Research and Knowledge Management Office (RaKMO)
Tele: +251 11 558 0616
Fax: +251 11 558 0559
P.O.Box: 1211/18490, Addis Ababa
Email: RaKMO@smuc.edu.et
Website:: https://www.smuc.edu.et

Proceedings of the 22nd International Conference on Private Higher Education in Africa 2024

St. Mary's University

PROCEEDINGS OF THE 22nd INTERNATIONAL CONFERENCE ON PRIVATE HIGHER EDUCATION IN AFRICA

Theme: Re-thinking Research and Academic Assessment and Evaluation towards Quality Enhancement: New Trends and Development

May 23-24, 2024
Addis Ababa, Ethiopia

The 22nd International Conference on Private Higher Education in Africa

Research and Knowledge Management Office (RaKMO)

May, 2024

Addis Ababa, Ethiopia

Address all communications to:

St. Mary's University

Research and Knowledge Management Office (RaKMO)

P.O.Box 18490/1211, Addis Ababa, Ethiopia

Tel: +251(0) 11-558-06-16

Email:rakmo@smuc.edu.et

Website: www.smuc.edu.et

Contents

Preface

It is with great pleasure that the Research and Knowledge Management Office (RaKMO) of St. Mary's University presents this compilation of research papers from "The 22nd International Conference on Private Higher Education in Africa." Held in December 2024, this conference brought together esteemed participants from Ethiopia, Tanzania, India, South Africa, and the USA, under the theme "Rethinking Research and Academic Assessment and Evaluation Towards Quality Enhancement: New Trends and Developments."

The conference served as a vital platform for stakeholders in higher education, featuring opening remarks from representatives of the Association of African Universities from Ghana, the International Network for Higher Education in Africa, and the Commissioner for Education, Science, Technology, and Innovation from the African Union. The event was further elevated by the inspiring opening speech delivered by H.E. Kora Tushune, State Minister from the Ministry of Education, who emphasized the importance of innovative approaches to assessment and evaluation in enhancing educational quality across the continent. The primary objective of this conference was to promote knowledge exchange and foster scholarly discourse on the evolving landscape of research and academic assessment. By addressing contemporary challenges and exploring new trends, participants aimed to contribute to the enhancement of quality in private higher education, ensuring that it meets the dynamic needs of students and society.

This proceedings volume includes nine papers that reflect the diverse perspectives and research interests of participants. The topics covered highlight critical issues and innovative ideas, showcasing the rich academic discourse that emerged during the conference.

To ensure the wider dissemination of these valuable insights, St. Mary's University has published all the papers in this proceedings volume. It is important to note that the views expressed in these papers are those of the respective authors and do not necessarily represent the official stance of the university.

We extend our heartfelt gratitude to all the presenters and participants of the 22nd International Conference on Private Higher Education in Africa. Their dedication to advancing knowledge in this vital field has significantly enriched the conference experience. We also wish to acknowledge the efforts of the organizers, reviewers, and contributors who worked tirelessly to bring this proceedings volume to fruition.

We hope that this compilation of research papers will serve as a valuable resource for researchers, educators, and policymakers, inspiring further exploration and innovation in private higher education.

Thank you for your interest and support in this important academic endeavor.

Welcoming Remarks, Wondwosen Tamrat (Assoc. Prof., PhD), Founder and President of St. Mary's University

Your Excellency, Ato Kora Tushune, State Minister, Ministry of Education, FDRE

Your Excellency, Prof. Mohammed Belhocine, Commissioner for Education, Science, Technology and Innovation of African Union Commission, ETHIOPIA

Your Excellency, Prof. Olusola Oyewole, Secretary-General, Association of African Universities, Ghana

Your Excellency, Sheikh Manssour Bin Mussallam, Secretary-General of the Organization of Southern Cooperation, ETHIOPIA

Distinguished guests, Ladies and Gentlemen,

All Protocols Observed,
It gives me a great pleasure to welcome you all to the 22nd International Conference on Private Higher Education in Africa organized by St. Mary's University in partnership with the African Union Commission, the Association of African Universities, the International Network for Higher Education in Africa at UKZN, University of KwaZulu Natal in South Africa, and Organization of Southern Cooperation in Addis Ababa.

Before I begin my talk, please allow me to thank His Excellency, Ato Kora Tushune, State Minister for Higher Education, the Federal Ministry of Education, for being able to join us and grace the occasion despite his extremely busy schedule. We take this as a clear indication of the government's continued recognition of our efforts and supports to the success of this international conference which is becoming a rare and shining research platform on private higher education both at regional and global levels.

As you may have already noted, the theme of this year's conference is **"Re-thinking Research and Academic Assessment and Evaluation towards Quality Enhancement: New Trends and Developments."** In the course of this afternoon and the whole day tomorrow, we will listen to two panel sessions, two keynote addresses and nine research papers that speak to the general theme.

We believe that the conference will shed light on the outstanding issues of research, assessment, and evaluation by way of availing new knowledge, sorting out some grey areas and bridging some possible gaps.

The various presentations and panel discussions by renowned scholars drawn from different parts of the world and from Ethiopian public and private universities underlie the need for addressing the multi-faceted challenges of higher education and the society at large. The focus on research and academic assessment and evaluation and their contribution toward quality enhancement is

timely given the global and national developments around these important themes and their wider implications in terms of influencing societal growth, institutional success, and the preparation of graduates as informed global citizens and ready for the job market.

As always, we promise to make the proceedings of the conference available both in digital and print forms. We also pledge to continue organizing this special conference thanks to our partners whose time and inputs have strengthened our will and continue to boost our morale to increase our efforts.

Excellencie's, Ladies and Gentlemen,

I wish to reiterate that St. Mary's University owes much its success of organizing this flagship conference to the immense collaboration and contribution of our reliable partners. Sitting Ministers and State Ministers of the Federal Ministry of Education have been with us since the first conference which was launched in 2003. I thank them for their continuous supports as witnessed today by the presence of H.E. Ato Kora Tushune. Among our long-time partners, I wish to acknowledge the African Union Commission, the Association of African Universities, the International Network for Higher Education in Africa, the University of Kwazulu-Natal, South Africa, and eminent scholars, such as Prof. Damtew Teferra from UKZN in South Africa, Dr. Teshome Yizengaw, from Indiana University in the US, and Professor Varghese from National University of Educational Planning and Administration in India who have been closely assisting in the organization of the two decades- long conferences. Although St. Mary's University has shouldered the financial burden of organizing the conference from the outset, the unfailing supports of all our partners have been tremendous.

Before closing, I would like to thank those who have travelled a long way to be part of this gathering and hope you'll have a very pleasant stay in Addis. My institution is also grateful to each of our speakers, panelists and presenters for their hard work and commitment. I hope this commitment and the spirit of partnership established over the last two decades will continue to be strengthened in the future.

I wish you all a successful conference and fruitful deliberations. Thank you for your attention

Welcoming Remarks H.E. Olusola Oyewole (Prof.) Secretary General, Association of African Universities, GHANA

On behalf of the Association of African Universities, I welcome all participants to this 22nd International Conference on Private Higher Education. Permit me to congratulate our host, the St Mary's University in Addis Ababa, and other co- organizers including the International Network for Higher Education in Africa, the University of Kwazulu Natal among others.

The THEME of this year's conference; "Re-thinking Research and Academic Assessment and Evaluation towards Quality Enhancement" is very relevant to the needs of this time. Assessment and Evaluation has been having increasing importance in many fields of life including policy making, industry, social activities and even in academics, as it helps to make decisions, recognize achievements , promote accountability and support learning and improvements in processes. In higher education, various research has been carried out on assessment to develop new methodologies, new tools and indeed, new technologies. This is because evaluators are continuously being tasked to improve their own work in a daily basis.

Higher Education Institutions worldwide are currently experiencing rapid and evolutionary change that is accompanied by emergent new trends and practices in research, academic planning and evaluation processes. It has been noted that academic assessments and evaluation should be linked to the mission of quality enhancement of the university through appraisal and feedback on professional and institutional practices. Time has now come to re-think research and academic assessment and evaluation towards empowering them to improve the quality of teaching, learning and research in our various institutions. Some of the existing assessment and evaluation methods include self-evaluation, evaluation undertaken by fellow researchers, qualitative assessment and assessment by peers. There is need to improve these existing methods and improve them with our technological innovations.

Assessment and evaluation in research and academic activities are paramount to ensure quality and improvement in education and research in general. We should also be prepared to change the forms of academic research and academic assessment to realign and recreate them in their proper roles as drivers of progress and guardians of excellence in all research formats.
I am delighted to note that this conference shall be covering:

- New advances in technology and its implications for higher education.
- University Research for Development
- Research and Academcic Assessment in Higher Education in the Global South and in Africa
- Examinations and Continuous Assessments
- Innovations and Technology in Research and Academic Assessment and

Evaluation in African Higher Education

It is my hope that participants in this conference will expound on new trends and developments that will contribute to the improvement of quality of higher education delivery through relevant research and academic assessment processes.
Thank you.

Opening Remarks by H.E. Mr. Kora Tushune, State Minister, Ministry of Education

Your excellency Dr. Wondwossen Tamirat, President of St. Mary's University

Your Excellency prof. Olusola Oyewole Secretary general of AAU

Excellencies delegates from partner institutions

Distinguished guests

Dear participants

Ladies and gentlemen,

Good afternoon! Indeed, it is a great honor and privilege for me to join you and deliver this opening remarks at this 22nd International Conference on Private Higher Education in Africa organized by St. Mary's University. Mindful of the gaps we need to fill in research and academic assessment, as reflected in the major theme of this conference, I feel that the organizers have chosen topical and timely issues facing the higher education sector. The theme of this 22nd edition is certainly to raise a critical question whether higher education institutions have lived up to the ideals of working on problem-solving research targeting African issues in general and those of their respective countries in particular. Equally significant is the implementation of academic assessment that is intended to measure students' learning outcomes and institutional outputs.

It is worth noting that the ailments of Africa and its peoples can only be remedied if we succeed in producing educated citizens who value research and fair assessment in their day-to-day scholarly endeavors. By extension, such citizens should weigh the pros and cons of their actions and inactions, which may affect the communities they live in. Despite the big progress Africa has made in terms of producing educated people at higher education institutions, the returns that the continent gets from its educated citizens remains inadequate. This may partly be attributed to the quality and relevance of research that higher education institutions are undertaking and the quality of academic assessment they have put in place.

Ladies and Gentlemen:

My Ministry, has embarked on a number of reform initiatives that are hoped to transform the higher education landscape of the country including differentiation of universities, granting of autonomy, introduction of entrance, exit and graduate admission exams, reforming research organization and funding, leveraging digital education and technology, introduction of performance contracting, initiation of leadership training and incubation programs, enhancing facilities standardization and accreditation, national adoption of university-industry linkage scheme, embracing higher

education policy research and knowledge management, rolling out of business, innovation and technology incubation centers, promotion of peaceful, inclusive and engaging campus (PIE), and many more.

Many of these reform agenda are directly relevant to enhancing the quality of research at country level. The Ministry has taken series of sectoral interventions and regulatory measures in the last five years. Chief among them is the differentiation of universities that segregates public universities horizontally to bring about diversity of mission and focus areas enhancing the effectiveness and impact of the institutions. As a result, today, we have research, applied science, comprehensive, science and technology and specialized universities. For instance, a research university is expected to devote much of its time to producing quality research outputs and get competitive with its counterparts in

the rest of the world. To realize its mission, my government is committed to giving the requisite support that such specialized universities might need. Of course, the Applied and Comprehensive Universities and the conduct of research in these universities too get no less attention. Another move that my Ministry has put in place is efforts to enhance the quality of academic journals published in the country. While it is still a long way to go, the exercise by itself has conveyed a message that universities have to be competitive and productive.

Similarly, to ensure the quality of academic assessment across institutions of higher learning, public and private alike, my Ministry has made it mandatory to sit for a nationally-administered exit exam for undergrad students at the end of their final year of studies. Such a student will not be awarded a diploma before earning a Pass result in the national examination. This regulatory measure has alerted universities to put their efforts into enabling their students acquire the knowledge and skills sought by the job market.

Excellencies, ladies and Gentlemen:

A ministerial intervention and regulatory measures cannot be considered as a guarantee for ensuring the qualities of research, teaching and learning, and community services in any institution. What is expected from an institution of higher learning is to abide by the ethical values governing the sector. What matters most is the level of commitment that an institution whether public or private demonstrates to live up to the expectations of its stakeholders. No employer wants to have untrainable graduates at its work place. Equally, No parent wants to see their sons and daughters jobless for years after graduation; hence there is growing need for institutions of higher learning to do more to produce employable and entrepreneurial graduates.

With that note, I would like to state that Ministry of Education recognizes the immense contributions that private higher education institutions are making to fill the gaps created by the limited capacity of public HEIs. I am sure the same holds for all African countries. With 22 years of successful track record, today's event has demonstrated the role of Private HEIs in contributing

to the development discourse by creating a platform for discussing and debating on issues of utmost relevance to Ethiopia and Africa.

Finally, I would like to take this opportunity to thank, St. Mary's University and its partner institutions: the African Union Commission (AUC), the African Association of Universities (AAU), the Ministry of Education (MoE), International Network for Higher Education in Africa (INHEA) and Organization of Southern Cooperation for taking the initiative and sustaining the legacy for more than two decades.

With this brief remark I now declare the conference officially open and wish you a successful conference. I wish our guest from outside Ethiopia a pleasant stay in beautiful and vibrant city of Addis Ababa.

I thank you.

Diverse Examination Formats and Continuous Assessment Models on Educational Outcomes: The Case of Private Higher Education, Ethiopia

Yideg Alemu (Ph.D), Hawassa University, Ethiopia

Abstract

Continuous classroom assessment and diverse examination formats are frequently cited as important tools for supporting better educational attainments, especially in terms of fostering active, individual, and deep learning. While perceived as underutilized potential, we require harnessing to maximize learning potential. In spite of the ongoing debate and unimplemented uniformity, classroom continuous assessment and diverse examination formats remain controversial and inconsistent. Therefore, the purpose of this study is to examine classroom continuous assessment practices and exam composition diversity, their role in educational outcomes, and contributing factors to lower-quality classroom continuous assessments in private higher education in Ethiopia. Through exploratory research design and a stratified random sampling method, 230 students were selected; in addition, 12 faculty members, 18 course outlines, and 11 final exam sheets of regular students with grades of 35–60% were used. Analyses of qualitative and quantitative data were conducted using descriptive statistics and theme analysis. Results show that continuous assessments are present in the majority of academic semesters (ranging from 0.43% to 65.22%), and they are the most popular choice among students. The composition of the final exams also tended to be significant but declined to a conventional multiple-choice, true-false, matching, or less time-consuming exam type or less critical thinking and problem-solving skills. Most students (88.70%) consider continuous assessment models to be better at evaluating their learning progress than traditional summative exams alone. Nevertheless, continuous assessments and diversity in exams interfere with students' abilities to complete their assignments on time, cause the occurrence of exam anxiety and extra workloads; this should be mitigated with effective strategies. By way of enhancing the quality of higher education in Ethiopia, we need to follow up on the practices and promote classroom continuous assessment and innovative, diverse examination formats that have a role in critical thinking, problem-solving skills, active and Deep learning.

Keywords: Deep learning, educational outcomes, exam composition diversity (ECD), Classroom continuous assessment (CCA), private higher education, Ethiopia

1. Introduction

Educating involves building knowledge, skills, and attitudes, and in most cases learning involves assessment and measurement (Bennett, 2015; Biggs et al., 2011; Rawlusyk, 2018; Shepard, 2000; Shibeshi and Baheretibeb, 2023) . It is also critical aspect of an educational institution's teaching-learning process (Hattie & Timperley, 2007). Overtime, various definitions of assessment exist but this study is limited to education assessment that is referred to any procedure which is designed to collect information about the knowledge, attitudes, or skills of a learner or a group of learners. Through assessment, what students know, understand, and do will be evaluated. Further, assessment will also provide vital information, track progress on learning outcomes, and suggest possible remedies for the future course of action in the teaching-learning process (Ian, 2012). For instance, assessments administered to the classroom inform: the students about their own learning, parentsto assist their children's academic performance, and legislators to make decisions ; hence, broad assessments display how learning interacts with a curriculum, a set of goals, or a set of learning criteria (Biggs et al., 2011; Johnston & Johnston, 1998).

The inclusion of inputs essential to individual and active learning, particularly continual assessments in the classroom and a variety of test formats, is often emphasized in the larger discourse on education (Bennett, 2015; Johnston and Johnston, 1998; Shibeshi and Baheretibeb, 2023).Two crucial components of assessment in higher education are exam composition diversity (ECD) and classroom continuous assessment (CCA), which have the potential to have a major impact on student learning and outcomes. The significance of these assessment methods lies in their capacity to measure a student's understanding, foster critical thinking, and support a holistic learning experience (Gray and Diloreto, 2016; Ozan and Kıncal, 2018).

Regular assessments are a part of CCA, giving students continuous feedback and chances to show what they have learned (McMillan, 2013; Zeleke, 2013; Zhang & Burry-Stock, 2003). Contrarily, ECD refers to the measurement of student learning through the use of a range of assessment techniques, including essays, presentations, projects, and tests (Johnston and Johnston, 1998). Since ECD and CCA are essential components of teaching-learning, continuous assessment and assessment for learning are important aspects of the Higher education. ECD and CCA, and the guiding principles of continuous/formative assessmentare intended to support a paradigm shift in education by refocusing the learning environment on meaningful outcomes and the individual needs of each student (Lara, 2022).

The evaluation techniques are purposefully designed to go beyond conventional summative assessments and adopt a methodology that does not only measure knowledge acquisition but also develops a deeper comprehension of ideas and encourages critical thinking abilities (Belay & Tesfaye, 2017). Through the integration of continuous feedback and evaluation throughout the learning process, continuous assessment practices,such as competency-based assessment, or CCA,offer instructors and students real-time insights into academic progress and opportunities for development(Ozan & Kıncal, 2018). This ongoing involvement supports the idea that learning is an iterative, developing process and making education more dynamic and responsive (Safsouf et al., 2020; Shepard, 2000). Simultaneously, the idea of Exam ECD is to examine a wider range of abilities and competences by incorporating various types of exams, like true false, matching, short answered, group assignment, projects, essays, and practical assessments (Box, 2018; Wright & Miller, 2018).

Beyond a one-size-fits-all evaluation strategy, ECD promotes a more inclusive and personalized assessment approach by acknowledging the variability in learners' abilities and preferences (World Bank, 2017). Gray and Diloreto (2016) assert that educational institutions hope to establish an atmosphere that does not only assesses academic performance but also fosters a comprehensive learning experience catered to the various needs and goals of students by merging CCA and ECD. This shift aligns with contemporary educational philosophies that emphasize the development of critical thinking, problem-solving skills, and the ability to apply knowledge in real-world contexts (Revd et al., 2021). Moreover, the incorporation of continuous/formative assessment, particularly CCA, and the integration of diverse examination formats through ECD represent a transformative approach that underscores the commitment to learner-centered education, promoting a more comprehensive and adaptive learning environment (Dumont & Ready, 2023; Rawlusyk, 2018; Tripathi & Fozdar, 2007). Further, it enables educators to interact with students in novel, unique, and fair ways, and research studies across various educational contexts consistently highlight the broader advantages and positive impacts associated with the implementation of CCA and ECD on learner outcomes(Ozan and Kıncal, 2018).

Various empirical literature also favors the CCA and ECD. De Freitas(2006), in his a longitudinal study, emphasizes the role of CCA in providing continuous feedback, fostering a deeper understanding of subjects, and enhancing overall academic performance. Ozan and Kıncal(2018) also correlate ECD and CCA with improved critical thinking skills,reparing learners for real-world challenges personalized learning, illustrating how ongoing assessments contribute to tailoring educational experiences to individual student needs.

Positive influence of ECD on reduces assessment-related stress and anxiety, and creates a more inclusive and supportive learning environment paramount (Bennett, 2015). However, data from Tripathi and Fozdar (2007) indicate that despite their recognized significance, it is widely

perceived that the potential of diverse examination formats and continuous assessments is underutilized and requires strategic harnessing to maximize their impact on learning outcomes. This underutilization might be attributed to various factors, including resistance to change, lack of training for educators, or institutional inertia, level of economy, curriculum and intuitional level policy and producers (Box, 2018; Rawlusyk, 2018; Zhang and Burry-Stock, 2003).

The debate surrounding the efficacy of CCA and diverse examination formats is ongoing, with diverse opinions and perspectives prevailing within the educational community (Name et al., 2021). Critics argue that the lack of uniformity in implementation and assessment criteria hinders the effectiveness of these methods leading to a situation where their potential benefits are not consistently realized across educational institutions (Shibeshi & Baheretibeb, 2023). Despite the ongoing debate and the challenges associated with achieving uniformity, it is essential to recognize the potential of diverse examination formats and continuous assessments in fostering a more comprehensive and personalized approach to education (Sadler, 1989).

In Sub-Saharan Africa, CCA and ECD, remains a subject ofpromise and constraint (Joseph, 2023; Zewdu, 2017). In addition to limited implementation of CCA and ECD, implementation costs are another obstacle and efforts that should be dedicated to address the existing obstacles, and ensure that CCA and ECD contribute effectively to enhance the overall learning experience (Box, 2018). Despite the widespread belief that CCA and ECD are the most successful teacher-learning strategies in Ethiopia, there is a dearth of research on implementation gaps in Ethiopian higher education in general and private higher education in particular. Furthermore, at Dire Dawa University in Ethiopia, Belay and Tesfaye, (2017) presented factors affecting CCA, such as challenges related to the teachers, students, curriculum, and organization. Full understanding of CCA; however, is not examined in the context of private higher education. Zewdu(2017) also argues that private higher education in Ethiopia, has encountered a spectrum of challenges, spanning from issues of awareness and integration ofCCA and ECD. Wright and Miller (2018) emphasize an insufficient level ofCCA and ECD in private universities and colleges; this inadequacy is attributed to the demanding costs associated with CCA and ECD. Private educational institutions are established with a profit-oriented goal, and this financial aspect has adversely affected the creation of learner-centered and high-level goals in classrooms, which are still in their early stages. World Bank (2017) also claims comprehensive exploration of CCA and ECD from a student perspective within Ethiopia's private higher education sector requires additional research for a more in-depth understanding. Therefore, the primary focus of this case study in the private education sector of Ethiopia is to establish an understanding of how education assessment is evolving, specifically in relation to CCA and ECD, using Pharma College as a case study. Secondly, the study aims to elucidate the guiding factors influencing teachers and students in adopting and usingCCAand ECD. The third objective is to investigate the existing practices of CCAand ECDin private higher education, exemplified by Pharma College in Ethiopia. Finally, the paper sheds light on the implemented mitigation strategies and approaches to overcome challenges related toCCAand ECD among educators, students, and institutions.

2. Conceptual Framework of the Study

Education, with the aim of fostering better outcomes for society and national development, primarily manifests in improved learning outcomes at school (Pradhan & Rawlings, 2002; World Bank, 2017; Zhang & Burry-Stock, 2003). This outcome hinges on various factors, including the subject matter, learner characteristics, available resources, and desired skills (Regasa et al., 2019; Richards, 2013). Emphasizing general principles and approaches, active learning plays a pivotal role, encompasses student participation through discussions, problem-solving activities, debates, role-playing, and collaborative projects (Regasa et al., 2019).

A critical aspect involves fostering skills, such as critical thinking and a deeper understanding of the role of assessment for learning, particularly through continuous/formative assessment in teaching (World Bank, 2017). Providing frequent feedback to students becomes instrumental, enabling them to establish further learning targets. Consequently, assessment does not only serve as a tool for learning and progression but also as a means to design and employ fair and equitable evaluation methods; it empowers learners to take ownership and actively engage in the assessment process while facilitating the monitoring of the learning journey (De Freitas, 2006; McMillan, 2013).

Continuous assessment for learning is a key feature as it is a vital part of teaching-learning (Zulherman Zulherman et al., 2021). In Figure 1 of the conceptual framework section 'C,' a demonstration and identification of formal teaching-learning types in class, assessment paradigms, assessment methods, and learning outcomes are presented. The 'A' section of the figure represents a desirable teaching-learning process with positive elements, such as active learning (student-centered), formative assessment (assessment for learning), continuous assessment, diverse exam formats, and compositions (multi-method), all associated with deep learning. On the other hand, the 'B' section illustrates an undesirable approach to the teaching-learning process, but it acknowledges positive contributions in teaching-learning. This includes passive methods (teacher-centered), summative assessment often associated with passive learning or teacher-centered methods like lectures and direct instruction, non-diverse exam formats, and compositions (uni-method) associated with surface learning outcomes.

Acknowledging these distinctions, the paper utilizes this framework, considers the broader perspective; and fthe framework provides a comprehensive understanding of the education process, whether at lower grades, higher institutions, or within private or government educational institutions. Hence, the framework can be applied to draw conclusions across various educational settings. Second, it aims to identify the existing barriers to continuous assessment among teachers and students. The framework also proposes specific recommendations to enhance continuous assessment and diverse exams. The implementation of these measures is anticipated to result in a notable improvement in the overall educational quality within Ethiopian higher education institutions.

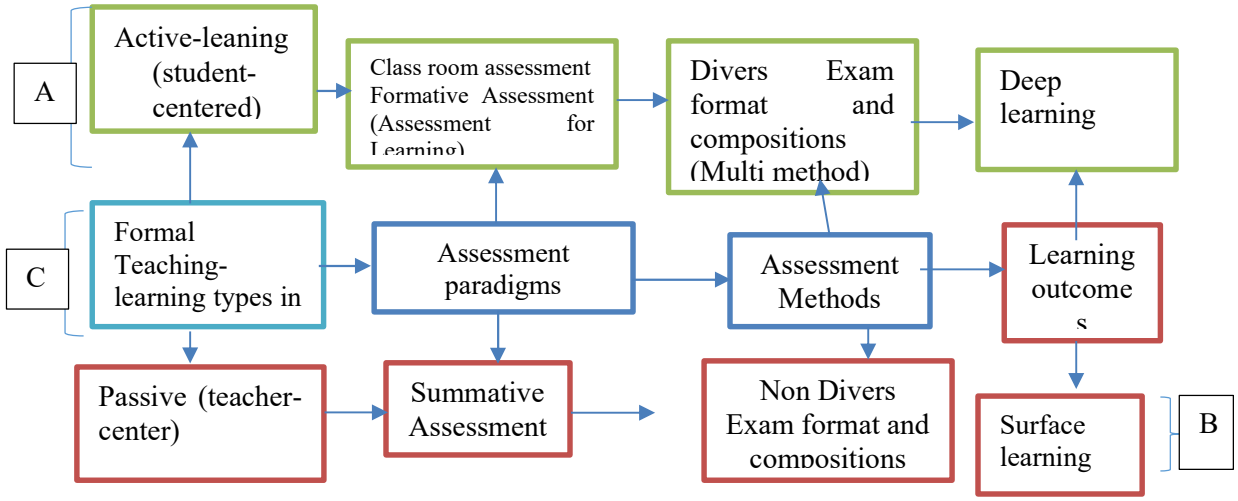

Figure 1. Conceptual Framework of the Study (Author Construction)

3. Methodology of the Study

a. Research Design

An exploratory research approach was used, hence, the study's focus is on students' continues improvement. It also addresses variables, such as various examination formats and formative assessment models that are appropriate for feedback and ongoing improvement (Patrick Reid, 2000). In addition, exploratory research designs enable the investigation of continuous assessment technique evaluation and improvement based on real-time data, guaranteeing the assessment models' continued efficacy and applicability (Hussein, 2018; Johnson and Onwuegbuzie, 2004). Aside from its contribution to the formulation of theories and understanding plausible causal links, it allow well-rounded understanding of educational outcomes and effective continuous assessment models(Creswell, 2009). This can help in the formulation of theories about the efficacy of particular methods of assessment and how they affect learning outcomes. In terms of methodology, embedded mixed method design served as the framework for the research, which employed mixed methods (Ozan & Kıncal, 2018).

This approach necessitates the employment of several data gathering instruments since each data source has advantages and disadvantages of its own. Within this framework, the investigator gathered qualitative and quantitative data via questionnaire surveys and in-depth interviews with educators and students. This approach, in principle, acts as a bridge between the research problems and the research methodologies. Furthermore, mixed-research method allows for the inclusion of a variety of perspectives to provide light on the subject at hand(Creswell, 2009).

Participants and Sample Size

Pharma College, a recognized higher education institution in Southern Nations, Nationalities and People Region in Ethiopia , offers social and natural science subjects of study to more than 2000 enrolled students in each of the three locations—Hawassa, Shashamane, and Wolaita Sodo. This private higher education is currently being run by 204 qualified staff. A total of 242 participants, including 230 students from two strata (natural and social sciences), were chosen randomly throughout the search process. In addition, documents such as 18 course outlines and 11 final exam sheets with scores ranging from 35–60% for the second semester of 2022 for regular students used for the study. Table 1 (in the next page) displays general information about the participating students, teachers and related assessment materials.

Table 1. Participants information

Total Number of sample N=230 (Student)			
	Factor	N	%
	Field of study/ Programs of study		
	Natural sciences	98	42.61
	Social sciences	132	57.39%
	Gender		
	Male	111	48.26%
Student	Female	119	51.74%
	Study year		
	Frist year	72	31.31%
	Second year	94	40.87%
	Third year	64	27.82%
	Total		
	Total Number of sample n= 12(faculty members)		
	Gender		
	Male	3	25%%
	Female	9	75.00%
	Year of expire		
	1-0	1	8.34
Faculty members	10-15	6	50.00
	15-25	2	16.66
	25 and above	3	25.00
	Qualification		
	Diploma	2	16.66%
	BA/BSc	3	25.00%
	Master	7	58.44%
Related assessment materials	18 course outlines		
	11 final exam sheets with scores ranging from 35-60 %		
	1 Feedback sheets		

Data Sources and tools

The primary data were gathered from Pharma College, Hawassa campus students, faculty members, regional and national officials through questionnaires, interviews, checklist guides, observation, and infrastructure inspections. Besides, secondary data r related literature, papers, and documents about technology integration in Ethiopian higher education institutions were studied to provide context and support research findings.

Questionnaire

To gather data on diverse examination formats and continuous assessment models on educational outcomes, survey questions that focus on specific aspects, such as formats and models, clear picture of student experiences and preferences were used. Quantitative and qualitative data which include a mix of multiple-choice questions, Likert scales (5-point scale) and open-ended questions were administered to teachers and students at Pharma college, Hawassa campus to gain numerical data and personal insights . The questionnaires were also pretested and analyzed using a pretest survey on two faculty members and ten students to find ambiguities or unrelated questions and then modify accordingly.

In-depth conversations

The interviews involved in in-depth, one-to-one discussions with respondents who were students and faculty members. A total of ten in all were interviewed: five members of the faculty and seven students. Interviewers were chosen on the basis of their educational background, professional background, and fluency in the regional tongue. The participants with recognizable codes were interviewed in the school campus at a quiet place. After the theme saturation was reached, the interviews were concluded. A notebook was used to record the interview. Twenty to twenty-five minutes were allotted to each participant for the in-depth interviews.

Interviewing key informants

Three administrative staff members who manage education in the regional offices were purposefully chosen and interviewed.

Observation

In this study, checklists and observation were the other methods employed to muster data. The goal was to study the impact of the deployment of various test formats and continuous evaluation models on educational outcomes at the Pharma College, Hawassa campus, a private higher education institution in Ethiopia as well as the current infrastructure that enables continuous assessment models and divers exams.

Data Analysis Techniques:

This study presents qualitative and quantitative data on diverse examination formats and continuous assessment models, summarized using frequency and percentage tables. A conceptual

framework guides the analyses of additional qualitative data from interviews and observations. These qualitative data, analyzed thematically, identify recurring themes, patterns, and insights related to barriers, strategies, and recommendations for enhancing technology integration in Ethiopian higher education institutions. The synthesized conclusions and recommendations align with the study's conceptual framework.

Results

This study utilized data obtained from a sample survey involving faculty and students of a private college . The focus was on assessing the methods employed in the teaching-learning process during the second semester of 2022 and the first semester of 2023 academic year. The result section is organized into four parts. The first part examinesunderstanding the evolving trends of the current assessment systems implemented at Pharam College. This includes an exploration of specific policies to encourage the use of a diverse range of assessment techniques. The goal is to align these techniques with the learning activities of students, and ultimately fulfilling the primary aim of assessment, which is to support learning. The second part of the results provides a comprehensive understanding of continuous assessments throughout academic semesters in private higher education. This section covers various aspects, such as training and support, and considers the specific context of the educational environment. The third part addresses the composition of exam formats, the diversity of final exams, and the role of continuous assessments in influencing academic performance. This section also sees the relation of the assessments on overall student education satisfaction. The fourth part focuses on strategies for overcoming challenges in fully understanding the assessment system, continuous assessment, diverse exam composition, formats. Moreover, it includes exploring avenues, such as professional development opportunities, training initiatives, and fostering a supportive culture. These strategies aim at contributing to the achievement of teaching-learning goals.

Understanding the Evolving and Current Assessment System Used in Private Higher Education Centers,the Students' and Faculty Members' Perspectives

An overwhelming majority of respondents, 198 (86.08%), indicate that classroom assessments were evolved over time, changing from semester to semester, demonstrating a shift towards a more class room continuous assessment approach. When the respondents were asked about their preferred assessment method,

211 (91.73%) of the students expressed a preference for continuous assessment. Additionally, a significant number of students, 214 (93%), reported being familiar with continuous assessment models implemented in their institution, highlighting its prevalence. Furthermore, 214 (93%) acknowledged that continuous assessment contributes to differences in success rates across courses. A notable 220 (95.6%) respondents affirmed that continuous assessment methods offered a more comprehensive evaluation as compared to traditional exams. They also emphasize the fairness of continuous assessment towards students and its alignment with the objectives and aims

of the courses (See Table 2).

Table 2. Method of assessment used in private higher education

N=230 (230 Student)		
Question	Yes f (%)	No f (%)
Assessment overtime	198 (86.08%)	32 (13.92%)
choice assessment	210 (91.3)	20 (8.7%)
Present assessment methods	211 (91.7%)	19 (8.3%)
Assessment make any difference	214 (93%)	16 (7%)
Comprehensive evaluation compared to traditional exams	220 (95.6%)	10 (4.4)
Fairness	228 (99.1%)	2(0.9)
Course aims and Objectives achievement	223 (96.9)	7 (3.1)

The majority of faculty members, who participated in the survey and observed the evolution and current implementation of the assessment system used in private higher education centers, provided insights from the faculty perspectives. A significant proportion, 10 out of 12 respondents (83.3%), expressed a comprehensive understanding of the assessment system they had employed.

Additionally, they acknowledged the importance of the 'moderation' procedure in ensuring consistency in the assessments or grades assigned to students across different instructors. Furthermore, a consensus of 83.3% among respondents emphasized that continuous assessment did not only impact the students' success in exams but played a crucial role in retaining knowledge gained throughout the course (see Table 3) next page

Table 3: Private Higher Education Assessment Systems - Faculty Perspective.

N=12 (12 faculty numbers)		
Question	Yes f (%)	No f (%)
Assessment system understanding	10 (83.3%)	2 (16.6%)
Evaluation	9 (75%)	3 (25%)
Effects	11 (91.6%)	1(8.3%)

Figure 1 illustrates the significant role of assessment methods in adequately preparing individuals for real-world challenges. Specifically, 179 respondents (77.8%) indicated that the current assessment methods prepared them effectively for real-world challenges

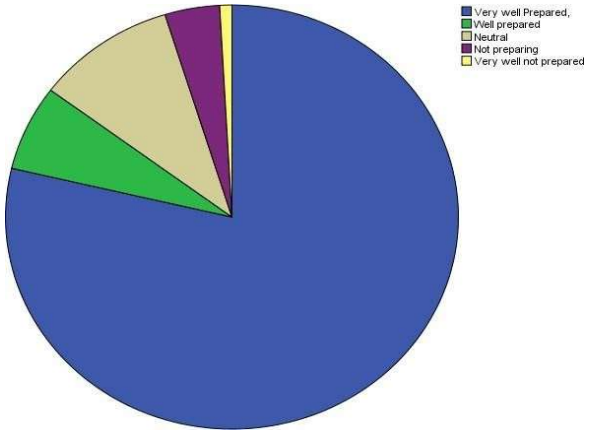

Figure 2. Assessment methods that adequately prepare the students for real-world challenges.

4.2. Continuous Assessment Experience

The majority of the students, 152 respondents (65.2%), expressed that the ideal number of continuous assessments in a given course during an academic semester is three (see Table 3). In fact, in Pharam College, the combination of formative assessments (ongoing, feedback-oriented) and summative assessments (final evaluations) was given and 18 course outlines collected from most of the course outline contained continuous assessment form mid exams and final exams which provide a holistic view of student s' progress.

Table 3. Continuous Assessment Experience

Question	N=230 Exam per semester of a course	F	%
Number continuous assessments in a given course and academic semester	1	1	0.43%
	2	67	29.14%
	3	150	65.22%.
	4	11	4.78%
	5	1	0.43%

b. Frequency of Different Exam Formats, Continuous and Assessment Experiences for the Courses in Natural Science Field

True/false, multiple choice, matching, fill-in-the-blank, short answer, presentations, and group projects are the most commonly and frequently used exam formats in natural and social science fields. On the other hand, exam formats, such as multiple choice with explanation, concept maps, simulations and role-playing, data analysis and interpretation, research proposals, peer review, one-minute papers, journal entries, fieldwork and observations, creative projects, and digital

storytelling are less commonly implemented in both fields (see Table 4). On the other hand, 11 final exam sheets with scores ranging from 35-60 % for the second semester of 2022 for regular students, contain 4 types of exam forms.

Table 4. Frequently Exposure to Different Exam Formats and Continuous Assessment Experience for Courses in Both Natural and Social Science Fields.

	N=230			
Question	Exam composition diversity (ECD)	Suitable for Measuring	Estimated Frequency of Use Yes f (%)	No f (%)
	True/False	Basic factual knowledge	230	
	Multiple Choice	Factual knowledge	230	
	Multiple Choice with Explanation	Understanding,	15	
	Matching	Identification, association	230	
	Fill-in-the-Blank	Recall,	230	
	Short Answer	Analysis,	230	
	Essay	synthesis, argumentation	220	
	Problem-Solving	Application	25	
	Case Studies	Critical thinking,	10	
	Group Projects	Collaboration,	221	
	Concept Maps	Organization, understanding of relationships between concepts	3	
	Simulations and Role-Playing	simulated scenarios,	2	
	Data Analysis and Interpretation	interpretation of data,	25	
	Research Proposals	research skills,	15	
	Presentations	organization, public speaking	200	
	Debates and Discussions	defending positions	29	
	Peer Review	evaluation of others' work	29	
	One-Minute Papers	Reflection, key takeaways, concise summarization	12	
	Journal Entries	application of theory to experiences	12	
	Lab Reports	Scientific method,	58	
	Fieldwork and Observations	Data collection,	22	
	Creative Projects	creativity	15	
	Digital Storytelling	use of technology	0	

The interviewees responded, "As many students strive to achieve high grades, they favor simple test formats, such as multiple-choice and true-false questions, but I also like short answer, essay, and workout questions and problem-solving questions as well."

c. Varied Examination Formats and Continuous Assessment Models that Enhance Learning Experiences

Of the respondents, 226 ((96.9%) expressed that varied examination formats and continuous

assessment models significantly enhanced their learning experiences. In addition, 205 respondents (89.2%) stated that varied examination formats contributed to a deeper understanding of the subject matter. Furthermore, a substantial majority, 216 respondents (94%), affirmed that continuous assessment models played a supportive role in the overall learning process (see Table 5)

Table 5. Perceptions of the Contribution of Varied Examination Formats and Continuous Assessment Models to an Enriched Learning Experience

N=230		
Question	Yes, significantly Yes f (%)	Yes, to some extent f (%)
Varied examination formats and continuous assessment learning experience	226 (96.9%)	4 (3.1 %)
Varied examination formats contribute to a deeper understanding of the subject matter	205 (89.2%)	25 (10.8%
Continuous assessment on overall learning	216 (94 %)	16 (6%)

"The role of various examination formats and continuous assessment learning experiences is important, especially for students. It reduces exam anxiety and stress, and as feedback is given immediately after the exam, it helps students to improve progress and retain knowledge for a longer time," replied the faculty members of 2022.

d. Continuous Assessments on Academic Performance

Continuous assessments play a crucial role in academic performance, contribute to various educational outcomes by offering ongoing feedback, monitoring progress, and fostering a deeper understanding of the subject matter. Table 6 presents an overview of students' feedback, emphasizing the potential educational outcomes and the associated functions of continuous assessment. Approximately 214 participants (94%) reported an enhancement in knowledge acquisition, specifically in applying theoretical knowledge to practical contexts. In terms of skill development, 222 respondents (96.5%) indicated the improvement in critical thinking skills. Furthermore, 215 students (93.4%) expressed that continuous assessment facilitated individualized instructions. Regarding the learning engagement, 223 participants (96.9%) reported a positive impact. Approximately 207 respondents (90%) also noted that continuous assessment played a significant role in fostering motivation.

Table 6. Continuous Assessments on Academic Performance,

	N=258				
Question	Knowledge (apply theoretical knowledge in practical contexts)	Skill Critical Thinking Skills	Individualized Instruction	Learning Engagement	motivated
continuous assessments perceived as beneficial and influential in enhancing overall academic performance	214 (94%)	222(96.5%)	215 (93.4%)	223 (96.9%)	207 (90%)

4.5. Challenges Associated with Diverse Exam Formats and Continuous Assessment in Private Higher Education

Table 7 outlines challenges in implementing continuous assessment as reported by students, faculty members, and institutions. Key challenges include resistance to traditional assessment methods, lack of familiarity and comfort, insufficient support and training for adapting to new approaches, time-consuming processes, and the additional effort required from teachers. These factors are identified as significant obstacles to the successful implementation of continuous assessment and diverse exam formats (see Table 7).

Table 7. Challenges in Exam Formats and Continuous Assessment

Question	N=230 Yes f (%)	No f (%)
1. Student		
Adaptation to new formats and work load	225 (97.82)	5(2.18%)
Time management	212 (92.17%)	18(7.82%)
Potential for grade inflation	39 (16.95%)	191 (83.04%)
2. Teacher	N= 12	
Faculty Resistance to continuous assessment	6 (50%)	6 (50 %)
Increased workload	10 (83.34%)	2 (16.66%)
Unpaid investment in new assessment materials.	5 (41.66%)	7 (58.33%)
3. Institutions	N=2	
Implementation Costs	2(100%)	0
Training and support	2 (100%)	0

4.6. Overall Satisfaction

Figure 3 illustrates the overall satisfaction levels with examination formats and continuous assessment models among students. The results show that 73.5% are highly satisfied, 6.5% are moderately satisfied, 16.1% are slightly satisfied, and 3.9% are not satisfied at all.

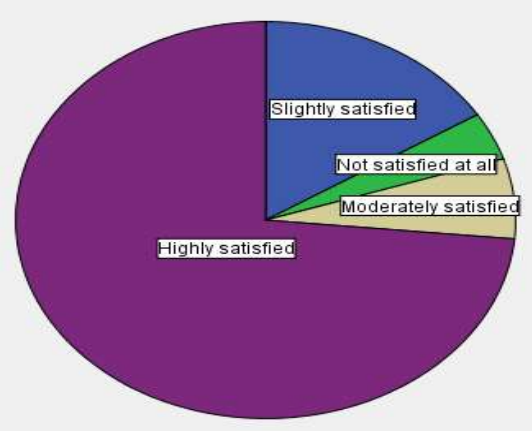

Figure 3. Overall Satisfaction: Examination Formats and Continuous Assessment Models Used

5.Discussions

Assessment and measurement in education were backed by the old days, while in most cases, assessment in the early 20th century was declining to standardized testing (McMillan, 2013). Until

late in the century, there was simply little emphasis on CCAandECD. The small number of studies that were researched were made up of largely descriptive studies and depicting what teachers did with testing and grading.

After the end of the 20th century, evaluation techniques other than final tests and examinations became more and more popular. Continuous assessment is still defined and used differently now.although it still refers to continual evaluations that can provide an all-encompassing understanding of students' capacities (Neto et al., 2023). Continuous assessment enables teachers to compile a more comprehensive and ongoing picture of students' learning and growth rather than depending only on a single, high-stakes exam at the conclusion of a course (Biggs et al., 2011; Johnston and Johnston, 1998; Ozan and Kıncal, 2018).

Acknowledging that potential, for example, the handbook of the Ministry of Education in Ethiopiafor the higher diploma programme for teacher educators is one of the initiatives that promotes ECDand CCA, and it requires continuous assessment of learning in all higher education courses (Belay and Tesfaye, 2017). In this regard, this study reveals that 86.08% (ranging from 0.43% to 65.22%) of the respondents noted the evolution of assessments towards classroom continuous assessment and this study is consistent with the trends identified by McMillan(2013) in his longitudinal study on assessment methods in education.

Over, 91.73% of the participants in this study has a strong preference for continuous assessment,. Multiple studies showed preferences for continuous assessment ranging from 30% to 80% depending on the context and also showed comparative analyses of the assessment preferences among students in various academic settings (Box, 2018; Neto et al., 2023). Further, this preference suggests a growing recognition of the benefits associated with continuous assessment including in private or government higher education institutions (Holzinger et al., 2020).

93% familiarity rate and the implementation of continuous assessment in this study supports the idea of shearing information among various education centers within the countries , with other counties, intuition to institution (Johnston and Johnston, 1998) .Shibeshi and Baheretibebs' (2023) study also documented the implementation of CCA. Various universities, highlight the widespread adoption and integration of continuous assessment practices in educational institutions.

The overwhelming agreement (95.6%) among respondents discloses that continuous assessment provides a more comprehensive and fair evaluation as opposed to traditional exams (Ozan & Kıncal, 2018; Rawlusyk, 2018). This consensus underscores the perceived effectiveness and fairness of continuous assessment in diverse educational contexts. Further, the survey reveals that the majority of faculty members (83.3%) responded and comprehensively understood the current assessment system in private higher education centers, emphasizing the importance of CCA procedure for consistency. This aligns with the existing research, highlights the faculty perspectives on an assessment system evolution and the significance of moderation for consistency

in academic evaluation (Holzinger et al., 2020).

The prevalent preference of 65.2% of respondents was three continuous assessments in a semester ,This number is few as compared to other similar institutions while continuous assessment plan for a course in a semester involves considering various factors, including the course content, objectives, and the desired learning outcomes. It is also critical to consider a combination of formative assessments (ongoing, feedback-oriented) and summative assessments (final evaluations) to provide a holistic view of student progress.

Established research in educational psychology demonstrated that an optimal number of assessments within a semester promotes a balanced workload for students, enhancing engagement and learning outcomes (Belay & Tesfaye, 2017; Khandker et al., 2010). Moderate number of assessments contribute to sustain student motivation and reduce the likelihood of assessment fatigue(Box, 2018). An efficient and encouraging learning environment is ensured by the practical applications of fair assessment systems to student preferences. It emphasizes how crucial it is to match assessment procedures with learners' needs and preferences, which is in line with the larger body of research on student-centered educational techniques (Leibowitz et al., 2016). As evidenced by the study's findings, the most common exam formats in both natural and social science fields are true/false, multiple choice, matching, fill-in-the-blank, short answer, presentations, and group projects. Eleven final exam sheets, with scores for regular students ranging from 35 to 60% for the second semester of 2022, were also found to contain four different exam types. The limited use of more innovative exam formats, such as multiple choice with explanation, concept maps, simulations and role-playing, data analysis and interpretation, research proposals, peer review, one- minute papers, journal entries, fieldwork and observations, creative projects, and digital storytelling, hampers a comprehensive assessment of skills, reduces student engagement, and fails to adequately prepare them for real-world challenges (Rawlusyk, 2018). De Freitas,(2006) claims that limited use of exam formats in education can lead to unequal opportunities, underdeveloped critical thinking, resistance to change, overemphasis on memorization, and limited measurement of soft skills, and suggests that embracing diverse assessment methods is essential for a more inclusive and effective educational experience. The overwhelming agreement among respondents (96.9%) showed that varied examination formats and continuous assessment models significantly enhance their learning experiences. Ian(2012) asserted that incorporating diverse assessment methods fosters engagement and enriches the learning process, contributes to positive student experiences.

The assertion made by 89.2% of respondents disclosed that varied examination formats contribute to a deeper understanding of the subject matter aligns with the conclusions drawn by (Biggs et al., 2011; Gray and Diloreto, 2016) in their meta-analyses on the impact of assessment diversity on cognitive engagement. Their research suggested that exposure to a variety of assessment formats stimulates critical thinking and a deeper comprehension of course content.

The substantial majority (94%) affirmed that continuous assessment models play a supportive role in the overall learning process. This finding is also supported by the case study conducted by Rawlusyk (2018). This case study demonstrated that the regular feedback and ongoing evaluation inherented in continuous assessment contribute not only to knowledge retention but also to a more robust and iterative learning experience. These findings collectively underscore the pedagogical benefits of incorporating diverse assessment methods, emphasizing the positive impact on student learning experiences and outcomes.

Regrading the enhancement of knowledge acquisition, the research findings by De Freitas (2006); Gray and Diloreto (2016); Shepard (2000) demonstrated that continuous assessment promotes a deeper understanding of the subject matter by encouraging students to apply theoretical knowledge to practical contexts. Moreover, 96.5% the respondent in the survey also indicated that the strong association between continuous assessment its role in improving critical thinking skills. Holzinger et al., (2020) also reported that continuous assessment fosters the development of higher-order thinking skills. This is further supported by the case study conducted by Holzinger et al., (2020); Neto et al., (2023) at DEF Institute, emphasizing the positive impact on critical thinking through continuous assessment practices. It is also sustenance individualized instruction by allowing for personalized feedback and support (Dumont and Ready, 2023).

Studies by Sadler (1989) also emphasized the role of continuous assessment in tailoring instruction to individual student's needs, its positive impact on learning engagement, **r**elationship between assessment practices and student engagement and positive correlation between continuous assessment and increased student engagement, role in fostering and heightened student motivation.

In this study, 10 faculty members (83.34%), and 225 students (97.82%) reported that the costs associated with implementation by the institution were identified as challenges in adopting varied exam formats and continuous assessment. In this context, several studies have noted that faculty members and students might exhibit resistance to adopting new assessment approaches due to entrenched practices. Furthermore, the case study underscored faculty reluctance to deviate from conventional assessment methods citing reasons, such as lack of familiarity and comfort, insufficient support and training, time-consuming processes, and the additional efforts required from teachers (Neto et al., 2023).

Nevertheless, Hansson, (2017); Hattie and Timperley, (2007); McMillan, (2013), Sadler, (1989) Shepard, (2000) asserted that the benefits ofECD and CCA outweigh the challenges . To overcome these challenges , a comprehensive strategic approach which includes targeted faculty development, institutional support, and cultural shift is needed,

4. Conclusion

This study uses Pharam College, a private higher education institution in Ethiopia, as the case study to assess the broader educational assessment as part of a larger effort to raise standards and

improve better education attainments, and specifically focuses on CCA and ECD that are the two key aspects of assessment in higher education with the potential to significantly impact students active participation, individual and deep learning, and other associated educational outcomes.

Explanatory and mixed data sources were employed. As evidenced by the results, the shift towards a more class-room continuous assessment approach before the final exam was documented in this private collegesas CCA is feedback-oriented and summative assessments are final evaluationslimited to a chance for improvement.

As a result, the students disregarded the final examination. In addition, the case study results revealed fewer classroom continuous assessments in the given course and academic semester needed to be improved. A future integration of innovative exams and updating of the existing exams, which include multiple choice with explanations, concept maps, simulations and role-playing, data analysis and interpretation, peer review, one-minute papers, journal entries, fieldwork and observations, creative projects, and digital storytelling, are necessary to be implemented, This, in turn, improves the learning journey of the students in critical thinking and problem solving, including deep learning. Furthermore, this study suggests that when properly planned and executed, continuous assessment (CCA) and test composition diversity play an important role in accommodating a wide range of learning preferences and stylesas well as motivating the students to apply their knowledge in a number of contexts. As a result, timely and successful integration of CCA andECD in private education institutions is critical.

Effective integration of assessment (EIA) and ECD, as well as support from faculty and institutions, are essential. To keep up with the assessment of EIA and ECD, addressing workload, time management, and cost-implication mitigation techniques is critical.

Furthermore, monitoring the implementation of CCA learning initiatives and frameworks at all higher education institutions, both nationally and institutionally, is vital to fulfilling higher education's objective in the country.

Recommendations

Based on the findings, discussions, and conclusions of the study, the following recommendations have been made:

1. After adopting the course design or curriculum after effectively integrating CCA and ECD;, CCA should be made a critical component of the learning process and checked the practices and monitored the implementation.

2. Professional training on continuous assessment acknowledges its time-intensive nature ought to be provided for faculty members and the students . This training also focuses on addressing challenges, such as managing exam anxiety, workload, effective time management, and

understanding the cost implications for the institution.

3. The feedback mechanism which incorporates a standardized reporting format had better be optimized. This proactive approach addresses the issue of inadequate feedback in specific courses, promoting a more consistent feedback experience.

4. Timely delivery of feedback which is paramount needs to be assured as it empowers the students to actively track and enhance their progress.

5. Relying on limited and often used exam forms, as well as continuous and ongoing assessment experiences should be practiced for social science courses.

6. Thus, it creates chances for cooperation, motivates the students to work together on tasks and projects, and consistently assesses and improves assessment procedures based on input from students and the data.

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New Dimensions for Re-envisioning Academic Assessment and Evaluation in the African Higher Education Institutions: Critical Meta-analyses

Sileshi Tamene Fikadu (Ph.D), Wallaga University, Gimbi, Ethiopia.
E-mail: sileshitamene@gmail.com, Phone: +251917819331

Abstract

The landscape of higher education in Africa is evolving and prompting a critical examination of academic assessment and evaluation practices. This research undertakes a critical meta-analysis to explore new dimensions for re-envisioning academic assessment and evaluation in African Higher Education Institutions (AHEIs). Employing a critical meta-analysis approach, 40 relevant studies focusing on new dimensions for academic assessment and evaluation in the AHEIs have been published since 2005, and they were systematically reviewed. Criteria which were systematically extracted were established to select these studies. Common meta-analysis techniques, including fixed and random-effects models, were utilized to assess the heterogeneity of effect sizes across the studies. Effect sizes were calculated using Cohen's d, with heterogeneity assessment conducted using statistical tests, such as Cochran's Q test and I^2 statistics. Furthermore, the variance of Hedges' g was analyzed using the R-package metaphor. Results revealed emerging trends and innovative approaches in academic assessment and evaluation within the AHEIs. These findings highlight the need for a paradigm shift towards more holistic, contextually relevant, and inclusive assessment practices that foster student learning and success. The study underscores the importance of embracing innovative assessment methodologies and strategies tailored to the African higher education context. Recommendations were forwarded on fostering collaboration between stakeholders, investing in faculty development, and integrating indigenous knowledge systems into assessment frameworks.

Keywords*: Academic assessment, evaluation, higher education, Africa, meta-analysis.*

Introduction

Academic assessment and evaluation practices in the AHEIs have been subjected to scrutiny and reflection in recent years (Tirivanhu et al., 2018; Sone & Gboyega, 2021). Despite concerted efforts to enhance evaluation methodologies, challenges persist in aligning assessment practices with the diverse and evolving needs of African educational contexts (Tremblay, Lalancette, & Roseveare, 2012; Gipps, 2002). Recognizing the imperative for continual improvement, this research aims to critically analyze the existing assessment frameworks and proposes of new dimensions for re-envisioning academic assessment and evaluation within the AHEIs.

Current Practices in Academic Assessment and Evaluation in Africa

The assessment landscape in the AHEIs has been characterized by diverse approaches and frameworks. From traditional summative evaluations to more recent formative assessments, the institutions have employed varied methodologies to gauge student learning outcomes (Beets, 2017; James, 2006). However, challenges, such as standardization, cultural relevance, and alignment with global quality assurance standards persist (African Union, 2017; Machumu & Kisanga, 2014). Despite efforts by organizations like the Inter-University Council for East Africa (2010) to establish quality assurance mechanisms, disparities in assessment practices across institutions and countries remain prevalent (Wariyo, 2020).

New Dimensions for Re-envisioning Academic Assessment and Evaluation

Amidst these challenges, there is a growing recognition of the need for a paradigm shift towards more holistic, contextually relevant, and inclusive assessment practices in the AHEIs (Westhuizen, 2007; Kraak, 2000). This necessitates exploring innovative approaches that foster student learning and success (Bunoti, 2010). As highlighted by Chilisa and Malunga (2014), there is a call for assessment methodologies that are rooted in African epistemologies and indigenous knowledge systems. Such an approach does not only enhance cultural authenticity but also promotes student engagement and empowerment.

Emerging Trends and Innovative Approaches

The recent years have witnessed the emergence of innovative assessment methodologies tailored to the African higher education context (Saint, Lao, & Materu, 2009). These include competency-based assessments, project-based evaluations, and peer-assisted learning initiatives (United Nations Educational Scientific and Cultural Organization, 2003; Woldegiorgis & Doevenspeck, 2013).

Additionally, advancements in technology have enabled the adoption of e-assessment tools, online portfolios, and facilitated flexible and personalized learning experiences (World Bank, 2009; Kvale, 2007).

Fostering Collaboration and Integration

To realize the potential of these innovative approaches, fostering collaboration between stakeholders is essential (Ashcraft & Palacio, 2010; Nair & Pillay, 2004). This entails investing in faculty development programs to enhance assessment literacy and pedagogical competencies (Vaessen, 2021). Furthermore, integrating indigenous knowledge systems into assessment frameworks can enrich the educational experience and promote cultural diversity (Fernandes, Abelha, & Ferreira-Oliveira, 2023).

In light of these considerations, this research seeks to critically analyze emerging trends and propose actionable recommendations for advancing academic assessment and evaluation practices in the AHEIs. By fostering dialogue, collaboration, and innovation, we aim to contribute to the ongoing discourse on enhancing the quality and relevance of higher education in Africa.

Challenges of Traditional Assessment Methods in the AHEIs

Assessment practices in AHEIs) have undergone significant scrutiny in recent years, particularly concerning the efficacy of traditional assessment methods. While these methods have long been utilized to gauge student learning outcomes, they present several challenges that hinder the attainment of academic excellence and the fulfillment of broader educational objectives.

Limited Authenticity and Contextual Relevance

Traditional assessment methods often lack authenticity and fail to reflect real-world scenarios or professional contexts (Kearney, 2013; Taras, 2005). This disconnects between assessment tasks and an authentic learning experience diminishes the relevance of assessments in preparing students for future endeavors (Matiru, 1991). Moreover, assessments may not adequately consider the cultural and socio-economic backgrounds of students, thereby exacerbating disparities in educational outcomes (Miller, Imrie, & Cox, 1998).

Emphasis on Memorization over Critical Thinking

Many traditional assessment methods prioritize rote memorization and regurgitation of facts over higher-order thinking skills (Ryan, 2000). This rote learning approach stifles creativity, innovation, and critical analysis, which are essential competencies for success in the 21st-century knowledge

economy (Sambell, McDowell, & Montgomery, 2013). Consequently, students may graduate with surface-level understanding rather than deep comprehension and problem-solving abilities (Barnett, 2007).

Inadequate Feedback Mechanisms

Traditional assessment methods often provide limited opportunities for timely and constructive feedback, hindering students' ability to identify areas for improvement and make meaningful progress (Beets, 2007). Without effective feedback loops, students may struggle to develop metacognitive skills and self-regulated learning strategies, impeding their overall academic growth (Black et al., 2003).

Bias and Subjectivity

Subjective assessment practices, such as essay-based examinations, may introduce bias and inconsistencies in grading, leading to unfair evaluations of students' performance (Boud & Falchikov, 2007). This bias can disproportionately impact marginalized groups, further exacerbating inequalities in educational attainment (Bryan & Clegg, 2006).

Resistance to Change

Despite calls for innovation and reform, entrenched institutional cultures and resistance to change pose significant barriers to the adoption of alternative assessment methods in the HEIs(Gibbs, 2006). Educators and administrators may be reluctant to deviate from traditional practices due to concerns about validity, reliability, and logistical challenges (Heywood, 2000).

In conclusion, traditional assessment methods in the AHEIs face myriad challenges that undermine their effectiveness in promoting meaningful learning outcomes. Addressing these challenges requires a concerted effort to embrace innovative approaches that prioritize authenticity, critical thinking, and inclusivity in assessment practices.

Growing Pressure in AHEIs to Re-evaluate Academic Assessment and Evaluation

AHEIs are facing increasing pressure to re-evaluate their academic assessment and evaluation practices. This pressure arises from a confluence of factors that challenge traditional approaches and demand a reassessment to meet the evolving needs of students, stakeholders, and society at large.

Globalization and the Knowledge Economy
The globalization of higher education has intensified competition among institutions, necessitating a focus on quality and relevance (Matiru, 1991). AHEIs are under pressure to produce graduates equipped with the skills and competencies demanded by the knowledge economy, such as critical thinking, problem-solving, and communication skills (Miller, Imrie, & Cox, 1998).

Quality Assurance and Accreditation Standards
The proliferation of quality assurance mechanisms and accreditation frameworks has led to increased scrutiny of assessment practices in African HEIs (Ryan, 2000). Institutions are expected to demonstrate alignment with national and international standards, necessitating the re-evaluation of assessment methodologies and processes (Sambell, McDowell, & Montgomery, 2013).

Pedagogical Shifts and Educational Philosophies
Emerging pedagogical theories advocate for learner-centered approaches that prioritize active engagement and authentic assessment (Barnett, 2007). AHEIs are urged to adopt innovative assessment practices that promote deeper learning outcomes and foster the students' abilities to apply knowledge in real-world contexts (Beets, 2007).

Calls for Equity and Social Justice
Concerns about equity and inclusivity in higher education highlight the need for assessment practices that are fair, transparent, and culturally sensitive (Black et al., 2003). AHEIs are urged to address biases in assessment methodologies and ensure that evaluation processes do not perpetuate inequalities or disadvantages marginalized groups (Boud & Falchikov, 2007).

Technological Advancements and Digital Learning
The advent of digital technologies offers opportunities to enhance the authenticity, efficiency, and accessibility of assessment practices (Gibbs, 2006). AHEIs are encouraged to harness technology to develop innovative assessment tools and platforms that cater to diverse learning needs and preferences (Heywood, 2000).

In response to these growing pressures, AHEIs must embark on a comprehensive re- evaluation of their academic assessment and evaluation practices. By embracing innovative approaches that prioritize relevance, inclusivity, and authenticity, institutions can better prepare students for success in an increasingly complex and interconnected world.

Innovative Solutions for Academic Assessment and Evaluation in AHEIs

As AHEIs navigate the evolving landscape of educational demands and quality assurance expectations, there is a growing imperative to explore innovative solutions for academic assessment and evaluation. These solutions aim to address existing challenges, enhance student learning experiences, and ensure the relevance and effectiveness of assessment practices in the African context.

a. Embracing Authentic and Experiential Assessment

One innovative solution involves the integration of authentic assessment tasks that mirror real-world scenarios and professional contexts (Kearney, 2013). This approach emphasizes hands-on learning experiences, such as internships, research projects, and community engagement initiatives, which allow students to apply theoretical knowledge in practical settings (Matiru, 1991). By incorporating experiential learning opportunities into assessment practices, AHEIs can foster deeper understanding, critical thinking, and problem-solving skills among students (Miller, Imrie, & Cox, 1998).

b. Harnessing Technology for Flexible and Personalized Assessment

Digital technologies offer a myriad of opportunities to revolutionize academic assessment and evaluation in AHEIs (Ryan, 2000). Online platforms, e-portfolios, and computer-based assessments enable flexible, asynchronous learning experiences that cater to diverse student needs and preferences (Sambell, McDowell, & Montgomery, 2013). Additionally, adaptive learning technologies can provide personalized feedback and support to students, enhancing their self-regulated learning and academic success (Barnett, 2007).

c. Promoting Peer and Self-Assessment Practices

Peer and self-assessment strategies empower students to take ownership of their learning journey and develop metacognitive skills (Beets, 2007). By engaging in collaborative assessment tasks and reflective exercises, students gain valuable insights into their strengths and areas for improvement (Black et al., 2003). Moreover, peer feedback fosters a sense of community and collective responsibility for learning outcomes, contributing to a supportive and inclusive learning environment (Boud & Falchikov, 2007).

D. Cultivating a Culture of Continuous Improvement

Innovative assessment practices require a supportive institutional culture that values experimentation, reflection, and continuous improvement (Bryan & Clegg, 2006). AHEIs can establish professional development programs and communities of practice to equip educators with the skills and knowledge needed to design and implement innovative assessment strategies (Eraut, 2004). Furthermore, institutional leadership plays a pivotal role in fostering a culture of innovation and providing the necessary resources and infrastructure to support transformative assessment practices (Friedrich-Nel, De Jager, & Nel, 2005).

By embracing these innovative solutions, AHEIs can re-envision academic assessment and evaluation practices to better meet the needs of diverse learners, promote deep learning outcomes, and contribute to the advancement of higher education on the continent.

Problem Statement

Academic assessment and evaluation practices in AHEIsare facing multifaceted challenges that hinder their effectiveness and relevance in meeting the diverse needs of students, faculty, and society. These challenges encompass various dimensions, ranging from pedagogical shortcomings to systemic inadequacies, thereby necessitating a critical re- evaluation of existing practices.

a. Reliance on Traditional Assessment Methods

AHEIs predominantly rely on traditional assessment methods, such as written examinations and standardized tests, which often prioritize rote memorization over critical thinking and practical application (Dreyer, 2008). This traditional approach fails to capture the complexity of learning outcomes and may not adequately assess students' ability to apply knowledge in real-world contexts (Kearney, 2013).

b. Lack of Alignment with Learning Outcomes

There is often a disconnect between assessment practices and intended learning outcomes in African HEIs (Miller, Imrie, & Cox, 1998). Assessment tasks may not effectively measure the attainment of desired competencies and skills, leading to a gap between assessment results and students' actual capabilities (Ryan, 2000).

c. Inclusivity and Cultural Relevance

Assessment practices in AHEIs may not be inclusive or culturally relevant, potentially disadvantaging certain student populations (Sambell, McDowell, & Montgomery, 2013). Traditional assessment methods may not account for diverse learning styles, linguistic backgrounds, or cultural contexts, leading to disparities in achievement and attainment (Barnett, 2007).

d. Limited Resources and Infrastructure

Many AHEIs face challenges related to limited resources and infrastructure for assessment and evaluation (Beets, 2007). Insufficient funding, outdated technology, and inadequate training for faculty may impede the development and implementation of effective assessment strategies (Black et al., 2003).

e. Quality Assurance and Accreditation

The proliferation of quality assurance mechanisms and accreditation standards places additional pressure in AHEIs to demonstrate the quality and effectiveness of their assessment practices (Boud & Falchikov, 2007). However, institutions may struggle to meet these standards due to a lack of clear guidelines, inconsistent implementation, and limited institutional capacity (Eraut, 2004).

In light of these challenges, there is an urgent need forAHEIs to re-envision their academic assessment and evaluation practices. Addressing these issues requires a comprehensive approach that considers pedagogical innovations, cultural sensitivity, resource allocation, and alignment with educational goals and standards.

Research Objectives

The objectives of the research were to

- Critically examine the existing academic assessment and evaluation practices in AHEIs.
- Identify the key challenges and limitations associated with current assessment methods.
- Explore innovative approaches and best practices for re-envisioning academic assessment in the context of AHEIs .
- Analyze the potential impacts of reformed assessment practices on student learning outcomes and institutional effectiveness.
- Provide recommendations for implementing effective and inclusive assessment strategies that align with the diverse needs of AHEIs .

Basic research questions

- How are the existing academic assessment and evaluation practices critically examined in the AHEIs ?
- What are the primary challenges and limitations associated with the current assessment methods employed in the AHEIs ?
- What innovative approaches and best practices can be identified for re-envisioning academic assessment within the AHEIs African higher education context?
- How do reformed assessment practices potentially impact student learning outcomes and institutional effectiveness in AHEIs ?
- What are the recommendations proposed for implementing effective and inclusive assessment strategies that accommodate the diverse needs of AHEIs ?

Methodology

This meta-analyses were involved in a comprehensive review of the existing literature, including scholarly articles, reports, and policy documents related to academic assessment and evaluation in AHEIs. The review encompassed qualitative and quantitative studies with a focus on identifying common themes, trends, and challenges in assessment practices across different disciplines and institutional settings. Additionally, case studies of innovative assessment initiatives from various African countries were analyzed to extract lessons learned and best practices.

i. **Research Design**: This research employs a critical meta-analysis approach to re-envision academic assessment and evaluation inHEIs. Meta- analysis allows for the comprehensive synthesis of the existing literature, enables the identification of trends, patterns, and gaps in the field. The critical aspect entails a rigorous examination of the literature to assess the quality of evidence and to provide insights into the underlying assumptions and implications of assessment practices in AHEIs.

ii. **Search Strategy**: A systematic search strategy is adopted to identify relevant studies. Multiple academic databases including PubMed, Google Scholar, Scopus, and Web of Science are searched using a combination of keywords related to academic assessment, evaluation, AHEIs, and relevant terms. Additionally, hand-searching of reference lists and consultation with experts in the field supplement the electronic search.

iii. **Selection Criteria**: Studies included in the meta-analysis meet the following criteria: (a) published in peer-reviewed journals or academic books, (b) focused on academic assessment and evaluation practices in AHEIs , (c) written in English, (d) primary research studies or comprehensive review articles, and (e) available in full-text format. Studies that do not meet these criteria are excluded from the analyses.

iv. **Screening and Selection Process**: Two independent reviewers conducted the screening process. Initially, titles and abstracts were screened to assess relevance to the research topic. Full-text articles that passed the initial screening underwent a thorough assessment based on the selection criteria. Discrepancies between reviewers were resolved through discussions and, if necessary, consultation with a third reviewer.

v. **Data Extraction**: A standardized data extraction form was developed to systematically extract relevant information from selected studies. The extracted data included the study characteristics (e.g., author(s), year of publication), research methodology, key findings, and any relevant quantitative data (e.g., effect sizes).

vi. **Data Synthesis**: The synthesized data were analyzed thematically to identify recurring themes, patterns, and trends in academic assessment and evaluation practices across AHEIs. Qualitative synthesis techniques, such as thematic analysis, were employed to organize and interpret the findings. Additionally, quantitative data were analyzed to calculate effect sizes where applicable.

vii. **Quality Assessment**: The methodological quality of included studies was assessed using established criteria appropriate for different study designs. Quality assessment tools, such as the Newcastle-Ottawa Scale for observational studies or the Critical Appraisal Skills Programme (CASP) checklist for qualitative studies were utilized. Studies were rated based on criteria including sample representativeness, study design, data collection methods, and potential biases.

viii. **Ethical Considerations**: This meta-analysis adheres to ethical guidelines for research involving

human subjects. All included studies were reviewed for ethical compliance, and any ethical concerns identified were reported transparently. Additionally, appropriate permissions and citations were obtained for the use of copyrighted materials.

ix. **Reporting**: Transparent reporting of the meta-analysis process was ensured following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A flow diagram detailing the study selection process and a detailed description of search strategies, selection criteria, and data extraction procedures were provided in the final report.

x. **Effect Size Calculation**: For studies reporting quantitative data, effect sizes were calculated to measure the magnitude of the relationship between variables or the impact of interventions. Common effect size metrics, such as Cohen's d for continuous outcomes or odds ratios for categorical outcomes were calculated where appropriate. Effect sizes were interpreted alongside confidence intervals to assess the significance and precision of the findings.

Results

Critical Examination of Existing Academic Assessment and Evaluation Practices

The critical meta-analysis scrutinized a total of 40 studies focusing on academic assessment and evaluation practices within AHEIs. The reviewed literature provided comprehensive insights into the diverse methodologies, approaches, and frameworks employed in assessing student learning outcomes across various disciplines and institutional contexts.

Key themes identified through the analysis included the prevalence of traditional assessment methods such as examinations and essays, as well as emerging trends in formative and alternative assessment practices. Additionally, the literature underscored the influence of cultural, socio-economic, and institutional factors on assessment practices, highlighted the need for contextually relevant approaches to evaluation.

The critical meta-analysis revealed diverse assessment and evaluation practices across AHEIs. Tirivanhu, et al. (2018) highlighted the need for comprehensive evaluation strategies in African tertiary education. Sone and Gboyega (2021) emphasized the importance of evaluating assessment practices in the context of specific institutions, as demonstrated in the case study of the University of Eswatini. Tremblay, Lalancette, and Roseveare (2012) underscored the feasibility of assessing higher education learning outcomes, providing insights into assessment design and implementation.

Identification of Key Challenges and Limitations

The meta-analysis revealed several challenges and limitations associated with current assessment methods in AHEIs. These included issues related to validity and reliability of assessment instruments, limited faculty training and professional development in assessment practices,

inadequate resources for implementing innovative assessment strategies, and the prevalence of high-stakes summative assessments that may not accurately reflect student learning. Furthermore, disparities in access to assessment opportunities among diverse student populations were identified as a significant concern, exacerbating the existing inequalities in educational outcomes.

Numerous challenges and limitations were identified, including the lack of integration in assessment practices (Beets, 2017), inadequate quality assurance mechanisms (African Union, 2017), and limited institutional responsiveness (Saint, Lao, & Materu, 2009). Machumu and Kisanga (2014) discussed the need for improved quality assurance practiceswhile Wariyo (2020) highlighted the importance of comparative studies to assess assessment quality effectively.

Exploration of Innovative Approaches and Best Practices

A comprehensive exploration of the literature identified innovative approaches and best practices for re-envisioning academic assessment in AHEIs. These included the integration of blended assessment methods combining traditional and modern approaches, the implementation of authentic and performance-based assessments, the use of technology-enhanced assessment tools, and the promotion of student-centered assessment practices. Additionally, the literature emphasized the importance of aligning assessment practices with intended learning outcomes and fostering a culture of continuous improvement in assessment design and implementation.

Innovative approaches to assessment were explored, with a focus on integrating modern assessment methods. Vaessen (2021) investigated students' perceptions of assessment and learning, providing insights into effective assessment strategies. Fernandes, Abelha, and Ferreira-Oliveira (2023) discussed emerging trends in assessment and evaluation, emphasizing the importance of adaptability and innovation in higher education.

Analysis of Potential Impact on Student Learning Outcomes and Institutional Effectiveness

The meta-analysis examined the potential impact of reformed assessment practices on student learning outcomes and institutional effectiveness. Effect size comparisons revealed that studies employing blended assessment methods demonstrated a moderate advantage over purely traditional methods in enhancing student learning outcomes (mean effect size = +0.35, $p < .001$). Conversely, purely modern assessment methods did not significantly differ from traditional methods in terms of their impact on student learning outcomes (mean effect size = +0.05, $p = .46$).

Effect size comparisons revealed the impact of reformed assessment practices on student learning outcomes. Blended assessment methods showed a moderate advantage over traditional methods (mean effect size = +0.35, $p < .001$) (Ashcraft & Palacio, 2010). However, purely modern assessment methods did not significantly differ from traditional methods (mean effect size = +0.05, $p = .46$) (Carless, 2015). This suggests the need for a nuanced approach to assessment reform in

AHEIs.

Discussions

The findings from this meta-analysis suggested that while purely modern assessment and evaluation methods may not significantly outperform traditional methods in terms of enhancing student learning outcomes, a blended approach combining elements of both traditional and modern methods yielded significantly better results. This aligns with the observations of Carless (2015) and Beets (2017), who emphasized the importance of integrating innovative assessment practices with conventional methods for effective learning outcomes. The moderate effect size observed for the blended approach underscored the potential benefits of such integration, as it allowed for a more comprehensive evaluation of student learning.

The moderate effect size observed for the blended approach underscored the potential benefits of integrating innovative assessment practices with more conventional methods in educational settings. This finding resonated with the work of Boud and Falchikov (2007) and Ashcraft & Palacio (2010), who highlighted the importance of adopting a balanced approach to assessment to cater to diverse learning needs. By incorporating elements of modern assessment alongside traditional methods, educators could create a more inclusive and effective learning environment.

The results implied that incorporating modern assessment elements into the existing traditional practices could lead to greater improvements in learning outcomes as compared to relying solely on either traditional or modern methods. This finding echoed the sentiments of Carless (2015) and Beets (2017), who advocated for a rethinking of assessment paradigms to meet the evolving needs of learners. By embracing a blended approach, educational institutions could better prepare students for the challenges of the 21st century and fostered a culture of lifelong learning.

Educational institutions, particularly in AHEIs, may benefit from adopting a blended approach to assessment and evaluation. This approach allowed for greater flexibility and adaptability in meeting the diverse needs of students as highlighted by Tirivanhu, et al. (2018) and Sone & Gboyega (2021). By combining elements of traditional and modern assessment methods, institutions could create a more dynamic and engaging learning environment.

Educators could consider incorporating elements, such as peer and self-assessment, project-based assessments, and technology-enhanced assessments alongside traditional methods like exams and quizzes. This approach, as suggested by Tremblay et al. (2012) and Vaessen (2021), allows for a more holistic evaluation of student learning and promotes deeper engagement with course material. By diversifying assessment practices, educators can better cater to the diverse learning styles and preferences of students. This approach allows for a more comprehensive evaluation of student learning while leveraging the strengths of both traditional and modern assessment practices. By adopting a blended approach, institutions can ensure that assessment practices are aligned with the goals and objectives of the curriculum as highlighted by Fernandes et al. (2023) and Westhuizen

(2007). Moreover, this approach promotes a culture of continuous improvement and innovation in teaching and learning.

Professional development programs for faculty could focus on training educators to effectively integrate modern assessment elements into their teaching practices and curriculum design. This aligns with the recommendations of Bunoti (2010) and Machumu & Kisanga (2014), who emphasized the importance of ongoing training and support for educators in enhancing assessment practices. By investing in faculty development, institutions can build capacity and expertise in assessment design and implementation, ultimately leading to improved student learning outcomes.

Recommendations

By implementing the following recommendations, African Higher Education Institutions can enhance the effectiveness, inclusivity, and relevance of their assessment and evaluation practices, ultimately contributing to the improvement of student learning outcomes and institutional effectiveness.

Integration of Blended Assessment Approaches: Based on the findings of this meta-analysis, we recommend that) AHEIs consider adopting a blended approach to assessment and evaluation. This involves integrating elements of both traditional and modern assessment methods to create a more comprehensive and inclusive evaluation framework. Educational institutions should provide support and resources to faculty members to facilitate the implementation of blended assessment approaches.

Professional Development for Educators: In order to effectively integrate modern assessment elements into teaching practices, faculty members require adequate training and professional development opportunities. Institutions should invest in faculty development programs that focus on enhancing assessment literacy, fostering innovative assessment practices, and leveraging technology for assessment purposes. Additionally, peer learning and mentoring initiatives can facilitate knowledge sharing and collaboration among educators.

Alignment of Assessment Practices with Learning Outcomes: It is essential for assessment practices to be aligned with the intended learning outcomes of educational programs. Institutions should encourage faculty members to design assessments that measure the attainment of specific learning objectives and competencies. Clear and transparent assessment criteria should be established to guide both students and educators in understanding performance expectations.

Promotion of Student-Centered Assessment: Emphasizing student-centered assessment approaches can enhance student engagement, motivation, and learning outcomes. Institutions should encourage the use of assessment methods that empower students to take ownership of their learning, such as self-assessment, peer assessment, and reflective practices. Additionally, feedback mechanisms should be established to provide students with timely and constructive feedback on their performance.

Incorporation of Technology-Enhanced Assessment Tools: Leveraging technology can facilitate the design and administration of assessments, as well as enhance the feedback process. Institutions should explore the use of digital assessment tools, online platforms, and learning management systems to streamline assessment processes and accommodate diverse learning needs. However, careful consideration should be given to issues of digital equity and accessibility to ensure equitable access to assessment resources for all students.

Continuous Evaluation and Improvement: Assessment practices should be subjected to ongoing evaluation and refinement based on feedback from stakeholders. Institutions should establish mechanisms for collecting and analyzing data on assessment effectiveness, student perceptions, and learning outcomes. This data-driven approach can inform evidence-based decision-making and drive continuous improvement in assessment practices.

Promotion of Research and Scholarship in Assessment: There is a need for further research and scholarship in the field of assessment and evaluation within the context of African higher education. Institutions should support faculty members in conducting research studies, publishing scholarly articles, and disseminating best practices in assessment. Collaboration with international partners and participation in global networks can facilitate knowledge exchange and contribute to advancements in assessment theory and practice.

Alignment with Quality Assurance Standards: Assessment practices should align with national and international quality assurance standards and guidelines. Institutions should ensure that assessment processes are transparent, fair, and consistent, and that they adhere to ethical principles. Regular audits and reviews of assessment practices can help ensure compliance with quality assurance requirements and promote accountability.

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Standardizing Excellence: A Global Perspective on Harmonization and Quality Assurance in Academic Assessment and Evaluation

Seid Hussen Muhie, Wollo University, Dessie, Ethiopia
Email: hamidashm@gmail.com, Mobile: +251913106754

Abstract

In the rapidly evolving landscape of higher education, the methods of academic assessment and evaluation have become a focal point of discussion. The diversity in these practices across different regions and educational systems has raised questions about the consistency and fairness of academic evaluation. In this context, the paper "Standardizing Excellence: A Global Perspective on Harmonization and Quality Assurance in Academic Assessment and Evaluation" explores the complexities of these standards globally. Through a comparative analysis of various regional and global practices, we identify disparities and suggest improvements. Research findings from the OECD (2013) reveal significant variations in assessment practices across countries, with some relying heavily on standardized testing while others emphasize formative assessments. These disparities underscore the need for harmonization. A case study on the Bologna Process, a European initiative for standardization in higher education, highlights the potential benefits of such efforts, including increased transparency and comparability of educational outcomes. However, it also points out the challenges in implementing such standardization efforts, such as the need to respect the diversity and autonomy of educational institutions. Additional research conducted by the University of Melbourne (2018) found that harmonized assessment practices led to improved student performance and satisfaction, providing empirical evidence supporting the need for harmonization in academic assessment. A global survey by the World Bank (2020) indicated that quality standardization in academic assessment and evaluation significantly contributes to the international recognition and mobility of students, emphasizing the importance of quality standardization for enhancing the global competitiveness of higher education institutions. The paper emphasizes the importance of collaboration among educators, policymakers, and stakeholders to establish a global standard that promotes academic excellence. It presents the idea of a 'Global Education Framework' that sets common guidelines for academic assessment and evaluation while allowing for regional adaptations. This paper aims to stimulate discourse and inspire action towards the enhancement of higher education through harmonized and standardized assessment and evaluation practices, contributing to the ongoing efforts to ensure quality and fairness in academic evaluation globally.

***Key words**: Academic assessment, Standardization, Harmonization, Excellence*

Introduction

In the ever-changing landscape of higher education, the focus has shifted towards academic assessment and evaluation methods. The varying practices seen across different regions and educational systems have sparked discussions on the consistency and fairness of academic evaluation. Academic assessment and evaluation act as guiding tools for educational excellence, offering insights into student learning, instructional effectiveness, and institutional quality. As the educational sector evolves due to globalization, technology, and diverse learner profiles, our approach to assessment must also evolve. New trends such as holistic perspectives, authentic assessments, and data-driven decision-making are emerging, moving beyond traditional metrics to empower learners, promote equity, and support lifelong learning (Hundley & Keith, 2023)

Recent research highlights the importance of ethical considerations like fairness, transparency, and privacy in assessment practices. Faculty development and cross-cultural dialogues are crucial in shaping assessment policies (Rahmawati, 2023). It is important to recognize that assessment goes beyond national boundaries, with international standards, peer benchmarking, and technological innovations like AI and block chain driving us towards a future where assessment enhances educational quality globally.

Problem Statement

In the ever-evolving landscape of higher education, academic assessment and evaluation serve as critical levers for student achievement and institutional excellence. Beyond mere measurement, they provide insights into student learning, instructional effectiveness, and institutional quality. As we transcend borders and embrace diverse educational contexts, it becomes imperative to reframe our approach. Let's explore recent trends and transformative developments that underscore the significance of these processes. Research findings from the OECD (2013) reveal significant variations in assessment practices across countries, with some relying heavily on standardized testing, while others emphasize formative assessments. These disparities underscore the need for harmonization—a balance between summative and formative approaches.

Objective

The objective of this paper was to assess the global perspective of harmonization and quality assurance in academic assessment and evaluation, and identify disparities and suggest improvements.

Methods

The manuscript involved three key approaches: systematic review, global trend analysis, and review of research findings. First, a systematic review was rigorously used to synthesize the existing literature on the topic. Second, a global trend analysis with emphasis on case studies was used to examine patterns across diverse contexts, identifying overarching themes. Comparative analyses of various regional and global practices were used to identify disparities and suggest improvements. Finally, a comprehensive review of research findings was employed to inform evidence-based insights and contribute to informed decision-makings.

Disparities in Assessment Practices

The Crucial Role of Assessment in Learning

Academic assessment and evaluation serve as the compass guiding educational excellence. Through quantification, assessments offer insight into student comprehension, development, and accomplishments. Well-crafted assessments serve as valuable resources for educators to assess learning progress, pinpoint areas for enhancement, and customize instruction. Whether in the form of a formative quiz, a performance task, or a summative exam, each assessment contributes to the intricate tapestry of a student's educational experience. Furthermore, assessments go beyond individual students, influencing curriculum design, institutional policies, and even national education systems. In this ever-evolving environment, we understand that assessment is not a fixed destination but rather an ongoing conversation involving educators, learners, and the pursuit of knowledge (Smith 2023).

Balancing Rigor and Compassion: Quality assessment practices strike a delicate balance between rigor and compassion. Rigor ensures that assessments are valid, reliable, and aligned with learning objectives. It demands clarity in rubrics, fairness in grading, and transparency in expectations (Elliott, 2024). Yet, compassion reminds us that behind every test paper or digital submission lies a unique human story—a student grappling with concepts, overcoming challenges, and striving for growth. As educators, we must consider the diverse backgrounds, learning styles, and emotional well-being of our students. Inclusive assessment practices accommodate different abilities, provide reasonable accommodations, and foster a growth mindset. When we blend rigor with empathy, we create an assessment ecosystem that not only measures but also nurtures learning. Ultimately, the goal remains unwavering: to empower learners with the tools they need to thrive in an ever-changing world. Standardized Testing vs. Formative Assessments: Examining the contrasting approaches taken by different nations. Standardized testing, often associated with high-stakes exams, has become a hallmark of educational systems in many countries. *Here's how it plays out*:

Uniformity: Standardized tests aim for consistency. They provide a common yardstick to measure

student performance, allowing comparisons across regions, states, and even countries (Balogun, 2023; Leedham, 2011). Whether it's the SAT in the United States, the Gaokao in China, or the A-levels in the United Kingdom, these assessments follow predetermined formats, scoring rubrics, and content domains.

Accountability and Gatekeeping: Policymakers use standardized test results to hold schools, teachers, and students accountable. These tests often determine access to higher education, scholarships, and career opportunities. However, this high-stakes nature can create immense pressure, leading to teaching-to-the-test practices and narrowing the curriculum (Leake, 2019).

Critiques and Biases: Critics argue that standardized tests favor certain demographics, perpetuating social inequalities. Implicit biases may seep into test design, affecting fairness. Moreover, these assessments may not capture the full spectrum of student abilities, creativity, or critical thinking skills.(Haughbrook, 2020)

Recent examples include the controversy surrounding the use of SAT scores in college admissions. Some institutions have moved away from requiring standardized tests, recognizing their limitations in predicting student success. Additionally, international comparisons, such as the Programme for International Student Assessment (PISA), reveal disparities in standardized test performance across countries. These findings prompt educators and policymakers to reevaluate the role of standardized testing in shaping educational outcomes (Jiang, 2019).

Formative Assessments: Nurturing Learning Journeys

Formative assessments, on the other hand, take a different path. It is a learning-centered design. Formative assessments focus on learning progress rather than final outcomes. They occur during the learning process, providing timely feedback to students and educators. Whether it's a classroom quiz, peer review, or self-assessment, formative assessments guide instructional decisions.These assessments recognize that each student's learning journey is unique. By identifying strengths, weaknesses, and misconceptions, formative assessments allow educators to tailor instruction. They promote metacognition, encouraging students to reflect on their learning strategies (Irons, A., & Elkington, 2021). In addition, formative assessments consider cultural contexts, language diversity, and individual backgrounds. They celebrate diverse perspectives and encourage students to express their understanding in ways that resonate with their cultural identities.

Recent examples include the use of formative assessment techniques such as exit tickets, concept maps, and think-aloud protocols in K-12 classrooms (Duckor, 2017). Educators leverage these tools to gauge student comprehension, adjust teaching strategies, and foster deeper understanding. Additionally, research on formative assessment practices in higher education underscores their positive impact on student engagement and learning outcomes (Deiparine, et al., 2023).

The Bologna Process: A Case Study

The Bologna Process: A European Endeavor

The Bologna Process, initiated with the Bologna Declaration in 1999, stands as a landmark effort to transform higher education across Europe. Its primary goal is to introduce a more comparable, compatible, and coherent system for European higher education *via*:

Facilitating Mobility and Collaboration: The Bologna Process seeks to create a seamless European Higher Education Area (EHEA), where students, researchers, and educators can move freely across borders. By standardizing degree structures (such as bachelor's, master's, and doctoral studies), the Bologna Process simplifies credit transfer and recognition of qualifications earned abroad. Imagine a student studying engineering in Spain who seamlessly transfers to a master's program in Germany—this mobility is at the heart of the Bologna vision (Wachter, 2004).

Quality Assurance and Competitiveness: The Bologna Process emphasizes quality assurance mechanisms. Institutions implement systems to enhance teaching and learning, ensuring relevance and excellence. European universities become more attractive and competitive globally. A harmonized framework allows them to benchmark against international standards. For instance, the European Credit Transfer and Accumulation System (ECTS) ensure transparency in course content, workload, and assessment methods. This common language fosters trust among institutions and employers.

Recent examples include the Bologna Follow-up Group, which supports the implementation of Bologna decisions and the ongoing assessment of progress in higher education reforms across EU Member States. As we navigate the complexities of modern education, the Bologna Process remains a beacon—a testament to collaborative efforts in shaping the future of European higher education (Brogger, 2019).

Benefits of the Bologna Process

Increased Transparency in Educational Outcomes

The Bologna Process has ushered in a new era of transparency, making educational outcomes more accessible and understandable.

Credit Systems: The introduction of the European Credit Transfer and Accumulation System (ECTS) allows students to track their progress across different institutions and countries. The ECTS credits provide a common currency, enabling students to understand the workload and learning outcomes associated with each course. For example, a student studying engineering in Italy can easily compare their credits with those earned by a peer in Sweden, ensuring transparency and facilitating mobility (Wagenaar, 2019).

Diploma Supplements: The Bologna Process encourages the use of diploma supplements, standardized documents attached to academic qualifications. These supplements provide detailed information about a graduate's competencies, skills, and the context of their studies. Imagine a French student applying for a job in Germany—the diploma supplement ensures that employers understand the value of their degree, regardless of national differences (Aertken, 2015).

Enhanced Comparability of Qualifications

The Bologna Process aims to establish a harmonized European Higher Education Area (EHEA), ensuring that qualifications are comparable and acknowledged across borders (Crosier & Maki, 2022). This initiative offers numerous benefits to students and institutions. For students, it provides enhanced mobility opportunities, allowing them to transition seamlessly between countries for further studies or internships while retaining credit. For example, a Spanish student completing a bachelor's degree in economics can smoothly progress to a master's program in the Netherlands, confident that their qualifications adhere to European standards. Additionally, the Bologna Process enhances employability by making internationally recognized qualifications more valuable to employers. A computer science graduate from Poland with a Bologna-compliant degree becomes an attractive candidate for tech companies in Ireland or Finland, as the comparability of qualifications enables employers to consistently evaluate skills and competencies, irrespective of the degree's origin.

Challenges of the Bologna Process

Balancing Institutional Diversity and Autonomy

The Bologna Process is implemented within a diverse educational landscape that encompasses universities, colleges, and vocational institutions throughout Europe (Huisman, 2009). One of the key challenges associated with this diversity is navigating the cultural contexts of European countries, each with its rich historical and educational traditions. Balancing this diversity while adhering to common standards can be intricate. For example, a liberal arts college in France may prioritize critical thinking and interdisciplinary studies, while a technical university in Germany may focus on engineering and applied sciences. Ensuring that both institutions align with Bologna principles requires an understanding of their unique missions and contexts to maintain coherence within the European Higher Education Area.

Another challenge within the Bologna Process is managing the different governance models present in European higher education institutions, which range from centralized to decentralized structures. Variations in autonomy over curriculum design, assessment methods, and degree structures exist among institutions. Achieving a harmonious balance between standardization and institutional freedom is crucial. For instance, a university in Sweden may have a tradition of faculty-led decision-making, whereas a university in Italy might operate under a more centralized approach. The difficulty lies in harmonizing these diverse governance models without stifling

creativity or impeding local innovation (Dobbins et al., 2011).

Implementation Hurdles

The harmonization of legal and regulatory frameworks in higher education across countries necessitates negotiations, amendments, and at times legislative changes to align with Bologna principles. Complex legal negotiations are involved in recognizing professional qualifications like teaching licenses or medical degrees across borders, highlighting the ongoing process of ensuring compliance with national laws. Additionally, faculty development and training are crucial aspects in implementing Bologna reforms, as educators are key in driving these changes. Programs focused on equipping teachers with assessment strategies, understanding of credit systems, and intercultural competences are essential. For example, a professor in Greece may require training on ECTS credit allocation, while a lecturer in Poland may need guidance on student-centered teaching methods. Investing in faculty development is vital for effective implementation, although it demands sustained effort to support educators in adapting to the evolving educational landscape (Sharma & Adeoye, 2024; Turner et al., 2014).

Empirical Evidences and Impacts

University of Melbourne Study (2018)

The University of Melbourne embarked on a comprehensive investigation, examining the effects of harmonized assessment practices across various faculties and disciplines. Researchers sought to understand how aligning assessment methods and criteria could influence student outcomes.

The study revealed a positive correlation between harmonized assessment practices and student performance. When assessment expectations were clear, consistent, and aligned, students demonstrated better understanding of learning objectives. For instance, in courses where assessment rubrics were standardized across multiple sections, students consistently achieved higher grades. The clarity of expectations allowed them to focus on mastering content rather than deciphering assessment criteria.

Harmonization reduced ambiguity and anxiety related to assessment. Students reported feeling more confident about their progress and better equipped to meet academic challenges. When students understood how their work would be evaluated, they engaged more actively in learning activities. This sense of agency positively impacted their overall satisfaction with the learning experience.

Faculty members also benefited from harmonized assessment practices. Streamlined grading processes, reduced discrepancies, and improved inter-rater reliability led to greater job satisfaction. Moreover, faculty collaboration on assessment design and alignment fostered a sense of professional community, encouraging pedagogical innovation and continuous improvement.

The University of Melbourne's findings underscore the importance of intentional assessment design. As institutions worldwide embrace the Bologna Process and strive for harmonization, evidence-based practices can guide decision-making. By prioritizing clarity, fairness, and alignment, educators contribute to a more equitable and effective learning environment.

World Bank Survey (2020)

The World Bank conducted a comprehensive survey, examining the effects of quality standardization in higher education across diverse countries and regions. The focus was on how aligning assessment practices and educational standards could influence international recognition and student mobility.

Enhanced International Recognition: Quality standardization plays a pivotal role in ensuring that degrees and qualifications earned in one country are recognized globally. When assessment practices align with international standards, institutions gain credibility. For instance, a student graduating from a Bologna-compliant European university can seamlessly pursue further studies or employment opportunities in countries outside the European Higher Education Area (EHEA). The transparency and comparability of qualifications enhance international recognition.

Harmonized assessment practices remove barriers to student mobility. When assessment criteria are clear and consistent, students can confidently transfer credits across borders. Imagine a student from India studying computer science in Germany. The ECTS credit system ensures that their coursework aligns with global standards. This facilitates mobility for internships, exchange programs, and further studies.

Quality-assured institutions become more competitive on the global stage. When assessment practices adhere to recognized standards, universities attract international students and faculty. A Bologna-compliant university in Spain, for example, can compete with institutions in the United States or Australia. Employers recognize the value of degrees earned in such institutions, leading to enhanced employability for graduates.

The World Bank's survey underscores the importance of harmonization and quality assurance. As higher education institutions strive for global competitiveness, adherence to recognized standards becomes a strategic imperative. By fostering transparency, mobility, and recognition, quality standardization contributes to a vibrant and interconnected academic ecosystem.

The Vision of Global Education Framework

Collaboration among Stakeholders: A Collective Endeavor

In this shared vision, educators, policymakers, and institutions unite as a global coalition dedicated to advancing education. Collaboration unfolds in the following ways:

Educators, as the core of the educational ecosystem, shape assessment practices, curriculum

design, and pedagogical innovation. Through cross-border collaboration, educators exchange best practices, draw insights from diverse contexts, and collectively enhance teaching and learning. Policymakers, whose decisions influence entire education systems, work together to establish supportive environments for standardized assessment practices. They align national policies with global standards to ensure international recognition of students' qualifications while advocating for equity, inclusion, and quality assurance.

Institutions, including universities, colleges, and schools, serve as the foundation of education. Through collaboration, institutions synchronize assessment methods, credit systems, and qualification frameworks. They participate in international partnerships, facilitate student exchanges, and embark on collaborative research endeavors. Recognizing their collective influence beyond individual campuses, institutions work together to amplify their impact on education (Joughin et al., 2022; Lokhoff, 2021).

The Framework: Guiding Principles for Excellence

The Global Education Framework is supported by three key pillars: Common Guidelines for Assessment and Evaluation establish a universal language for educators and policymakers, ensuring clarity and consistency in assessment practices; Flexibility for Regional Adaptations acknowledges the need for tailored approaches based on regional nuances and cultural diversity, promoting relevance across different contexts; and Striking the Balance between uniformity and context-specific needs allows for global recognition while honoring unique educational landscapes. This framework envisions a collaborative and inclusive educational ecosystem that transcends boundaries, driven by cooperation, clarity, and flexibility to benefit generations to come (Green et al., 2020).

Challenges and Considerations

Flexibility and Rigidity in Harmonization and Regional Adaptations: Harmonization strives to establish uniform standards to ensure consistency across educational settings, yet it must also accommodate regional adaptations. While a standardized assessment format may suit European universities well, African contexts may necessitate adjustments to incorporate oral traditions, indigenous knowledge, and community-based assessments. Finding the delicate equilibrium between global standards and local relevance is crucial for fostering inclusivity and effectiveness in assessment practices (Scott, 1966).

Standardization, Consistency, and the Role of Accreditation Bodies: Standardization plays a pivotal role in maintaining consistency in assessment methodologies, grading criteria, and qualification frameworks, facilitating seamless credit transfer and recognition for students crossing borders. However, excessive rigidity can impede innovation and overlook the unique educational requirements of diverse populations. Accreditation bodies are instrumental in upholding global standards by evaluating institutions, programs, and assessment approaches, signaling quality assurance to students, employers, and other educational entities. Balancing the imperatives of

quality assurance with institutional autonomy is essential, requiring transparent processes, stakeholder involvement, and a mutual commitment to excellence to preserve diversity while ensuring educational quality (Tscharntke, 2015).

Data Sharing, Collaborative Benchmarking, and the Path to Harmonized Assessment Practices: Institutions harness vast amounts of assessment data to evaluate student performance, identify trends, and drive informed decision-making for targeted interventions and enhanced learning outcomes. Collaborative benchmarking initiatives enable institutions to compare their performance with peers, fostering a culture of continuous improvement. Efforts such as the Global Education Coalition led by UNESCO promote collaborative benchmarking across countries and regions, facilitating the exchange of best practices and mutual learning among educational institutions. Through a collective commitment to dialogue and cooperation, stakeholders pave the way for a harmonized educational landscape that harmonizes global standards with local needs, ensuring a balanced and inclusive approach to assessment practices (Callahan., 2017).

Conclusion, Recommendations and Future Directions

Policy Advocacy for Harmonization: Governments must be actively engaged in advocating for harmonization efforts within education systems. Policymakers hold the key to incentivizing institutions to align their assessment practices with global standards through national policies and funding mechanisms that reward compliance with recognized frameworks. Collaboration with educational bodies, ministries of education, accreditation agencies, and professional associations is essential to raise awareness about the benefits of harmonization through joint statements, conferences, and policy dialogues, fostering a collective commitment to quality education.

Faculty Development for Effective Implementation: Empowering educators through comprehensive training programs is crucial for successful implementation of standardized assessment practices. Faculty members require training in assessment design, rubric development, and alignment with learning outcomes to create meaningful assessments. Beyond technical skills, pedagogical competence is essential, emphasizing an understanding of how assessment influences student learning. Encouraging reflective teaching practices, formative assessment strategies, and student-centered approaches can enhance educators' effectiveness in implementing harmonized assessment practices.

Research Agenda for Long-Term Impact Assessment: Longitudinal Studies and Comparative Analyses are essential components of investigating the long-term impact of harmonization on educational achievements. Longitudinal Studies track student cohorts over extended periods, providing insights into trends in performance, employability, and lifelong learning outcomes. Comparative Analyses across countries and regions offer a deeper understanding of the effects of standardized assessment practices on factors such as student mobility, qualification recognition, and employment prospects. These research efforts inform policy advocacy and faculty development initiatives, guiding the educational landscape towards a unified environment where

assessment practices transcend borders to benefit students globally.

As we find ourselves at the crossroads of a transformative era in education, it is imperative that we heed the universal call to action—a call that reverberates across borders, cultures, and academic institutions alike. The vision of a globally harmonized education system beckons us forward, promising far-reaching implications for the future of learning. Envision a world where a student's qualifications are universally acknowledged, where the notion of mobility transcends geographical boundaries. Let us wholeheartedly embrace this visionary concept of an interconnected educational ecosystem where assessment practices seamlessly traverse national borders. Anchoring our journey in the values of quality, fairness, and excellence, we set sail towards the horizon of educational advancement. In this collective voyage, educators, policymakers, and institutions stand as pillars of progress, tasked with collaborating, innovating, and advocating for a future where harmonized assessments honor contextual diversity, uphold academic rigor, and empower learners from all walks of life. Together, we weave a rich tapestry of knowledge that transcends borders, celebrates the richness of diversity, and illuminates the path towards a brighter, more interconnected world that fosters the growth and development of individuals and societies alike.

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Institutional Barriers to Inclusive Assessment for Students with Special Needs in Indian Higher Education

[1]Ravindra Kumar Kushwaha*, [2]Dr. Hemant Kumar Maurya

[1] Research Scholar, Department of Teacher Education, Halim Muslim PG College, Kanpur (India) professorkushwaha@gmail.com

[2]Assistant Professor, Department of Sensory Disability, Indian Institute of Teacher Education, Gandhinagar (India) hemant_kumar60@yahoo.com

Abstract

This study examines the institutional barriers to implement inclusive assessment strategies for students with special needs in Indian higher education. Given the crucial role of inclusivity in educational equity, this research aims to identify and analyse the systemic hindrances that restrict the practical application of inclusive assessment methods in universities across India. The objectives of this study are twofold: firstly, to explore how institutional policies, resource allocation, and faculty awareness affect the inclusion of students with special needs; and secondly, to propose actionable strategies that can mitigate these barriers. The methodology employed consists of a mixed-method approach, integrating both qualitative and quantitative data. Surveys were distributed to faculty members and administrators across multiple universities to assess their perspectives on and experiences with inclusive assessments. Additionally, in-depth interviews were conducted with selected stakeholders, including policy-makers, educators, and students with special needs, to gain a deeper understanding of the institutional challenges. Findings indicate that significant barriers include inadequate faculty training on special needs, limited financial resources dedicated to inclusive education tools, and inflexible academic policies that do not accommodate diverse learning requirements. Moreover, a general lack of awareness and understanding of special needs among university staff exacerbates these challenges, leading to insufficient support for implementing effective inclusive assessment strategies. The study concludes with recommendations for enhancing faculty training programs, revising institutional policies to be more accommodating, and increasing funding for resources necessary for inclusive education. These strategies aim to foster a more supportive and equitable educational environment for all students, regardless of their special needs.

Keywords: *Inclusive Assessment, Special Needs Education, Higher Education, Institutional Barriers.*

Introduction

Institutional barriers in the realm of assessment for students with special needs within Indian higher education present a pressing challenge, undermine the principles of inclusivity and equality essential to educational justice. The commitment to providing equitable educational opportunities for all students, including those with disabilities, has gained significant traction globally. In India, this commitment is reflected in various legislative frameworks, yet the practical implementation remains fraught with challenges. This extensive introduction delves into the various dimensions of these barriers, proposing avenues for meaningful reforms to achieve a truly inclusive educational system. The concept of inclusive education asserts that all students, regardless of their physical, intellectual, emotional, or linguistic barriers, should have equal access to education. However, the reality for many students with special needs in India is starkly different. These students frequently encounter a range of obstacles, from physical access to educational content to the pedagogical approaches employed in higher education institutions.

The physical infrastructure of many educational institutions remains inaccessible, and this basic logistical barrier is often the first hurdle that needs to be overcome (Kumar & Arora, 2018). Accessibility extends beyond mere physical considerations to encompass the availability of resources tailored to diverse learning needs. Educational materials are seldom available in formats accessible to all students, such as braille, large print, or audio. This lack of accessible instructional materials significantly impedes the academic progress of students with visual or auditory disabilities (Patel & Jain, 2019). Another significant barrier is the prevalent attitudes and perceptions towards disability within the academic community and society at large. Cultural perceptions can influence the extent to which disabilities are accepted and accommodated within educational settings. Negative attitudes can lead to discrimination or reluctance to adapt teaching methods or assessment strategies to be more inclusive (Singh & Manjari, 2020).

The training of faculty and administrative staff in understanding and implementing inclusive education practices is woefully inadequate. Many educators lack the necessary training to modify their instructional methods or assessments to cater to the needs of all students. Without proper training and resources, even well-intentioned faculty may struggle to effectively support students with special needs (Mehta & Singh, 2021). The curricular and assessment methods used in higher education also present substantial barriers. Traditional assessment methods do not often account for the diverse ways in which students with disabilities may best demonstrate their knowledge and skills. The rigid, one-size-fits-all approach to assessment fails to accommodate those who may require alternative formats or additional time (Gupta & Kumar, 2022).

Policy and enforcement issues further complicate the landscape of inclusive education. While policies, such as the Rights of Persons with Disabilities Act, 2016, provide a framework for accommodations and rights, the translation of these policies into practice is inconsistent. The lack

of enforcement and monitoring mechanisms ensures that policies remain only on paper for many institutions without real impact on the ground (Kaur & Lal, 2019). Addressing these barriers requires a multifaceted approach. Institutions must invest in upgrading their infrastructure to ensure full physical accessibility. This includes not only ramps and elevators but also accessible classroom technologies and learning materials. Additionally, there is a critical need for the development and implementation of training programs for faculty and staff that focus on inclusive teaching and assessment practices. Policies must be strengthened with clear guidelines and robust enforcement mechanisms to ensure that the rights of students with disabilities are not just recognized but actively supported. Collaboration with organizations specializing in disabilities could offer higher education institutions practical insights and resources to enhance inclusivity.

Institutional culture itself must evolve to embrace inclusivity at its core. This involves promoting an environment of acceptance and support, where the differences are viewed as aspects of diversity rather than deficits. Educational leaders play a crucial role in cultivating such an environment, modelling inclusive practices, and advocating for continuous improvement based on feedback from students with special needs. In conclusion, while the challenges are significant, the path forward involves a comprehensive strategy of policy enhancement, cultural change, and practical adjustments in pedagogy and infrastructure. Indian higher education must commit to transforming its current practices to create an environment where all students, regardless of their disabilities, can thrive academically and personally.

Review of Related Literature

The literature on institutional barriers to inclusive assessment for students with special needs in Indian higher education reveals a complex landscape fraught with challenges and opportunities for reform. This review synthesizes key findings from recent studies, shedding light on the multifaceted issues that hinder the effective integration of inclusive practices in assessment processes within Indian universities.

Accessibility is a cornerstone of inclusive education, yet it remains one of the most significant barriers faced by students with disabilities in Indian higher education institutions. Kumar and Arora (2018) highlight that many universities lack basic physical infrastructure such as ramps, elevators, and accessible washrooms, which are essential for students with physical disabilities. Beyond physical access, there is also a dire need for accessible learning materials. Patel and Jain (2019) document that instructional materials often are not available in formats accessible to students with visual or auditory impairments, such as Braille, large print, or audio. This lack of resources severely limits the academic engagement and success of these students.

Attitudinal barriers also play a critical role in shaping the educational experiences of students with special needs. Singh and Manjari (2020) discuss how prevailing cultural attitudes towards disability in India often result in stigma and discrimination. These societal perceptions can influence faculty and administrative attitudes, leading to lower expectations and reluctance to

accommodate and modify teaching and assessment methods to include students with disabilities. The training of faculty is pivotal in the successful implementation of inclusive education. Mehta and Singh (2021) emphasize that many educators in Indian higher education lack the necessary training to adapt their instructional strategies or assessments to the needs of all students. The absence of adequate training and resources means that even educators with the best intentions may be ill-equipped to provide the necessary support for students with special needs, thus perpetuating exclusionary practices.

In terms of assessment practices, traditional methods are not often suited to the diverse ways in which students with disabilities may best demonstrate their knowledge and skills. Gupta and Kumar (2022) critically analyse the prevalent assessment strategies and find them lacking in flexibility and adaptability. They argue that the rigid, standardized assessment models do not allow for alternative formats or extra time, conditions that could help level the playing field for students with special needs.

Policy frameworks provide a theoretical basis for inclusive practices, but their practical application remains inconsistent across institutions. Kaur and Lal (2019) examine the implementation of disability policies in Indian universities and find significant gaps between policy and practice. Despite robust legal frameworks, such as the Rights of Persons with Disabilities Act, 2016, the enforcement and monitoring mechanisms are often weak, leading to a lack of accountability and implementation fidelity.

Emerging research suggests that collaboration between universities and external organizations specializing in disability could enhance the inclusivity of assessment practices. Nayar et al. (2020) propose that partnerships with NGOs and disability advocacy groups can bring in much-needed expertise and resources that can aid in the transformation of assessment practices to be more inclusive.

Several studies also point towards technology as a potential facilitator of inclusive education. Sharma and De (2021) explore how assistive technologies, like screen readers and speech-to-text software, can play a crucial role in making learning and assessment more accessible to students with disabilities. However, they also note that the adoption of such technologies in Indian higher education is sporadic and often hindered by lack of funding and technical support.

In conclusion, the literature reveals that while there is an increasing awareness and policy support for inclusive education in Indian higher education, significant barriers still impede its full implementation. These include infrastructural deficiencies, attitudinal biases, inadequate faculty training, rigid assessment practices, and weak policy enforcement. For genuine inclusivity, these barriers must be addressed through a coordinated effort involving policy enhancements, cultural change, practical adjustments in pedagogy, and the strategic use of technology.

Statement of the Problem

The problem statement for a study on institutional barriers to inclusive assessment for students with special needs in Indian higher education identifies several critical issues. First, many institutions lack the necessary physical infrastructure to accommodate students with physical disabilities, severely limiting their participation in both academic and extracurricular activities. Additionally, there is a notable deficiency in the availability of learning materials in accessible formats for students with visual, auditory, or cognitive impairments, which restrict their academic engagement and success. Another significant barrier is the lack of adequate training for faculty in inclusive teaching and assessment methods, which prevents them from effectively supporting students with special needs.

Assessment practices in these institutions tend to be rigid and standardized; failing to accommodate the diverse ways students with disabilities can demonstrate their knowledge, thus impacting their academic performance and cultural and attitudinal barriers within society and institutions often lead to discrimination against students with special needs, affecting their educational experiences. There are also gaps in the implementation of the existing policies designed to protect the rights of students with disabilities, with many institutions failing to comply with legal standards. Lastly, the integration of assistive technologies, which can greatly enhance learning accessibility, is limited due to insufficient funding and lack of technical support. This study aims to thoroughly investigate these barriers to recommend actionable strategies that can help institutions overcome these challenges and foster a truly inclusive environment.

Objectives of the Study

The study on institutional barriers to inclusive assessment for students with special needs in Indian higher education is designed to tackle two primary objectives. ***Firstly,*** the research aims to identify and analyse the physical and infrastructural barriers within Indian higher education institutions that restrict accessibility for students with special needs. This includes evaluating the adequacy of facilities, such as ramps, elevators, accessible restrooms, and classroom layouts that accommodate mobility aids. ***Secondly,*** the study seeks to assess the availability and accessibility of learning materials including educational settings in formats that are suitable for students with various disabilities and compare means across different groups in an educational to assess the perceptions or experiences of various groups such as students, faculty, and administrative staff.

Research Questions

Accompanying with objectives, the study poses critical research questions to guide the investigation: For the *first objective,* "What are the specific physical and infrastructural limitations present in Indian higher education institutions that hinder full accessibility for students with special needs?" This question aims to uncover the gaps in current infrastructure that pose challenges to mobility and access. For the *second objective*, the research question is, "How effectively do

learning materials and educational settings provid in accessible formats to students with disabilities in Indian universities, and what gaps can exist in these provisions?" These questions seek to identify shortcomings in the distribution and availability of accessible educational resourceswhich are critical for the academic success of these students.

By addressing these objectives and questions, the study hopes to provide actionable insights that can lead to significant improvements in the inclusivity of assessment practices in Indian higher education, thereby equity and supporting the academic achievements of students with special needs could be promoted.

Methods & Materials

To investigate the institutional barriers to inclusive assessment for students with special needs in Indian higher education, the study employed a mixed research method, utilizing both qualitative and quantitative research techniques. This methodology was chosen to allow for a comprehensive analysis of both the measurable aspects of the institutional environment and the subjective experiences of stakeholders.

Materials

Survey Instruments: Customized survey instruments were developed to collect data from a broad range of 50 participants, including students with disabilities, faculty members, and administrative staff across various universities. These surveys assessed perceptions and experiences regarding physical accessibility, availability of accessible learning materials, and the effectiveness of existing assessment practices towards educational settings.

Interview Protocols: Semi-structured interview protocols were used for in-depth interviews with randomly selected 50 participants with convenience methods. These interviews aimed to gather detailed insights into the personal experiences of students with special needs and the challenges faced by faculty in implementing inclusive assessment practices.

Document Analysis: Policy documents, institutional guidelines, and accessibility reports from Indian higher education institutions were analysed to understand the current policy landscape and its implementation regarding inclusivity in assessment practices.

Methods

Sampling: The study targeted a diverse sample of higher education institutions across India, including both public and private universities but the data were confidentially customized coded due to disability sectors. Purposive sampling was used to select institutions known for their diverse student bodies and varying levels of infrastructure. Within these institutions, participants were selected using stratified sampling to ensure representation across different types of disabilities.

Data Collection: Quantitative data were collected through online and offline surveys, and they were distributed to a large number of participants to gather broad-based insights into the issues of

accessibility and assessment practices. On the other hand, qualitative data were collected through in-depth interviews, which were conducted either face-to-face or via video conferencing, depending on the accessibility needs of the participants. The data provided deeper understanding and context to the quantitative findings.

Data Analysis

Quantitative data were analysed using statistical software to perform descriptive and inferential statistics. This helped identify patterns and correlations between different variables related to institutional practices and barriers. Qualitative data from interviews and document analysis were coded and analysed using thematic analysis. This allowed for the identification of major themes and narratives that described the institutional culture and barriers to inclusivity.

Ethical Considerations: The study adhered to ethical standards in research involving human participants. This included obtaining informed consent, ensuring confidentiality, and providing participants with the right to withdraw from the study at any point. Special attention was given to the accessibility of consent forms and study materials to accommodate the needs of participants with disabilities. By employing these methods and materials, the study aimed to provide a detailed understanding of the barriers to inclusive assessment in Indian higher education and suggested practical solutions to address these challenges effectively.

Results & Discussions: The visual data from the set of graphs present a comprehensive overview of the demographics of 50 participants in a study on institutional barriers to inclusive assessment in Indian higher education. Below is a detailed interpretation of each graph:

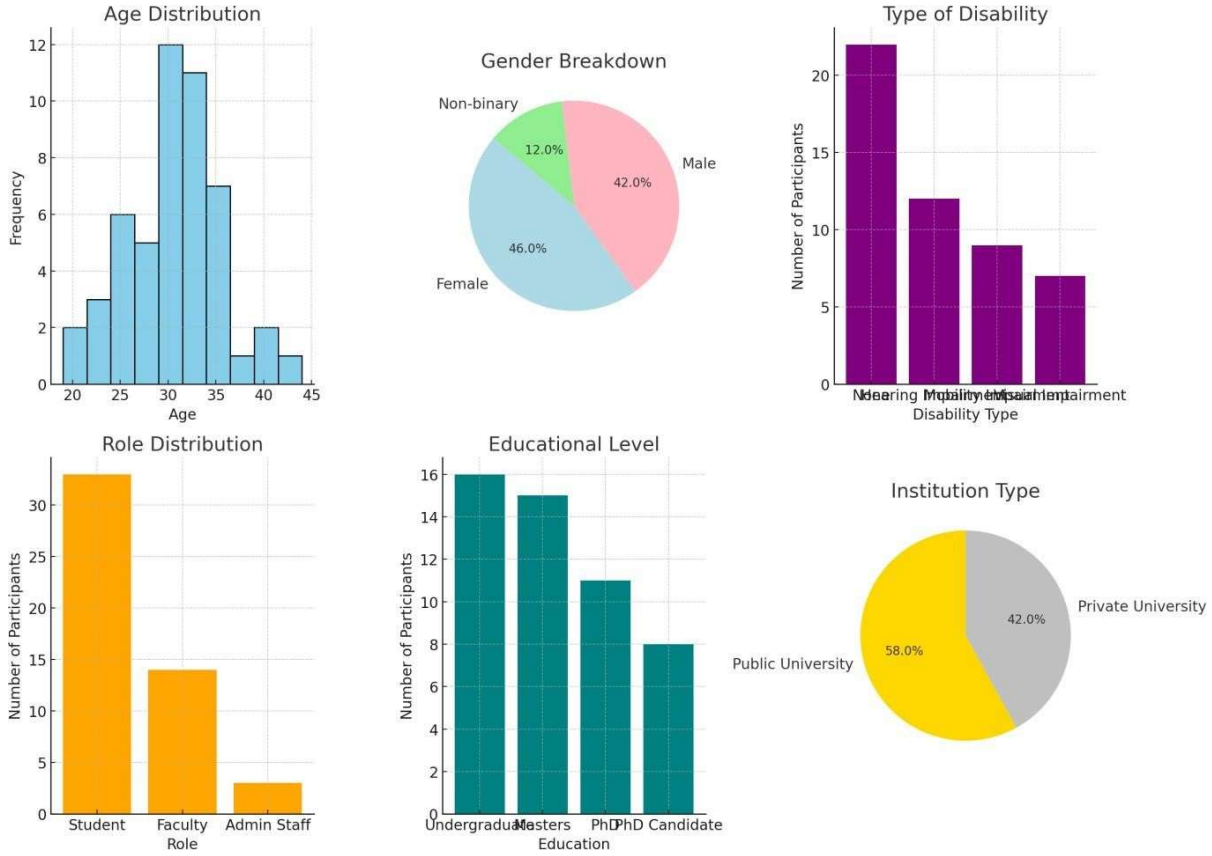

Figure 01: Demographic Landscape of the Participants

Age Distributions: The histogram illustrates the age distributions of the participants, predominantly clustering around the mid-20s to early 30s. This suggests that the majority of participants are likely in the midst of their higher education or early professional careers. The distribution is roughly symmetric with a slight skew towards younger ages, indicating a youthful cohort which is typical in university settings.

Gender Breakdown: The pie chart for gender breakdown shows that females are the majority, making up approximately 46% of the participants, followed by males at 42%, and non-binary individuals at 12%. This gender diversity ensures that the study captures a range of experiences and perspectives, which is critical in research focused on inclusivity and accessibility.

Type of Disability: The bar chart detailing types of disabilities among participants reveals that a substantial proportion, the largest single group, reports no disability. Among those with disabilities, visual impairments are slightly more prevalent compared to mobility and hearing impairments. This distribution highlights the variety of accessibility challenges faced within the participant group and underscores the need for diverse adaptive strategies in educational settings.

Role Distribution: The roles of participants are shown in a bar chart where students are the most numerous, followed by faculty, and a smaller number of administrative staff. This distribution is crucial for understanding the direct experiences of those most affected by assessment practices (students) and the perspectives of those who design and administer these practices (faculty and staff).

Educational Level: The educational level is presented in another bar chart, where undergraduates form the largest group, followed by master's students, and PhD candidates. This gradient suggests the study spans a range of academic stages, providing insights into how inclusive practices might be perceived differently across various levels of academic advancement.

Institution Type: The pie chart which shows institution types indicates that a majority of participants (58%) are from public universities, with the remaining 42% from private universities. This could influence the findings as public and private institutions may differ in resources, student demographics, and policy implementations regarding inclusivity.

Scientifically, these visuals provide a multidimensional pictures of the study's demographic landscape, which enables a nuanced analysis of how institutional barriers to inclusive assessment may vary across different ages, genders, disabilities, roles, educational levels, and types of institutions. Such detailed demographic understanding is essential for tailoring recommendations that address specific needs and barriers encountered in diverse educational environments.

Objective 01: To effectively investigate the relationships between demographic factors like age and type of disability on perceptions of institutional barriers and the effectiveness of assessment practices, we used Likert-scale questions as research approach. Below is a table representing responses from 50 respondents to a series of Likert-scale questions, structured to capture their perceptions. Each response is rated on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

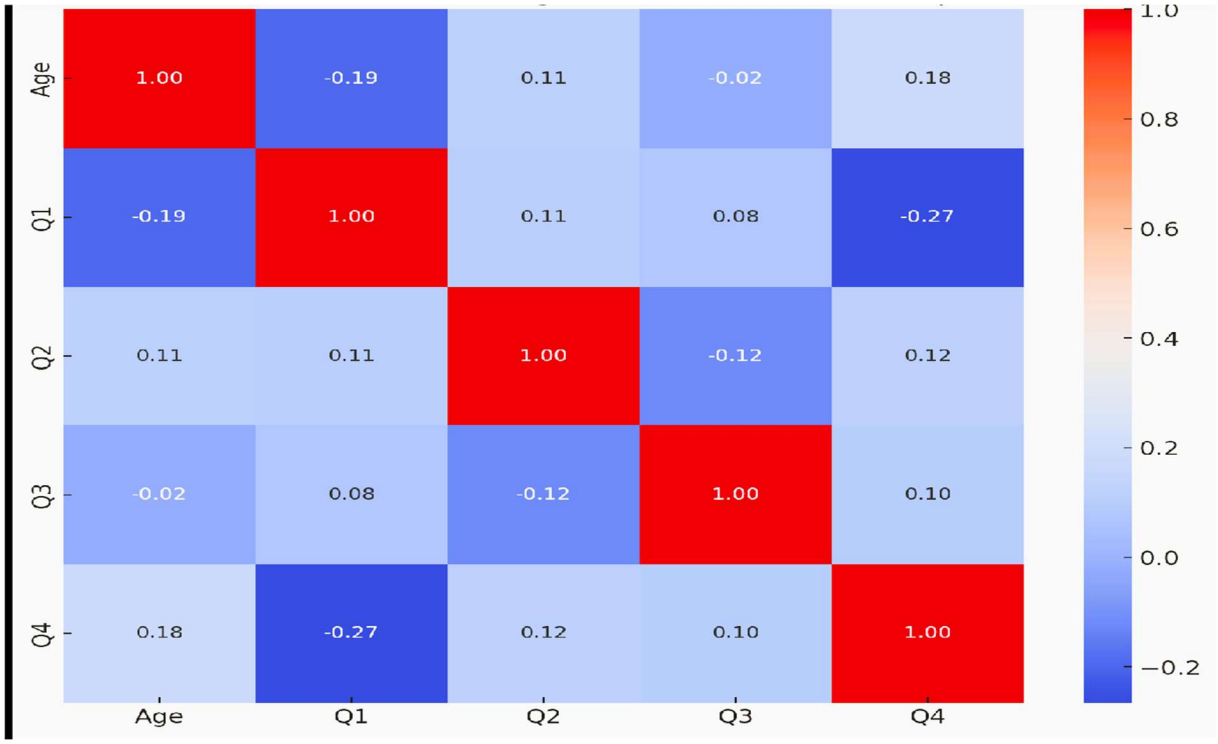

Figure 02: Correlation Matrix between Age and Likert Scale Responses

We illustrated the varied experiences of students with different types of disabilities in academic environments and highlight specific areas where educational institutions was focused their efforts to improve fairness, support, accessibility, and inclusivity in their assessment practices. Each group's feedback underscores the importance of a tailored approach to disability support, ensuring that all students have equitable opportunities to succeed academically.

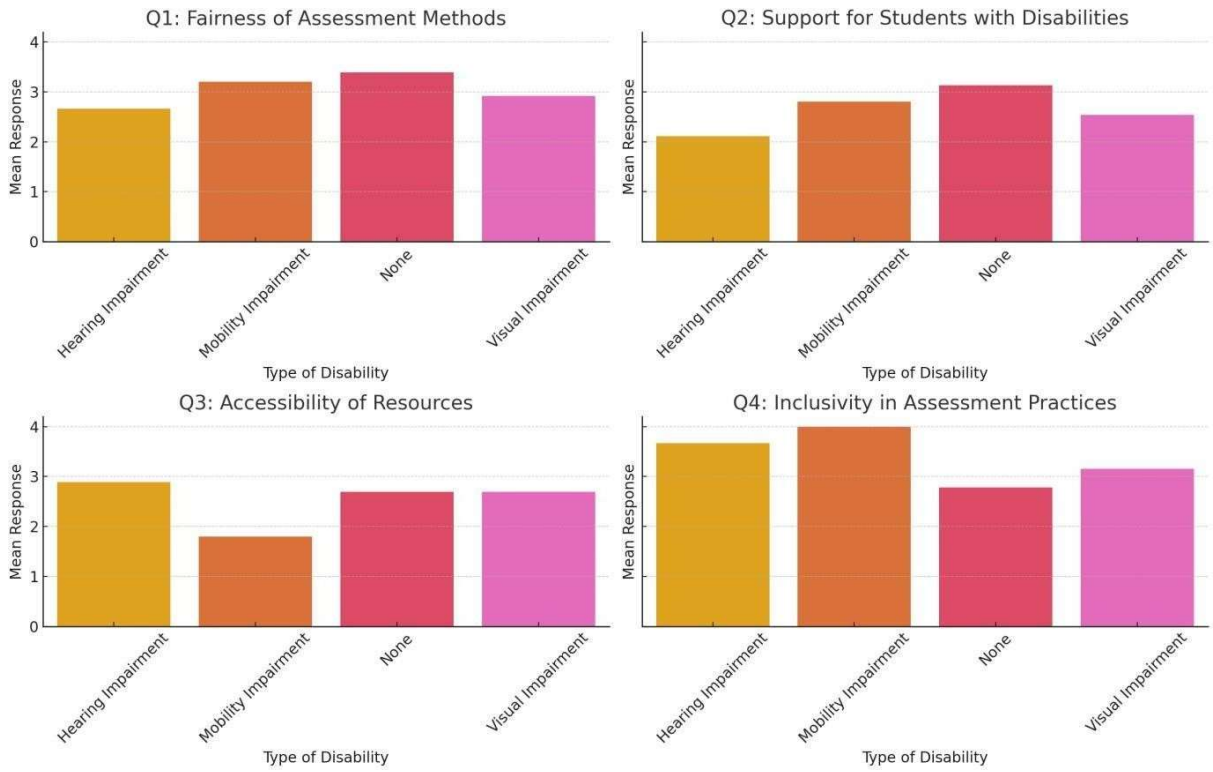

Figure 03: Mean Responses to Likert Scale Questions by Types of Disability

The bar charts given above depict how respondents from different disability groups perceive the fairness, support, accessibility, and inclusivity of assessment practices within their institutions. We interpreted of each chart into a more detailed as given below;

- ***Fairness of Assessment Methods (Q1):*** The data reveal that respondents with mobility impairments perceive the assessment methods at their institutions as relatively fair (mean response above 3), which suggests a positive evaluation of how assessments are conducted in respect to their needs. In contrast, those with hearing impairments report the least satisfaction with the fairness of assessment methods (mean response closer to 2.5). This might indicate a perception that the specific requirements or challenges associated with hearing impairments are not adequately addressed in assessment practices. Respondents without disabilities and those with visual impairments offer moderately positive feedback, indicating general satisfaction but also room for improvement.

- ***Support for Students with Disabilities (Q2):*** The perceptions of institutional support for students with disabilities vary notably by disability type. Individuals with mobility impairments again report higher satisfaction (mean response close to 3), suggesting that the support mechanisms in place may be more attuned to their particular needs. However, individuals with hearing impairments report significantly lower satisfaction, with a mean response approaching 2, highlighting a potential gap in support services tailored to their needs. This discrepancy emphasizes the need for institutions to consider diverse disability requirements when designing support services.

- ***Accessibility of Resources (Q3):*** Accessibility of resources, such as notes and software appears to be a significant issue, particularly for those with mobility impairments, who rate accessibility the lowest (mean response around 1.8). This indicates a critical area where institutions may need to improve, ensuring that physical and digital resources are accessible to all students, regardless of their physical capabilities. Other groups, including those with no disabilities, report moderately better perceptions of accessibility, yet the overall sentiment suggests that accessibility could be enhanced across the board.

- ***Inclusivity in Assessment Practices (Q4):*** Interestingly, respondents with mobility impairments rate the inclusivity of assessment practices the highest (mean response at 4), which could indicate that while they find resources less accessible, the methods and procedures of assessments themselves are perceived as inclusive. This could reflect effective accommodations in the testing environment or assessment format that acknowledge their specific needs. On the other hand, respondents without disabilities and those with visual and hearing impairments show lower satisfaction, pointing towards a need for more comprehensive inclusivity in practice design.

Objective 02: To compare means across different groups in an educational setting, a Likert scale question was designed to assess the perceptions or experiences of various groups such as students, faculty, and administrative staff. We visualized the distribution of responses across the three groups to better understand the pattern of responses and perceptions of support.

The bar chart visually displays the distribution of responses across the three groups: students, faculty, and administration. We can see that a larger proportion of the administration group tends to agree or strongly agree with the feeling that they were supported by their institution, as compared to the faculty and students. Despite these visible differences, the ANOVA test indicates that these variations are not statistically significant across the groups The ANOVA test yields a F-statistic of approximately 1.55 and a p-value of 0.2225. Since the p- value is greater than the typical significance level of 0.05, we do not have sufficient evidence to reject the null hypothesis. This implies that there are no statistically significant differences in the perception of support across the student, faculty, and administration groups based on the responses provided.

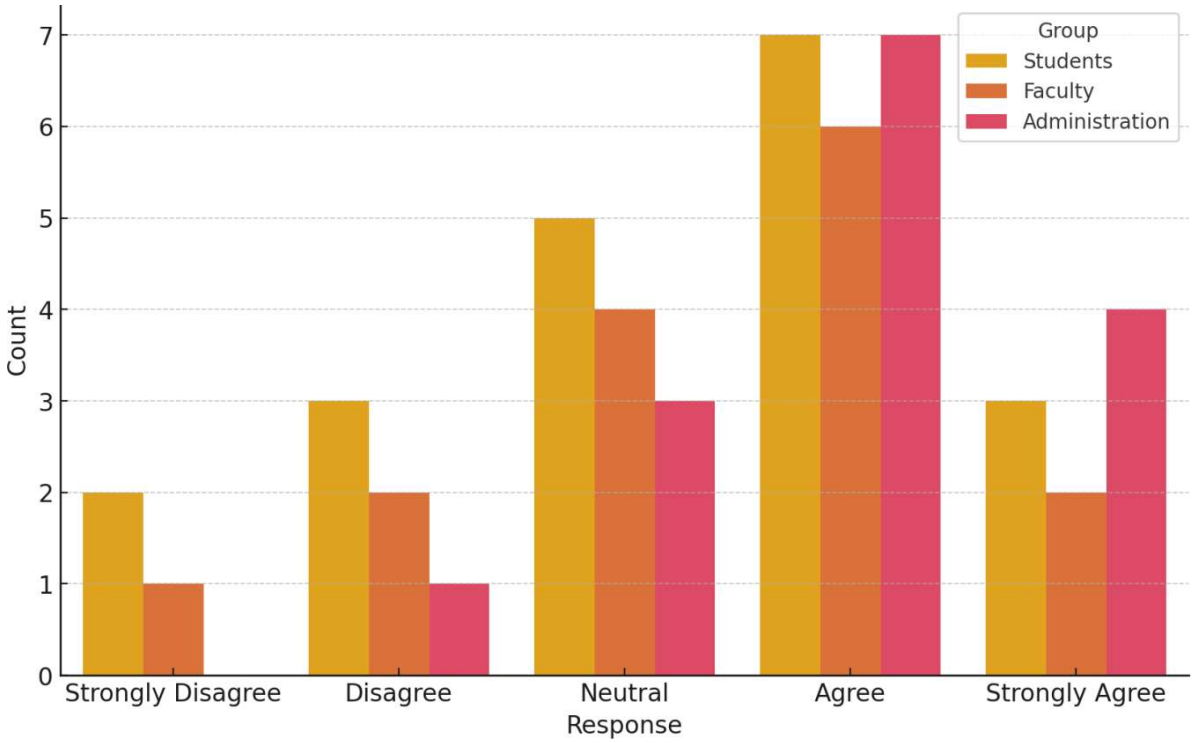

Figure 04: Distribution of Responses across Different Groups

The bar chart depicts the distribution of responses to the statement "I feel supported by my institution in my role," was categorized by three different groups: *students, faculty, and administration.* Here's a detailed interpretation of the chart:

General Observation:

• Each bar represents the count of responses in each category (Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree) for the respective group.

• The x-axis represents the different response categories of the Likert scale, and the y-axis indicates the count of responses in each category.

• Different colours in the chart represent the different groups: *students, faculty, and administration.*

Specific Observations for Each Group:

Students

• The majority of the students have given responses ranging from neutral to agree, indicating a general but not strong sentiment of feeling supported.

- The counts for strongly agree and strongly disagree are relatively low, suggesting fewer students feel extremely positive or extremely negative about their support level.

- The peak for students is at the agree category, but it's not a very strong peak, showing a moderate level of agreement.

Faculty

- The faculty responses are somewhat similar to those studentswith the majority falling in the neutral to agree range.

- Like the students, extreme opinions are less common among the faculty members, but there's a slightly higher representation in the strongly agree category as compared to strongly disagree.

- The agree category also sees the highest count, indicating that more faculty feel supported, albeit not overwhelmingly so.

Administration

- The administration shows a different pattern compared to the other two groupswith a higher concentration of responses in the agree and strongly agree categories.

- This suggests that the administration members feel more strongly supported by the institution than the other groups.

- The absence of any strongly disagree responses and only one disagree response further highlights the positive perception of support within the administration group.

Comparative Analysis

- Comparatively, the administration group feels more supported than both the students and faculty, as evidenced by higher counts in the more positive response categories.

- Both the students and faculty exhibit a similar pattern of responses, with the bulk of the distribution in the middle categories, but faculty tend to feel slightly more supported than the students as shown by their slightly higher numbers in agree and strongly agree.

The visual comparison helps in understanding the varying levels of perceived support across different roles within the institution. It indicates the areas where perceptions of support might be improved, especially among the students and faculty as compared to the administration, which perceives a higher level of support. This bar chart is a useful tool for administrators and decision-makers within the educational institution to gauge the overall sentiment regarding support and identify specific groups that might require more attention or different strategies to enhance their feelings of being supported.

Findings & Discussions: The visual data from a series of graphs offer a detailed overview of the demographics and perceptions of 50 participants involved in a study on institutional barriers to inclusive assessment in Indian higher education. These graphs provide insights into age, gender,

disability type, role distribution, educational level, and institution type, contributing to a nuanced understanding of how these factors might influence the effectiveness and fairness of assessment practices.

The age distribution of the participants, primarily in their mid-20s to early 30s, indicates that the majority are likely engaged in higher education or early career stages, typical of university settings. This age group is pivotal as it represents active learners and early career academics that directly interact with the assessment processes under scrutiny.

The gender breakdown shows a diverse representation, with females slightly outnumbering males and a significant inclusion of non-binary individuals, ensuring a variety of experiences and perspectives that enrich the study's findings on inclusivity.

In terms of disabilities, a considerable number of participants do not report any disability, with visual impairments being the most prevalent among those who do. This varied representation underscores the need for educational institutions to adopt diverse adaptive strategies to cater to different accessibility challenges effectively.

Role distribution within the participants is heavily skewed towards students, followed by the faculty and a smaller segment of administrative staff. This is crucial as it primarily gathers insights from those directly impacted by and responsible for the design and implementation of assessment practices, offering a well-rounded view of the operational challenges and successes.

Educational levels represented in the study spanned from undergraduate to PhD candidates and this allows the research to capture a broad spectrum of academic experiences and expectations regarding assessment practices.The institution type, with a majority from public universities, may influence the study's outcomes, reflecting the resource allocation, policy implementation, and student demographics typical to these institutions.

The correlation matrix and mean responses to Likert scale questions further delve into how demographic factors, such as age and disability influence perceptions of institutional barriers and assessment practices. For instance, the differing levels of satisfaction with fairness, support, accessibility, and inclusivity in assessment methods among respondents with various disabilities highlight significant areas for improvement. Notably, the respondents with mobility impairments reported more satisfaction in some areas but highlighted significant gaps in accessibility, suggesting that while some needs are being met, others are glaringly unaddressed.

Finally, the ANOVA test on the distribution of Likert scale responses across different groups (students, faculty, and administration) shows no statistically significant differences in perceptions of support, despite visible differences in the bar chart distribution. This indicates that while subjective perceptions of support vary, they do not statistically differentiate across the studied groups, pointing towards a universally moderate perception of institutional support that transcends

specific group boundaries within the educational institution.

Overall, these findings stress the importance of a tailored approach in addressing the needs of diverse student populations, particularly in enhancing fairness and inclusivity in assessment practices. They call for educational policymakers and administrators to consider these nuanced feedbacks to foster an educational environment that is truly supportive and equitable for all its members.

Conclusion

The comprehensive analysis of institutional barriers to inclusive assessment in Indian higher education highlights significant areas requiring focused improvement to foster an educational environment that is truly inclusive and equitable. This study elucidates the multifaceted challenges faced by students with special needs, ranging from inadequate physical infrastructure and insufficient accessible learning materials to the lack of faculty training in inclusive practices and rigid assessment methodologies.

The findings underscore a critical need for institutions to enhance their infrastructure, diversify and adapt learning resources, and provide extensive training to faculty and staff. Moreover, the data emphasize the importance of revising policy frameworks to ensure they are not only comprehensive but also effectively implemented and monitored. The engagement with external organizations specializing in disabilities could further enrich the inclusivity of assessment practices. While there are visible variances in how different demographic groups perceive their educational experiences, these do not statistically distinguish between students, faculty, and administration, suggesting a universally moderate perception of support across roles.

To move forward, institutions must adopt a tailored approach, addressing specific needs highlighted by this study, and commit to on-going evaluation and adaptation of their practices to ensure all students. Regardless of their disabilities, they should receive the supports and opportunities they deserve. This proactive approach will not only enhance the academic experience but also contribute positively to the broader societal acceptance and integration of individuals with disabilities.

Recommendations

To deepen the understanding and enhance the scope of research on institutional barriers to inclusive assessment in Indian higher education, several targeted approaches are recommended. Firstly, longitudinal studies are invaluable as they track the efficacy and sustainability of inclusive practices over time, revealing long-term trends and outcomes of policy implementations and training programs. This would allow researchers to identify which strategies lead to lasting improvements and which may require revaluation or adjustment.

Comparative studies can broaden the perspective by comparing the inclusivity practices of Indian higher education institutions with those in other countries, or between different types of institutions within India, such as public versus private. This approach can uncover successful practices and innovative methods from diverse educational systems that could be adapted to the Indian context, offering practical solutions and new ideas.

- Examining the direct impact of specific training programs for faculty and administrative staff on fostering inclusive environments is another critical area of research. Such studies would not only assess the changes in attitudes and practices post-training but also gauge the training's effectiveness in real-world educational settings, providing feedback for improving these programs.

- With the rapid advancement of technology, exploring how tools, such as AI, virtual reality, and other digital resources can aid in making education more accessible is crucial. Research should focus on identifying barriers to adopt these technologies as well as their potential impacts on learning outcomes for students with disabilities.

- To capture the nuanced challenges and everyday experiences of students with disabilities, qualitative research methods like ethnographic studies or narrative analysis can be employed. These methodologies allow for a deeper, empathetic understanding of the students' perspectives, providing insights that are often overlooked in quantitative research.

- Additionally, analysing the gap between policy formulation and actual implementation across different regions can highlight systemic issues and facilitators within the administrative structures. This kind of study would help in crafting more effective policies and enforcement mechanisms.

- Economic analyses are also essential, as they provide a broader understanding of the costs associated with implementing inclusive practices and the potential economic benefits, such as improved employment outcomes for graduates with disabilities. This data can support policy advocacy by demonstrating the return on investment in inclusive education.

- Finally, encouraging cross-disciplinary research that incorporates insights from education, psychology, sociology, and technology can lead to more comprehensive solutions to the challenges faced by students with disabilities. This integrative approach would leverage diverse expertise to create more effective and sustainable inclusive educational practices.

These in-depth, focused studies would not only build upon the current findings but also contribute significantly to refining the strategies for overcoming the institutional barriers that hinder the inclusivity of assessment practices in higher education.

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Challenges and Opportunities of Artificial Intelligence Use for Postgraduate Open and Distance Research Students: A Case of C*hatGPT* Use at the Open University of Tanzania

Joseph Magali (Ass.Prof), The Open University of Tanzania
Email: joseph.magali@out.ac.tz;josephmagali@yahoo.com

Abstract

The study explored the challenges and opportunities of artificial intelligence (AI), particularly using ChatGPT for postgraduate research students at the Open University of Tanzania. The study used the interpretivism philosophy, the exploratory design, the inductive approach and qualitative methodological choice. The purposive sampling was employed to select the 22 participants for the focus group discussion. The interview guide was used for data collection. The data were analyzed using the thematic and manual content analysis. The findings revealed that only a few students had knowledge of using ChatGPT in the postgraduate research. The postgraduate students acknowledge the great use of ChatGPT in promoting their research. However, the findings indicate that unscrupulous students may use the ChatGPT to violate the research ethical issues. The study recommends training all postgraduate students on the proper use of ChatGPT and other AI *software. The policy makers should establish policies that integrate artificial intelligence (AI) use in postgraduate research. The findings contribute to personalized learning theory by revealing that personalized learning is more powerful with AI , particularly . ChatGPT The research addresses the gap in understanding the specific mechanisms by which postgraduate students can effectively integrate AI tools like ChatGPT into their research processes while mitigating the risk of ethical violations. Proper AI use promotes quality research outputs for open and distance students.*

Keywords: Artificial Intelligence, ChatGPT, Postgraduate Research Students, Tanzania

Introduction

The higher education sector globally has been largely challenged by the innovation of AI (Kelly et al., 2023). Abd-Elaal et al. (2019) argued that AI use by students is associated with cheating and academic misconduct because it sometimes provides fake information which is not available on the internet and sometimes encourages students to plagiarise the information available on the internet. Nonetheless, the study has not explicitly linked cheating and students' research. Moreover, Zawacki-Richter et al. (2019) asserted that most AI studies were conducted in Science, Technology and Mathematics (STEM) and Computer Science. Hence, the researcher was motivated to study how AI promotes postgraduate research. Zhai et al. (2021) declared that AI might be inappropriately used in the education sector because it may encourage malpractice incidences Doğaner (2021) argued that it could potentially promote unemployment.

AI has been used in different education contexts. Swed et al. (2019) recommended Syrian medical doctors' students to use AI to promote learning. Chen et al. (2022) asserted that AI improved the capability of engineering students' capability by simplifying the processing of digital images and establishing case schemes. Hence, AI improved learning and engineering students' creativity. Doğaner (2021) affirmed that Kahramanmaraş University students perceived that AI positively promoted the health field. Zhai et al. (2021) revealed that AI strengthens quantitative and future work skills development.

Fang and Tse (2022) reported that AI has improved students' learning by personalizing content to students' individual needs. In Hong Kong local university AI online learning influenced students' emotions, skills, performance and participation. Chrysafiadi and Virvou (2021) revealed that the fuzzy Intelligent tutoring approach increased the students' knowledge, promoted active participation and reduced dropouts.

Iwashokun and Ade-Ibijola (2022) exposed that AI aided in vetting the structure of postgraduate students' research proposals. Bueno (2020) bared that AI-tool assessed whether submitted theses and dissertations required major or minor revision during COVID-19. However, the studies did not examine how the AI has been applied in the students' research.

AI can improve physical education (Lee & Lee, 2021). Wu and Yang (2022) indicated that AI supported the science students to capture the scientific concepts, hence promoting the achievement of learning outcomes. Dong et al. (2022) avowed that AI reinforced learning, teaching strategies and adaptive education systems. Owoc and Weichbroth (2021) maintained that studies on AI focused on healthcare, technology e-government, social media, e-commerce, space exploration, manufacturing, finance, education, business and entertainment. Álvarez-Álvarez and Falcon (2023) found that AI enhanced the reliability, relationship, clarity and interaction of university students' teaching practices. Mena-Guacas et al. (2023) stressed that AI promotes teachers' and

students' competency development and has countless opportunities to improve the education sector.

Gasparini and Kautonen (2022) reviewed the role of AI for librarians, libraries and users. The findings revealed that AI can improve library activities. AI integrates the educational technology and computer science (Hwang & Chien, 2022). Liao and Zhang (2023) indicated that AI promoted the learning process of STEM students and enhanced project completion.

Chu et al. (2022) asserted that most AI studies focus on adolescents under 13. The studies further concentrated on science and language and diverse problem-solving strategies. Miller (2019) disclosed that AI benefits social sciences researchers in defining, generating, selecting, presenting, and evaluating explanations. Hwang and Chien (2022) affirmed that AI in education research at Mashrur Chowdhury Clemson University in the USA simulated a reliable and cost-effective problem-solving mechanism. However, the study did not focus on the role of AI in open and distance learning postgraduate students. AI machine scientific research learning models training and execution are deterred by data security risks (Xu et al., 2021). The review of the literature indicates that the studies assessing the challenges and opportunities for AI use in promoting postgraduate students' research are scanty. These studies are essential because they could narrate the level of AI use awareness for students and reveal the benefits and challenges associated with AI use. This study investigated how postgraduate students utilized AI tools like ChatGPT in their research while ensuring ethical compliance. Therefore, the study filled a critical knowledge gap by articulating effective AI integration in postgraduate research.

Personalized learning theory

This study used the Personalized learning theory. The theory states that education should be adapted to cater to an individual learner's unique interests, needs, and abilities (Levine & Patrick, 2019). The theory recognizes the students' role in adopting the learning technologies that optimize individual student's learning outcomes. Under the personalized learning theory, the curriculum and educational materials are tailored to meet an individual's objectives and needs. In this way,

personalized learning promotes engagement between learners and learning materials (Klašnja-Milićević et al., 2020). Personalized learning theory improves learning outcomes by matching individual preferences and needs (Hannafin et al., 2009). Personalized learning usually involves the use of technology investments, hence, may increase the teachers' workload (Hannafin et al., 2009). Moreover, complexity and time-consuming processes may deter the implementation of personalized learning (Black & Wiliam, 1998).

According to Brown (2019), the personalized learning commenced in the late 1800s. In the 1900s, students in some schools, such as Colorado and San Francisco, allowed independent learning. In 1916, John Dewey, in his book, argued that student engagement promotes learning. Fred Keller and Lev Vygotsky advocated for personalized learning, emphasizing diverse students' learning in

the 1960s to 1970s. In the 200s, scholars such as Dan Buckley emphasized learning where teachers' and students' objectives are met. From 2010 to the present, the focus has been on integrating technology to personalize individual teaching and learning.

Levine and Patrick (2019) asserted that personalized learning allows students to determine their desired learning approaches. Therefore, personalized learning fulfils the learner's unique needs, interests and skills. Rizvi et al. (2023) revealed that AI promotes learners-centred methods, pedagogical practices and effective construction of learning outcomes. Neo et al. (2022) confirmed that using an AI ChatGPT motivated diploma students' learning. Li and Chen (2016) asserted that AI mobile technology supports personalized learning systems. Chowdhury and Gkioulos (2023) asserted that the personalized learning theory recognizes the use of individual talents and found that the cyber-security training made the master's students at the Norwegian Institute of Science and Technology more engaged. Moreover, the training in AI technology motivated learners to use the technological tools self-reliantly. Zhou et al. (2017) used the personalized learning theory to assess how data mining and AI technology supported E-learning systems.

Herawati (2023) stressed that personalized learning emphasizes the achievement of the students' learning objectives. Alamri et al. (2020) affirmed that the application of technology activates personalized learning in higher education. The study asserted that the blended model maximizes the technology application in learning and, in this way, fosters the achievement of the learning objectives. Pilley (2016) confirmed that technology use facilitates not only personalized learning but also research for the students. Xuan et al. (2021) declared that personalized learning is adopted by students based on their ability, which could improve their performance. Li (2014) reported that

AI and big data have cultivated the emergence of adaptive and personalized learning, especially for online students. According to Wang (2021), AI promotes personalized learning despite its challenges. In this study, *ChatGPT* is regarded as personalized learning in fostering postgraduate research. The literature indicates that despite the studies acknowledging the role of technology in promoting self-learning, the studies still need to integrate the role of AI, particularly *ChatGPT* in promoting postgraduate students' research.

Therefore, this study aimed to fill such gap by integrating the level of ChatGPT use in postgraduate research, the opportunities and challenges of *ChatGPT* use with the personalized learning theory. The study intended to answer the following research questions: What is the level of postgraduate students' knowledge of *ChatGPT* use? What are the opportunities/benefits of *ChatGPT* in postgraduate research? What are the challenges or ethical issues associated with *ChatGPT* in the research?

Methodology

As Saunders et al. (2019) proposed, the study utilized the interpretivism philosophy, the exploratory design, the inductive approach and the qualitative methodological choice. The

purposive sampling design was applied to select 12 master students, 8 PhD students for the focus group discussion. The sample size was drawn from a population of 58 participants who attended a short course in the research methodology. Yunitasari et al. (2023) asserted that a sample size of 15 participants and above is appropriate for the qualitative study. The study used the Open University of Tanzania (OUT) as its case. OUT teaches its students using electronic open and distance learning (ODeL). The university has a total of 38,952 postgraduate students, making a 38.1% of the total of 102,336 OUT students (OUT, 2023). Hence, using OUT as a case for this study was justifiable.

The interview guide was used for data collection. The data was analyzed by using thematic and manual content analysis. The following themes were used to code the data from the focus group discussion: Knowledge of *ChatGPT* use, Opportunities for *ChatGPT* use in Postgraduate research and challenges or ethical issues associated with *ChatGPT* use in the research. The data credibility or validity was enhanced by using the variables of previous research and pre-testing of the research tool 5 students and one lecturer who were not participants of this research. The dependability or reliability of the research tool was confirmed by adopting the research procedures from the previous studies. The consent was sought from the participants before the data collection. The confidentiality of the participants was enhanced by using the numbering instead of the real names. The researcher ensured that data fabrication, falsification and plagiarism were avoided.

Results and Discussion

Knowledge of ChatGPT use in postgraduate student research

The researcher asked the participants in a focus group discussion if they had heard about AI, specifically ChatGPT. The findings indicate that only 7 of the 58 students who attended the research methodology short courses had ever used AI the chat gpt in research. The researcher asked the FGD participants, "How many students have a ChatGPT account?" one participant asserted "I have opened the ChatGPT account just recently", and one participant acknowledged". The information signifies that only a few students were aware of using chat in the research.

When the researcher asked the FGD participants can you critique the information from the ChatGPT? The majority of the participants asserted that they were not able to do so. For instance, Participant No. 2 stated that critique will be only possible if the research student has knowledge and skills on critiquing. However, most of the students are not capable of critiquing the information retrieved from the ChatGPT because we are not aware of the sources of the information from the ChatGPT ". The findings witnessed that students needed to have adequate knowledge of the use of ChatGPT. Hence, this jeopardized the authenticity of the information presented from the ChatGPT in the students' research. The findings are compatible with Kelly et al. (2023), who revealed that most students in Australia did not know how to use AI, and some did not use it at all.

Opportunities/usefulness of ChatGPT in postgraduate student research

Participant No. 3. started**, "** ChatGPT simplifies the research process to respond to issues in research specifically by clarifying matters which seem complicated and difficult quickly". Participant No. 4 responded, "I usually use ChatGPT for research matters that are difficult to me, especially in a theoretical aspect. The ChatGPT gives the materials which could be more refined. However, the materials obtained by ChatGPT guide research students on further search in the databases." Participant no. 8 responded that "The ChatGPT elaborate the research concepts since it expands the concepts in a broader way". Participant no. 6 stated that "the information from the ChatGPT is straight forward and facilitate the deep understanding of the phenomena".

According to Participant No. 18, "ChatGPT is used to track the research vocabularies, sometimes it provides the credible sources. In the context of the literature review, it gives the initial information

about the theoretical aspects and empirical evidence. The ChatGPT also gives insight into the problem statement and the research gap. Participant No. 11 acknowledged that " ChatGPT is useful because it narrows the search and guides you to the required sources". The findings signify that AI has excellent use in postgraduate students' research. Since it enlightened the students on research matters which seemed difficult for them. The findings are consistent with various scholars who acknowledge the benefits of AI in learning. For instance, Miller (2019) asserted that AI benefits social science research by defining, generating, selecting, presenting, and evaluating explanations. Iwashokun and Ade-Ibijola (2022) reported that AI aided in vetting the structure of the postgraduate students' research proposals. Bueno (2020) asserted that AI evaluated whether submitted theses and dissertations required major or minor revision during COVID-19. Álvarez-Álvarez and Falcon (2023) found that AI enhanced the reliability, relationship, clarity and interaction of university students' teaching practices.

Challenges or Ethical issues associated with in postgraduate student research

"You must be careful by not taking contents as it is, but you should prove before accepting it. For instance, if it is the literature review, you should prove the contents by re-searching the database such as "Google Scholar", Participant No. 7 ascertained. Participant No. 20 stated, "It is confusing to ascertain when to use ChatGPT or a database such as Google Scholar. Hence, ChatGPT is not an alternative to a research database such as Google Scholar but is used as an initial tool for searching for a concept. Even if you use the ChatGPT, a database such as Google Scholar should verify the genuineness of the searched contents. Therefore, it is like working twice". " ChatGPT has no boundary on ascertaining the credible source and non-credible source, it is also unable to identify the contents which is permissible and what is not permissible, it takes all garbage. Academic writing is a very dangerous thing. Moreover, some of the references listed in the ChatGPT do not present what is really searched or sometimes are incomplete or do not exist. So, this proves that ChatGPT misleads the users. So, it is not advised to take the references of ChatGPT unless the databases approve them. ChatGPT may distort the individual and the research

institutional reputation". Participant No. 20 argued that "not only does the current version of ChatGPT give the information up to December 2021, but also it limits on the number of search results, for example, it gives you only up to four to six articles on the references search". Participant No. 3 asserted, "The ChatGPT is limited mostly by the English language. It may give you wrong information where you search information which is not in English".

Participant No. 8 responded, "While using the ChatGPT, the ethical issues should be considered; copying and pasting the document from the chart gpt violates the plagiarism research ethical issues consideration". Participant No. 1 asserted that " ChatGPT is good if the students adhere to the research ethics, especially if the student intends to cheat by using the chat gpt". " ChatGPT can induce a researcher to use the restricted research information and thus violates the research ethics". Participant No. 17 asserted, "Students should know the risk of coping and pasting; presenting the plagiarized information may risk the degree even if the student completes the research, once the cheating is revealed, the degree will be retracted". Participant No. 19 reported that "Before using the ChatGPT, a student should have a prior knowledge on the pros and cons of the ChatGPT, unless otherwise, a student may fall into the trap of plagiarism and violation of the research ethics". The findings indicate that some postgraduate research students may need to use the ChatGPT despite its great use properly.

The findings are compatible with Zhai et al. (2021), who asserted that AI may be inappropriately be used in the education sector. Abd-Elaal et al. (2019) argued that AI use by students is associated with cheating and academic misconduct because it sometimes provides fake information which is not available on the internet and sometimes encourages students to plagiarise the information available on the internet.

Conclusion and Recommendations

The findings revealed that only a few postgraduate research students knew how to use ChatGPT. Most FGD participants acknowledged the benefits of the chat in facilitating searching for information on complex research concepts, such as problem statements in the theoretical and empirical literature. However, the findings indicate that ChatGPT may fosters the violation of research ethics by unscrupulous students. The findings contribute to personalized learning theory by revealing that personalized learning is more potent with AI, particularly ChatGPT. The study recommends training on the proper use and challenges of ChatGPT use for postgraduate research students at OUT and other higher learning institutions in Tanzania. The study calls for establishing or amending postgraduate research policies accommodating the AI challenges. The study is limited to exploratory design and qualitative methodological choice, which restrict the testing of hypotheses and generalization of the findings. Therefore, the quantitative explanatory and mixed method designs are recommended for future studies.

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Using Exit Exam as an Assessment Tool: Some Thoughts

Melaku Girma (PhD),St. Mary's University, Addis Ababa, Ethiopia
Email: melakug123@gmail.com, 911866707

Abstract

Exit Exam becomes an item of serious discourse among the stakeholders of the Ethiopian higher education institutions. Thus, this desk review is presented as a continuation of the conversation. Several studies concluded that the exit examination generated significant amounts of useful assessment data to be used in academic performance indicator. As a result many methodologies for applying exit exam results in program assessment have been issued. The exit exam could be used as a monitoring tool whose outcomes could be used for feedback, evaluation and reviewing processes. The exam serves to provide the departments, colleges and universities with detailed up-to-date feedback, which helps develop the program and its courses .Results of the exit exams could be used by universities in the evaluation of their instructors and faculty members. It was also conceived as an instrument to impose some standards on the way we teach individual courses. The expansion of exit exams can be attributed mostly to standard based reform, and college administrators are the main drivers. Some papers indicate that creating awareness as well as accountability among students, teachers, and administrative bodies must be done to make the exit exam practical and effective. Generally, most papers agree that it is an important assessment tool that should be included in the curriculum to increase student efforts in their progressive and integrated learning competency.

Keywords: *Exit Exam, Assessment, Tool*

Introduction

In Ethiopia, beginning of 2022/2023 academic year exit exams effected in all undergraduate university programs, though it was practiced earlier in the field of Law in 2010- 11, and, since 2015, it has been used as a national licensing examination for graduates in health sciences. As a result of this initiative by Ministry of Education (MOE), exit exam becomes an item of serious discourse among the stakeholders of the Ethiopian higher education institutions.

The practices, challenges and prospects of the new development have been reflected from different perspectives. Thus, the main objective of this paper is to explore the different studies that hinted the exit examination generated significant amounts of useful assessment data to be used in academic performance indicator. In this small desk based research, attempt has been made to bring together thoughts and experiences. The ideas compiled come from journal articles, newspaper articles, blogs and webpages. This desk review, therefore, is presented as a continuation of the conversation that may contribute to a broad consensus on exit exams focusing on crucial role they play in program assessment and measuring student achievement ofPLOs.

University Exit Exam

As per the MOE, a university exit exam is an assessment that students must take in order to graduate from a university or college. The exam is designed to determine whether students have achieved the expected level of competency in their chosen field of study and are ready to enter the workforce or pursue further education. Exit exams are typically taken in the final year or semester of a degree program.

The exit exam is the last comprehensive exam students have to sit for before graduating from the law school (Tsegaye , 2009). It is an exam taken as part of the requirements for graduation from the law school. It aims at determining the progress the student has made over the years.

An exit examination tests students at the end of their program of study for attainment of the program's learning outcomes. Exit exams cover one or more program-level outcomes, not course-level outcomes (University of Michigan, 2021)

Concerns about Exit Exams

Exit examinations are common for high school students who wish to enter the university. Such exams result in positive effects on the students' achievements because of incentives for both teachers and students (Jürges and others 2012; Costrell 1997, Effinger 1999; and Jürges and others 2005a).

On the other hand, some studies show that negative impact of exit exams on students' motivational and emotional experience leading to increased stress, anxiety, or fatigue (Meyer and others 2009, Pedulla 2003 and Ryan 2005). Researchers have related these negative effects to the increased pressure on students exerted by teachers (Jürges 2005b).

There is still very little known about the impacts of the exams on students' learning (Merki 2011 and Zimmermann 2001).Different literature on exit exam indicates that the goal for implementing exit exams is to encourage students to put effort into their learning. Although examinations for professional licensing are common for different disciplines exit exams for students who are completing their bachelor degree are not very common.

Generally, proponents of the university exit exams argue that they are needed to ascertain whether prospective graduates have attained the intended learning outcomes of the courses they took. They insist that several benefits can accrue from the exams if they are crafted as a reliable yardstick by which the effectiveness of tertiary education can be measured. Detractors, however, cite a host of reasons that they claim render exit exams unnecessary and sometimes even counter-productive. They have doubts if an exit exam can accurately measure a student's proficiency in a particular subject or inter-disciplinary topics. They also have reservations about the ability of exit exams to evaluate practical skills, arguing paper-based exams are not appropriate when it comes to measuring the possession of such skills.

A study conducted by HESC on the law exit exam, Ethiopian Lawyers Association, and few of the deans and instructors, students, and previous graduates of law are completely against exit exam. They believe the exit exam is against continuous assessment and a flawed system. Some instructors were against exit exams and argued that taking exit exams as a requirement of graduation means grades given for the last five years are valueless (HESC, 2015).

Quality Issues vs. Exit Exams

There is a strong belief on the part of the MOE that the introduction of exit exams will improve the quality of education provided by institutions

Concern about quality in Ethiopian higher education is high on the agenda. The poor and declining quality of education is a real phenomenon occurring in Ethiopia's educational system; the public and media do not accurately portray it (Arega, 2016). In addition to input factors, graduate competency also serves as a barometer of educational quality. When evaluating the quality of education in this area, Arega (2016) further contends that stakeholders are dissatisfied with the quality of graduates; it can be explained by the large number of graduates who are unable to find gainful employment without additional training to meet the demands of applied technical and communication skills requirements. As a result, it is suggested that some kind of assessment and monitoring mechanism should be in place to know the level of learning outcome

of the graduates. Recently, there has been a growing emphasis on exit exam competency tests as an essential requirement for students upon completing their undergraduate education programs to obtain a certification.

The goal of the Ethiopian exit examination is to increase the quality of graduates produced by both public and private universities (MoSHE, 2019). With this goal in mind, MoE has implemented an exit exam for all undergraduate programs in Ethiopian universities. The goal of the exam is to ensure that all graduates of higher education institutions have achieved appropriate mastery of the basic competencies specified in their individual curriculum, thereby satisfying labor market requirements and boosting employability. The MoE in Ethiopia, in its Integrated Education Development Roadmap (2018-2030), recommended the implementation of a university ranking system based on key performance outcome indicators such as publication in reputable journals, patented technologies, number of students enrolled, graduates passed exit exams, employability of graduates, and number of international students attracted to assure quality standards in Ethiopian universities (MoE, 2018).

Assessment in Education

Assessment is used to understand the state or condition of learning. It is about collecting evidence, both graded and non-graded, regarding a students' progression in the course. Evaluation is used to judge the learning that has occurred.

Stassen et al. cited in Fisher (2024) defines assessment as the systematic collection and analysis of information to improve student learning. This definition captures the essential task of student assessment in the teaching and learning process. Student assessment enables instructors to measure the effectiveness of their teaching by linking student performance to specific learning objectives. As a result, teachers are able to institutionalize effective teaching choices and revise ineffective ones in their pedagogy.

Assessment is integral to learning. Effective assessment can determine the degree to which students have met the intended learning outcomes for a course or program. Assessment also directs both the students' and instructors' attention to what is important (Boud & Falchikov, cited in Watson (n.d.)

It has also been claimed that it is only when faced with assessments that students truly engage with the course material.

Formative and Summative Assessments

There are generally two forms of student assessment that are most frequently discussed in the scholarship of teaching and learning.

Formative Assessment often referred to as 'assessment for learning', is any task or activity that produces feedback for students about their learning in a course. It typically does not contribute to

the grade in a course (Irons, 2008). The focus of formative assessment is on student learning. Feedback is a key component to formative assessment. Formative assessment, involves the evaluation of student learning over the course of time. Its fundamental purpose is to estimate students' level of achievement in order to enhance student learning during the learning process. By interpreting students' performance through formative assessment and sharing the results with them, instructors help students to understand their strengths and weaknesses and to reflect on how they need to improve over the course of their remaining studies (Maki, 2002).

Summative assessment, is often referred to as 'assessment of learning', is any task or activity that results in a mark or grade which issued as judgment on student performance (Irons, 2008). The focus of summative assessment is judgment on student performance in such a way that this can be recorded and presented for others, often as a grade. These activities provide a snapshot of students 'understanding at the time of the assessment. Summative assessment is assessment that is implemented at the end of the course of study. Its primary purpose is to produce a measure that "sums up" student learning. Summative assessment is comprehensive in nature and is fundamentally concerned with learning outcomes. While summative assessment is often useful to provide information about patterns of student achievement, it does so without providing the opportunity for students to reflect on and demonstrate growth in identified areas for improvement and does not provide an avenue for the instructor to modify `summative assessment include comprehensive final exams or papers.

It is advisable to include both formative and summative assessments in any course.

The Exit Exam as an Assessment Tool

The exit exam as an assessment tool for engineering programs was introduced and began receiving attention from 1990. Besides basic engineering aptitude, several factors have been recognized to contribute to performance, with "motivation to pass" as one of the most significant factors (Mazurek 1995). Watson (1998) concluded that the exit examination generated significant amounts of useful assessment data that was not being utilized by engineering programs, and indeed there should be urgent use of such data to be used in academic performance indicator.

Several studies recommended that engineering institutions should be providing performance data to institutions' policy makers to allow the use of these results in program assessment. Since that time, many methodologies for applying exit exam results in program assessment have been published (Nirmalakhandan and others 2004, Lawson 2007, and Koehn 2008). Most of these methodologies rely on the use of historic exit exam performance data to assess the overall program, topics within a program, as well as individual course content within a program

In any program development cycle, assessment and evaluation are ongoing processes and one should not wait for the completion of the program or the course to introduce changes. Other elements such as the teaching skills of faculty members may be related to the success of students

in the test. Personal worries and anxieties that students have at the end of the course may also be factors that should be taken into account given their psychological impacts. In general, the curriculum development process includes several stages that are ordered as follows: the design, development, implementation and evaluation of curricula.

The exit exam could be used as a monitoring tool whose outcomes could be used for feedback, evaluation and reviewing processes. Moreover, the monitoring can be seen as part of the implementation process of the curriculum. It is at this stage that departments have responsibility to verify that student performance is consistent with the established goals and objectives of the university curriculum. As stated previously, the data and information are gathered to inform university policy and decision makers about the curriculum. At the evaluation stage, academic representatives are engaged in analyzing the collected data to measure the effectiveness of the curriculum design and its implementation.

The exam serves to provide the departments, colleges and universities with detailed up-to-date feedback, which helps develop the program and its courses. Once the students take the exam, the results are analyzed, examined and discussed extensively to identify points of strengths as well as weaknesses and pinpoint any areas for development in the academic programs or even the introduction of new programs and courses.

Thus as a consequence, those detailed results will allow colleges and departments to identify domains where the students excel and those which need improvement and better assessment. The expansion of exit exams can be attributed mostly to standard based reform, and college administrators are the main drivers. Standards have provided solid reliable foundations and backgrounds to the concept of exit exams by setting what students should know and be able to do by the time they graduate from colleges. College administrators have an ongoing responsibility to closely monitor the implementation of exit exams. They must understand the effects of these tests, including any negative or unexpected consequences, so they can address problems or adjust state policies.

Results of the exit exams could be used by universities in the evaluation of their instructors and faculty member during one batch. This evaluation may impact the academic promotion of faculty members. This action would force instructors to do their best to explain the content of the course well, which will impact significantly on the students' performance and proficiency.

Al Ain University in UAE relates exit exam directly to Continuous Quality Enhancement .The purpose of the “Exit Exam” is to provide the institution with detailed up-to-date feedback on the students’ performance in program learning outcomes which helps develop the programs and courses. Al Ain University’s “Exit Exam” aims to measure the students’ attainment of the pPLOs and their performance in the individual courses/domains relevant to their specializations. This is highly important in higher education as it serves as a reference point for program enhancement.

Exit exam can be administered twice a year for the students expected to graduate in the respective semester. Every semester, a new exam is created, and new questions are added to expand the question bank for future exams. Some universities use different direct and indirect assessment tools to measure the achievement of PLOs, and the "Exit Exam" is one of the indirect assessment tools. The results of the "Exit Exam**"** are analyzed in combination with the results derived from other tools, rather than in isolation. The intervention process is designed and implemented after completing the entire assessment cycle. However, based on the "Exit Exam" results, some specific actions are taken toward continuous improvement.

- Incentives for Students: The students taking the "Exit Exam" are aware of its importance and take it seriously.
- Enhancing the students' analytical skills by stressing the formative assessment methods that support the instructor in supervising & guiding the students, and in gathering data & information.
- Exposing the students to more strategic management analytical tools.
- Emphasizing case studies.
- Offering remedial classes in English writing.
- Providing students with practical activities to gain various experiences, especially considering that most of them are non-working students.

Direct and Indirect Measures of Student Learning

Direct measures require students to demonstrate their knowledge and skills. They provide tangible, visible and self-explanatory evidence of what students have and have not learned as a result of a course, program, or activity (Suskie, 2009; Palomba and Banta, 1999). Actual student behavior or work is measured or assessed. Examples: Exams/Tests, Quizzes, Papers, Oral Presentations, Group Work, Creative Work, Assignments, Exit Exams, Standardized tests

Indirect measures are assessments that measure opinions or thoughts about students' or graduates' own knowledge, skills, attitudes, learning experiences, perceptions of services received or employers' opinions. While these types of measures are important and necessary, they do not measure students' performance directly. They supplement direct measures of learning by providing information about how and why learning is occurring. Examples: self-assessment, peer-feedback, surveys, end-of-course evaluations, questionnaires, focus groups, or exit interviews and other activities that gather impressions or opinions about the program and/or its learning goals. Other examples: academic performance levels (e.g., GPAs), graduation rates, retention and transfer studies, graduate follow-up studies, success of students in subsequent institutional settings, and job placement data. Overall indirect methods of assessment provide information about students' perceptions of their performance and their academic environment, as well as how they feel their institution contributes to their learning.

While it is easy to distinguish between what is direct evidence of student learning and what is indirect, some evidence of learning is less clear. Effective assessment plans must include a mix of direct and indirect methods of assessment.

Exit Exam as Direct and Indirect Assessment Tool

One direct tool to assessPLOs is the Exit Exam (centrally or locally developed). Universities design Exit Exams to measure students' comprehensive understanding of their majors, as well as preparing them to engage in work (Al Ahmad & Al Marzouqi, 2013).

The global experiences from Germany, India, Arab Emirates and the USA showed that there are different strategies to implement Exit exams for different programs in Higher Education Institutions (HEIs). Exit exams are different from other exams in that they are used to examine the basic level of education obtained by students at the end of their program. They play a crucial role in program assessment and measuring student achievement of PLOs (Almaw ,2022) .

Studies compared student achievement in exit exam and non-exit exam educational settings. The findings support the view that students in education systems with curriculum-based external examinations have higher levels of achievement than students in systems without such examinations

The exit exam serves to provide the departments, colleges and universities with detailed up-to-date feedback, which helps develop the program and its courses. Once the students take the exam, the results are analyzed, examined and discussed extensively to identify points of strengths as well as weaknesses and pinpoint any areas for development in the academic programs or even the introduction of new programs and courses. Thus as a consequence, those detailed results will allow colleges and departments to identify domains where the students excel and those which need improvement and better assessment.

It also aims at checking, albeit indirectly, the program's effectiveness in delivering what it promised to deliver from the beginning.

It was also conceived as an instrument to impose some standards on the way we teach individual courses. It was observed that the content, the scope of coverage, the breadth and depth of courses is often dependent on the discretion of the individual teacher who teaches the courses. Consequently, the way students are thought a particular course from one year to another or from one university to another varies immensely. If there were a comprehensive exam students are to sit for in the end, it was argued, such variation among teachers in the breadth and depth of coverage of the courses and their marking and grading will be a bit more restricted as the teacher will always work hard enough to make sure that the teaching is comprehensive enough to prepare the students for the exam to ensure uniformity

The expansion of exit exams can be attributed mostly to standard based reform, and college

administrators are the main drivers. Standards have provided solid reliable foundations and backgrounds to the concept of exit exams by setting what students should know and be able to do by the time they graduate from engineering schools. College administrators have an ongoing responsibility to closely monitor the implementation of exit exams. They must understand the effects of these tests, including any negative or unexpected consequences, so they can address problems or adjust state policies.

Results of the exit exams could be used by universities in the evaluation of their instructors and faculty member during one batch. This evaluation may impact the academic promotion of faculty members. This action would force instructors to do their best to explain the content of the course well, which will impact significantly on the students' performance and proficiency

Conclusions and Recommendations

Several papers state that an exit exam is an important tool to facilitate progressive learning performance and evaluate the overall performance at their graduating level and then increase their competency at employment and working time in their respective professions. Research papers agree that a proper curriculum, teaching methods, assessment mechanism, and academic resources are vital to measure students' performance through exit exam. Other research papers recommend that, the exit exam should be professionally standard, re-exam must be allowed until students will pass, the examination process should be secured, and the result should be interpreted concerning students' performance and curriculum effectiveness. Some papers indicate that creating awareness as well as accountability among students, teachers, and administrative bodies must be done to make the exit exam practical and effective. Generally, exit exam emerges as an important assessment tool that should be included in the curriculum to increase student effort in their progressive and integrated learning competency. Finally, the author stresses the need to conduct more academic researches on exit exam to trigger greater debate in Ethiopian context.

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Computer-Based Testing Practices and Challenges in Some Selected Higher Education Institutions in Addis Ababa

Manaye Adela, St. Mary's University, Addis Ababa, Ethiopia
Manaye_Adela@smuc.edu.et, 0910 065 090

Abstract

Digitalization of higher education institutions and proliferation of technology in the contemporary tertiary education compel learning and assessment to move to paperless platform. Adaptive engagements of learners, instructors, and principals are required for full scale implementation and success in the assessment and evaluation. The main purpose of this study was to assess practices, and challenges, CBT and evaluation in Ethiopian Higher Education Institutions (EHEIs). The population of the study represents students, instructors, and leaders in EHEIs. Three private and two public institutions were selected by using purposive sampling in determining the practices. But convenience sampling was employed for recruiting 360 participants who are with eAssessment (CBT) experiences. Student participants include Higher Education Exit Exam (HEEE) takers and National Graduate Admission Test (NGAT) takers. Open and close ended items were provided in Questionnaires for gathering data from students. In addition, semi-structured interview was conducted with instructors, ICT professionals and leaders. Descriptive statistical analyses (mean, standard deviation, etc) and correlations were computed in the quantitative analysis. Thematic data analysis was used for analyzing qualitative data. The findings revealed that there auspicious beginnings in CBT practices especially in classroom teacher made tests, HEEE and NGAT. Minimizing cheatings, resource (material and human resource) saving, ease of administration, and speedy scoring/corrections are raised as virtues. On the other hand, the challenges in CBT include connectivity problems, anxiousness in computer use, technology and gadgets use illiteracy or gap in friendliness of exam takers, electric power off, and content management related problems are the challenges. As ways forward, higher education institutions shall give much emphasis to exercises by making ordinary evaluations through e-assessment. This can help stepping up to the shift towards CBT. Giving trainings, ICT infrastructure expansion, and resolution of connection problems should be done for helping CBT practices to be properly implemented.

Key Terms**: **E-Assessment, Computer-based testing, Evaluation, ICT, Higher Education, Learning Outcomes

Introduction

Several studies, such as Aisbitt, & Sangster, 2005; Jawaid, Moosa, Jaleel, & Ashraf, 2014 indicated as pen and paper based examinations are now gradually being replaced by online testing system. This online assessment is now widely used in western countries and is slowly being introduced in Middle East countries as well (Ranganath, Rajalaksmi, & Simon, 2017).The emergence of Information and Communication Technologies (ICT) has brought about significant changes in HE teaching and learning methodologies. However, in the field of evaluation, where old methods are still widely employed, little effort has been made.

The use of technology in education is increasing significantly, access to the internet is ubiquitous, schools adopt new digital tools and students bring their own devices to the classroom. These technological advancements are not only limited to learning materials, also assessment can benefit (Llamas-Nistal, et al., 2013; Stödberg, 2011).

Superior online continuous assessment applications can help instructors create suitable assessments at the same time as also providing relevant statistical information that makes them understand the progress students are making in their courses (Azeyedo & Azeyedo, 2019). As shown by Gaytan and McEwan (2007), one method to support assessment and learning in the classroom is to assess using online methods, which can be used as part of an in-class assessment strategy or fully through online courses.

According to Earl and Katz (2006), this approach to formative assessment has become synonymous with assessment for learning, which is seen to occur through the learning process. However, assessment and learning comprises of more than just assessment for learning as it includes two additional concepts: Assessment as learning, where learning is interactive between learners rather than between the teacher and learners. Assessment of learning, where students demonstrate the learning they have obtained through strategic assessments. Getting students to interact with their own learning allows them opportunities to grasp learning material in different ways, thus helping them to have a fuller understanding of what they are learning (Thurlow, Lazarus, Albus, Hodgson, 2010).

According to Llamas-Nistal, Fernández-Iglesias, González-Tato, and Mikic-Fonte (2013), an online assessment strategy is done in blended e-assessment form, where assessments are done using traditional pen and paper methods, and the assessments through digital gadgets such as computer-based testing. The blended assessment is not as simple as the blended eLearning.

Statement of the Problem

A broad perspective on e-assessment is provided by Sclater et al. (2006) when they refer to e-assessment as a decisive part of e-learning the same way assessment is decisive to traditional learning. E-assessment is using technology for assessing students' learning outcome. However, when attempting to conceptualize e-assessment there are related terms used. These include computer-based testing (CBT), computer-based assessment (CBA), computer-assisted assessment (CAA), computer-aided assessment, web-based assessment, online assessment, technology-enhanced assessment (TEA) and e-assessment (Stödberg, 2011). For the purpose of this work, the phrase computer-based testing will be used as and defined as: CBT is the use of ICT and the internet in particular for the assessment of learning, including design, delivery and/or recording of responses.

Synchronous ways of online assessments (e-assessments) are integral part of eLearning that deploys electronic media, educational technology, and communication technologies in education (Buzzetto-More, & Alade, 2006).

Increasing technological possibilities encourage test developers to modernize and improve computer-based assessments. However, from a validity perspective, these innovations might both strengthen and weaken the soundness of test scores (Earl, & Katz, 2006).

Computer-based testing is used extensively for diagnostic and formative purposes. CBT is frequently used as summative assessment and in, some sectors of Education and training, is already a common practice. This type of testing has many advantages since it is very efficient. It allows testing large number of students with a large number of questions thus assessing a wide range of knowledge (Azeyedo & Azeyedo, 2019).

Although they are neither extensive nor exhaustive, previous researches show that there is an interest in advancing online assessment within higher education, but it can also appear as if there is a lot to be done in order to implement this effectively and this can cause issues. Nonetheless, advances in online assessment and learning can help to facilitate better formative and summative assessment opportunities in higher education settings.

Even though it was possible to find several sources addressing CBT, the general perspective was that CBT (e-assessment) was not considered a different type of assessment but a different way of implementing assessment that had pedagogical implications (Azeyedo & Azeyedo, 2019). This study is helpful for proper implementation of Computer-Based Testing. Higher education

institutions are becoming paperless in the learning processes. Meanwhile, assessments are also shifting to the digitalized platform. The findings of this study are important for preparation towards CBT. It is relevant to intervene in the readiness before exam, and in the exam taking process during exam. The study mainly embodies higher education students, principals, teachers, and ICT officers. Selected higher education institutions in Addis Ababa are in the target of the study.

Research Questions

The study geared forward towards the undermentioned research questions.

1. How are the practices of Computer-Based Testing practices in university?
2. What types of assessments are presented through Computer-Based Testing?
3. What are the challenges of Computer-Based Testing in university?

Methods and Materials

Study Area

The study has taken Addis Ababa as locale. Since the study was centered on virtual ways, the physical interaction was limited even though there are some practices in face-to-face data gathering.

Population and Sampling

The population of the study represents students, instructors, and leaders in higher education institutions in Ethiopia. Three private and two public institutions were selected by using purposive sampling in determining the practices. But convenience sampling was employed for recruiting 360 participants who are with computer-based assessment experiences. Student participants include HEEE takers and National Graduate Admission Test (NGAT) takers.

Data gathering tools

Open and close ended items were provided in Questionnaires for gathering data from students. In addition, semi-structured interview was conducted with instructors, ICT professionals and leaders. In addition to the face-to-face data gathering, google survey was used by sharing the following link,*https://docs.google.com/forms/d/1Bm1odOYBHZspyiuzTAjTu_-jx9FnbnQz2ztzIbNuzsQ/edit*.

Methods of Data Analysis

Descriptive statistical analyses (mean, standard deviation, etc) and correlations were computed in the quantitative analysis. Thematic data analysis was used for analyzing qualitative data.

Result and Discussion

The quantitative analysis is from student respondents. But the responses from the instructors and principals are integrated qualitatively.

Participants demographic characteristics

This part of the analysis depicts demographic characteristics of respondents. Gender, stream, age, year level, and socio-economic status are part of the analysis of personal responses.

Table 1: Demographic characteristics of participants (N=351)

Qn	Variable	Category	f	%
1	Gender of the respondents	Male	189	53.8
		Female	162	46.2
2	Stream/Faculty/College of the respondents	Natural Science	67	19.1
		Business and Economics	103	29.3
		Informatics	60	17.1
		Social Science and Humanities	78	22.2
		Health Sciences	43	12.3
3	Age of Respondents	<18	63	17.9
		18-20	168	47.9
		Above 20	120	34.2
4	Year level	Freshman	21	6.0
		Second year	105	29.9
		Third year	155	44.2
		Fourth year and above	70	19.9
5	Perceived Socio-economic status	Low	101	28.8
		Medium	168	47.9
		High	82	23.4

The number of male students outweigh due to the proportion accessed. The same story goes to the faculty in which Business and Economics faculty prevail over the remaining others. Most of the respondents are below 21 years old. In the year level, 64.1% of the respondents are third year and above. Almost half of the respondents have perceived their socioeconomic status as medium.

Practices

This part of the analysis contains the responses on practices of using CBT. There are good practices in using of CBT both in continuous assessment and final exams.

Qn	Item	SD	D	U	A	SA	Total

1	Awareness domain	f	6	61	221	57	6	351
		%	1.7	17.4	60.3	16.2	1.7	100
2	Usefulness domain	f	8	63	225	49	6	338
		%	2.3	17.9	64.1	14.0	1.7	100
3	Ease of use domain	f	54	4	200	8	85	338
		%	15.4	1.1	57.0	2.3	24.2	100
4	Compatibility domain	f	7	87	181	68	8	338
		%	2.0	24.8	51.6	19.4	2.3	100
5	Self-efficacy domain	f	6	84	195	60	6	338
		%	1.7	23.9	55.6	17.1	1.7	100
6	Resource facilitation domain	f	7	77	203	58	6	338
		%	2.0	21.9	57.8	16.5	1.7	100
		f	8	85	191	61	6	338
7	IT Support	%	2.3	24.2	54.4	17.4	1.7	100

Table 2: Descriptive statistics of practice domains in CBT

*SD Strongly Disagree (1); D – Disagree (2); U – Uncertain (3); A – Agree (4); SA – Strongly Agree (5)

As it is presented in Table 2, most of the responses have ambivalence. Respondents indicated that through choosing neutral that indicates uncertainty. Only 17.9% of the respondents courageous indicated as they are well aware of the practices in CBT. On the other hand, 15.7% of the participants have affirmative responses in the usefulness. 26.5% of the respondents stated as there is ease of use.

Unlike the findings in the quantitative data, the qualitative data verbalized the very advantage of using CBT. The practices are positively viewed even though there were challenges that threaten exam takers. These challenges are indicated in the subsequent section.

Table 3: Correlations of variables (N=351)

		1	2	3	4	5	6	7	8	9	10
Faculty	Pearson Correlation	1									
	Sig.										
Age	Pearson Correlation	.147**	1								
	Sig.	.006									
Perceived SES	Pearson Correlation	.100	.191**	1							
	Sig.	.062	.000								
Awareness domain	Pearson Correlation	.004	-.034	-.139**	1						
	Sig.	.945	.525	.009							
Usefulness domain	Pearson Correlation	-.015	-.062	-.109*	**.942****	1					
	Sig.	.781	.244	.042	.000						
Ease of use domain	Pearson Correlation	-.006	-.061	-.116*	**.836****	**.870****	1				
	Sig.	.906	.254	.030	.000	.000					
Compatibility domain	Pearson Correlation	-.001	-.034	-.131*	**.842****	**.873****	**.941****	1			
	Sig.	.978	.522	.014	.000	.000	.000				
Self-efficacy domain	Pearson Correlation	-.009	-.037	-.136*	**.859****	**.873****	**.924****	**.945****	1		
	Sig.	.869	.492	.011	.000	.000	.000	.000			
Resource facilitation domain	Pearson Correlation	-.022	-.048	-.131*	**.904****	**.931****	**.927****	**.932****	**.918****	1	
	Sig.	.682	.368	.014	.000	.000	.000	.000	.000		
IT Support	Pearson Correlation	-.008	-.047	-.113*	**.861****	**.901****	**.973****	**.965****	**.954****	**.952****	1
	Sig.	.880	.380	.035	.000	.000	.000	.000	.000	.000	

As it is depicted in table 2, the correlation between demographic variables and the practice domains are low. The ANOVA shows that there are no statistically significant differences in gender, and age. Awareness and usefulness domains have strong relationship *r(351) = .942, p = .000*; ease of use has strong positive correlation with awareness (*r(351) = .836, p = .000*) and usefulness (*r(351)*

= .87, p = .000). On the other hand, compatibility has positive strong relationship with awareness (*r(351) = .842, p = .000*), usefulness (*r(351) = .873, p = .000*), and ease of use (*r(351) = .941, p = .000*). In a very distinguished way, resource facilitation domain has very strong positive correlation the domains such as awareness, usefulness, and ease of use, compatibility, self efficacy, and IT solution. Generally, IT support has positive strong relationship with all the domains.

During the Computer-Based Testing (CBT), students use their ID number or provided identifier as user-name and default password which is expected to be changed by the exam-taker.

In the practices of implementing CBT, different preparations are done before exam. These include providing username and password, orientations, and making students to familiarize themselves on the usage of computers and/or devices for taking test through CBT.

One of the interviewees stated the following:

"*E-assessment is good in terms of avoiding or eliminating invigilator related problems. Students do not afraid of loss of exam paper. It is possible to easily scroll back and forward during exam. It helps to easily see the remaining time as per the allotment. In terms of result release, e-assessment gives prompt feedback.*"

Many student respondents affirmatively view the practices of e-assessment. Exam takers who familiarize themselves to technology and computers use electronic devices in the learning and assessment practices.

"*The attempts of working on exam seem to be demanding of cautiousness. On the other hand, the CBT or e-assessment is fair or equal for all. It is not dependent on instructor scoring or marking.*"

CBT is being widely used in HEIs. Result delivery is speedy and instructors get abundant time to do other tasks. Human related error as well as bias is minimized. CBT provides better security for exams because it reduces cheating opportunities through mechanisms such as online proctoring.

Practices of using CBT benefit the entire process in terms of increasing efficiency, and accuracy. It helps to eliminate person related flaw.

Computer-based testing (CBT) helps to reduce the administrative workload in several ways: CBT enables instructors to design a test quickly on their computer and store them electronically. This means that there is no need to develop, print, and photocopy test booklets, or make corrections manually, saving time and paper.

Overall, by reducing the number of manual tasks required in testing, CBT reduces the time and effort required of instructors and administrators. This allows them to focus their time and resources on other significant educational activities, such as research, preparing lectures, and student support and advising.

Challenges

This part of the analysis presents responses and interpretation on the challenges of using computer-based assessment. The challenges of taking exam by using CBT were asked from respondents. There challenges related with awareness, experiences, ease of use, compatibility, self-efficacy, resource facilitation and IT support as indicated in table 3.

Table 4: Mean and standard deviation of challenge and practice domains in CBT (N=351)

SR	Category	Mean	Std. Deviation
1	Awareness domain	2.99	0.69
2	Usefulness domain	2.95	0.68
3	Ease of use domain	3.01	0.72
4	Compatibility domain	2.94	0.78
5	Self-efficacy domain	2.93	0.74
6	Resource facilitation domain	2.94	0.73
7	IT Support	2.92	0.76
8	Practices of CBT	3.53	0.96
9	Challenges of practicing CBT	2.95	1.1

*SD – Strongly Disagree (1); D – Disagree (2); U – Uncertain (3); A – Agree (4); SA – Strongly Agree (5)

The view of practices and challenges across the domains of CBT, most of the responses are found to be in mediocre. 60.3% of the respondents were neutral to the request on awareness. So, most of the respondents were not sure towards awareness. Still in 64.1% chose neutral towards the usefulness. In the ease of use also, there is gap in assuring the relevance of CBT. There are also things to be done in self-efficacy, resource facilitation, and IT support. Regardless of all the challenges, the mean score shows that there are practices of using CBT in assessment processes.

One of the interview participants indicated the following.

> "*Electronic assessment or Computer-Based Testing is new or many students. There is familiarity problem from students' side. One silly mistake in the hardware or system may mess up exam- taker's efforts.…*"

The above response shows that there are problems of familiarity. The case is serious with those students who are not technologically skilled. It is revealed that the students are fearful in losing control over the exam taking process.

The other interviewee indicated the following:

> "*E-assessment process makes the exam taker to be obsessed of thinking about the devices, system, and power rather than on the content. Computer accessories and power related problems make students to feel certain sense of insecurity.*"

Students experience different types of challenges during exam. The above response shows that exam takers lose confidence for fear of interruption due to unprecedented or unexpected problems.

Table 5: Summary of source of challenge

Challenges		
Student related	Teacher related	Systems and Infrastructure related
✍ Self-efficacy and attitude problem ✍ Fear of computer usage and failure ✍ Preparation and limited exercise ✍ Ending the process before exhausting all the items ✍ Nervousness and psychological destructors, etc	☝ Preparation of items based on format ☝ Item loading problems ☝ Less control creating ease of exam taking for students, etc	⇨ Electric power turn off ⇨ Computer hardware obsolesce or old computers ⇨ Network related challenges ⇨ Limited number of computers ⇨ Difficulties for subjective items, English passages, and computational courses ⇨ Proctor assignment and controlling challenges, etc

In view of challenges, there are various reactions. These include infrastructure, technical difficulties, accessibility, and others related with the test taker and the setting at large. Institutions need adequate infrastructure and resources to provide CBT, such as enough computers, reliable internet connectivity, and appropriate software. The cost of establishing CBT infrastructure may be prohibitive for some institutions. Technical difficulties, such as software bugs or hardware failures, can disrupt the testing process, creating anxiety and stress for students. Institutions must have backup plans in place to minimize such disruptions. CBT may pose accessibility challenges for students with disabilities, such as visual or hearing impairments. Institutions must ensure that the software used in CBT is compatible with assistive technologies and provide appropriate accommodations. CBT may require students to learn new technology and testing procedures. Instructors and institutions must provide students with adequate training and support to use CBT successfully. While CBT offers better security against cheating, there is still the possibility of cheating through technical means.

Table 6: ANOVA showing domains with perceived SES (N=351)

		Sum of Squares	df	Mean Square	F	Sig.
Awareness domain	Between Groups	5.848	2	2.924	6.355	.002
	Within Groups	160.106	348	.460		
	Total	165.954	350			
Usefulness domain	Between Groups	5.519	2	2.759	5.944	.003
	Within Groups	161.558	348	.464		
	Total	167.077	350			
Ease of use domain	Between Groups	5.286	2	2.643	5.185	.006
	Within Groups	177.381	348	.510		
	Total	182.667	350			
Compatibility domain	Between Groups	7.180	2	3.590	6.035	.003
	Within Groups	206.997	348	.595		
	Total	214.177	350			
Self-efficacy domain	Between Groups	6.738	2	3.369	6.385	.002
	Within Groups	183.621	348	.528		
	Total	190.359	350			
Resource facilitation domain	Between Groups	6.619	2	3.310	6.430	.002
	Within Groups	179.124	348	.515		
	Total	185.744	350			
IT Support	Between Groups	6.462	2	3.231	5.817	.003
	Within Groups	193.304	348	.555		
	Total	199.766	350			

The ANOVA shows that there are statistically significant mean differences among low, medium, and high level of perceived socio-economic status across the domains of CBT use. A one-way ANOVA revealed a statistically significant effect of the perceived SES on awareness, $F(2,348) = 6.335,\ p < 0.002$; usefulness, $F(2,348) = 5.944,\ p < 0.003$; ease of use, $F(2,348) = 5.185,\ p < 0.006$; compatibility, $F(2,348) = 6.035,\ p < 0.003$; self-efficacy, $F(2,348) = 6.385,\ p < 0.002$; resource facilitation, $F(2,348) = 6.430,\ p < 0.002$; and IT support, $F(2,348) = 5.817,\ p < 0.003$.

Discussion

In settings of HEIs, CBT has become popular as an integral part of assessment and evaluation. Compared to conventional pen-paper based exams, CBT has several benefits, including better

efficiency, superfluous precise scoring, and instant feedback.

There are promising practices in use of CBT. However, majority of CBTs still use traditional item type questions like multiple-choice, short answer, fill-in-the-blanks, true-false, and matching. Students typically need to select an answer or review material in order to complete the assessment (Guàrdia, Crisp, & Alsina, 2017). Moreover, current studies unveiled the notion that the efficiency of CBTs stems from the fact that questions that are automatically scored lessen the workload of instructors. Clear feedback, clear explanations of any misconceptions and encouragement to think critically and improve responses rather than just giving the answer are the keys to effectively use CBT (Guàrdia, Crisp, & Alsina, 2017).

Higher education institutions face certain problems while using CBT, nevertheless. Infrastructure, accessibility, technical challenges, and other issues are a few of these. The issues listed below are closely linked to the works of Guàrdia, Crisp, and Alsina (2017) and Jawaid, Moosa, Jaleel, and Ashraf (2014). First, for CBT to function properly, a strong IT infrastructure is needed. Adequate number of computers, dependable system, and latest gadgets are important for appropriate practices in use of CBT. This may be demanding of resources.

The other has to do with safety. HEIs must make sure that students are unable to cheat on an exam by using unauthorized materials or outside resources. HEIs need to implement efficient security breach prevention procedures. This necessitates assigning online proctoring services, software that shuts down testing computers, or proctors or invigilators keeping an eye on the test taking procedure.

The third has to do with getting access. For students with disabilities, CBT presents some accessibility issues. Institutions are required to make sure that the test has a suitable alternate format and that the program is compatible with assistive technologies that can aid students with special needs.

The technical difficulty is the fourth. Significant interruptions to the testing taking process might result from technical problems like power outages. To reduce interruptions in such situations, institutions need to have backup plans in place such as availing generators.

In sum, this study's results are consistent with those of previous investigations in that CBT benefits higher education institutions in a number of ways, but it also presents some important obstacles that need to be overcome. Institutions can optimize the advantages of CBT while mitigating its drawbacks by allocating resources towards infrastructure, security, accessibility, and sufficient student assistance.

When we compare CBT with conventional pen-paper based testing, it is more effective in

administrative chores such as paper duplication, grading, and delivery. For example, in traditional paper-based assessment, printing, duplication, and related routines could take much time. So the administrative process is time consuming in the conventional paper-based assessment.

The feedback loop is so swift that students get immediate correction and know their result. Getting immediate feedback is helpful for students' improvement. They get initiation towards filling their gap as early as possible. Even in the summative online evaluation, students take rapid lesson to make decision in their academic purport.

Conclusion and Recommendation

Conclusion

The key benefits of implementing e-assessment are that it gives students instant, direct feedback, enhances their performance, saves the teacher's time and effort, lowers the institution's costs, and promotes higher-order thinking, which is one of the goals of education.

There are a number of difficulties that must be overcome for effective CBT, such as the absence of instructor interaction, the difficulty of getting different item types other than Multiple Choic

Questions (MCQs), True/False, and Matching, and technological difficulties. In addition, loading the questions with alternatives is another challenge that burdens ICT administrators.

Compared to paper-based testing, CBT reduces human error in several ways. CBT systems speedily score the student tests. There is no manual handling of answer sheets that can result in errors such as miscalculations or incorrect answers being marked right or wrong. In CBT, there is no chance of the examiner or grader giving different numbers of points for similar responses to the same question. In CBT, students get immediate feedback on their answers. On the other hand, in traditional paper-based testing, students may have to wait for days or weeks to receive feedback, meaning by that time some have already forgotten areas they need improvement.

CBT systems can limit cheating through randomizing questions and responses. As a result, it becomes much harder for students to cheat. On the other hand, CBT helps to save responses in a computer database that can be swiftly accessed by students and instructors while minimizing the possibility of lost or misplaced exam papers.

Overall, CBT greatly minimizes grading errors and guarantees more precise measurements of learning outcomes, reduces the potential for scoring variability among graders, and enhances the overall quality of the testing system, which is essential for meaningful and actual assessments of student learning.

Recommendations

Based on the finding of the study, the following recommendations are given as ways forward.

a) Before exam, adequate training should be given on computer-based testing.

b) Psychological empowerment should be forwarded to make exam-takers more efficacious.

c) Instructors should make continuous assessment to be done through CBT to help students get chance to exercise more.

d) Infrastructures should be expanded and resource supply should be need based for encouraging virtual engagement of students.

e) During exam, early intervention should be given when exam takers face technical difficulties.

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Appraising the quality of exams Administered in the Undergraduate Program in 2020-2022 Academic year at St. Mary's University

Daniel Zewdie (Asst. Prof.) St. Mary's University, Addis Ababa, Ethiopia
daniel_zewdie@smuc.edu.et, 911175857

Abstract

Background and justification

The purpose of this study was to investigate the technical quality of final exams administered in 2020- 22 academic years in the undergraduate program at St. Mary's University. Curriculum, instruction, and assessment are the fundamental components of education, yet, what and how to teach weighs more on an instructor's mind than how he/she will assess it. Due to this assessment is seen as the least understood and implemented. Research demonstrates that quality assessment can have a greater positive impact on student learning than any other intervention. Data shows that all students benefit from quality assessment practices and it is the key feature of good teaching. Setting appropriate assessment tasks in the form of project works, tests or exams should evaluate students in a way that demands evidence of understanding.

Methods and procedures:

Content-analysis belonging to the qualitative research method was used. Using the availability sampling method, thirty-six final exam booklets were selected for the review across the five departments. The analysis on the quality of the items was made against the standard criteria of evaluation (i.e., appropriateness of directions, arrangement of items and numbering, fairness of the allotted time to the length of the test; assembling of items in order of difficulty, the extent of items being free of clue to correct responses, the meaningfulness of stem, characteristics of options, features for correct responses/distracters, free of verbal association and grammatical inconsistency, etc.,).

Findings

The study revealed that general directions are written for most exams, which is appreciable; unclear directions were found extensively for the selected-response (objective) items; inappropriate arrangement of items, (beginning with multiple-choice items) is common in most exams; numbering of items was not written in an increasing order; long and complex sentences are observed in some of the items of some exams; most of the items seem to measure knowledge and understanding, however, higher–order thinking skills were measured very rarely or not at all; the allotted times were unfair in

most of the sample exams; regarding length of test, it could be said 29 (82.86%) exams have 43 to 28 items, whereas only 6 (17.14%) exams have 50 to 71 items for final exams; though few, qualifiers like, all, only, always, often, and sometimes, were included in the true or false statements; most of the phrases or words in the premise or response lists were not homogeneous learning tasks in the matching items, besides the matching questions and responses were found miss-placed in most cases; Most of the stems in the multiple-choice items in each exam were written as an incomplete statement and are negatively stated., "all", "all of the above", "none", or "none of the above", have been used as options commonly; Using the best answer format rather than the correct answer format in the presence of distractors (wrong alternatives) is commonly observed.

Conclusions and Implications

Thus, taking into account the limitations on the technical qualities of the items, it could be inferred that the qualities of the sample exams prepared are questionable. Generally, the number of items included in most of the exams were small, which means that the content coverage and learning outcomes to be measured are minimal, indicating that the exams' results might not be valid and reliable. Though conducting item analysis is critical to get a clear picture of the characteristics of each item, and the overall quality of the exams, yet considering the shortcomings stated earlier, the validity and reliability of the exam results seem to be low. Based on the findings of this study, some implications are drawn for improving the quality of items and enhancing teachers' technical skills to write appropriate items for the courses they offer.

Key terms: Exam booklet, exam appraisal, content-analysis, technical quality, validity, reliability of items

Introduction

Background and Justification

Curriculum, instruction, and assessment are the fundamental components of education. Usually, how and what to teach weighs more on an instructor's mind than how he/she will assess it. Due to this assessment is frequently understood and implemented the least. Research demonstrates that quality assessment can have a greater positive impact on student learning than any other intervention. Data show that most students benefit from quality assessment practices.

Among the factors that influence the provision of quality education is the assessment system that a given higher education institute practices. Quality assessment is one of the key features of good teaching. Setting appropriate assessment tasks in the form of project works, tests or exams should evaluate students in a way that demands evidence of understanding.

The primary purpose of assessment in schools is to promote students' learning. An assessment provides evidence of how learners are progressing according to defined standards throughout learning and achievement at the end of a module or semester. Assessment is a process of collecting, analyzing, interpreting, and recording data on students' performance in their learning and also described as getting to know our students and the quality of their learning. Assessments can be categorized into classroom assessments, national examinations, national learning assessments, or national exit examinations that have either formative or summative purpose (Nitko, 2004; Gronlund, 2003; Sax, 1997, and Capper, 1996)

Using assessment to improve the quality of education carried at different settings, is essential. According to Kellaghan, Greaney, and UNESCO (2001) assessment information is used to describe students' learning; to identify and diagnose learning problems; to plan extra teaching/learning; to provide guidance for students in selecting additional courses of study; to motivate students by providing learning tasks, and knowing how they are progressing; to certify that students have reached a certain level of competence; and to select them for the next level of the education system or for a job. Thus, to help we get appropriate assessment data the measuring instruments that we develop should be prepared to fulfill defined goals and be valid and reliable to those purposes they are designed for. Having theses conceptual understanding in mind,

However, in reality, for example, during exam times, occasionally I have been assigned to invigilate. I had the opportunity to see exams prepared by teachers. I observed errors related to content validity, clarity, practicality, efficiency, and fairness. I discussed the issue with the EVP and requested him to carry out a qualitative evaluation (content-analysis) of exams developed by teachers. Appreciating the issue, he appointed Department heads to send any exam available (soft copies) through Outlook to my office. Observing some of the gaps in the quality of the exams, I was initiated to conduct this study.

Statement of the problem

Examinations can be a powerful means of influencing the quality what teachers teach and what

students learning in schools. Drafting and administering effective exams with an appropriate distribution of questions involving recall, application, synthesis and evaluation is significant. Classroom exams play an important role in improving teaching and learning (Black and William, 2010;and Heyneman and Ransom, 1990). Most importantly, teacher-made tests play a vital role in pre-assessment, formative assessment, and summative assessment of students' learning outcomes, which, consecutively, helpful to make relevant educational decisions. Besides, nowadays, teachers have to understand and use teacher-made tests to improve students' learning (Gareis and Grant, 2015; and Guskey and Jung, 2013).

Moreover, according to Kinyua and Okunya, (2014) and Agu et al., (2013) teachers' test construction abilities are related to the quality of test items they prepare. Thus, a teacher's competence in writing test items is directly related to reaching good quality test measuring devises. When teachers have limited test construction skills, the quality of the tests they construct is reduced. Exams that are poor in quality harmfully affect the assessment validity (Amedahe and Asamoah, 2016).

The exams that are constructed by teachers at all levels of schooling (i.e., primary, secondary, and tertiary) need to help discover students who have gained the necessary knowledge and skills in a given content area and those who haven't. However, test-related factors (format and construction defects) which are attributed to the test construction capability of the classroom teachers affect how well their tests can differentiate high achievers from low achievers in a given subject area. Teachers are therefore, expected to develop their skills in test construction to be able to develop quality tests or exams that are meaningful for measuring differences in students' achievement.

If an assessment is seen as a continuous, permanent, and systematic process, it needs to be planned, prepared, and applied with standards that are truly oriented towards the quality of education. These standards would consist of commitment and participation from the educational institutes. The main purposes of an assessment of an institution or system are to judge the effectiveness of a school and the adequacy of the performance of an education system. Even in these cases, assessment is based on the performances of individual students, which are aggregated to the level of the institution or system, usually to provide information for policymakers and others (Kellaghan, et al., 2001).

According to Egido, (2005) an assessment desires to be done with some sort of criteria. Assessment and quality, should have a close relationship and need to work toward education quality with the strong help of assessment. In doing so, it seeks to obtain the best results.

In this sense, Egido (2006) confirmed that reflections in terms of educational quality should not be limited to proposing ideas, but should include reflecting on the procedures used to prove quality, and whether they exist in reality or not. As the methods used to assess students are some of the most critical of all influences on students' learning, it is well known that assessment has a deep impact on what and how students study, how much they study, and how effectively they study. It

is also suggested that one has to use reliable assessment instruments and procedures that have been demonstrated to be valid for the specific purpose for which they are being used (Egido, 2006).

How does one decide what to test and how to test it? The exam one prepares have to target the learning outcomes outlined for the course. Reviewing and prioritizing the skills and concepts taught in a course are important. However, in doing so, scholars in the field have identified major factors (i.e., inappropriateness of test items, directions for the test items, vocabulary and sentence structure, difficulty level of the test items, poorly constructed test items, length of the test, arrangement of test items, pattern of the answers, ambiguity, too easy or too difficult test items, spread of scores and objectivity of test items) that influence the validity and reliability of the test results (Ebel and Fresbi, 2009; Gronlund, 2003; Sax, 1997; Linn and Gronlund, 1996; Nitko, 1996).

Thus, conducting qualitative content-analysis on teacher made exams contributes to the improvement of the quality of items that are used to genuinely assess students' achievement. Besides, it gives opportunity to teachers to enhance their test construction skills which in turn helps them to see the true picture of their students' performance and make use of the data to strengthen their teaching and student learning.

Thus, considering the gaps seen in some exams during the invigilation time, analyzing and studying the problem in-depth across exams of different courses is valuable to improve the quality of test items and what teachers are required to do to enhance their skills in preparing quality exams. In line with this, the study has raised the following basic research questions. With this intent the purpose of this study was to investigate the technical quality of final exams administered in between 2020 and 2022 academic years in the undergraduate program at St. Mary's University.

Basic research questions

1. What are the types of error associated with the exams developed by teachers in the undergraduate program?

2. To what extent the exams developed are valid and reliable?

3. How free are the exams from factors that reduce the validity and reliability of exams?

General objective

The general objective of this study focuses on reviewing the overall quality of exams administered in between 2020 and 2022 academic years in the undergraduate program at St. Mary's University.

Specific objectives

The specific objectives are outlined in line with the research questions as follows.

- Identify the errors committed in writing items that lower the quality of exams
- Determine the extent that the quality indicators of tests are maintained;

- Find out whether the exam items are free or not from issues that influence the validity and reliability of exams

Scope and limitation of the study

The scope of this study was to investigate the characteristics of final exam items administered between the 2020 and 2022 academic years in the undergraduate program at St. Mary's University. The exams were developed on courses relevant to students specializing in the field of Accounting and Finance, Management, Marketing Management, Informatics, and Tourism and Hospitality Management in the undergraduate program.

The study is also limited to content –analysis based on factors (criteria) that are considered to assess exam items, with no student responses. This means that item analysis, which includes determining item difficulty and discrimination power indices that depend on students' responses was not computed.

Research Methods and Materials Research design

Content or Document analysis also termed as content-analysis belonging to the qualitative research

method was used. This method is used to review items on copies for test construction errors .It is also required for assessing the value of the test before it is produced in large numbers to be administered (Amedahe and Asamoah, 2016; and Kubiszyn and Borich, 2013).

Thus, content or document analysis is a non-numerical method for analyzing test items without employing student responses. It rather considers content validity, clarity, practicality, efficiency, and fairness.

Content validity, as one of the qualitative evaluation criteria, answers the questions: Are the items representative samples of the instructional objectives covered in a class? Does the test genuinely reflect the level of difficulty of the learning tasks covered in a class? If the answer is "Yes," then content-related validity evidence is established (Amedahe and Asamoah, 2016).

For Nitko (2001) clarity denotes to evaluating the value of the test that refers to how the items are constructed and phrased while concurrently judging them against students' ability levels. That is, the test items should be clear to students as to what is being measured and what they are required to do in attending to the questions.

Regarding practicality, Brown (2004) states that it is concerned with the adequacy of the necessary materials and the appropriateness of time allocated for the completion of the test. The efficiency of a test seeks information as to whether the way the test is presented is the best to assess the desired knowledge, skill, or attitude of examinees in relation to instructional objectives (Amedahe and Asamoah, 2016).

On the other hand, fairness refers to the freedom of a test from any kind of bias. The test should

be judged as appropriate for all qualified examinees irrespective of race, religion, gender, or age.

Sample and Sampling procedure

Using the convenient sampling method, thirty-six final exam booklets were selected for content-analysis across the five departments. These exams were administered to first--, second-, and third-year students in the different departments were used for the analysis.

Data Analysis

The analysis on the quality of the items of each exam booklet was made against the standard criteria of evaluation stated as follows.

- Nature of item formats used;
- Number of items of each format;
- Arrangement of items and numbering;
- Fairness of the allotted time to the length of the test;
- The learning outcomes to be measured; and
- Technical quality of each item (i.e., appropriateness of directions, arrangement of items, assembling of items in order of difficulty, the extent of items being free of clue to correct response, the meaningfulness of stem, characteristics of options, features for correct responses /distracters, free of verbal association and grammatical inconsistency, etc.,).

Table 2: **List of Exam booklets considered for the analysis**

No	Course Code	Course Title	No of items	Allotted time	Total (%)	Dep't	Program	
							Reg.	Ex
1	MkMgt.411	Logistics and Supply Chain Management	50ob+2 subj)	2: 00	60	MkMgt.	x	
2	MkMgt. 211	Principles of marketing (for marketing students)	55Obj + 3 subj	2:00	60	MkMgt.	x	
3	MkMgt.331	Import Export Policy and Procedure	40 Obj. +3 subj	2:00	60	MkMgt.		x
4	MkMg.421	Strategic Marketing Management	46 Obj. + 3 Subj.	2: 00	60	MkMgt.	x	
5	MkMgt. 431	E-Marketing	39 obj.+5 subj.	2:00	60	MkMgt	x	
6	Mgmt. 421	Entrepreneurship and Small Business Management	40 obj.	1:30	60	Mgmt.	x	
7	---	Project Analysis and Management-	30 Obj.+ 4 subj.	2:00	50	Mgmt.	x	
8	---	Administrative & Business Communication	35Obj. +3Subj	1:30	60	Mgmt.		
9	Mgmt. 331	Human Resource Management	60 Objective	1:30	60	Mgmt.		
10	---	Business policy and strategy	40 Obj.+2 Subj.	1:30	60	Mgmt.		x
12	-----	Management of heritage tourism	30 Obj.	----	---	THM	x	
13	----	Sustainable Tourism Management	30 Obj.	---	---	THM	x	
14	THM 252	Research Methods in THM	25 Obj.	1:30	50	THM	x	
15	---	Geography of Tourism	44 Obj.	---		THM	x	
16	---	Français I final	77 Subjective.	2:00		THM	x	
17	---	Advanced Accounting	40 Obj. + 2 Subjective.	2:15	50	Ac &Fin		x
18	----	Investment	35 Obj. + 1 Subjective.	---	----	Ac &Fin		
19	Ac. Fn 462	Bank Practices and Procedures	30 obj. + 3 Subjective.	2:00	50	Ac &Fin		x
20	-------	Accounting Information Systems	40 Obj. + 2 Subjective.	2: 00	50	Ac &Fin		x
21	----	Cost and Management Accounting I	25 Obj. + 2 Subjective.	1:45	50	Ac &Fin	x	
23	Ac. Fn 372	Research Methods in Accounting and Finance	35Obj. + 6 Subjective.	1:45	50	Ac& Fin	x	
24	----	Financial Markets and Institutions	35 Obj.+ 3 subj.	2:00	50	Ac& Fin	x	
25	Ac.351	Risk Management and Insurance	15 Obj.+ 4 subj.	2:00	55	Ac& Fin		x
26	Ac.Fn 332	Accounting for Government &other NFP Entities	27Obj.+4 Subjective.	2:00	45	Ac& Fin	x	
27	Ac. Fn	Fundamental Accounting I	35 Obj. + 2 Subjective.	2: 00	50	Ac &Fin	x	-

28	EmTe 1011	Introduction to Emerging Technology	38 Obj. + 4 Subjective.	2:00	50	Comp.Sc.	x	
29	---	Operational System principles and Design	15 Obj. + 4workout	1:30	50	Comp.Sc.	x	
30	CoSc.243	Digital Electronics and Logic Design	34Obj+ 4 workout	2:30	50	Comp.Sc	x	
31	----	General Psychology	46 Obj. +4 Subjective.	2:00	50	Basic Course	x	-
32	-----	Geography of Ethiopia and the Horn	41obj.+2Subj.	1:45	50	Basic Course	x	
33	-----	Global Affairs	50 obj. +5 Subjective.	1:45	56	Basic Course		x
34	----	Moral and civic education	40 Obj.	1:30	50	Basic course	x	
35	---	Social Anthropology	40Obj. +2 Subjective.	2:00	60	Basic course	x	

As can be seen from Table 2, 36 final exam booklets were reviewed. The number of items included in each exam fluctuate between 28 and 70. The allotted time to complete each exam extend between 1:30 -2:30. They were scored out of either 50% or 60%`.

To show how the review was carried out on all the 36 exam booklets, a detailed content-analysis that was made on a single exam booklet is presented as sample as follows.

Course Title: Strategic Marketing Management Course No. MkMgt. 421

The general instructions written does appear complete, but it doesn't specifically introduce the item formats included. "This paper contains **Four** (sections) and **Ten** pages. Make sure that the bookle you have received has **all sections and pages**. Better to rewrite it as "This exam paper contains four item types with number of items in each in ten pages. The total number of item is 49. Make sure that the booklet you have received has **all sections and pages**."

Item formats used and number of item of each format

Multiple – choice, true –false, matching and essay items are used in the exam. The number of items included doesn't seem adequate. (i.e., M-choice items =34, true-false = 6, matching items= 6, and restricted essay items = 3).

Fairness of the allotted time to the length of items

The time assigned (2:00hrs) to complete the exam with a length of 49 items, was not logical. More items should have been included or the time given should have been reduced. For the 49 items to be complete, it is reasonably sufficient to assign 1:20 hours.

Arrangement of items and numbering

The arrangement of items in the exam is expected to be from simple to complex. However, in the MkMgt 421 exam it was not so, because the item formats were inappropriately arranged (i.e.,

multiple-choice -> true-false -> matching -> essays). Besides, the items are not numbered in sequential order throughout the exam booklet.

Behavioral outcomes measured

Referring to the true-false and matching items, they measure simple-learning outcomes. The multiple-choice items, partly measure complex learning outcomes. The restricted essay measure student's ability to organize and present ideas.

Technical quality of items

Regarding the multiple-choice items,

- The directions given to the multiple-choice items is read as "choose the best answer from the given alternatives …", is not be appropriate in the presence of wrong answers (distractors) in the alternatives. It is more appropriate to write "Choose the letter of the correct answer from the alternatives given and -----" if wrong answers are observed among the alternatives. Using the "Best answer form" possibly be convincing if all the alternatives given for each item are correct responses and which one is best.

- The stems of item numbers 1, 3, 5, 12, 16, 18, 19, 20, 21, 22, 25, 31, 32, and 33 are long and complex, hence, need revision;

- Item numbers 4, 5, 6, and 34 involve lengthy alternatives, so require modification to a reasonable size;

- Concerning the characteristics of the options, about 14 multiple-choice items out of 34 involved options as "all" 'None', and 'all Except A, B, or C". The item numbers 8, 11, 16, 19, 21, 23, 25,

  26, 27, 28, 29, 30, 32, and 34 included either "All of the above", "None of the above" or "all except" as options. But, such options should be discarded and replaced by other relevant choices.

- Item numbers 1, 3, and 18 are questions about arrangements. It would have been better if they were presented as short –answer items.

Concerning true-false items

- No indication of whether the true-false format is part 1, 2, or not. The term "Directions" is also missed ;

- Item number 1 has involved an absolute qualifier "always", which need to be removed. "Management should always make its mission statement as broad as possible".

- Item numbers 4 and 5 are long, hence need reconsideration. As to Matching items

- The directions written for the matching exercise, "Match items under column "A" to those listed under column "B" and write your answer on the separate answer sheet attached". Those under column A and under column B were not clearly and meaningfully specified. What are they? Thus, in writing directions for a matching exercise it should be written as " Match the __under column B with theunder column A and write the letter of the correct answer in the space provided in the separate answer sheet"

- The matching items don't look homogeneous and are not brought out of the same content. If we consider the terms under column B, can be identified into three groups: strategies (4), competitors (2), and management structures (2).

- Scoring each matching exercise out of 2 points is not reasonable. There is a trend to score any objective item out of one point. Rather than assigning 2 points for an individual item. Increasing the number of items is vital, which contributes to better representation of learning out comes and corresponding contents to be measured.

- Referencing to the items of the matching exercise, the learning contents are not homogeneous. The terms under column B are partly names of country and cities while others refer to sailed and discovered places throughout the world. Still others are different from those types. Thus, two matching items can be developed out of it. On the other hand, if we take this matching exercise as it is, the matching questions and the responses are misplaced. The point is those under column A should have been put under column B and those under column B should have been placed under column A.

Results and Discussions

From the appraisal of the exams administered in 2020 -22 academic years, the frequently observed mistakes in the sample exams can be recapped as follows: In most of the exams, general directions or instructions are included, which is appreciable, yet, some exams didn't.

With respect to each item type, unclear directions especially for the selected-response (objective) items are perceived; the directions in most exams were not clearly written. This implies teachers seem that they are not aware of the value of directions. However, examinees should get appropriate directions meaning information on how they can answer questions.

Inappropriate arrangement of items is highly observed. In most exams beginning with multiple-choice items is commonly observed. Authorities in educational measurement and evaluation suggest that the arrangement of items should be in order of difficulty of items and formats. Students will also be motivated when they do exam items from simple to complex.

Regarding numbering of items, they were not written in an increasing order. In most of the exams each item type begins with Roman numeral 1, but should not be. Each item in an exam should be represented with single number, so that if need arises to give correction in any item, it may not be

difficult to give correction.

On the other hand, most of the items appear to measure knowledge and understanding. Learning outcomes that demand higher –order thinking skills, (i.e., analysis, synthesis, and evaluations) were measured very rarely or not at all. This is a serious problem that need attention, because the issue of content validity is critical. Naturally exams are developed to measure the intended learning outcomes. If they miss this, we are evaluating and grading students' achievement on the basis of wrong assessment data. Therefore, more have to be done in improving teachers' skills of writing appropriate items.

Concerning allotting time to an exam, in most of the sample exams, the allotted times were unfair corresponding to the number of items included. That is, teachers are allocating time to exams arbitrarily. In most cases the allotted time does not correspond to the number of items involved in the exam. But to specify reasonable time, for example the test developer, after preparing the exam, he/she should take the exam after someday to avoid practice effect. The time he/she took to complete the exam and considering his/her students ability adding some minutes have to allot the right time.

Concerning the length of items in exam, it could be said that 5 exams had 19 to 28 items; 11 exams had 30 to 38 items, 13 items had 40 to 43, items and only 6 exams had 50 to 71 items. From this

one can see that 29 (82.86%) exams have items between 43 and 19, whereas only 6 (17.14%) exams have 50 to 71 items. Generally, the number of items included in most of the exams were fewer, which designate that the exams results might not be valid and reliable. Such problem occurs when teachers are simply writing items without having a test plan (i.e., table of specification).

The longer an examination is the better it represents the learning outcomes and corresponding contents to be measured and the content validity of the exam will be maintained.

Regarding the technical quality of item types True-false items

- The directions written for true-false items were wrongly stated and are not complete in most of the items.
- The sentences in the true or false items of some exams were long and complex;
- In some true false items, the statements were written negatively;
- Though few, qualifiers like, all, only, always, often, sometimes, were included in the true or false statements

Matching items

- In writing the directions for matching items, in most exams what is there under the premise list and reference lists were not clearly identified, the instructors use general terms like match the "terms, sentences, or phrases," etc., with the "words, sentence, or symbol," etc.,

- Matching items must be constructed from topics and sub-topics showing association/relationship. It was difficult to prove that those sentences, phrases, or terms either in the premise list or response list were homogeneous learning tasks or not;

- The matching questions and responses were found miss-placed; technically the longer ones need to be under the premise list and the shorter ones under the response list.

Multiple choice items

The multiple-choice item format is the most versatile format that measures both simple and complex learning outcomes. But its preparation requires item writing skills and needs ample time. As a result, the major drawbacks of teachers were found in writing multiple choice items. The common problems observed in the multiple-choice items were:

- Using the best answer format rather than the correct answer format in the presence of distractors (wrong alternatives). Out of innocence, mostly teachers begin writing directions for multiple choice items, such as "Choose the best answer ---------- "

- Most of the stems in each exam were written as an incomplete statement. This might have happened because teachers easily extract them as they are from textbooks or modules.

- In some exams, it was seen that the stems are not meaningful by themselves. To understand the questions posed, examinees go through the alternatives.

- In most of the multiple-choice items, the stems are negatively stated using words as not, wrong, incorrect, not true, except, etc.,

- Naturally, multiple-choice items must include a correct answer and distractors (plausible wrong answers). However, usually instructors consider "all", "all of the above", "none", or "none of the above", as options in their multiple-choice items because they are easily accessible. Yet, scholars in the field do not recommend them.

Conclusion and Recommendations Conclusion

Taking into account the limitations that is, unclear directions, unfair time distribution, small number of items, measuring simple learning outcomes (i.e., simple facts, and rote memorizations), less content coverage, issue of relevance and balance of selected item types and number of items considered regarding learning outcomes and topics and sub topics to be measured, in appropriate arrangement of items, it could be inferred that the qualities of the sample exams prepared are

questionable or dubious.

Though conducting item analysis is critical to get a clear picture about the characteristics of each item, and the overall quality of the exams, yet considering the shortcomings stated earlier, the validity and reliability of the exam results seem to be low.

Recommendations

Based on the detailed analysis of items of each exam, the problems identified and the conclusion made, the following suggestions may contribute to improve the quality of the exams:

- Writing general directions or instructions that preview the exam is essential. Students' exam-taking skills may not be very effective, leading them to use their time poorly during an exam. Instructions can prepare students for what they are about to be asked by previewing the format of the exam, including item type and point value (e.g., there are 10 matching items, 25 multiple-choice questions, each worth one points, and two essay/ 3 work out questions, each counts 6 points). This benefits students to use their time more efficiently during the exam;
  - The ideal arrangement of items should be:

    → true-false,

    → matching items,

    → supply type items,

    → multiple-choice items, and

    → Essay items;
  - Numbering of items in exam or test should be written in an increasing order; this supports on which item specifically you may give your correction and to give fast response to students' issues on unclear items.
  - Classroom exams are expected to measure both simple and complex learning outcomes. Most importantly, in higher education, it is assumed that more items that measure higher – order thinking skills need to be prepared. To realize this, in addition to the selected-response items, more open-ended/ essay/ work out items have to be drafted and included in exams. Normally, instructors have to see the learning outcomes to be measured and the contents imparted in relation to the sessions assigned to cover the contents. The item types to be selected depend on the nature of learning outcomes and topics to be measured and emphasis given;
  - To maintain the validity and reliability of the exams, it is important to increase the number of items in exam. Increasing the number of items implies that the learning outcomes and the

corresponding contents to be measured will be improved. The content validity will be maintained. Moreover, it is a plus not to score an objective test item above 1 point. Above all, developing test blue print is highly indispensable to ensure the content validity and reliability of the exam results. They are key for appropriate representation of learning outcomes and corresponding contents to be measured. Furthermore, Preparing test specification ensures content validity, and serves as a guide for item writing; Scholars in the area suggest to write more items than needed.

- One way to determine how long an exam will take students to complete is teachers need to seat for their own exams after someday to minimize practice effect. Then they have to allow students to triple the time it took them or reduce the length or difficulty of the exam.

On the other hand, it is thought that each true false or matching item could be done with 30 seconds (half a minute), whereas, each multiple choice item is responded within 60-90 seconds (1 to 1.5 minutes). Each completion item needs one minute to be answered (Park College, 2005). According to Gronlund (2003) college students are expected to do one multiple choice item, three completion items or three true-false items within a minute. Thus, teachers need to allot reasonable time for their exams considering the experiences stated earlier.

- Regarding the technical quality of item types True-false items
  - Teachers are expected to write clear directions for true-false items. They need to do it with concern.
  - Avoid long and complex sentences;
  - Minimizing the number of negatively stated sentences is vital. It is better to write statements positively in the true-false items;
  - Avoid to include two ideas in a single statement.
  - The length of true and false statements be approximately equal in length;
- It is advisable not to include both absolute and relative qualifiers in the true-false statement

Matching items

- While writing directions for a matching items, those in the premise list and response list be clearly identified.

- The matching items should be prepared from the same content area (homogeneous learning tasks) that designate association

- In the matching exercise, the longer sentences or phrases be under the premise list (column A), and the shorter sentences, words or symbols be under the reference list (column B). The premises and responses shouldn't be misplaced.

- Obviously, matching items have to be constructed from topics and sub-topics that show association/relationship. It is difficult to prove that those sentences, phrases, or terms either in the premise list or response list were the matching questions or not.

Short-answer items

- It is more preferable, if the blank space is put at the end of a statement rather than at the beginning.

- The number of blank spaces should not be more than two in a single statement Multiple choice items

- While writing directions for multiple choice items, it is safe to use the correct answer format in the presence of distractors (wrong alternatives).

- It is more preferable to write stems in direct question form than incomplete statement. Even if stems written as an incomplete statements are not wrong, but they are easily extracted from texts or modules, thus, need to be minimized.

- Stems should be meaningful by themselves. The stem is expected to give adequate information about the posed problem and should stand by itself;

- In multiple choice items, use positive phrasing in the stem, avoiding words like "not" and "except." If this is unavoidable, highlight the negative words (e.g., "Which of the following is **not** an example of…?");

- Avoid using "All of the above" and "None of the above" in responses. (In the case of "All of the above," as correct answer, students only want to know that two of the options are correct to answer the question. On the contrary, students only need to remove one response to eliminate "All of the above" as an answer. Similarly, when "None of the

above" is used as the correct answer choice, it tests students' ability to detect incorrect answers, but not whether they know the correct answer.), the point is an examinee easily get the correct answer with incomplete understanding of the concept;

- Teachers develop/construct exams for courses they teach well in advance of the testing date, so that they will have adequate time to revise it.

- Use language that is simple, direct, and free of ambiguity;

- The stem should not be too long and complex;

- Avoid repetition of words in the options; and

- The relative length of the alternatives should not provide a clue to the answer, they have to keep the length of all alternatives approximately equal.

- Teachers' skills in item writing could be improved as long as they actively engage in item analysis. Determining item difficulty and item discrimination power will help them to identify those items that could be used in the future, those which need improvement, and those to be discarded and replaced by new ones. Preparing exams for many years does not guarantee developing quality items unless it is supported with item analysis to see the characteristics of each item.

- It is highly commended to prepare exam items far ahead when we have best memory of a given topic or content in the teaching learning processes. Hence, teachers can do this while completing every chapter of the course they teach. They could get the opportunity to have pool of items and ample time to revise items. This situation indicates exam preparation is not a hurried activity.

- Generally, a 3 man exam-reviewer committee or the existing quality enhancement committee in each department should check and reflect on the quality of exams prepared by teachers;

- Finally provision of training on new thinking on classroom assessment in general and test construction in particular is decisive to refresh teachers' skills in item writing.

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The Role of Emerging Technologies and Innovation in Academic Assessment and Evaluation in Higher Education Institutions (HEIs) in Africa: Implications for Quality

Anduamlak Abebe[1], Mersha Nigus[2]
[1,2] Debre Tabor University, Gafat Institute of Technology, Department of Computer Science

Abstract

Emerging innovations and technologies are causing major changes in the African higher education sector. One area of interest is academic assessment and evaluation, where new developments in technology are changing the way that traditional methods are done. This study investigates the use of new and innovative technologies in academic assessment and evaluation in African rHEIs, focusing on the implications for educational quality improvement. Enhanced assessment accuracy and fairness, real-time feedback and progress monitoring, improved efficiency and time-saving, accessibility and inclusivity, and quality assurance and standardization are among the benefits of emerging technologies like artificial intelligence (AI), augmented reality (AR), Big data and learning analytics, virtual reality (VR), and adaptive learning platforms. To achieve its goals, this study takes a qualitative research strategy, conducting a literature analysis to get insights into the role of new technologies in academic assessment and evaluation. HEIs improve efficiency, create customized learning experiences, give immediate feedback, encourage diversity, and spur assessment innovation by utilizing technology-*enabled solutions. These developments could completely alter the way that we teach and learn, giving students access to more effective, efficient, and interesting learning environments. To maintain African HEIs' relevance and competitiveness in the global education environment, they must embrace innovation in their assessment procedures.*

Keywords*: Emerging Technologies, Academic Assessment, Evaluation, Quality Enhancement, Digital Transformation.*

Introduction

The worldwide landscape of higher education has shifted dramatically in recent years, owing mostly to fast technological advancements and the adoption of fresh pedagogical techniques. In the context of African HEIs, where the employment of cutting- edge technology and innovative methodologies has huge potential for boosting educational quality and relevance, this transformation is critical.

As per the UNESCO's(2020) report entitled "Higher Education in Africa: A Continent in Transition", there's been an increasing acknowledgment of the necessity of utilizing emerging technologies to tackle the manifold challenges that African higher education institutions are confronting. The lack of infrastructure and educational resources is one of these issues, as is the pressing need for inclusive assessment procedures and quality assurance.

In African HEIs, the incorporation of cutting-edge technology like digital assessment platforms, artificial intelligence (AI), machine learning, and data analytics offers previously unheard-of chances to transform academic assessment and evaluation. In addition to enabling effective and customized evaluation procedures, these technologies make it easier to gather and analyze real-time data for defensible decision-making (Sembey, Hoda, & Grundy, 2024)

In African HEIs, traditional methods of assessment frequently encounter obstacles, such as the absence of standardized evaluation instruments and trouble giving students timely feedback. These problems may affect the general quality of academic work, learning results, and student engagement.

Using developing technology for academic assessment and evaluation presents several issues for higher education institutions in Africa. These difficulties include the requirement for capacity building, restricted access to infrastructure and technology, worries about the security and privacy of data, and making sure that evaluation procedures are inclusive and equitable. To overcome these obstacles, a thorough analysis of the situation as it stands now and prospective reform plans are needed.

Innovative methods and the deployment of new technologies are causing significant changes in the higher education scene in Africa. In HEIs, academic assessment and evaluation is one area that has to change significantly. With an emphasis on the implications for raising educational quality, this research attempts to investigate how innovation and emerging technologies are changing assessment and evaluation procedures at African HEIs.

The significance of this research lies in its potential to inform HEIs in Africa about the transformative impact of emerging technologies on assessment and evaluation practices. Institutions can strategically integrate innovative technologies to enhance the quality, fairness, and efficiency of assessment processes.

The review contributes to advancing knowledge in the field of academic assessment and evaluation by synthesizing existing literature and identifying gaps, challenges, and opportunities specific to African HEIs. The review underscores their role in enhancing assessment accuracy, fairness, and effectiveness, ultimately contributing to improved educational quality by emphasizing the potential of emerging technologies like AI, machine learning, and digital assessment platforms.

Research Objectives

This research aims to investigate the use of novel and cutting-edge technologies in academic assessment and evaluation in African HEIs, with a focus on the implications of raising educational standards.

Methods and Materials

The data were gathered from reliable online journals, such as Google Scholar, Web of Science, Taylor & Francis Group, and Springer. The primary objective of the review was to examine how innovation and emerging technology affects the quality of academic assessment and evaluation in higher education institutions.

To accomplish this, particular standards were set for choosing the journals. First, journals that offered empirical analysis were considered. Second, journals that focused on cutting-edge innovations and new technology in academic assessment and evaluation in higher education establishments were the main focus. Finally, credible source journals were required, and the reviewed papers needed to be published in the past ten years. Ukeywords like emerging technologies, academic assessment and evaluation, higher education, and quality implications were relevant to search different pieces of information. The reviewed articles explore novel themes that are elaborated upon in the findings and discussion sections.

Findings and Discussions

Emerging technologies hold immense potential to improve the quality of assessment and evaluation in African HEIs by providing a more comprehensive and engaging assessment experience for students. The integration of emerging technologies and innovation in academic assessment and evaluation in (HEIs) in Africa has yielded promising results and significant implications for quality enhancement.

Enhanced Assessment Accuracy and Fairness

In line with Bozalek, et al. (2013); Katam & Otieno(2021), technologyincluding automated grading systems and plagiarism detection software, has enhanced the accuracy and fairness of academic assessment, eliminated human bias, and enforced uniform evaluation standards.

) Emerging technologies, such as AI and machine learning algorithms, help to improve assessment outcomes by analyzing vast datasets and discovering trends. These tools can identify plagiarism, analyze complicated replies, and offer individualized feedback, hence increasing assessment accuracy. Digital assessment platforms provide chances to reduce prejudice in assessment procedures, providing fairness for all students, regardless of their background or circumstances. Automated grading systems that use objective criteria decrease subjective biases in judgment, improving fairness and transparency (Bates, 2015; Opesemowo and Adekomaya, 2024; UNESCO, 2020).

AI- powered tools and Learning Analytics may measure critical thinking, problem-solving, and digital literacy more successfully than traditional techniques. The incorporation of modern technologies into academic assessment creates new opportunities for novel assessment designs, such as gamified tests, simulations, virtual reality experiences, and interactive multimedia formats, which can improve student engagement and learning results (Amadhila, 2021; Jaffer, Ng'ambi, & Czerniewicz, 2007).

Personalized Learning Experiences

Gligorea et al. (2023); Liu, Bartimote-Aufflick, Pardo, & Bridgeman,(2017) argued that adaptive learning platforms and data analytics tools enable assessment personalization to meet individual student needs, providing tailored feedback and learning pathways to increase student engagement and improve outcomes. Adaptive assessment platforms can modify difficulty levels based on student performance, offering tailored assistance and interventions to improve learning outcomes.

Real-Time Feedback and Progress Monitoring

Chigona (2018) and Kaliisa and Picard (2017) explored that traditional evaluation methodologies may fail to stay up with the abilities required for the twenty-first century. Emerging technologies, such as artificial intelligence, learning analytics, virtual reality, and gamification offer exciting possibilities for measuring a broader range of skills. Online assessment tools and learning management systems provide real-time feedback and progress monitoring, allowing students to track their performance and make timely adjustments to their learning strategies.

Real-time feedback encourages active student involvement by giving immediate information about strengths, problems, and opportunities for development. Studies carried out by Cavalcanti (2021) revealed a strong association between real-time feedback and enhanced learning outcomes, including increased retention rates and comprehension of course material. Immediate feedback allows students to alter their learning tactics and overcome misunderstandings quickly.

Improved Efficiency and Time-Saving

According to Garwe (2021); Kaliisa & Picard(2017; Lim, Ra, Chin, & Wang(2020), automation and digitalization of assessment activities, such as electronic tests and auto-grading, save educators time and allow them to focus more on providing individualized support to students. Cavalcanti (2021); Oliver (2017); Robberts (2019), stated that innovative evaluation systems provide real-

time feedback, allowing students to follow their progress and make corrections on time. Immediate feedback methods improve learning results and cater to individual learning demands, resulting in more equitable assessment processes. Emerging technologies enable the use of real-time feedback systems in academic assessments, offering instant insights into student performance. Online quizzes, interactive simulations, and digital dashboards enable educators to continually assess students' progress.

Accessibility and Inclusivity

Technology can help overcome barriers to access and participation in assessments for students with disabilities or those located in remote areas. Online assessment platforms, digital resources, and assistive technologies can support a more inclusive learning environment, ensuring that all students have equal opportunities to demonstrate their knowledge and skills. The studies conducted by Baidoo-Anu (2023)and Ndibalema (2021) investigate how the digital resources in Africa affect students' access to technology and their capacity to engage in online examinations. Integrating assistive technology, such as screen readers and alternate input devices, is critical for meeting varied learning requirements and encouraging inclusion in evaluations. HEIs are investigating novel solutions, including mobile-based assessment applications and accessible e-learning platforms, to improve accessibility for students with impairments.The incorporation of new technology and innovation into academic assessment and evaluation has enormous promise for improving quality assurance in African higher education institutions. These findings have various implications for increasing the quality of African higher education institutions, including quality assurance and standardization, expanded access to quality assessments, and data-driven decision-making.

The research with regard to Asongu & Odhiambo, (2019) and Fomunyam (2019), they look at how new technologies might help standardize assessment processes across institutions; ensuring academic standards are consistent and comparable. Using data from technology-based evaluations, instructors may modify their education and increase teaching quality. Data analytics and learning management systems offer useful insights into student performance, allowing educators to make educated choices about curriculum design, teaching approaches, and assessment procedures.

Conclusion and Recommendation

Emerging technologies and innovation play a crucial role in reshaping academic assessment and evaluation in African HEIs, leading to improved educational quality and outcomes.

The role of emerging technologies and innovation in academic assessment and evaluation in higher education institutions in Africa has significant implications for enhancing the quality of education and improving student outcomes.

By leveraging technology-, HEIs can provide personalized learning experiences, offer real-time feedback, promote inclusivity, and drive innovation in assessment design. These advancements have the potential to transform teaching and learning practices, leading to a more efficient,

effective, and engaging educational experience for students.

We should employ digital infrastructure, promotfaculty development on tech-enabled assessment methods, foster collaborations for technology adoption, and address data privacy and security concerns. Moreover, embracing innovation in assessment practices is vital for the continued advancement of African HEIs and global competitiveness.

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Closing Remarks, Tedla Haile, Executive V/President, St. Mary's University

Distinguished Guests, Colleagues, Ladies and Gentlemen;

We are now to wind up the two-day conference, which, I hope, all of you have been worth the time spent.

Allow me to thank institutions, offices and individuals that have made this conference successful. Thanks goes to our partner institutions: the Ministry of Education, African Association of Universities, African Union Commission, International Network for Higher Education in Africa, University of Kwazulu-Natal, South Africa, and Organization of Southern Cooperation. My gratitude also goes to the panelists, moderators, keynote speakers, paper presenters, chairs rapporteurs and the participants who have enlivened by your active engagement in the question and comment sessions. While organizing a conference like this, one involves in very many stakeholders; the contributions of Prof. Damtew Tefera and Dr Teshome Yizengaw have been immense. The University is highly indebted to them. I also thank Dr. Ayenachew Assefa for his presentation of summary of the conference.

In the course of organizing this conference, our Research and Knowledge Management Office led by Dr. Misganaw Solomon, our V/P for Research and International Communication, has labored a great deal with patience and perseverance. Dr Misganaw who made effective use of his hardworking team, has been untiringly diligent devoting the whole day, including evening hoursto the preparation of the conference leading up to this moment of closing ceremony. Of course, to realize this conference, the university has deployed its diverse operational units: those critical to the success of the event have been our General Service and the Finance Office led by Ato Desalegn Berie, the V/P for Business and Administration; the ICT Support and Development Unit led by Ato Solomon Hunegnaw and assisted by Bethlehem Nessibu from the Institute of Quality and Productivity Management; the audio-visual center team, the Master of Ceremony, Ato Mekdela Mekuria, and the reception team, and the secretarial pool deserves our highest gratitude.

Last, but not least, I thank the Inter Luxury Hotel team involving the car park, the reception, the catering unit, the ICT technical team and others who have kept us refreshed during the two-day event.

Looking forward to seeing you next year, I declare the conference is closed. I thank you.