ASSOCIATION FOR EDUCATIONAL ASSESSMENT IN AFRICA

AEAA

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Council for Quality Assurance in General and Further Education and Training

REIMAGINING EDUCATIONAL ASSESSMENT

in the Age of Multiple Dimensions of Learning in a Global Society

CONFERENCE PROCEEDINGS

40th AEAA ANNUAL CONFERENCE
19-23 August 2024

EDITORS

Matseliso Lineo Mokhele-Makgalwa
Matsie Agnes Mohale
Tsholofelo Lucia Madise

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Theme

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Conference Proceedings

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ISBN: 978-1-0370-4278-2 (e-book)
ISBN: 978-1-0370-4277-5 (print)
Main DOI: https://doi.org/10.38140/obp2-2024
Publication date: December 2024

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Publisher's Information

ERRCD Forum
Harrismith, South Africa

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Preface

The 40th Annual Conference of the Association for Educational Assessment in Africa (AEAA), hosted by Umalusi, the Council for Quality Assurance in General and Further Education and Training, marks a significant milestone in fostering dialogue and collaboration among education stakeholders across the continent. Held from August 19–23, 2024, at the Century City Conference Centre in Cape Town, South Africa, this year's conference brought together experts, policymakers, researchers, and practitioners under the theme: Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society.

This Book of Proceedings contains a selection of high-quality papers that have undergone a rigorous double-blind peer-review process, ensuring academic integrity and relevance to the conference theme. The papers explore critical topics such as digital pedagogy, non-traditional learning assessments, and strategies to enhance the quality and accessibility of education in the face of global challenges.

We extend our sincere gratitude to the keynote speakers, workshop presenters, and the Conference Abstract Review Committee for their dedication and expertise in shaping this event. Special thanks are due to the reviewers for their valuable contributions in refining the manuscripts and to the editors for their diligent efforts in producing this proceedings volume.

As an affiliated member of the AEAA, Umalusi takes pride in facilitating this platform for robust discussions and knowledge sharing. We trust that this collection of papers will contribute to advancing educational assessment practices, inspire innovation, and foster collaboration within and beyond the African continent.

Matsie Agnes Mohale (PhD)
Conference Chair

Foreword

The Association for Educational Assessment in Africa (AEAA) is a non-profit organisation dedicated to fostering collaboration among examining and assessment bodies across the continent. Established in 1982, AEAA originated from the sub-regional Conference for Heads of Institutions responsible for Educational Assessment in Eastern and Southern Africa (AEBESA). Its founding members included Kenya, Uganda, Tanzania, Botswana, Lesotho, and Malawi. Over the years, AEAA has grown significantly and now comprises 21 active primary members representing examination bodies from various African nations. A key objective of the association is to facilitate the exchange of best practices in educational assessment, primarily through its annual conference, which is hosted on a rotational basis by member institutions.

In 2024, Umalusi, the Council for Quality Assurance in General and Further Education and Training, had the privilege of hosting the 40th AEAA Annual Conference. Umalusi, established under the General and Further Education and Training Quality Assurance Act (No. 58 of 2001), is responsible for developing and managing the General and Further Education and Training Qualifications Sub-framework (GENFETQSF) at Levels 1–4 of the National Qualifications Framework. While Umalusi oversees examinations and assessments, the administration of these examinations falls under public and private assessment bodies.

It is with great pleasure that Umalusi presents the proceedings of the 40th AEAA Annual Conference that took place from 19 to 23 August 2024, at the Century City Conference Centre and Hotel in Cape Town. Themed "Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society," the conference explored how assessment systems must adapt to an evolving educational landscape.

This four-day event, followed by an excursion on the fifth day, featured an engaging programme that included three hands-on workshops, three plenary discussions, five keynote addresses, and presentations from leading conference sponsors. The conference attracted over 350 delegates from 30 countries and was officially opened by the Honourable Ms Siviwe Gwarube, South Africa's Minister of Basic Education. A total of 200 abstracts were submitted, and from these, 112 were selected for presentation at the conference. Of the 23 papers submitted and peer-reviewed for publication after the conference, 11 were rejected while 12 papers were selected for inclusion in this volume of conference proceedings.

We hope that these proceedings serve as a valuable resource for researchers, policymakers, and practitioners in the field of educational assessment, inspiring further dialogue and innovation in assessment practices across Africa and beyond.

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Mafu Rakometsi (PhD)
CEO, UMALUSI

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Towards a Quality Assurance Framework for Online Assessments for Business Education Subjects in the FET Phase

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Reference Formats (APA 7th Edition)
Dos Reis, K., & America, C. (2024). Towards a quality assurance framework for online assessments for business education subjects in the FET phase. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 1-15). ERRCD Forum. https://doi.org/10.38140/obp2-2024-01

Abstract: The COVID-19 pandemic has precipitated a shift to online assessments for educational institutions worldwide and exacerbated challenges related to assessment implementation and processes. In South Africa, the quality of online assessments in schools remains a central concern, partly due to the lack of consensus on the criteria that establish such quality. The objective of this study is to establish a framework to create transparency and consistency when summative online assessments are applied in the FET band (Grades 10 to 12). The methodology employed consists of a preliminary meta-study of research related to online (summative) assessment, with a focus on quality assurance over a five-year period from 2018 to 2023, using one search engine.The main findings suggest that four dimensions are required to ensure quality assurance for online assessments: a policy dimension, which represents specific regulatory or statutory bodies to ensure quality assurance processes; presage factors, which are mainly concerned with infrastructure; the people involved (examination bodies, teachers, learners, and school management teams); and the processes applied to ensure continuous collection of information and monitoring of the strengths and weaknesses of the assessment process. The value of the proposed framework lies in the implementation of online assessments that are learner-centred, authentic, trustworthy, and reliable. Moreover, it supports quality assurance in the review and evaluation of online assessment procedures.

Keywords: Meta-study, online assessment, proctored assessment, summative assessment, quality assurance.

1. Introduction

Higher education institutions (HEIs) around the world were largely unprepared for the COVID-19 pandemic and had to transition rapidly to meet new administrative and teaching requirements (Ramrung et al., 2020). Many universities adopted emergency remote teaching, which also required modifications in student assessment. However, the assessment procedures and protocols via online or remote settings were experimental, presenting peculiar challenges across various educational contexts. In South Africa, among the key issues that universities had to address were the digital divide, constrained pedagogical approaches, inadequate proficiency in the use of the learning management system, the quality and integrity of assessments being somewhat compromised, and the unfavourable living conditions of students that made learning from home difficult (Maphalala, Kumalo & Kumalo, 2021). Unproctored assessments raised concerns about plagiarism, grade inflation, and the overall quality of teaching and learning. More stringent security measures had to be implemented to circumvent academic dishonesty. Since

COVID-19, online assessments have taken an innovative turn in education, which could have long-lasting effects on teaching and learning. Contestation regarding the effectiveness of online assessments compared to traditional invigilated paper-based assessments still exists (Ellis, Oeppen & Brennan, 2021). Therefore, the assessment procedures and methods for online assessments require proper quality standards and guidelines.

Incorporating online assessment as part of the teaching and learning strategy requires careful consideration of whether it is formative or summative; synchronous (real-time) or asynchronous; proctored (invigilated) or unproctored; and whether it is low-stakes or high-stakes assessment. The assessment strategies may also differ within private and public education institutions. Moreover, consideration must be given to the appropriate online platform to ensure reliability, security, and technological sophistication to address concerns about implementation, infrastructure, accessibility, security, dishonesty, academic integrity, and quality.

In the South African school system, research on Business Education within the school context is limited (America & Skelly, 2021). Business Education encompasses subjects like Business Studies, Economics, and Accounting for the Further Education and Training (FET) phase (grades 10-12).The teaching, learning, and assessment of these subjects culminate at the end of grade 12 as the exit level of schooling, which enables learners to either enter a higher education institution or participate in the formal or informal economic sectors.Nationally, learners take exit-level examinations that are high-stakes, proctored (invigilated), sit-down summative assessments. These examinations adhere to the learning outcomes stipulated in the respective Curriculum Assessment and Policy Statements (CAPS) frameworks, under the auspices of the Department of Basic Education, and are quality assured by Umalusi, the Council for Quality Assurance in General and Further Education and Training.There is immense responsibility on the stakeholders within the South African school education system for grade 12 learners to perform according to established performance indicators.

This article focuses on high-stakes, summative, and proctored online assessment within the school sector. The research questions are:

- What are the quality assurance indicators for online assessment in (business) education?
- What are the challenges education institutions face with online assessments?

The aim of this article is to establish a quality assurance framework for online assessments in Business Education within the FET phase. This framework could ensure transparency and consistency for proctored online assessments. In South Africa, the quality of online assessments in the school sector remains a significant concern, partly due to the lack of consensus on the criteria for establishing such quality.

1.1 Literature review

Assessment provides observable evidence of learning, understanding of the curriculum, and student progress (Joshi et al., 2020). There are inconclusive results in studies about the effects

of un-proctored versus proctored online assessments (Domínguez et al., 2019) and a wider range of assessment results therein (Hollister & Berenson, 2009). Others find no evidence that the absence of invigilators affects assessment performance (Lievens & Burke, 2011), provided that the assessment task is properly designed and the arrangements are effectively made (Lin et al., 2023). However, during and after Covid-19, the implementation of assessment presented a new focus on e-assessment, also referred to as online assessment. Online assessment presents different options, such as proctored or un-proctored, formative or summative, and low-stakes or high-stakes online assessments. Given the South African socio-economic inequalities and digital divide within the education system, technological advancement with regard to surveillance and efficacy should not disadvantage the poor (Meeran & Davids, 2022). These authors focused on Online Open Book Examinations within a university context and experienced, for the first time, the use of an invigilation application activated by scanning a QR code with a smartphone. They argue that to ensure fairness in assessment (no digital exclusion), students should be exposed to these technologies prior to the examination.

The use of online assessment has largely been for formative purposes, while being restricted to digital portfolios when it comes to summative assessment (Lin et al., 2023). It is important that there should be flexibility in terms of how and when assessments are administered and whether students have internet access (un-proctored assessments), the institution's infrastructure, and a stable learning management system (Lin et al., 2023). Overall, online assessment requires pedagogical and practical considerations in the attainment of learning outcomes.

Online assessment is dependent on technology, which has infrastructure and cost implications. These can vary in the case of proctored online assessments versus un-proctored. The cost will depend on the assessment system software licence, servers, a large number of computers, well-trained support staff, and large spaces (Sim, Holifield & Brown, 2004). In addition, good licensed anti-virus and anti-hacking software should be implemented. In high-stakes summative assessments, online cheating, plagiarism, and identity fraud are real concerns. Anti-plagiarism software such as Turnitin could be useful in countering academic dishonesty. Facial or eye authentication could be the way forward to ensure the identity of the student can be affirmed. Students with special needs and physical disabilities should also be considered in online assessments.

Joshi et al. (2020) identify a variety of pedagogically appropriate guidelines for e-assessment which include authenticity, validity, reliability, and that it should be conducted by a trained assessor. The latter is an important impact factor, especially for high-risk summative assessments. Moreover, online assessments should be entrenched in a quality assurance framework to ensure that the assessment is of high quality, reliable, valid, and fair. In the case of unproctored online assessments, there are concerns about potential issues with learning quality, such as plagiarism and grade inflation. Joshi et al. (2020) are of the view that the biggest hurdle is to conduct summative online assessments.

Although various studies have been conducted during and post-COVID-19 across higher education and schooling about the impact of online teaching, learning, and assessment (Mahlaba & Sekano, 2023), the focus on Business Education appears to be sparse. Regarding online assessment specifically, there has been increasing uptake, albeit mostly within the formative assessment domain, in many fields of study over the past decade (Huber et al., 2024) in higher education, but to a lesser extent in the school environment and more specifically about summative assessments.

1.2 Theoretical framing

Our research is framed within Biggs' extended P-model called Policy-Presage-Process-Product, which is an interactive framework in which individuals, organisations, and contextual experiences interact to support the learning process (Biggs, 1993; Allison, 2021). Policy suggests that, due to the context of the country, educational systems and cultures vary, and a political dimension is common to educational systems (Allison, 2021). These structures may include statutory bodies; for example, within the South African context, Umalusi and the Department of Education.

Presage refers to the experiences of stakeholders, such as schools, teachers, and learners. These experiences can encompass perceptions, expertise, professional and academic skills, values, beliefs, the enacted curriculum, and the perceived degree of institutional support for teachers' initiatives (Kanashiro et al., 2020). The third element is the Process factor, which refers to how students approach learning (including assessment) based on the teachers' Presage factors. Learning can be deep or surface, with the latter referring to minimal effort to meet the learning outcomes. Deep learning involves engagement with the subject through maximum meaning, understanding, connections, and relationships between topics, as well as the development of creative thinking and analytical skills (Kanashiro et al., 2020). In this instance, online assessment requires a deep understanding of its risks, maximum output, and contextual factors. The final factor of this model is Product, which implies the attainment of the envisaged learning outcomes. Ideally, learning outcomes should enable a learner to describe, understand, explain, and reflect on the subject.

Education systems and practices vary across countries. Central to these systems is a political dimension that influences a country's context and educational practices, and this should not be overlooked. Consequently, the challenges educational institutions face are embedded in the context of their country. For this reason, we propose the addition of a fourth P for Policy, as suggested by Allison (2021). Thus, Biggs' 3P Model has been adapted in the context of online assessments with this additional factor, called Policy. See Figure 1 below:

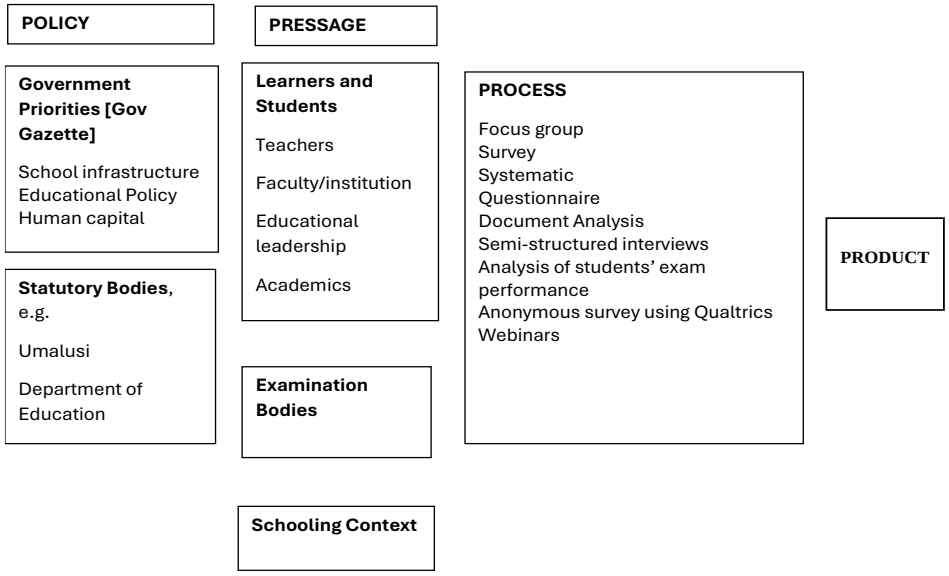

Figure 1: *4P Model [adapted from Biggs et al. (1993) and Allison (2021)]*

2. Methodology

This research is a preliminary inquiry using a meta-study methodology. A meta-study is employed to interpret and systematically review primary research, revealing the similarities and differences across a range of studies. It differs from a traditional literature review in that it is conducted in a methodical (or systematic) and unbiased manner, according to a pre-specified protocol. Of specific interest in this case is the scope of peer-reviewed research publications on online summative assessment between 2018 and 2023, using the following keywords: quality assurance, online assessments, e-assessments, online assessments in business education. These four themes broadly cover the key aspects identified in the literature review on the challenges in online assessment within the South African context. The timeframe represents two years prior and three years during and after COVID-19.

The analysis process of this meta-study starts with the identification of studies that comply with the pre-specified protocol by using Google Scholar as the search engine, followed by the (re)interpretation according to the four themes identified, after which the data are appraised and key findings are summarised. Booth (2006) is of the view that the results of such a systematic review could lead to the development of new knowledge, a synthesis or interpretative conversion of the new knowledge.

We reviewed the protocols employed by Dempster (2003), Khan et al. (2003) and Moher et al. (2009). In using the keywords 'online assessment', we found that most of these articles focused on the use of software programs for online assessments such as Mooc, Kahoot and Moodle, which were then excluded in the final stage. We consulted one additional document, such as

TESLA, and used the BIGGS model as a lens to develop a quality assurance framework for summative, proctored, online assessments.

The sample was limited to articles in peer-reviewed journals that focus on quality assuring online assessment, in particular summative assessments, and the initial sample included 55 articles. Articles were included or excluded based on three criteria:

- The article is a peer-reviewed academic article.
- The article is concerned with quality-assuring online assessments.
- The article presents an explicit detail regarding quality assurance indicators for online assessments.

The inclusion/exclusion criteria were addressed in three subsequent rounds of review: the first round involved a title/abstract review by the first author; the second round consisted of a title/abstract review by the second author; and the third round included a full-text review by both authors. Initially, we discarded articles that did not directly address our research questions or meet the inclusion criteria stated above. Next, we coded each of the articles based on categories under Biggs' 3P model using the ATLAS.ti software programme. Finally, we summarised the main findings of each article as they relate to the research question on quality indicators that inform summative online assessments, utilising Biggs' model.

We then organised the findings according to the presage–process–product categories described in Biggs' 3P model, aiming to synthesise commonalities between studies or highlight areas of inconclusive results. The final sample included 20 articles, as seen in the table below.

Table 1: *Research Articles Included [2018 TO 2023]*

N0	Article Title	Journals	Authors	Years
P1	Towards a framework for designing and evaluating online assessments in business education	Journal homepage: www.tandfonline.com /journals/caeh20	Elaine Huber, Lynne Harris, Sue Wright, Amanda White, Corina Raduescu, Sandris Zeivots, Andrew Cram & Andrew Brodzeli	2023
P2	Online Assessment: Concept and Applications	Journal of Research in Medical Education & Ethics	Anuradha Joshi1 , Amrit Virk, Shaista Saiyad, Rajiv Mahajan and Tejinder Singh.	2020
P3	Online Assessment in the Era of Digital Natives in Higher Education Institutions	International Journal of Technology in Education	Placidius Ndibalema	2021
P4	Guidelines for Online Assessment in Emergency Remote Teaching during the COVID-19 Pandemic	Education in Medical Journal	Ahmad Fuad Abdul Rahim	2020

P5	EFL Teachers' Online Assessment Practices During the COVID-19 Pandemic: Changes and Mediating Factors	Asia-Pacific Edu Res	Cong Zhang, Xun Yan, Junju Wang	2021
P6	Is Online Assessment in Higher Education Institutions during COVID-19 Pandemic Reliable?	Siriraj Medical Journal	Nik Ani Afiqah Tuah, Lin Naing.	2021
P7	Students' Perspective on Online Assessment during the COVID-19 Pandemic in Higher Education Institutions	An International Journal	Najeh Rajeh Alsalhi, Abdallah Darweesh Qusef, Sami Sulieman Al-Qatawneh and Mohd. Elmagzoub Eltahir	2022
P8	Virtual exams: has COVID-19 provided the impetus to change assessment methods in medicine?	Bone Jt Open	M. Pettit, S. Shukla, J. Zhang, K. H. Sunil Kumar, and V. Khanduja	2021
P9	Academic integrity of university students during emergency remote online assessment: An exploration of student voices	Transformation in higher education	Anne H. Verhoef, and Yolandi M. Coetser.	2021
P10	Students' Experiences of Fairness in Online Assessment: A Phenomenological Study in a Higher Education Institution Context	SAGE Open	Mohd Elmagzoub Eltahir, Nagaletchimee Annamalai, Arulselvi Uthayakumaran, Samer H Zyoud1, Antonia Ramı´rez Garcı´a, Viktorija Mazˇeikiene, Bilal Zakarneh and Najeh Rajeh Al Salhi.	2023
P11	Students' acceptance and perceptions of online assessments post-COVID-19 pandemic: A case of Community Extension students at a historically disadvantaged institution	Perspectives in Education	Ntombenhle Ndlovu, Phiwayinkosi R. Gumede, and Sandile Mthimkhulu.	2023
P12	Academic Dishonesty in Online Accounting Assessments—Evidence on the Use of Academic Resource Sites	Issues in Accounting Education	Jenelle K. Conaway and Taylor Wiesen	2023

P13	High-stakes online assessments: A case study of National Benchmark Tests during COVID-19	Perspectives in Education	Ms Tatiana Sango, Robert Prince, Sanet Steyn, and Precious Mudavanhu	2022
P14	Secondary school teachers' use of online formative assessment during COVID-19 lockdown: Experiences and lessons learned	Journal of Computer-Assisted Learning	Maria Joanna Veugen, Judith Theresia Maria Gulikers, and Perry den Brok.	2022
P15	Minimise Online Cheating for Online Assessments During COVID-19 Pandemic	Journal of Chemical Education	Joseph G. Nguyen, Kristopher J. Keuseman and Jonathan J. Humston	2020
P16	Quality Assurance Framework for K-12 Online Learning	Saskatchewan	Guideline	2023
P17	Considerations and strategies for effective online assessment with a focus on the biomedical sciences	Perspective	Karen Mate, and Judith Weidenhofer	2021
P18	Online Assessment in Higher Education: A Systematic Review	Online Learning	Joana Heil,	2023
P19	Rethinking online assessment from university students' perspective in the COVID-19 pandemic	Cogent Education	Vivian Wing Yan Lee, Paul Lai Chuen Lam, Judy Tsiu Sim Lo, Jesse Lai Fong Lee, and Joyce Tik Sze Li.	2022
P20	Emerging trends of online assessment systems in the emergency remote teaching period	Smart Learning Environments	Arif Cem Topuz1 , Eda Saka, Ömer Faruk Fatsa, and Engin Kurşun.	2022

3. Discussion of Findings

As previously mentioned, 20 articles were included in the analysis, of which 11 were empirical and 9 were theoretical papers. Among the empirical studies, 9 applied qualitative research methods, 5 used quantitative methods, and 2 employed a combined approach. Four of the articles provided a review of quality assurance in an educational setting. Our search did not yield any articles specific to Business Education that relate to online assessment, summative assessment, or quality assurance.

The studies were also categorised according to geographical spread. One study represented Tanzania (n = 1) and Malaysia (n = 3). There were four studies conducted in China, two each in the UK, USA, and South Africa, and one each in Germany, India, the United Arab Emirates,

the Netherlands, and Turkey. This indicates a strong representation of the Global North in the literature on online assessments.

From the thematic analysis, several overarching themes were identified that informed the quality indicators of online assessment for teaching and learning, as well as the development of a proposed quality assurance framework. The analysis relied on the empirical studies conducted and systematic reviews of online assessments. To develop the quality assurance framework, we focused mainly on the challenges faced by students, teachers, and institutions related to online assessments.

3.1 Presage

The first element of Bigg's 3P model is the Presage factors, which represent teachers, students, faculty/institutions, and experiences related to online assessments. Teachers' Presage factors include ensuring equity of access for students and facing challenges such as academic dishonesty, limited exposure to technological innovation, exam security, and academic integrity. Students' Presage factors encompass their experiences with unreliable internet access, a lack of provisions and support to alleviate the anxiety of online assessments, limited accessibility to personal devices, the incorporation of technology in teaching, low acceptance and readiness for new technology, and academic dishonesty. Meanwhile, faculty/institution Presage factors primarily concern infrastructure issues, such as a lack of awareness of ICT policies, costs related to hacking and viruses, system failures and compatibility, procedural justice related to student unfairness, and the alignment of assessment culture with discipline and stated learning objectives.

3.2 Process

The second element, Process, includes the research instruments required for achieving the purpose of establishing the challenges facing online assessments and the quality indicators needed for quality assurance. The themes are identified as steps in the process of collecting information for the purpose of achieving a desired outcome. See the table below for an overview of the instruments used:

Table 2: *Categorization of instruments and the number of articles per instrument*

Instruments	**n**
Focus group	1
Survey	2
Systematic review	6
Analysis of institutional	1
Questionnaire	5
Document Analysis	5
Semi-structured interviews	4
Scoping review	1
Analysis of students' exam performance	2
Anonymous survey using Qualtrics	1

Webinars	1

3.3 Product

Finally, the Product is the outcome that is a direct result of the challenges teachers and students face, such as academic integrity, ensuring equity of access for students, and academic dishonesty (Huber, Harris, Wright, White, Zeivots, Cram & Brodzeli, 2023). An example of academic dishonesty is purported by Conaway and Wiesen (2023), who found that accounting students make use of Chegg, which is an online question-and-answer student service.

The major reasons for dishonesty include the availability of content online, students feeling overwhelmed and stressed, pandemic-related issues, lack of monitoring, lack of time management, academic inexperience, struggles with technology, recycling of lecture questions, and allowing too much time for assessment (Verhoef & Coetser, 2021). These researchers propose that to prevent online cheating, academics should ask different questions and have proctored assessments (remote invigilation). To address academic dishonesty, there should be an increase in assessment frequency for online formative assessments to reduce the risk that could lead to greater learning gains (Nguyen, Keuseman & Humston, 2020).

Institutions are facing challenges such as the prevention of viruses and the cost to avoid hacking (Joshi, Virk, Saiyad, Mahajan & Singh, 2020). Pettit, Shukla, Zhang, Kumar, and Handuja (2021) found similar challenges related to online assessments, such as exam security (cheating, dishonesty), authentication (confirmation of candidates' identity), maintaining exam integrity, poor candidate internet access, systems failure and compatibility, cybersecurity threats, impersonation, and cheating detection.

In Ndibalema (2021), students experience unreliable internet access and display negative attitudes toward online assessments. Factors that exacerbate students' negative attitudes include their limited accessibility to personal devices and limited exposure to technological innovation, which results in low acceptance and readiness for new technology. This researcher also highlighted inadequate organisational support, such as limited orientation on basic skills in e-learning and lack of awareness of ICT policies. In terms of pedagogy, there is a lack of basic skills for online assessments, and it was found that few academics integrate technology into their teaching. On another note, the concept of 'procedural justice' was emphasised, as students felt they were being treated unfairly because of limited time, technical problems, and unclear expectations of assessment (Eltahir, Annamalai, Uthayakumaran, Zyoud, Garcıa, Mazeikiene, Zakarneh & Al Salhi, 2023). To overcome these challenges, it is recommended that institutions plan and implement changes, such as an increase in the percentage of formative assessments and a decrease in the percentage of summative assessments (Zhang Yan Wan, 2021). A similar recommendation is echoed by Veugen, Gulikers, and den Brok (2022) that institutions should lean more towards formative online assessments due to reliability and validity issues.

Tuah and Naing (2021) further propose that the following considerations for online assessments related to readiness, student diversity, and cheating practices should be taken into account:

- Internet unavailability
- Cost for paper and other logistics
- Internet instability
- Slow feedback
- Unable to afford internet Faculty perspectives:
- Cost of internet/wifi
- More time for grading
- More time for checking plagiarism
- Require training
- Logistics for invigilation
- Require motivation
- Require an online platform
- Require technical support

To conclude, the success factors of online assessment should include that assessment criteria need to be made transparent, as well as students' perspectives on the perceived ease of use and perceived usefulness of online assessments (Heil and Ifenthaler, 2023).

3.4 Policy

We included policy because of the context of a country's educational systems and cultures that vary, commonly by political structures, and common to educational systems is a political dimension (Allison, 2021). As such, when establishing the challenges related to online assessments and quality indicators through the lens of Biggs' 3P, the inclusion of a country's context and culture should not be overlooked (Zhang, Yan & Wan, 2021).

There are two policy factors, namely government priorities and regulatory bodies. Government priorities are linked to what a country's focus is regarding their society and place an emphasis on the role society plays in education. For example, is the focus of education addressing scarce skills in society? Regulatory bodies, on the other hand, are influenced by government and established to manage and monitor educational performance and standards. These regulatory bodies also influence the traditional elements that exist within the 3P model. That said, education examination bodies must comply with a myriad of government regulations, resulting in similar operations despite their legal independence (Zhang, Yan & Wan, 2021).

3.5 Quality Assurance framework

We present our preliminary quality assurance framework for high-stakes summative proctored assessments. This framework is centred around the 4 P's (policy, purpose, people, and process) and provides a platform for reflecting on the alignment (or lack thereof) of these four elements

in any quality assurance configuration. This means that, depending on the goals of an organisation, processes can be identified that position people in ways that may contribute to educational quality. Consequently, the framework offers a perspective on quality assurance that has the potential to explain why quality assurance in an organisation is functional or non-functional. Below is an illustration of the proposed quality assurance framework:

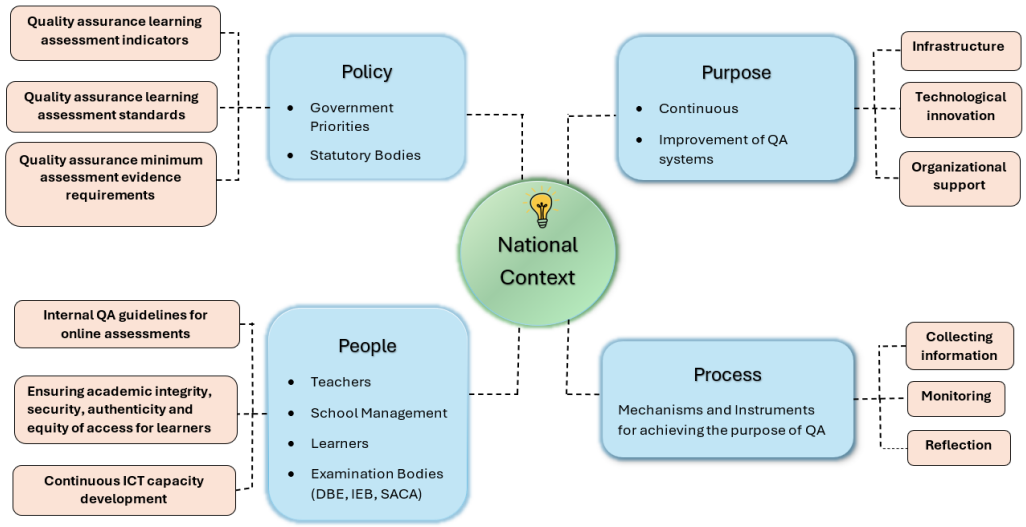

Figure 2: *Quality assurance framework*

First, attention must be given to a policy that addresses the quality assurance of learning assessment indicators and standards, along with the minimum evidence required for quality assurance. Second, once the policy has been approved, stakeholders (including examination bodies, teachers, and management) need to develop internal guidelines for online assessments. These guidelines should ensure academic integrity, cyber security, authenticity, and equitable access for learners, while also considering the continuous ICT capacity development of all stakeholders within the organisation. Third, the focus should be on the continuous improvement of quality assurance systems, such as infrastructure, technological innovation, and organisational support. Finally, the process encompasses the mechanisms and instruments required to achieve the aims of quality assurance. Here, the collection of information, monitoring, and reflection on the operational aspects of quality assurance are crucial.

4. Conclusion

Based on the preliminary meta-study on online assessment, Figure 2 illustrates that the national context of South Africa is the cornerstone upon which all decisions regarding online assessments in basic education should be based. Even if online assessment is not yet a national imperative, the changing times and technological advancements in almost all spheres of life make it a force to be reckoned with. Moreover, the proliferation of private educational institutions with the technological resources and trained human capacity to implement large-scale assessments could

place additional pressure on educational policymakers.The Policy dimension in Figure 2 represents specific regulatory or statutory bodies responsible for ensuring that quality assurance learning requirements, standards, and indicators are aligned with the national government's priorities for online assessment in basic education.

The people (examination bodies, teachers, learners, and school management teams) are integral to the successful implementation of online assessment. The internal quality assurance guidelines governing the technological systems, as well as issues regarding authenticity, security, academic integrity, and access, are important. Continuous training and development of staff are crucial.

The processes applied to ensure the quality of online assessments involve the continuous collection of information and monitoring of the strengths and weaknesses of the process. Regular reflection and diagnostic analysis of each online summative assessment will ensure that challenges are circumvented and improvements for future assessments are envisaged.

The ultimate outcome or purpose of an efficient quality assurance system is the continuous improvement and development of quality assurance systems.Sophisticated technological infrastructure and continuous innovation should be in place, including high-level expertise in cybersecurity. This aspect of the quality assurance system cannot be achieved without skilled technical and IT staff, particularly for high-stakes, proctored summative online assessments.

We are cognisant of the limitations of this research. As stated, it is a preliminary study in which only one search engine was used. Moving forward, our aim is to include additional search engines and databases to ensure that the bulk of the publications on the topic are included. We could also extend our keywords to 'teaching and assessment' and 'learning and assessment', as assessment might be a sub-topic of teaching and learning research in general. As established in the proposed framework of this research, the future direction for quality assurance in assessment encompasses a broader approach to teaching and learning in basic education.

5. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

Allison, J. (2021). The importance of context: Assessing the challenges of K-12 computing education through the lens of biggs 3P model. In *Proceedings of the 21st Koli Calling International Conference on Computing Education Research* (pp. 1–10). Joensuu.

America, C., & Skelly, L. (2001). Exploring the scope of and gaps in the teaching and learning of Business Studies at school and teacher education levels. *Journal of Transdisciplinary Research Southern Africa*, *17*(1), 1040. https://doi.org/10.4102/td.v17i1.1040

Biggs, J. B. (1993). From Theory to Practice: A Cognitive Systems approach. *Higher Education Research and Development, 12*(1), 73-85. https://doi.org/10.1080/0729436930120107

Booth A. (2006). Brimful of starlite: Toward standards for reporting literature searches. *Journal of the Medical Library Association*, *94*(4), 421–205.

Dempster, M. (2003). Systematic review. In R. Miller & J. Brewer (Eds.), *The A-Z of social research* (pp. 312–316). Sage Publications.

Domínguez, C., Lopez-Cuadrado, J., Armendariz, A., Jaime, A., Heras, J., & Pérez, T.A. (2019). "Exploring the differences between low-stakes proctored and unproctored language testing using an internet-based application", *Computer Assisted Language Learning*, *32*(5/6), 483-509. https://doi.org/10.1080/09588221.2018.1527360

Ellis, R., Peppen, R.S., & Brennan, P.A. (2021). Virtual postgraduate exams and assessments: the challenges of online delivery and optimising performance. *British Journal of Oral and Maxillofacial Surgery*, *59*(2), 233-237. https://doi.org/10.1016/j.bjoms.2020.12.011

Eltahir, M. E., Annamalai, N., Uthayakumaran, A.,Zyoud, S. H., García, A. R., Mazeikienė, V., Zakarneh, B., & Al Salhi, N. R. (2023). Students' experiences of fairness in online assessment: A phenomenological study in a higher education institution context. *SAGE Open**, 13, 1–13.

Foerster, M., Gourdin A., Huertas, E., Möhren, J., Ranne, P. & Roca, R. (2019). *Framework for the quality assurance of e-assessment*. Project Number: 688520 – TESLA – H2020-ICT-2015/H2020-ICT-2015.

Hollister, K.K. & Berenson, M.L. (2009). "Proctored versus unproctored online exams: studying the impact of exam environment on student performance", *Decision Sciences Journal of Innovative Education, 7*(1), 271-294. https://doi.org/10.1111/j.1540-4609.2008.00220.x

Huber, E., Harris, L., Wright, S., White, A., Zeivots, C., Cram A., & Brodzeli, A. (2023). Towards a framework for designing and evaluating online assessments in business education. *Assessment and Evaluation in Higher Education*, *49*(1), 102–116. https://doi.org/10.1080/02602938.2023.2183487

Joshi, A., Virk, A., Saiyad, S., Mahajan, R., & Singh, T. (2020). Online Assessment: Concept and Applications. *Journal of Research in Medical Education & Ethics*, *10*(2), 79-89.

Kanashiro, P., Iizuka, E.S., Sousa, C. & Dias, S.E.F. (2020). Sustainability in management education: A Biggs' 3P model application. *International Journal of Sustainability in Higher Education*, *21*(4), 671-684.

Khan, K.S., Kunz, R., Kleijnen, J. & Antes, G. (2003). Five steps to conducting a systematic review. *J R Soc Med., 96*(3), 118–121. https://doi.org/10.1258/jrsm.96.3.118

Lievens, F., & Burke, E. (2011). Dealing with the threats inherent in unproctored internet testing of cognitive ability: Results from a large-scale operational test program. *Journal of Occupational and Organizational Psychology*, *84*(4), 817-824. https://psycnet.apa.org/doi/10.1348/096317910X522672

Lin, L. Foung, D., & Chen, J. (2023). Assuring online assessment quality: the case of unproctored online assessment. *Quality Assurance in Education*, *31*(1), 137-150.

Mahlaba, S. C., & Sekano, K. G. (2023). A systematic review of the implications for teaching, learning and assessment at South African universities after the Covid-19 pandemic. *Perspectives in Education, 41*(4), 293-311. https://doi.org/10.38140/pie.v41i4.6181

Maphalala, M.C., Khumalo, N.P., & Khumalo, P.N. (2021). Student teachers' experiences of the emergency transition to online learning during the COVID-19 lockdown at a South African university. *Perspectives in Education, 39*(3), 30-43. http://dx.doi.org/10.18820/2519593X/pie.v39.i3.4

Meeran, S., & Davids, M.N. (2022). Covid-19 catalysing assessment transformation: a case of the online open book examination. *South African Journal of Higher Education, 36*(3), 109-122. https://dx.doi.org/10.20853/36-3-4732

Moher, D., Liberati, A., Tetzlaff, J., Altman, D., & The PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement [flow diagram]. *PLoS Med 6*(7), e1000097. https://doi.org/10.1371/journal. pmed1000097

Ndibalema, P. (2021). Online Assessment in the Era of Digital Natives in Higher Education Institutions. *International Journal of Technology in Education*, *4*(3), 443-463.

Pettit, M., Shukla, S., Zhang, J., Kumar, S. & Khanduja, V. (2021). Virtual exams: Has COVID-19 provided the impetus to change assessment methods in medicine? *Bone Jt Open*, *2*(2), 111–118.

Ramrung, M.A., Frade, N., Marais, M.F., Govender, M.T., Cupido, X., Pather, S. & Fontaine, D. (2020). *Care and connection: understanding the lived experiences during COVID-19*. HELTASA.

Sim, G., Holifield, P. & Brown, M. (2004). Implementation of computer assisted assessment: lessons from the literature. *ALT-J*, *2*(3), 215–29.

Tuah, N.A. & Naing, L. (2021). Is Online Assessment in Higher Education Institutions during COVID-19 Pandemic Reliable? *Siriraj Medical Journal, 73*(1), 61-68.

Verhoef, A.H. & Coetser, Y.M. (2021). Academic integrity of university students during emergency remote online assessment: An exploration of student voices. *Transformation in Higher Education, 6*(0), a132.

Veugen, M.J., Gulikers, J.T.M., & den Brok, P. (2022). Secondary school teachers' use of online formative assessment during COVID-19 lockdown: Experiences and lessons learned. *Journal of Computer Assisted Learning*, *38*(1), 1465–1481.

Walvoord, B.E. (2010). *Assessment clear and simple: A practical guide for institutions, departments, and general education (2nd ed.).* San Francisco, CA: Jossey-Bass.

Zhang, C., Yan, X., & Wan, J. (2021). EFL Teachers' Online Assessment Practices During the COVID-19 Pandemic: Changes and Mediating Factors. *Asia-Pacific Edu Res*, *30*(6), 499–507.

Strategies for Enhancing Learning Outcomes Through Partnerships in South Africa's Education Sector

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Reference Formats (APA 7th Edition)

Ndlovu, P., & Mafora, O. A. (2024). Strategies for enhancing learning outcomes through partnerships in South Africa's education sector. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 17–29). ERRCD Forum. https://doi.org/10.38140/obp2-2024-02

Abstract: In South Africa's evolving education landscape, strategic partnerships and distinctive brand identities play pivotal roles in enhancing learning outcomes and accessibility. However, many educational institutions struggle to differentiate themselves and leverage synergies effectively, hindering their ability to craft appealing strategies for partnerships and brand development. This research paper explores fundamental theories and best practices that educational institutions can adopt to create distinctive brand identities and establish meaningful partnerships, which are key factors in enhancing learning outcomes and institutional sustainability. The study focuses on three critical areas: articulating an institution's unique identity and vision, developing distinct visual identities and messaging, and implementing and sustaining strategic partnerships. It emphasises the importance of clearly conveying institutional strengths and values to priority audiences, enabling educational entities to stand out amidst competition and form valuable collaborations with external stakeholders. The research highlights how these collaborations can create synergies that significantly enhance educational offerings and operational efficiency. Furthermore, it draws attention to the importance of authentically defining core competencies and differentiators, developing vision and mission statements that communicate strategic priorities, designing cohesive visual identifiers, and constructing marketing messages that resonate with key stakeholders. The paper argues that the long-term sustainability and competitiveness of educational institutions in South Africa depend substantially on their ability to define a distinct identity and expand capability pipelines through strategic partnerships. This study contributes to the body of knowledge in educational management and marketing, offering actionable recommendations for institutions striving to enhance their impact, relevance, and sustainability in pursuit of quality education for all in South Africa's dynamic educational environment.

Keywords: Brand differentiation, strategic partnerships, educational synergies, learning outcomes, South African education.

1. Introduction

Institutions in South Africa's fast-changing educational landscape face a crucial challenge: how to stand out in a more competitive environment while improving accessibility and learning outcomes for a diverse student body. Resource limitations, technological developments, and the lingering effects of past injustices in the educational system all contribute to this issue (Mohamed, 2020; Sikwela et al., 2018). Educational institutions find it challenging to communicate distinctive value propositions and leverage potential synergies, making it difficult to attract students, form alliances, and maintain long-term financial viability (Mlambo et al.,

2017). This assertion is supported by Bird and Mugobo (2021), who note that most of the more prominent and well-known private universities in South Africa rely on corporate image and website branding to remain profitable and successful. As the number of private higher education institutions grows, the long-term sustainability and competitiveness of these institutions increasingly depend on their ability to define a unique identity and expand their capability pipelines amidst the evolving educational landscape.

The challenge facing educational institutions is significant. First and foremost, there is an urgent need for educational institutions to develop distinctive brand identities that appeal to key stakeholders in a diverse and competitive market (Rameshkkumar & Alagappan, 2022). Secondly, many colleges and universities face the challenge of creating and sustaining strategic alliances that could enhance their academic programmes and administrative effectiveness (Lundy & Ladd, 2020).Innovations in higher education in the twenty-first century, such as technology-based education and blended learning, have become branding drivers, as they support the modern student experience and allow institutions to provide more personalised attention to each student due to smaller enrolments. Additionally, it is increasingly evident that students in smaller learning environments enjoy greater academic freedom of thought. Finally, it is imperative that these branding and collaboration initiatives align with the broader objectives of increasing educational accessibility and improving learning outcomes across South Africa's socioeconomic spectrum (Bird & Mugobo, 2021).

According to Karson, Purwanto, and Salman (2021), to provide parents and students with the best educational offerings, educational institutions must have a branding strategy. Naturally, different schools employ different approaches.This paper will examine how core competencies and differentiators define brand identity, the development of vision and mission statements that communicate strategic priorities, the design of visual identifiers and usage guidelines that express the brand, and the construction of marketing messages that resonate with priority stakeholders. Furthermore, the research will delve into the critical role of partnerships in enhancing learning outcomes and accessibility. It will explore how collaborations can address resource constraints, improve curriculum relevance, and provide students with diverse learning experiences. The paper highlights how these partnerships contribute to financial sustainability by opening up new revenue streams, creating economies of scale, and improving operational efficiencies.

Therefore, by addressing these crucial aspects of branding and partnerships in education, this research aims to provide valuable insights and practical strategies for educational institutions seeking to thrive in South Africa's dynamic and challenging environment. The findings will not only contribute to the body of knowledge in educational management and marketing but also offer actionable recommendations for institutions striving to enhance their impact, relevance, and sustainability in the pursuit of quality education for all.

2. Discussion of Findings

2.1 The need for partnership strategies to enhance learning outcomes and accessibility

Strategic alliances in the domain of education are crucial for addressing complex problems that individual institutions cannot handle alone. Many current issues in education, such as the promotion of inclusivity, the achievement of sustainability, and the maintenance of global competitiveness, require collaborative and innovative solutions that draw on a variety of experiences and resources. Irdiyanti, Haryono, Oktorina, and Awalya (2023) state that schools with a unique identity and distinctive traits can carve out a niche for themselves in the community, asserting that a school's history, values, objectives, and aspirations are all part of its identity. A brand's identity sets it apart from competitors. However, the majority of Indonesian private schools lack the distinguishing characteristics necessary to stand out, resulting in branding failures. These failures are primarily caused by inadequate marketing support, subpar school quality, and a lack of uniqueness from the parent brand.

The complexity of modern educational problems calls for a multi-dimensional approach. Collaborative partnerships foster cooperation among teachers, policymakers, businesses, and community members, thus enabling comprehensive solutions. For instance, intersectoral collaboration can lead to the development of programmes that address both academic and socio-emotional learning needs, thereby guaranteeing a more holistic educational experience (Fullan, 2007). From the assertions made by Irdiyanti et al. (2023), it is evident that in today's rapidly evolving educational landscape, the need for effective partnership strategies has become increasingly crucial for institutions seeking to enhance learning outcomes and improve accessibility. Schools must consider various types of collaborations and how learners can benefit from them. Families and educators are frequently mentioned as the main partners; however, schools can also collaborate with the broader educational community, which includes local businesses, media outlets, sports teams, organisations, and individuals. To establish overarching objectives, educators and schools should work closely with partners to determine the time required to create, execute, and maintain a relationship, and identify which areas of the curriculum would benefit most from collaboration.

Many educational institutions, particularly in underdeveloped countries such as South Africa, face considerable resource constraints (Mohamed, 2020). Partnerships can provide access to additional financing, knowledge, and infrastructure that individual institutions may struggle to acquire on their own (Brooks et al., 2012). By pooling resources through strategic cooperation, institutions can offer more comprehensive and higher-quality educational experiences to their students. The rapid pace of technological change presents both opportunities and challenges for educational institutions (Gopalan, 2016). Collaborating with technology companies, research institutions, and other innovative organisations can help schools stay informed about the latest

instructional technologies and methodologies. This can result in more engaging and effective learning experiences, thereby enhancing overall outcomes.

There is a need to bridge the skills gap that exists in South Africa. The talents taught in schools and those demanded by employers are sometimes at odds (Börner et al., 2018). Graduates not only lack an understanding of the requirements, tasks, and obligations of the professions they are applying to, but they also lack awareness of the broader work culture. In addition, they do not comprehend how careers progress within the corporate structure (Baradei and Kadry, 2022). Educational institutions must focus on addressing the skills gap in their curricula, as new industries and job types have emerged.

The introduction of Schools of Specialisation in the Gauteng Province is a strategic initiative that seeks to bridge the skills gap by leveraging partnerships between schools and industry. According to the Gauteng Department of Basic Education (2024), there is a need to improve the educational landscape to alleviate the skills shortage and high levels of unemployment. Partnering Schools of Specialisation with relevant industries based on their area of expertise is a strategic move that can enhance learning outcomes and make industry-relevant knowledge accessible.

Partnerships can play a crucial role in making education more accessible to underserved communities. Collaborations with local organisations, government bodies, or NGOs can help institutions improve access by reaching students who may otherwise be excluded from educational opportunities due to geographical, economic, or social barriers. Collaborative partnerships also provide immense opportunities for continuing professional development (CPD) for educators. Workshops, exchange programmes, and collaborative projects can help educators and administrators hone their skills and pedagogical practices. Various studies have indicated that teachers' participation in collaborative professional learning has a direct impact on increased student achievement, especially when CPD is sustained and coherent with classroom practice (Darling-Hammond et al., 2017).

Partnerships with industry players can help align curricula with real-world needs, ensuring that students are better prepared for their future careers. This alignment can significantly enhance the relevance and effectiveness of learning outcomes. According to focus group discussions conducted by Baradei and Kadry (2022), stakeholders claimed that because educational institutions are not keeping up with changes in the labour market, the current curricula are not connected to the workforce. Partnerships between educational institutions and research organisations can foster innovation in teaching and learning methodologies. Collaborations that enhance research and innovation can lead to the development of new pedagogical approaches, curriculum enhancements, and educational tools that improve learning outcomes across the board.

International and cross-sectoral collaborations will bring multiple perspectives into educational contexts. These alliances will certainly enrich the curriculum, broaden students' views of the world, and prepare them for a truly global community. Alliances that place global competencies at the core of partner integration align with frameworks such as UNESCO's Education 2030 Agenda, which advocates for education's role in fostering global citizenship (UNESCO, 2015). Partnerships can provide opportunities for educators to engage in continuous professional development through exchanges, workshops, and collaborative projects. This ongoing learning for teachers and administrators can directly translate into improved learning outcomes for students. Partnerships, especially those that cross sectoral or international boundaries, bring diverse perspectives to the educational process. This diversity can enrich the learning experience, broaden students' horizons, and prepare them for an increasingly interconnected global society. The need for partnership strategies in education is driven by the potential to overcome resource limitations, remain relevant in a rapidly changing world, improve the quality and accessibility of education, and address complex challenges. By fostering strategic collaborations, educational institutions can create synergies that not only enhance learning outcomes but also make education more accessible and relevant to a broader range of students. Rural and underserved communities benefit significantly from partnerships between educational institutions and non-governmental organisations (NGOs). The Khanya Project in the Western Cape, for instance, has partnered with various technology companies to bring computer literacy to rural schools, dramatically improving digital access and skills among learners who might otherwise be left behind in the digital age (Du Toit, 2005). Similarly, partnerships between schools and organisations like the Zenex Foundation have led to targeted interventions in mathematics and science education, addressing critical skills shortages in these areas (Zenex Foundation, 2022).

In the South African context, partnership strategies play a crucial role in enhancing learning outcomes and accessibility, addressing unique challenges and opportunities within the nation's educational landscape. South Africa's education system, shaped by its complex history and diverse population, faces significant disparities in resource distribution and quality of education across different regions and socioeconomic groups. Partnerships emerge as a vital tool to bridge these gaps and promote equitable access to quality education. In urban areas, collaborations between universities and major corporations have led to the development of specialised programmes in fields such as information technology, engineering, and business management. For example, the University of Cape Town's partnership with Siemens has resulted in the creation of a digital innovation lab, enhancing students' exposure to cutting-edge technologies and industry practices. Such initiatives not only improve learning outcomes but also increase graduates' employability in a competitive job market.

Language diversity in South Africa presents both challenges and opportunities for education. Partnerships between universities, language experts, and local communities have resulted in innovative approaches to multilingual education. For instance, the University of KwaZulu-

Natal's collaboration with isiZulu language experts and local schools has pioneered bilingual teaching methods, enhancing learning outcomes for students whose first language is not English. In the realm of higher education, partnerships between South African universities and international institutions have expanded research capabilities and global exposure for students and faculty. The African Institute for Mathematical Sciences (AIMS), with its network of centres across Africa, including South Africa, partners with global universities and tech companies to provide world-class postgraduate education in mathematical sciences, contributing to the development of local expertise in critical fields.

Technical and Vocational Education and Training (TVET) colleges have benefited from partnerships with industry players, aligning their curricula more closely with job market needs. For example, the collaboration between the Eastcape Midlands TVET College and the automotive industry in the Eastern Cape has led to specialised training programmes that directly feed into the local manufacturing sector, improving both learning outcomes and employment prospects for graduates (Parliamentary Monitoring Group, 2022). Partnerships also play a crucial role in addressing South Africa's historical inequalities in education. Initiatives like the Partners for Possibility programme bring together business leaders and school principals to improve leadership and management in underperforming schools, tackling systemic issues that affect learning outcomes (Collins & Betz, 2015).

In a fast-changing world, partnerships keep educational institutions relevant by adopting new technologies, calibrating curricula to meet market needs, and fostering lifelong learning. This flexibility ensures that students graduating are equipped to succeed in dynamic workforce environments (Hargreaves & Fullan, 2012). The COVID-19 pandemic highlighted the digital divide in South African education but also spurred innovative partnerships. Collaborations between telecom companies, edtech startups, and the Department of Basic Education resulted in zero-rated educational websites and the distribution of digital devices, ensuring continuity of learning for many students during school closures. In the South African context, partnership strategies not only enhance learning outcomes and accessibility; they are also instrumental in addressing historical inequalities, bridging the urban-rural divide, and preparing students for a rapidly changing global economy. By leveraging diverse expertise, resources, and perspectives, these partnerships contribute to a more resilient, inclusive, and effective education system that better serves the needs of all South African learners.

2.2 Leveraging Synergies

The financial viability of schools depends on utilising synergies, especially given the diversified and frequently resource-constrained educational environment in South Africa. When two or more organisations collaborate, their combined impact results in a greater overall effect than the sum of their individual efforts. This phenomenon is referred to as synergy. Leveraging these synergies can help schools achieve significant financial gains and operational efficiency, both of

which are necessary for long-term sustainability. Research indicates that strategic collaboration among schools and other stakeholders can lead to substantial cost savings and increased access to resources, which are critical for maintaining educational standards in resource-constrained settings. For instance, the Western Cape's Collaboration Schools initiative has demonstrated that partnerships between public schools and private entities can improve educational outcomes and financial management (Western Cape Education Department, 2018). Additionally, studies on collaborative learning models in South Africa highlight the benefits of teacher collaboration in enhancing educational quality and resource utilisation (Mthethwa, 2023).

Leveraging synergies is crucial for several reasons, chief among them being the possibility of cost savings. Collaborations allow for shared resources, lowering the financial burden on individual institutions in a nation where many schools confront budgetary constraints. For example, nearby schools may pool resources to share costly lab equipment, athletic facilities, or even specialised teaching personnel, enabling each school to offer a wider range of educational opportunities without having to pay for everything separately. This strategy is especially pertinent in South Africa, where there are severe disparities in educational resources, and many institutions struggle to provide a comprehensive range of courses due to budgetary limitations.

Additionally, economies of scale can result from synergies, which are particularly advantageous for smaller or underfunded schools. By collaborating during the procurement process, schools can negotiate better prices for supplies, textbooks, and instructional technology (Winthrop, 2022). Their collective bargaining strength enables schools to save a significant amount of money, allowing them to allocate their limited resources more effectively towards enhancing infrastructure and educational quality.

Leveraging synergies also opens up new revenue streams for schools. Collaborative efforts can make schools more attractive to donors, corporate sponsors, and government funding initiatives. For instance, a group of schools working together on an innovative educational programme may be more likely to secure grant funding than a single school pursuing the project alone. This increased appeal to funders can significantly bolster a school's financial resources, facilitating investments in quality improvements and the expansion of educational offerings.

Furthermore, synergies can enhance a school's market position and competitiveness. In South Africa's educational landscape, where private schools compete for students and public schools strive to retain learners, collaborative efforts can lead to unique selling propositions. Schools that are part of a network or partnership can offer students access to a wider range of resources, experiences, and opportunities, making them more attractive to prospective families. This enhanced appeal can lead to stable or increasing enrolment numbers, which is crucial for financial sustainability, especially for schools that rely heavily on tuition fees.

Operational efficiencies gained through synergies also contribute to financial sustainability. Collaborative administrative functions, shared professional development programmes for

teachers, or joint technology platforms can streamline operations and reduce overhead costs. These efficiencies not only save money but also enable schools to allocate more resources to their core educational mission, improving the quality of education without increasing costs.

In the South African context, where the education system faces challenges such as resource disparities, skills shortages, and the need for rapid technological adaptation, leveraging synergies can be a powerful tool for addressing these issues collectively (Baijnath, 2018). For instance, partnerships between well-resourced and under-resourced schools can facilitate knowledge transfer, resource sharing, and capacity building, helping to address systemic inequalities while improving the financial outlook for all involved institutions.

It is also worth noting that synergies can create resilience in the face of financial shocks or changing educational landscapes. The COVID-19 pandemic, for example, demonstrated the value of collaborative networks in teaching. Schools within larger systems or partnerships were frequently better positioned to transition to online learning, pool resources for remote instruction, and navigate the financial challenges created by the crisis (Mao, 2022). According to the Western Cape Education Department (2018), leveraging synergies is critically important for the financial sustainability of schools in South Africa. It offers pathways for cost reduction, resource optimisation, revenue enhancement, and operational efficiency. By working collaboratively and seeking out strategic partnerships, schools can not only improve their financial health but also enhance their educational offerings, adapt to changing circumstances, and contribute to a more equitable and robust educational ecosystem. As the education sector continues to face financial pressures and evolving demands, the ability to effectively leverage synergies will become increasingly vital for schools aiming to thrive in the long term. Given the persistent financial challenges faced by the education sector, the capacity to harness synergies effectively is poised to become a cornerstone of sustainable growth. Schools that succeed in these efforts are more likely to achieve long-term success and contribute to a robust educational ecosystem that supports broader societal development.

2.3 Design of visual identifiers

Building a school's brand is about much more than just logos and catchy slogans—it's about creating an identity that reflects the school's core values and connects with the people it serves. This involves setting clear standards for how the school is represented, using recognisable visual elements, and sharing messages that are authentic and meaningful. The design of visual identifiers and usage guidelines plays a crucial role in expressing a school's brand and constructing marketing messages that resonate with priority stakeholders, ultimately impacting financial sustainability. This process is integral to creating a cohesive and compelling brand identity that can attract students, engage parents, appeal to donors, and forge valuable partnerships. In the context of South Africa's diverse and competitive educational landscape,

effective visual branding can significantly influence an institution's perceived value and market position.

Visual identifiers, such as logos, colour schemes, typography, and imagery, serve as the tangible representation of a school's identity and values. When thoughtfully designed, these elements convey the institution's character, history, and aspirations at a glance. For instance, a school emphasising innovation and technology might opt for a modern, sleek logo design with cool colour tones, while an institution proud of its traditional values and long-standing heritage might choose classic fonts and warm, rich colours (Çelikkol, 2018). These visual cues immediately communicate the school's ethos to stakeholders, creating an instant connection with those who resonate with these values. The application of these graphic elements consistently across different platforms and materials is ensured by usage rules. Building brand recognition and stakeholder trust requires this consistency. A school's professionalism and attention to detail are reinforced when its visual identity is exhibited consistently on its website, social media accounts, printed materials, and physical campus. This well-organised presentation has the potential to greatly affect stakeholders' opinions about the school's dependability and quality, which in turn influences enrolment choices and donor confidence. In South Africa's ever-changing educational environment, having a strong brand is crucial. Schools are navigating challenges like increased competition, economic pressures, and shifting student demographics. A clear and consistent brand can help schools attract students, build partnerships, secure funding, and justify premium fees when necessary. More importantly, it creates trust and lasting connections with students, parents, and the broader community (Govender, 2021).

The effects of carefully considered visual identifiers and rules on financial sustainability are multifaceted. Firstly, they aid in successful differentiation in a crowded market. In South Africa, where there are state-funded public schools, reputable private schools, and recently developed alternative education models, making an impression is crucial. A distinctive visual identity can help an institution stand out and remain in the minds of potential students and their families, potentially leading to increased enrolment and tuition revenue. Research shows that schools with strong brands excel because they communicate their unique strengths and commitment to excellence. In South Africa, where education is a cornerstone of progress, a brand represents more than just a marketing strategy—it reflects the school's mission and its dedication to nurturing successful, well-rounded students (Moodley & Adam, 2019). Furthermore, a strong visual identity may justify premium costs for private or independent schools. When an educational programme's visual elements consistently convey exclusivity, quality, or innovation, stakeholders may be more willing to pay higher tuition, believing the education they are receiving is more valuable. In a country where many families sacrifice significant financial gains to ensure their children have access to top-notch education, this sense of value is essential.

Effective visual branding can attract corporate sponsorships and donations for public schools, particularly those serving impoverished populations. Potential funders and partners may

perceive a school as more legitimate and deserving of support if it possesses a polished and striking visual identity. Securing these additional funds can significantly enhance both the financial viability and pedagogical quality of South African schools, which heavily rely on external funding to supplement government subsidies.

At its core, branding is about fostering pride and belonging. It creates a shared sense of identity that unites everyone involved—students, parents, staff, and alumni. By investing in their brand, schools can ensure they remain relevant, sustainable, and prepared to thrive in an ever-changing world (Naidoo & Petersen, 2020).

The creation of marketing assets and messaging that resonate with key stakeholders is equally important. The messaging must align seamlessly with the visual brand while meeting the specific needs and values of the target audience. In South Africa's multilingual and multicultural context, this may involve developing messages that emphasise cultural inclusivity, academic success, or preparedness for the global job market, depending on the school's strengths and target audience. For example, a historically impoverished university could produce marketing materials that highlight alumni success stories that transcend socioeconomic divides. The visual components may incorporate symbols of empowerment and advancement, while the narrative focuses on themes of opportunity and transition. This approach may resonate strongly with the surrounding communities, thereby increasing enrolment and community support.

In a similar vein, institutions aiming to attract international students may create marketing materials that showcase their diverse student body, cutting-edge facilities, and global partnerships. Although the messaging emphasises cross-cultural communication and training for global employment, the visual identity may include elements suggesting global connectivity. By concentrating on this particular market, the school can capitalise on South Africa's growing need for international education to expand both its student body and revenue streams.

It is crucial to acknowledge that marketing messages and visual identifiers in the digital age must be flexible enough to function across various platforms. Whether a school's brand is displayed on a billboard, a smartphone screen, or school uniforms, it should maintain the same impact. This flexibility allows the school to efficiently interact and communicate with stakeholders across a variety of touchpoints, increasing its attractiveness and visibility.

A school's brand can be effectively communicated and resonated with by carefully crafting usage standards and visual identifiers, in addition to developing persuasive marketing messages. This methodical approach to branding and communication can significantly impact a school's ability to remain financially sustainable by influencing student decisions, attracting partnerships and funding, defending premium pricing when necessary, and cultivating enduring relationships with stakeholders.

With the ever-changing educational landscape in South Africa, schools face a wide range of opportunities and challenges. To ensure their long-term viability and success, they can benefit greatly from having a strong and consistent brand identity.

3. Conclusion

The great transformative potential residing in strategic partnerships lies in their ability to create synergies that improve educational outcomes. These collaborative efforts address some of the most pressing challenges while enhancing access and relevance through the combination of resources, the sharing of expertise, and the fostering of innovation. In this regard, strategic partnerships are essential for an equitable, sustainable, and future-ready educational system. A school's brand can be effectively communicated and resonated with by carefully crafting usage standards and visual identifiers, in addition to developing persuasive marketing messages. This methodical approach to branding and communication can significantly impact a school's capacity to remain financially sustainable by influencing student decisions, attracting partnerships and funding, defending premium pricing when necessary, and cultivating enduring relationships with stakeholders.

With the ever-changing educational landscape in South Africa, schools must navigate a wide range of opportunities and challenges. To ensure their long-term viability and success, they can benefit greatly from having a strong and consistent brand identity. Furthermore, synergies can enhance a school's market position and competitiveness. In South Africa's educational landscape, where private schools compete for students and public schools strive to retain learners, collaborative efforts can lead to unique selling propositions. Schools that are part of a network or partnership can offer students access to a broader range of resources, experiences, and opportunities, making them more attractive to prospective families. This enhanced appeal can lead to stable or increasing enrolment numbers, which is crucial for financial sustainability, especially for schools that rely heavily on tuition fees.

Operational efficiencies gained through synergies also contribute to financial sustainability. Collaborative administrative functions, shared professional development programmes for teachers, or joint technology platforms can streamline operations and reduce overhead costs. These efficiencies not only save money but also allow schools to focus more resources on their core educational mission, improving the quality of education without increasing costs.

4. Recommendations

For educational institutions to improve educational outcomes, great transformative potential resides in strategic partnerships that lie in their ability to create synergies. These collaborative efforts could address some of the most pressing challenges while improving access and relevance through the combination of resources, the sharing of expertise, and the fostering of innovation.

In this regard, strategic partnerships are essential for an equitable, sustainable, and future-ready educational system.

The findings of this study underscore the multifaceted nature of effective branding and partnership strategies in education. At the core of a successful brand identity lies the articulation of an institution's unique strengths, values, and vision. This process of self-identification goes beyond mere marketing; it is an introspective journey that requires educational institutions to critically assess their core competencies and differentiators.

The importance of visual identifiers and usage guidelines in expressing brand identity cannot be overstated. Thoughtfully designed logos, colour schemes, typography, and imagery serve as tangible representations of an institution's character and aspirations. When consistently applied across various platforms, these elements build brand recognition and trust among stakeholders. In South Africa's diverse linguistic and cultural landscape, the ability to craft marketing messages that resonate with priority stakeholders while aligning with visual branding is crucial for attracting students, engaging parents, appealing to donors, and forging valuable partnerships.

Partnerships have emerged as a vital strategy for enhancing learning outcomes and accessibility. By leveraging synergies through collaborations with other educational institutions, industry players, NGOs, and government bodies, schools can overcome resource constraints, improve curriculum relevance, and provide students with diverse learning experiences. These partnerships not only enhance educational quality but also contribute significantly to financial sustainability by opening up new revenue streams, creating economies of scale, and improving operational efficiencies.

5. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The author declares no conflicts of interest

References

Baijnath, N. (2018). Learning for development in the context of South Africa: Considerations for open education resources in improving higher education outcomes. *Journal of Learning for Development, 5*(2), 87-100. https://doi.org/10.56059/jl4d.v5i2.299

Bird, A., & Mugobo, V. (2021). Branding private higher education institutions in South Africa through the evaluation of current branding models. *Eureka: Social and Humanities*, 3, Business, management and accounting. https://doi.org/10.21303/2504-5571.2021.001841

Börner, K., Scrivner, O., Gallant, M., Ma, S., Liu, X., Chewning, K., Wu, L., & Evans, J. A. (2018). Skill discrepancies between research, education, and jobs reveal the critical need to supply soft skills for the data economy. *Proceedings of the National Academy of Sciences, 115*(50), 12630-12637.

Brooks, R. F., Rhodes, F., & Stibbe, D. (2012). *Partnerships for education: Building the foundations of a green, prosperous and equitable society.* T. P. I. I. B. L. Forum.

Çelikkol, Ş. (2018). The importance of logos and strategies for logo design. *Politico-Economic Evaluation of Current Issues,* 29-35.

Collins, M., & Betz, D. (2015). *Partners for possibility: How business leaders and principals are igniting radical change in South African schools*. Knowres Publishing.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute.

Department of Education. (2001). *Education white paper 6: Special needs education: Building an inclusive education and training system*. Department of Education Pretoria.

Du Toit, M. (2005). The Khanya project: Bridging the digital divide in Western Cape schools. *South African Journal of Education, 25*(2), 125-130.

Fullan, M. (2007). *The new meaning of educational change* (4th ed.). Teachers College Press.

Gopalan, C. (2016). The impact of rapid change in educational technology on teaching in higher education. *HAPS Educator, 20*(4), 85-90.

Govender, K. (2021). The role of branding in educational institutions in South Africa. *Journal of Education Marketing, 12*(2), 45-58.

Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every school*. Teachers College Press.

Karsono, K., Purwanto, P., & Salman, A. M. B. (2021). Strategi branding dalam meningkatkan kepercayaan masyarakat terhadap Madrasah Tsanawiyah Negeri. *Jurnal Ilmiah Ekonomi Islam, 7*(2), 869-880. https://doi.org/10.29040/jiei.v7i2.2649

Lundy, K., & Ladd, H. (2020). *Why collaboration is key to the future of higher education.* EY Parthenon.

Mao, J. (2022). A reflection on online teaching and learning through the pandemic: Revisiting creativity. In *Global perspectives on educational innovations for emergency situations* (pp. 179-188). Springer International Publishing.

Mlambo, H. V., Hlongwa, M., & Mubecua, M. (2017). The provision of free higher education in South Africa: A proper concept or a parable? *Journal of Education and Vocational Research, 8*(4), 51–61.

Mohamed, S. (2020). South Africa: Broken and unequal education perpetuating poverty and inequality. *Amnesty International,* 11.

Moodley, S., & Adam, R. (2019). Sustainability challenges for schools in South Africa: The branding imperative. *South African Journal of Education, 39*(3), 120–135.

Mthethwa, S. (2023). Teacher learning and collaboration in a life sciences cluster in South Africa. *South African Journal of Education, 43*(4), 1–10. https://doi.org/10.15700/saje.v43n4a1950

Naidoo, L., & Petersen, N. (2020). The impact of branding on stakeholder perceptions in South African schools. *Educational Leadership Review, 28*(4), 78–92.

Parliamentary Monitoring Group. (2022). *Manufacturing, Engineering and Related Services Sector Education and Training Authority. Strategic plan for 2020/21–2024/25*. https://static.pmg.org.za/Minister_of_DHET_DSI_merSETA_2020-25_SP_REPLACEMENT.pdf

Rameshkkumar, S., & Alagappan, A. (2022). Developing effective branding strategies for higher education institutions: A conceptual framework. *Educational Administration: Theory and Practice, 28*(03), 314–320.

Sikwela, M. M., Tshuma, M. C., & Tshabalala, T. (2018). A critical review of South Africa's land reform programme as a tool to address the nation's triple challenges. *Journal of Public Administration, 53*(2-1), 474–488.

UNESCO. (2015). *Education 2030: Incheon declaration and framework for action for the implementation of sustainable development goal 4. UIS*-UNESCO.

Western Cape Education Department. (2018). *Western Cape collaboration schools: A case study*. Global Schools Forum. https://globalschoolsforum.org/sites/default/files/2024-08/western_cape_collaboration_schools_south_africa_casestudy.pdf

Winthrop, R. (2022). Improving access to quality public education in Africa. Retrieved 24 May 2024 from https://www.brookings.edu/articles/improving-access-to-quality-public-education-in-africa/

Zenex Foundation. (2022). *Perspectives on learning backlogs in South African schooling*. https://www.zenexfoundation.org.za/wp-content/uploads/2022/05/Digital-Perspectives-on-Learning-Backlogs-in-South-African-schooling.pdf

Learning in Eclectic Formative Assessment Strategies: Experiences of Accounting Pre-service Teachers in one Higher Education Institution

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Reference Formats (APA 7th Edition)
Ngwenya, J., & Arek-Bawa, O. (2024). Learning in eclectic formative assessment strategies: Experiences of accounting pre-service teachers in one higher education institution. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 30–45). ERRCD Forum. https://doi.org/10.38140/obp2-2024-03

Abstract: One of the goals of Accounting education is to develop graduates capable of equipping learners with analytical skills pertinent to analysing and understanding financial information required for making economic decisions. Gaining and developing the knowledge and skills necessary for learning Accounting demands full engagement from both students and teachers throughout the learning process. This is primarily achieved through the application of wide-ranging formative assessment strategies that allow students to actively engage in learning while being challenged to think critically. This paper, therefore, aims to understand how the eclectic assessment practices of academics in a School of Education in South Africa contributed to preparing pre-service teachers for teaching. It explores the learning experiences of fourth-year Accounting students through eclectic formative assessment strategies. A qualitative case study approach within an interpretive paradigm was employed to explore the experiences of thirty purposively selected Accounting pre-service teachers. Framed by principled eclecticism, a thematic analysis of transcripts generated from semi-structured individual telephonic interviews with thirty students and WhatsApp-based focused group interviews was conducted to elicit students' views on their eclectic formative assessment practices. Insights from this study will be helpful to academics who aim to produce future teachers with the requisite skills to train the future workforce of any country. Teacher education institutions and other higher education institutions would also stand to benefit from the outcomes, which have the potential to guide policy directions to enhance the quality of undergraduate education, which is their key mandate.

Keywords: Eclectic assessment strategies, formative assessment practices, pre-service teachers' experiences, principled eclecticism, accounting education.

1. Introduction

Scholars worldwide agree that assessing student learning is a fundamental component of the teaching and learning process, as it enhances effective learning and fosters student success (Oo et al., 2023; Swart & Shuttleworth, 2021). Assessment is essential in education as it helps educators ascertain students' understanding, monitor their progress, identify areas needing intervention, and make informed instructional decisions (Black & Wiliam, 1998; 2018; Izci & Caliskan, 2017). Knowledge and skills in assessment are crucial for initial teacher education. Consequently, teacher preparation has shifted from focusing solely on summative assessments to enhancing pre-service teachers' abilities to employ various assessment methods to improve student learning (Brevik et al., 2017; Oo et al., 2023). Since teachers' knowledge and

understanding of formative assessment are vital for effective teaching and learning, pre-service teachers are expected to develop a certain level of formative assessment literacy before entering the profession. Therefore, preparing new teachers should provide greater opportunities for pre-service teachers to experience diverse formative assessment strategies (Macken et al., 2020). Building on Black and Wiliam's work from the 1990s, current research in teacher education emphasises enhancing classroom assessment practices to foster effective learning and teaching (Alonzo et al., 2021; Black & Wiliam, 1998; Izci & Caliskan, 2017) within an overall framework of Assessment for Learning (AfL).

The necessity to equip pre-service teachers with the knowledge and skills to assess learners formatively also applies to Accounting Education. Many scholars consider Accounting to be the technical language of business used to convey financial information (Abbott & Palatnik, 2018; Swart & Shuttleworth, 2021). The primary goal of the accounting process is to analyse, interpret, and report on financial statements to facilitate future planning (Frick et al., 2020). Consequently, the discipline of Accounting aims to develop students' creative and critical thinking skills to solve financial problems and make well-informed decisions. To foster these skills, scholars recommend equipping students with diverse assessment tasks that promote discussion and challenge them to think creatively (Abbott & Palatnik, 2018; Malan & Stegmann, 2018).

In Accounting, assessment is perceived as a dynamic exchange or two-way communication between the student and the teacher (Abbott & Palatnik, 2018; Barac & Du Plessis, 2014). This interaction highlights the ongoing provision of feedback and support throughout the teaching and learning process (Black & Wiliam, 2018; Malan & Stegmann, 2018). Therefore, it is crucial to ensure that pre-service Accounting teachers cultivate a strong level of proficiency in utilising assessment for learning, as their assessment literacy impacts their confidence in employing various assessment strategies prevalent in Accounting (Jiang, 2020; Johansson et al., 2022). Additionally, a teacher's literacy in assessment for learning enables them to effectively utilise assessment data to make key decisions related to teaching and learning, thereby enhancing student support (Brevik et al., 2017).

The aforementioned background encouraged accounting lecturers at the university where the research was undertaken to implement hybrid approaches to teaching, learning, and assessment across all Accounting Education modules to strengthen the learning and understanding of threshold concepts in Accounting. This teaching approach involves diverse assessment strategies to scaffold Accounting Education learning by engaging students in the learning process. It comprises a blend of methods such as online quizzes, group tutorials, interactive activities, research-based projects, and collaborative assessments. These wide-ranging approaches allow students to link classroom experiences to daily life by presenting them with authentic scenarios and case studies involving financial problems. Some activities are based on students' experiences and real-world situations. This enables students to interact with financial information by drawing on their knowledge to understand and evaluate financial cases. These teaching strategies go

beyond mere numbers and formulas, encouraging students to actively participate in learning while challenging them to think both critically and creatively (Lau & Lim, 2015; Mahoney, 2019).

A literature review indicates that research on eclectic learning approaches has predominantly been carried out in fields other than Accounting (Diseko & Modiba, 2016; Rao, 2018; Thamrin et al., 2023). However, there is a dearth of literature on Accounting, particularly concerning how students learn the subject using a hybrid of teaching and assessment strategies. This study contributes to the discipline by filling a gap in the current Accounting literature, specifically regarding eclectic, multi-faceted teaching and assessment methods employed by pre-service Accounting teachers in learning Accounting. The study aims to address the following research question: *What are the experiences of Accounting pre-service teachers in learning through eclectic formative assessment strategies in Accounting Education at one university in South Africa?*

2. Literature Review

2.1 Formative assessment

Formative assessment is designed to monitor student learning during instruction (Cagasan, 2020). Its main goal is to provide continuous feedback to both teachers and students, highlighting strengths and areas for improvement (Black & Wiliam, 2018; Dayal, 2021; Izci & Caliskan, 2017). Karaman (2021) notes that this type of assessment enables educators to track student comprehension throughout the teaching period, identifying learning gaps and opportunities for intervention. Effective use of formative assessments in the classroom requires teachers to provide assessment tasks regularly and offer timely feedback to students (Morris et al., 2021). Feedback from formative assessments should be clear and actionable, guiding students on how to enhance their performance. Teachers can use the insights gained from these assessments to adjust their teaching methods and address any misunderstandings or learning gaps. Formative assessments support student learning and enable educators to make well-informed decisions about their teaching practices (Anderson et al., 2001).

2.2 Eclectic approach

According to Mwanza (2017), the eclectic approach enables individuals to examine objects from several perspectives since it uses various methods. Eclecticism makes learning more dynamic, as it allows the teacher to employ several techniques to explain the content to the students according to the learning context (Kumar, 2013; Mwanza, 2017). Teachers who combine many teaching techniques and strategies can always present the subject matter in accordance with the preferences of the students. Moreover, the eclectic approach is adaptable to the classroom's requirements during lessons, as it caters to the diverse needs of students from various backgrounds (Kumar, 2013).

According to Yan and Brown (2021), the eclectic approach enables instructors to choose the most effective classroom resources, given the dynamic context. Rao (2018) views this approach

as motivating, adaptable, and student-focused, incorporating a range of classroom tasks and activities. The eclectic approach does not depend on any single teaching strategy or method. Hybrid approaches emphasise active learning rather than passive learning, as learners learn and practise by interacting with each other in classroom activities (Rao, 2018; Suleman & Hussain, 2016).

2.3 Strategies for learning in an eclectic teaching approach

3.3.1 Discussions and presentations

Jolliffe and Snaith (2017) note that for presentations to be effective, they should centre on authentic activities that provide students with direct experiential exposure to the real world. Such activities can motivate students to immerse themselves in complex problems relevant to their future employment or engagements in the field.. Discussion can occur in two formats: Whole-class discussions, where all students share ideas and learn collectively, or small group discussions, often referred to as group work. Research indicates that questions are potent catalysts for class discussions, promoting active engagement between students and teachers while keeping learners attentive (Edokpolor, 2018; Pukdesree, 2017; Zendler & Greiner, 2020).

Engaging students in discussions prompts them to ask questions that deepen their exploration of topics, thereby enhancing their opportunities to gain new knowledge (Pukdesree, 2017). Through these discussions, students can examine different viewpoints and enhance each other's comprehension of the subject matter. The argument is that by examining questions from various angles, students engage in deeper analysis, which fosters critical thinking skills (Rao, 2018; Suleman & Hussain, 2016). Yan and Brown (2021) discovered that during class discussions, students assist each other, with one student's answer sparking another's thought process, leading to a more refined answer and a better grasp of new concepts.

According to Malan and Stegmann (2018), working together and interacting with peers and teachers helps students provide each other with feedback by clarifying and deliberating on different responses, thereby increasing their understanding and critical thinking skills. Crawford and Jenkins (2018) found that small group discussions enhance participants' cognitive and emotional skills by allowing the free exchange of information and insights among peers, as groups collectively possess more knowledge than individuals. Yan and Brown (2021) emphasise that diverse answers are crucial for tackling thought-provoking questions, as varying viewpoints contribute to a more comprehensive understanding of the concept through deeper analysis.

2.3.2 Small group tutorials

Tutorials are regarded as an essential instructional strategy for enhancing the learning of new content (Crawford & Jenkins, 2018; Rathnum & Moodley, 2022). Tutorial classes are efficient and effective in bridging students' academic gaps and improving understanding, especially in subjects that require significant practice, such as Accounting. The majority of scholars agree that

students learn faster and better when they are allowed to participate actively in discussions, interacting freely with their lecturers and peers, working in groups, and engaging in practical activities together (Abbott & Palatnik, 2018; Baloche & Brody, 2017; Frykedal & Chiriac, 2018; Pereira & Sithole, 2019). Small group tutorials (SGTs) supplement learning through a collaborative approach, involving flexible, reflexive, interactive participant engagement and providing constructive and positive feedback (Malan & Stegmann, 2018). The tutorials allow students to assist one another in solving problems and offer a framework to support their learning journey. Frykedal and Chiriac's (2018) study revealed that small group tutorials enhance students' confidence in Maths and improve their academic performance. In a South African university, Pereira and Sithole (2019) found that students who attended tutorials achieved higher academic gains than those who did not attend at all.

2.3.3 Online quizzes

Online quizzes are utilised to assess students' comprehension of specific accounting concepts and to stimulate their interest and engagement. These quizzes can assist academics, even in large class sizes, by identifying areas where students might need further support (Enders et al., 2021; Sotola & Crede, 2021; Usagawa, 2018).Learning management systems such as Moodle provide discussion forums and facilitate quizzes (Sotola & Crede, 2021; Gamage et al., 2019), offering immediate or deferred feedback. Usagawa (2018) investigated the use of the Quizz app, which enabled multiplayer class activities—including quizzes—and concluded that students reported a positive impact on their learning experiences.

2.3.4 Case-based and scenario-based learning

Case-based learning strategy allows students to acquire new knowledge by engaging in situations that present them with opportunities to solve problems (Xinhong et al., 2023). According to Kantar and Massouh (2015), case-based learning gives students opportunities to develop their abilities to solve problems based on authentic real-life issues. As such, the approach can stimulate higher-order thinking skills among students. This learning strategy enables students to evaluate a problem and offer solutions from their experience, prior knowledge, course material, and additional resources (Kantar & Massouh, 2015). Kim (2022) finds case-based learning relevant to learning accounting because it facilitates students' analytical skills development. To solve financial problems successfully, students must have good teamwork skills that allow them to actively participate and work harmoniously with others (Utomo et al., 2022). Additionally, case-based or scenario-based activities help students develop communication skills and confidence in making presentations.

2.4 Principled Eclecticism

This study is framed through principled eclecticism, which is employed to understand eclectic teaching, learning approaches, and assessments. Literature indicates that scholars (Alharbi, 2017; Gao, 2011; Rao, 2018; Thamrin et al., 2023) discuss principled eclecticism as an approach "which

demonstrates a coherent and pluralistic approach" (Alharti, 2017, p. 34) "within their own dynamic context" (Gao, 2011, p. 365), aimed at meeting students' learning goals. Drawing from the work of other scholars, Rao (2018) and Thamrin et al. (2023) summarised the key points of principled eclecticism as:

- Instructional objectives should include more than one method that is effectively applied,
- The methods should stimulate student learning,
- Students should be actively engaged in the teaching and learning process
- Teaching time must be adequate, and
- Assessment should be included as an element of the teaching and learning process

These points suggest that using diverse, active formative assessment practices in the pedagogical process should stimulate student learning. It is, therefore, important to incorporate eclectic or principled eclectic formative assessment practices into the teaching process. However, as indicated earlier, studies on eclecticism have mainly been conducted outside the domain of Accounting Education; hence the need for this study.

3. Research Methodology

The study employed a qualitative approach within the interpretive paradigm. This method was chosen because it allowed us to explore the meanings that pre-service teachers constructed to make sense of their learning experiences while engaging in eclectic formative assessment activities (Cohen et al., 2018; Harrison et al., 2017). A case study research design was adopted as it provided an opportunity to explore real-life experiences and gather data through in-depth data generation instruments, such as face-to-face and focus group interviews (Creswell & Creswell, 2017, 2018). Yin (2018, p.16) describes a case study as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context." The choice of a case study in this research is further supported by Yin (2018), who states that a key aspect of a case study is its emphasis on using multiple methods to gather data within the participants' natural environments. Moreover, a case study design is typically associated with specific contexts (Harrison et al., 2017), such as this study's focus on pre-service teachers' experiences in Accounting Education at one university in South Africa.

3.1 Sampling

Denzin and Lincoln (2018) describe sampling as the process of choosing a portion of the entire group of individuals that comprise a specific group of interest in a research study. The sample consists of thirty fourth-year pre-service Accounting teachers, purposefully selected from a South African university, who are enrolled in a four-year Bachelor of Education programme. These participants have majored in Accounting and are taking Accounting Method III, a pedagogy module. All 65 fourth-year pre-service Accounting teachers enrolled in the Accounting Method III module were invited to an information session explaining the research purpose.

Students interested in participating were asked to submit their names afterwards. The first 30 students who submitted their names were selected on a first-come, first-served basis.

3.2 Data generation methods

Data were collected using semi-structured individual and focus group interviews, which served as the primary methods for exploring pre-service teachers' learning experiences with eclectic formative assessment activities. Five WhatsApp-based focus group interviews, each with six members, were conducted, followed by ten semi-structured individual telephone interviews. After the focus group sessions, each group selected two participants for individual interviews. The focus group interviews lasted between 30 and 35 minutes, while the individual interviews ranged from 40 to 45 minutes. An audio recording device was used to capture the interviews.

3.3 Data analysis

Thematic analysis was utilised to examine the data generated through the semi-structured interviews. Data analysis started with getting acquainted with it by converting audio recordings into text and reviewing the transcript multiple times to classify meaningful units for understanding the more profound significance of the pre-service teachers' responses. Open coding was then conducted by analysing the data, identifying key concepts, and assigning codes to them (Creswell & Poth, 2016). Categories were created, revised, and grouped into precise themes to present the findings.

3.4 Ethical issues

The study was conducted in adherence to all ethical guidelines. Gatekeeper consent to conduct the study was secured from the University of KwaZulu-Natal. Before data collection, ethical clearance was obtained from the Human and Social Sciences Research Ethics Committee of the university where we were based (Protocol Reference number HSSREC/00000315/2022).All participants were informed of the purpose of the study and the nature of their involvement. Furthermore, the study upheld key ethical principles such as confidentiality, privacy, anonymity, and voluntary participation. All participants provided their voluntary informed consent. To maintain anonymity and confidentiality, participants' names were not disclosed.

4. Presentation of Results

The study's results were combined into the themes used to present the findings. Participants' responses are captured using verbatim quotes.

4.1 In-class interactive activities

Given the practical nature of Accounting, the process of engaging pre-service Accounting teachers thoroughly in class while discussing activities and solutions is imperative. Pre-service teachers revealed that interactive class activities were the most efficient assessment and teaching strategy to elicit understanding and address misconceptions. The participants articulated several

experiences to demonstrate how they learned from the in-class interactive activities. Pre-service teachers also believed that in order to manipulate Accounting concepts and understand financial problems, there was a need for them to develop efficiency and accuracy in mathematical calculations. They believed that to develop and master procedural skills, practising such skills is very important. The participants indicated that they were often given in-class activities to assess their understanding of new knowledge and instil the knowledge and skills required in mastering procedural knowledge while the lesson was in progress. These activities were done step-by-step to allow the participants to ask for clarity while they were progressing with their activity. After each step of an activity, feedback was shared in class with other students. This is what Thandi from Focus Group 2 said:

> *"We were always given activities in class, and our lecturer wanted us to discuss and come up with solutions explained on the board. There were difficult calculations that needed to be explained using different methods. Other students have easy methods to clarify the way they came out with the answer".*

In Accounting, learning is progressive, meaning that the knowledge and skills acquired in earlier years serve as the foundation for subsequent studies. Participants clarified that lecturers introduced new topics by posing questions about prior knowledge, as accounting concepts are interconnected and build upon one another. Consequently, participants found it helpful to ascertain and reinforce their understanding of prior knowledge by engaging in activities that required revisiting previous concepts before learning new ones. The pre-service teachers were expected to participate in group activities and discuss their solutions before presenting answers to the whole class. This was confirmed by Busi from Focus Group 4:

> *"Our lecturer does not just teach a new topic. She always gives us activities and asks questions before introducing a new topic. She continues to ask other questions during the lesson because other topics are not completely new. We learn a lot during question and answer lessons because you start to realise what you understand and cannot remember clearly".*

The pre-service teachers valued these interactive class discussions because they were continuously motivated to engage in learning and verify their acquisition of new knowledge.

4.2 Interactive presentation

An interactive presentation is a dynamic and engaging assessment strategy that involves active participation and collaboration among students (the presenter and the audience). Unlike traditional presentations, where information is delivered one-way, pre-service teachers indicated that interactive presentations created opportunities for students to interact, respond, and contribute throughout the session. Participants explained that these presentations encouraged them to engage in the lesson while their peers presented their work, rather than listening to lectures passively. Participants valued being encouraged to speak and share their ideas, which

fostered a collaborative environment. During presentations, both lecturers and students served as sources of knowledge and insight. This is what Kuhle from Focus Group 3 said:

> *"Each task was divided among the group members. We were expected to do much work independently because each member had to present to the group and devise a strategy to present our work. I was encouraged to go and do research on my own because I knew that I would present my work in our group meeting. During presentations, we enjoyed the way our lecturer structured our presentations. We were free to talk and ask questions because other members were helping if you needed more explanation."*

Pre-service teachers mentioned that they were encouraged to conduct research and come together to devise strategies for class presentations. Students' interactions and discussions enabled them to apply knowledge accumulated in content modules and pedagogical and teaching practices to construct new knowledge. Participants felt that the interactive nature of the presentations created spaces for learning opportunities, as peers offered diverse interpretations and clear clarifications of questions and the allocation of marks.

4.3 Shared exposure to real-life scenarios

The participants acknowledged the collaborative learning opportunities during group discussions of scenarios. They indicated that they were given real-life scenarios that required authentic solutions. Students often found it challenging to solve unfamiliar problems since they struggled to apply their financial knowledge in analysing, formulating solutions, and drawing conclusions when attempting scenarios alone. However, they valued the opportunities they received in discussing scenarios collaboratively. They believed that repeated exposure to scenario-based activities was important for them to evaluate and nurture the skills required to grasp the practical implications and significance of accounting scenarios. This is what Sipho from Focus Group 1 said:

> *"Lecturers gave us more activities on problem-solving questions to do in groups. These questions are not easy, but we discuss the scenarios together to understand the problems and get more answers from other students. It is much better if we do problem solving questions in groups. What I have noticed is that we have different approaches to solving problems in Accounting. This was very helpful to us because they made it easy to interpret the scenarios, and there were different opinions from other students."*

The pre-service teachers felt that engaging in group scenarios allowed them to explore various analytical approaches to the issues. Discussing tasks with peers provided the benefit of gaining fresh and diverse perspectives on analysing financial problems. Although these scenarios were challenging, students attempted to formulate justifications to defend their solutions. They valued their colleagues' insights and viewpoints, which enabled them to tackle the assigned tasks from multiple angles. Making sense of complex scenarios together and formulating and sharing

diverse solutions allowed students to approach financial problems from the perspectives of others.

4.4 Learning through small group tutorials

The participants viewed group tutorials as an essential form of learning and an assessment strategy that helped them review and reinforce their understanding of new knowledge independently after lectures. Pre-service teachers were required to meet in small groups outside of lectures to discuss tutorials and work out solutions, which were later shared in class. They acknowledged the crucial role of group tutorials in improving their comprehension of new information and applying what they had learned. They also found time to review what had been covered in class and share ideas on formulating responses for independent work. As Khumbu from Focus Group 4 stated:

> *"Small group tutorial discussions were helpful, especially by allowing everyone to participate and we also ask questions if you do not understand. It is very effective because we meet in groups after lectures to answer questions. We also discuss the answers in class".*

Most participants felt more comfortable asking questions or expressing their opinions during group tutorials because some felt nervous about contributing during the lecture. Engaging in tutorials in groups allowed for social interaction, as pre-service teachers provided friendly support to one another. This is what Elvis from Focus Group 2 said

> *"I never felt alone when trying to do tutorials because I could meet with group members to come up with answers. You do not feel that you are learning because we have been chatting, and all members are free to contribute, even those who usually do not talk in class. I can also send a message via WhatsApp and ask questions if there is anything that I do not understand."*

The participants noted that group members proposed various solutions and opinions during tutorial discussions, which were shared within the groups and then with the entire class. This process enhanced the learning experience for everyone involved. They felt that interacting in small groups and in class to discuss solutions created opportunities to provide a variety of explanations to elucidate how specific accounting processes and procedures occurred.

4.5 Online quizzes

It emerged from the data that quizzes were a component of the formative assessment strategies used to evaluate pre-service teachers' understanding before and after lectures. Participants were informed in advance to prepare for online quizzes accessed on Moodle. They reported that the instant feedback provided them with an opportunity to review past lectures and identify gaps in their knowledge, as well as areas that required further reading. These online activities enhanced the learning and understanding of procedural knowledge and unique concepts. Lubanzi from Focus Group 5 said this:

"I really enjoyed the quizzes set by our lecturer. The questions were engaging and provoked me to think and reflect on all that we had been taught about VAT and Bank Reconciliation. Quizzes are like checkpoints to verify your understanding of a topic. I had the opportunity to stream down my notes by picking those items emphasised in the quiz questions."

Online quizzes offered pre-service accounting teachers an opportunity to preview and review new knowledge. They viewed this as an effective strategy to assess and enhance their understanding. They were happy that when they encountered challenges with laptops, they could resort to smartphones to access quizzes anywhere.

5. Discussion of Findings

Considering the practical nature of accounting, it is indispensable to engage pre-service accounting teachers thoroughly in discussions about activities and solutions. This means that students should be provided with various activities to nurture the development of the skills and knowledge learned in accounting (Malan & Stegmann, 2018). Pre-service teachers found interactive class activities to be the most efficient assessment and teaching strategy for assessing prior knowledge and strengthening the learning of new content. Engaging in class activities created opportunities for students to discuss solutions, resulting in whole-class verbal feedback. Wiliam (2018) confirms this, stating that students perceive feedback provided during whole-class discussions as more understandable and helpful than teacher feedback.

The nature of accounting as a subject requires regular practice. Consequently, opportunities for consistent practice were created through small group tutorials. Swart and Shuttleworth state that "Accounting is a challenging course; without the orderly practice of the material covered in class, it is often difficult for students to master and retain the fundamental concepts and techniques" (2021, p.207). The findings showed that participants viewed group tutorials as a vital learning strategy for enhancing efficiency and precision in tackling complex procedures and financial scenarios.

Pereira and Sithole (2019) articulate that for learning to be engaging, students should be given the opportunity to discover information by themselves, becoming real-world explorers. Participants appreciated the level of engagement during presentations. The interactive nature of these presentations kept pre-service teachers attentive throughout the entire class period. This level of concentration led to better participation and retention of the information presented, as it reduced the possibility of boredom and interruption.

In accounting, students are frequently provided with scenarios that require multiple and diverse solutions. The use of group discussions during problem-solving tutorials enhances the establishment of environments where students collaborate to develop solutions to problems (Baloche & Brody, 2017; Phan, 2018). Pre-service teachers valued the opportunities they had to discuss scenarios collaboratively. They believed that repeated exposure to scenario-based

activities was central to evaluating and fostering the skills required to understand the practical implications of accounting scenarios. This finding is supported by Frick et al. (2020), who stated that group discussions serve as a platform for all community members to share ideas within a real-life context.

Using diverse assessment strategies—interactive activities, presentations, real-life scenarios, small group tutorials, and online quizzes—aligns with the tenets of principled eclecticism, which require more than one approach (Thamrin et al., 2023; Parupalli, 2018). The study's findings support those of Thamrin et al. (2023), where teachers employed a combination of online strategies to assess students during the pandemic. However, earlier studies by Gao (2011) concluded otherwise, indicating that teachers maintained their traditional approaches while tending towards eclecticism. The findings further support the benefits of principled eclecticism (Thamrin et al., 2023; Alharbi, 2017), as pre-service teachers affirmed that the formative assessment strategies adopted by academics stimulated and enhanced their learning experiences.

6. Conclusions and Recommendations

Given the dearth of literature on students' experiences of formative assessment, this study aimed to assess final pre-service Accounting teachers' engagement in diverse assessment-for-learning practices. In line with principled eclecticism, pre-service teachers affirmed that their engagement in various low-stakes/not-for-marks assessment activities integrated into the instructional process stimulated and enhanced learning. As such, this study emphasised the importance of integrated active practice opportunities in student learning experiences.

Although students indicated class activities as the most effective formative assessment strategy, small group tutorials, real-life scenarios, and online quizzes were also fruitful. This highlights the value of eclectic formative assessment tools in the pedagogical process, as they offer a comprehensive approach to addressing students' diverse learning needs. The study, therefore, has implications for academics in all higher education institutions as they strive to facilitate learning effectively. This is especially crucial for those in teacher education institutions tasked with producing the next generation of teachers who will contribute to developing any nation's human capital. Consequently, the need for academics to shift from traditional assessment practices and embrace a broad spectrum of eclectic practices in enhancing student learning cannot be over-emphasised. The deterrents to this shift arise not only from time constraints and the comfort of remaining familiar with traditional teaching and assessment practices but also from a lack of awareness of relevant approaches that may be adopted. To this end, the authors call for regular training and workshops to develop academics' self-efficacy in eclectic assessment practices. As academics become more comfortable implementing these practices, pre-service teachers learn better and acquire assessment strategies for their future classrooms.

The study is not without limitations. As a case study, the outcomes should not be generalised. Interested scholars with more resources can broaden the scope to include teacher education

institutions within the province or nation. Nonetheless, the authors have provided sufficient details to enable replication by interested scholars. Additionally, the focus of this eclectic study from the students' perspective has been on formative assessment. Including summative assessments would provide a more robust insight into Accounting students' learning experiences through assessments. Future researchers can also expand the scope to focus on fourth-year commerce education students or across all levels. A mixed-method study would also capture the views and experiences of a larger student body.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

Abbott, J.I., & Palatnik, B.R. (2018). Students' perceptions of their accounting class: Implications for instructors. *Accounting Education, 27*(1), 72–9. https://doi.org/10.1080/09639284.2017.1381032

Alharbi, S. H. (2017). Principled Eclecticism: Approach and Application in Teaching Writing to ESL/EFL Students. *English Language Teaching*, *10*(2), 33–39. http://dx.doi.org/10.5539/elt.v10n2p33

Alonzo, D., Labad, V., Bejano, J., & Guerra, F. (2021). The policy-driven dimensions of teacher beliefs about assessment. *Australian Journal of Teacher Education*, 46(3), 1-14. https://doi.org/10.14221/ajte.2021v46n3.3

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., . . . Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives, abridged edition.* Longman.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice, 5*(1), 7–74. https://doi.org/10.1080/0969595980050102

Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice, 25*(6), 551–575. https://doi.org/10.1080/0969594X.2018.1441807

Baloche, L., & Brody, M.B. (2017). Cooperative learning: Exploring challenges, crafting innovations. *Journal of Education for Teaching*, *43*(3), 274–283. https://doi.org/10.1080/02607476.2017.1319513

Brevik, L. M., Blikstad-Balas, M., & Engelien, K. L. (2017). Integrating assessment for learning in the teacher education programme at the University of Oslo. *Assessment in Education: Principles, Policy & Practice*, *24*(2), 164–184. https://doi.org/10.1080/0969594X.2016.1239611

Cagasan, L., Care, E., Robertson, P., & Luo, R. (2020). Developing a formative assessment protocol to examine formative assessment practices in the Philippines. *Educational Assessment*, *25*(4), 259–275. https://doi.org/10.1080/10627197.2020.1766960

Cohen, L., L. Manion, & K. Morrison. (2018). *Research methods in Education*. 7th Edition. Routledge.

Creswell, J.W. & Creswell, J.D. (Eds.). (2017). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage Publications.

Creswell, J.W. & Poth, C.N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.

Dayal, H. C. (2021). How Teachers Use Formative Assessment Strategies during Teaching: Evidence from the Classroom. *Australian Journal of Teacher Education, 46(7). DOI: 10.14221/ajte.2021v46n7.1.*

Denzin, N. & Lincoln, Y.S. (eds.) (2018). *The Sage Handbook of Qualitative Research* (5th ed). Sage.

Department of Basic Education (DBE). (2011). *Curriculum and Assessment Policy Statement: Grades 10–12*. Government Printers.

Diseko, R. & Modiba, W. (2016). Learners' experiences of an authentic online assessment test in understanding of basic accounting content knowledge: A case study. Proceedings of ADVED 2016 2nd International Conference on Advances in Education and Social Sciences (pp. 339-350). https://doi.org/10.18768/ijaedu.280378.

Edokpolor, J. E. (2018). The use of Student-Centred Method in the Teaching of Business Studies in Junior Secondary Schools. *Journal of Education in Developing Areas*, *26*(1), 20-21.

Enders, N., Gaschler, R. & Kubik, V. (2021). Online quizzes with closed questions in formal assessment: How elaborate feedback can promote learning. *Psychology Learning & Teaching*, 20(1), 91-106.

Frick, H, Birt, J.J. & Waters, J. (2020). Enhancing student engagement in large management accounting lectures". *Accounting and Finance* 60 (1), 271–298. https://doi.org/10.1111/acfi.12318.

Frykedal, K. F. & Chiriac, E.H. (2018). Student Collaboration in Group Work: Inclusion as Participation. *International Journal of Disability, Development and Education*, 65(2), 183-198. https://doi.org/10.1080/1034912x.2017.1363381

Gamage, S. H. P. W., Ayres, J. R., Behrend, M. B., & Smith, E. J. (2019). Optimising Moodle quizzes for online assessments. *International Journal of STEM Education*, 6(1), 1 -14.

Gao, L. (2011). Eclecticism or principled eclecticism. *Creative Education*, *2*(04), 363–369.

Harrison, H., Birks, M., Franklin, R., & Mills, J. (2017). Case study research: Foundations and methodological orientations. *Forum Qualitative Sozialforschung/ Forum: Qualitative Social Research, 18*(1), 1–17.

Izci, K. & Caliskan, G. (2017). Development of prospective teachers' conceptions of assessment and choices of assessment tasks. *International Journal of Research in Education and Science*, 3(2), 464–474.https://files.eric.ed.gov/fulltext/EJ1148463.pdf

Jiang, Y. (2020). Teacher Classroom Questioning Practice and Assessment Literacy: Case Studies of Four English Language Teachers in Chinese Universities. *Frontiers in Education*, *5*(23), 1–17.https://doi.org/10.3389/feduc.2020.00023

Johansson, E., Kanapathippillai, S., Khan, A., & Dellaportas, S. (2022). Formative assessment in accounting: student perceptions and implications of continuous assessment. *Accounting Education*, *32*(6), 597–625. https://doi.org/10.1080/09639284.2022.2091411

Kantar, L. D., & Massouh, A. (2015). Case-based learning: what traditional curricula fail to teach. *Nurse Education Today*, 35(8), 14. https://doi.org/10.1016/j.nedt.2015.03.010

Karaman, P. (2021). The Effect of Formative Assessment Practices on Student Learning: A Meta-Analysis Study. *International Journal of Assessment Tools in Education*, 8(4), 801–817. DOI: 10.21449/ijate.870300

Kim, J. (2022). A case study on an online Korean discussion class with foreign undergraduate students. *The Korean Association of General Education*, 16(3), 167–178. https://doi.org/10.46392/kjge.2022.16.3.167

Kumar, C. P. (2013). The eclectic method: Theory and its application to the learning of English. *International Journal of Scientific and Research Publications, 3*(6), 2250–3553.

Lau, Y. & Lim, S. (2015). Learning approaches in Accounting education: Towards deep learning. *Management Science Letters*, *5*(9), 861–866.

Macken, S., MacPhail, A. & Calderon, A. (2020). Exploring primary pre-service teachers' use of 'assessment for learning' while teaching primary physical education during school placement. *Physical Education and Sport Pedagogy*, 25(5), 539–554. https://doi.org/10.1080/17408989.2020.1752647

Mahoney, M. W. (2019). Peer-mediated instruction and activity schedules: tools for providing academic support for students with ASD. *Teach. Except. Child*, 51, 350–360. https://doi.org/10.1177/0040059919835816

Malan, M. & Stegmann, N. (2018). Accounting students' experiences of peer assessment: A tool to develop lifelong learning. *South African Journal of Accounting Research*, 32(2-3), 205–224. https://doi.org/10.1080/10291954.2018.1487503

Morris, R., Perry, T., & Wardle, L. (2021). Formative assessment and feedback for learning in higher education: A systematic review. *Review of Education*, *9*(3), e3292. https://doi.org/10.1002/rev3.3292

Mwanza, D. S. (2017). The Eclectic Approach to Language Teaching: Its Conceptualisation and Misconceptions. *International Journal of Humanities, Social Sciences and Education, 4*(2), 53–67.

Pereira, L. & Sithole, B.M. (2020). Learner-Centred Pedagogy in Accounting: Understanding Its Meaning from a Bernsteinian Perspective. *African Educational Research Journal*, 8(1), 20–30. https://doi.org/10.30918/AERJ.81.20.002

Phan, L. T. (2018). An Evaluation of using Group Work to improve Speaking Fluency for First-Year Non-Majored English Students at Dong Nai Technology University. *International Journal of Learning, Teaching and Educational Research*, 17(12), 78–98. https://doi.org/10.26803/ijlter.17.12.5

Pukdesree, S. (2017). The comparative study of collaborative learning and SDLC model to develop IT group projects. *TEM Journal*, *6*(4), 800-809.

Rao, P. S. (2018). The eclectic approach in English language teaching: A comprehensive study. *ACADEMIA: An International Multidisciplinary Research Journal*, 8(10), 40–50.

Rathnum, C. D., & Moodley, M. (2022). Socio-emotional interaction in collaborative learning: Combining individual emotional experiences and group-level emotion regulation. *International Journal of Educational Research*, 102, https://doi.org/10.1016/j.ijer.2020.101589

Sotola, L.K. & Crede, M. (2021). 'Regarding class quizzes: a meta-analytic synthesis of studies on the relationship between frequent low-stakes testing and class performance', *Educational Psychology Review*, *33*(2), 407-426.

Suleman, Q., & Hussain, I. (2016). Effects of eclectic learning approach on students' academic achievement and retention in English at elementary level. *Journal of Education and Practice*, *7*(16), 32-37.

Swart, O., & Shuttleworth, C. C. (2021). The new face of alternative assessment in accounting sciences – Technology as an anthropomorphic stakeholder. *South African Journal of Higher Education*, *35*(3), 200–219. https://dx.doi.org/10.20853/35-3-3900

Thamrin, N. S., Madya, S., Putro, N. H. P. S., Mustakim, S. S., Hassan, A., & Retnawati, H. (2023). Eclectic approach: A search for more effective assessment ways to meet EFL

assessment principles. *Studies in English Language and Education*, *10*(2), 7. https://doi.org/10.24815/siele.v10i2.26682

Usagawa, T. (2018). Effectiveness of e-learning experience through online quizzes: a case study of Myanmar students. *International Journal of Emerging Technologies in Learning*, 13(12), 1–14.

Utomo, D. P., Putri, A. M. J. & Santoso, T. (2022). Student's Critical Thinking Ability to Solve Problems HOTS in Regular, Acceleration, and Olympics Class Programs. *Jurnal Didaktik Matematika*, *9*(1), 125-135.

Wiliam, D. (2018). Assessment for learning: meeting the challenge of implementation. *Assessment in Education: Principles, Policy & Practice.* 25(6), 682–685. https://doi.org/10.1080/0969594X.2017.1401526

Xinhong, Z., Boyan, Z., & Fan, Z. (2023). Student-centred case-based teaching and online-offline case discussion in postgraduate courses of computer science. *International Journal of Educational Technology in Higher Education*, 20(1), 1–20. https://doi.org/10.1186/s41239-022-00374-2

Yan, Z., & Brown, G. T. (2021). Assessment for learning in the Hong Kong assessment reform: A case of policy borrowing. *Studies in educational evaluation*, *68*, 100985. https://doi.org/10.1016/j.stueduc. 2021.100985

Yin, R. K. (2018). *Case Study Research Design and Methods*. 6th Edition. Thousand Oaks, Sage Publishing.

Zendler, A., & Greiner, H. (2020). The effect of two instructional methods on learning outcome in chemistry education: the experiment method and computer simulation. *Educ. Chem. Eng.* 30, 9–19. https://doi.org/10.1016/j.ece.2019.09.001

School-Based Assessment as a Driver of Self-Regulated Learning: Experiences of Tourism Learners

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Reference Formats (APA 7th Edition)

Dube-Xaba, Z. (2024). School-based assessment as a driver of self-regulated learning: Experiences of tourism learners. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 46–60). ERRCD Forum. https://doi.org/10.38140/obp2-2024-04

Abstract: School-based assessment (SBA) is an approach to continuous assessment at the school level that aims to drive teaching and learning. It supports teaching and learning processes and assists in tracking learner progress on a continuous basis. Given the importance of SBA, the value of learners' voices in contributing to its practices is crucial if the education system is committed to its efforts to improve accountability and quality education. This paper focuses on the role of SBA in driving self-regulated learning as perceived by learners who take Tourism as an elective. This interpretive case study examined Tourism learners' experiences of SBA's role in enhancing self-regulated learning in this subject. The researcher recruited Tourism learners from two secondary schools in the KwaZulu-Natal Province, resulting in a sample of a total of 40 Grade 11 learners who participated in four focus group sessions. The findings suggest that SBA is a driver of self-regulated learning (SRL) as the learners affirmed that this continuous assessment approach in Tourism improved their autonomy and helped them take ownership of their learning, while also enabling them to access knowledge and insight individually and in collaboration with others. The findings suggest that SBA allows learners to take control of their own learning and thus become self-regulated learners. The findings have profound implications for the role of assessment in the schooling context as it improves learners' accountability and sense of ownership of their own learning. Moreover, the variety of SBA assessment practices facilitates knowledge construction and thus improves the quality of education provision.

Keywords: School-based assessment, self-regulated learning, Tourism, learners' experiences.

1. Introduction

Assessment is an integral component of teaching and learning in all educational environments. More particularly, it plays a pivotal role in supporting learners' ability to learn in the secondary school context. In Tourism, school-based assessment (SBA) has become essential in all teaching and learning strategies as it is continuous and exposes learners to various learning activities. According to Brandmo (2020, p. 320), assessment should be "a continuously planned process where various forms of assessment are used in order to gather and interpret information about the performance of learners." This implies that assessment is a means of collecting and interpreting ongoing evidence to establish learners' progress and to make judgments about their performance (Department of Basic Education, 2011; Van Staden & Motsamai, 2017). Assessment tasks are therefore set according to a continuous, planned process to identify, gather, and interpret information about learners' performance while exposing them to various forms of assessment tasks (Brandmo, 2020). Given the functionality and effectiveness of continuous

assessment, it is commendable that assessment practices in South African secondary schools have shifted significantly towards this approach.

Assessment is an integral component of teaching and learning in all educational environments. More particularly, it plays a pivotal role in supporting learners' ability to learn in the secondary school context. Curriculum transformation in South Africa resulted in the introduction of SBA in assessment requirements in all public schools across the country. The fact that assessment is an integral part of teaching and learning emphasises the need for continuous formative and summative assessment tasks (Department of Basic Education, 2011). Therefore, the role of assessment has shifted from tests and one-off final examinations at the end of school terms to continuous SBA (Dube-Xaba & Xulu, 2020; Van Staden & Motsamai, 2017). This means that assessment in all public schools is ongoing and developmental, particularly as formative assessment tasks are included for regular and timely feedback to enhance learning, while summative assessment tasks are used to determine the progression and promotion levels of learners. Consequently, learners are assessed in each subject by their teachers, who provide feedback about their strengths and weaknesses in that particular subject. SBA thus addresses the application of both summative and formative assessments to enhance teaching and learning (Black & Wiliam, 2018). It was introduced in the South African schooling system to ensure diversified assessment practices that address the outcome requirements of each subject while accommodating individual learners' needs (Van Staden & Motsamai, 2017).

School-based assessment (SBA) has become pivotal in all teaching and learning strategies, as it is continuous and exposes learners to various learning activities. According to Brandmo (2020, p. 320), assessment should be "a continuously planned process where various forms of assessment are used in order to gather and interpret information about the performance of learners." This implies that assessment is a means of collecting and interpreting ongoing evidence to establish learners' progress and make judgments about their performance (Department of Basic Education, 2011; Van Staden & Motsamai, 2017). Therefore, assessment tasks are set according to a continuous, planned process to identify, gather, and interpret information about learners' performance while exposing them to various forms of assessment tasks (Brandmo, 2020). Given the functionality and effectiveness of continuous assessment, it is commendable that assessment practices in South African secondary schools have shifted significantly towards this approach.

1.1 SBA in tourism subject

SBA in South African secondary schools is administered as scheduled classroom-based assessment tasks that assist in the collection of information on learners' learning and the manner in which teachers are teaching. As noted by Maphosa and Chipfiko (2020), SBA tasks include aspects of the curriculum that cannot easily be assessed in public examination settings but are highly valued in the modern world. In the case of Tourism, communication strategies in

authentic settings, the development of problem-solving skills, and creativity and insight are all embedded in Tourism SBA tasks, particularly in the PAT.

Given that SBA includes informal, formative, and formal (summative) assessment tasks set and assessed by teachers, except at the end of the Grade 12 year, various methods are used to assess learning outcomes (Dube-Xaba and Qwabe, 2023). For instance, the Tourism policy states that the SBA framework for Grade 11 consists of five tasks: a Tourism skills assessment task, a March test, a mid-year examination, a data handling task, and a September test. All marks attained through continuous assessment tasks are weighted at 25% of the final promotion mark, while the final summative November (end-of-year) examination is weighted at 75%. The practical assessment task (PAT) is weighted at 25% of the end-of-year examination mark, although it is conducted as an SBA task in Grades 10 to 12 (Department of Basic Education, 2020; 2021). For the purposes of this study, the PAT was regarded as a formative assessment task and was thus included as part of the SBA component in the investigation.

1.2 SBA and self-regulated learning

SBA provides learners with opportunities to learn from valuable feedback, fosters student autonomy, improves their capability to direct their own learning, enhances communication and collaborative learning, and facilitates improvements in pedagogy (Black & Wiliam, 2018; Kanjee et al., 2022; Shih et al., 2016). However, despite the benefits of SBA, various challenges arise in administering these tasks, such as inadequate training for teachers, overcrowded classrooms, time constraints, poor feedback from teachers, a lack of resources, and high levels of absenteeism among both learners and teachers (Maile & Olowoyo, 2017). Another challenge is that some learners do not fully take advantage of the impact of SBA tasks on their year mark for this subject, as they are uninformed about how these marks contribute to the final promotion mark (Dube-Xaba & Xulu, 2020; Kanjee & Bhana, 2020). Moreover, assessment policies and practices are continuously subject to change as policymakers endeavour to ensure the relevance of assessment in the current educational landscape; hence, various curriculum reforms have occurred since 1997 to meet the needs of South African democratic society and to address employment realities (Kanjee et al., 2022).

As previously stated, SBA entails both formative and summative assessment tasks. One of the key purposes of formative assessment is to regulate learning (Wiliam, 2014). Therefore, SBA is contingent upon the extent to which teachers and learners seek "to create and exploit 'moments of contingency' by adapting instructional plans, resources, and methodologies in real time in response to learners' emerging needs" (Black & Wiliam, 2009, p. 9). Research has shown that, when suitably planned and administered, SBA can significantly enhance learning and academic achievement (Dube-Xaba & Qwabe, 2023; Yates & Johnston, 2018). For example, it has been argued that Tourism is a unique subject that requires distinct learning styles, as the subject matter is more vocationally oriented than that of most other subjects (Biyiri & Dissanayake, 2021).

Therefore, when shifting from one-off examinations to continuous assessment in Tourism, it was necessary to consider how learners acquire information and knowledge both individually and by interacting with their peers to construct new knowledge. In this regard, the SBA tasks that teachers set should trigger self-regulatory processes of learning and knowledge acquisition by learners. Engagement with these tasks should encourage learners to draw on prior knowledge and self-motivation to achieve the desired outcomes of each task.

According to previous studies, there is alignment between assessment and self-regulated learning (Christian et al., 2020; Inan et al., 2017; Zimmerman, 2015) because self-regulated learning endows learners with the ability to devise explicit plans for improvement and achievement. Kanjee and Bhana (2020) believe that the formative functions of SBA are determined by the degree of self-regulated learning a learner is able to achieve. However, the evidence in the literature regarding this notion is not conclusive, as there is a paucity of studies on the role of SBA in self-regulated learning in Tourism. Moreover, studies on self-regulated learning in other subjects have been conducted quantitatively rather than qualitatively (Biyiri & Dissanayake, 2021; Inan et al., 2017), making it vital to conduct a qualitative study to elicit evidence on the impact of SBA on self-regulated learning in Tourism, which is a relatively new subject in the South African secondary school curriculum.

1.3 Social cognitive theory of self-regulated learning

To explore the experiences and views of Tourism learners, the study utilised Bandura's (1986) social cognitive theory, which has been widely used to frame self-regulated learning studies. From the interactionist perspective of social cognitive theory, social factors influence the operation of the self-regulative system (Schunk and Green, 2018). This theory posits that human functioning results from reciprocal interactions among personal, behavioural, and environmental factors that either propel or stagnate learning. Self-regulated learning, therefore, involves multiple sources while the learner engages in an activity. Drawing on this theory, Zimmerman (2002) proposes a conceptual framework of self-regulated learning strategies within the educational sphere. His model highlights that the factors driving self-regulated learning are personal (such as cognitive beliefs and emotional states), environmental (including the structuring of physical or social settings), and behavioural (encompassing self-regulated overt motor activities).

According to Schunk and Green (2018), self-regulation entails monitoring and managing one's cognitive processes while controlling emotions, motivations, behaviours, and environmental factors related to learning. These processes include concentration, self-discipline, and the acceptance of personal responsibility for one's own learning (Schunk & Green, 2018; Zimmerman,2015; Shanker, 2017). Most scholars agree that self-regulated learning is an active, constructive process that learners employ to monitor and control their learning, guided by metacognition, strategic action, and motivation (Biyiri & Dissanayake, 2021; Schunk & Green,

2018). In essence, self-regulated learning occurs when a learner approaches learning or assessment tasks in a planned manner, with the purpose of progressing towards a learning goal.

Most researchers advocating various models of self-regulated learning concur that it includesself-motivation (intrinsic interest in the task), self-control (focusing attention and applying task strategies), self-observation (experimenting with alternatives to determine what works best), self-reflection (evaluating one's performance against a standard), and self-reaction (achieving a degree of self-satisfaction) (Zimmerman, 2015; Shanker, 2017). This suggests that self-regulated learning relates to how individuals manage their personal learning processes, particularly in how they monitor, regulate, and evaluate their own learning, as well as plan learning actions and behavioural processes that increase the likelihood of goal attainment (Zimmerman, 2015). It is a process wherein learners choose goals for their learning while also attempting to control and regulate their cognition, motivation, and behaviour. Studies related to self-regulation and student satisfaction have shown a positive correlation between these constructs (Inan et al., 2017; Shanker, 2017). Specifically, Shanker (2017) argues that self-regulated learning enhances learners' learning, increases the extent and depth of their thinking, assists them in directing their conscious focus on learning, and is instrumental in developing reflective and responsible learners. The concept of self-regulated learning is central to most research, particularly that associated with social cognitive theory. However, there has been little explicit articulation linking it to learners' voices in SBA. This study aimed to explore SBA as a driver of self-regulated learning through the lens of Bandura's social cognitive theory.

1.4 Problem Statement

Historically, assessment practices in South Africa primarily focused on learner promotion at the end of the academic year and did not consider the significance of a learning continuum (Kanjee et al., 2022; Reyneke, 2016). Brandmo et al. (2020) argue that this previous approach placed too much emphasis on the grading function of assessment and too little focus on how to assist students in learning. In other words, past assessment practices concentrated on summative assessment while neglecting formative assessment opportunities. Therefore, in light of the unique assessment strategies and approaches that Tourism as a subject requires, it is deemed vital to establish whether learners are continuously taught and assessed in an appropriate manner, and whether they will be equipped for the ever-changing needs of the tourism industry.

To confirm what students should know and whether they have met the required curriculum outcomes, effective individualised programmes and certified proficiency levels have been devised to guide decisions about students' achievement levels and placement. These processes require ongoing and versatile tasks that are assessed appropriately (Black & Wiliam, 2018). It is important that Tourism learners embrace unique learning styles to meet the needs of this subject's content and vocational applicability (Biyiri & Dissanayake, 2021; Shih et al., 2016). Consequently, as assessment practices have shifted from one-off summative examinations to

school-based assessment, it has become necessary to consider whether learners can utilise such assessment practices to construct and internalise knowledge and gain the required insights to attain the highest possible academic results at the end of their schooling career. Moreover, the underlying purpose of school-based assessment (SBA) in Tourism is to facilitate and enhance the learning experiences of learners so that they are equipped for the demands of the tourism industry should they choose to pursue a career in this domain.

In recognition of the significance of SBA as an integral part of teaching and learning, the researcher conducted a study to examine the alignment between the implementation of the tenets of SBA and self-regulated learning. It is therefore envisaged that the information shared in this paper will contribute to in-depth debates on assessment and self-regulated learning. It is also intended that the information provided will fill the gap in the literature on the effectiveness and usefulness of current assessment practices in Tourism and the development of self-regulated learning among learners who take this subject. To achieve these aims, the study focused on answering the following two key research questions:

- What are Tourism learners' experiences of SBA?
- Have these experiences enhanced self-regulated learning?

2. Methodological Approach

The case study design was used for this qualitative investigation, as Alpi and Evans (2019) argue that this research approach provides both the researcher and the reader with a unique example of people's views on and experiences of a real situation. A case study involves the in-depth exploration and analysis of a specific, bounded instance or case within its real-life context (Yin, 2018). In this study, the case is the experience of Tourism learners using SBA as a driver for self-regulated learning. The learners served as the unit of analysis. In line with qualitative case study methodology, a purposive sampling method was employed to select schools and a sample of participants. According to Thacker (2020), a sample is a subset of participants from the population used to make inferences about the entire population. The sample consisted of forty purposively selected learners who were taking Tourism as a subject in Grade 11 at two secondary schools in the KwaZulu-Natal Province of South Africa. Tourism is an elective subject in the curriculum and is only offered in Grades 10 to 12. The two schools were purposively selected: one school had offered Tourism for less than five years, while the other had offered it for over ten years. I purposively selected Grade 11 learners for two reasons: (1) they would have been exposed to SBA in Tourism since Grade 10 and would therefore be able to provide in-depth data on the study topic, and (2) these Grade 11 learners would not yet exit the schooling system in the year of data generation and would be available should follow-up data be required.

The inclusion criteria for learners were based on varying performance in their SBA tasks. Including a large number of participants was to make provision for a good sample in case others dropped out before the study was completed. Focus group discussions were conducted with

four groups of 10 learners each.The size of the FGD was in line with the recommendation in the literature that focus group sizes often range between six and 12 individuals (Creswell & Creswell, 2018; Guest et al., 2017). I conducted two sessions that lasted about 2 hours each for all four groups. An audio recording was made of each of the focus group discussions to capture the verbatim words of the participants. In addition, I also recorded field notes. The data were analysed using the thematic approach as proposed by Braun and Clarke (2023). All ethical issues associated with learner research participation were taken into consideration. Ethical clearance was granted by the University of KwaZulu-Natal's Ethics Committee (HSS/1115/017) and the Department of Basic Education. The two principals of the schools also agreed that the study could be conducted on their premises and that I could recruit Grade 11 learners. The participants were recruited by means of an invitation that was sent to their cell phones (the numbers had been provided with the permission of the principals). Parental/guardian consent was sought and obtained, and permission from the parents was also obtained. Assent of the learners was sought and obtained in an ethical manner. Participation was voluntary. The discussions were conducted in English, as all the learners were quite proficient in this language, as it is the language of teaching and learning in the two schools. However, participants could also switch to IsiZulu if they felt more comfortable in that language when they wished to stress a point. The researcher, who is fluent in both isiZulu and English, made translations of the non-English contributions.

3. Presentation of Results

The findings revealed that SBA propelled and inculcated a sense of self-regulated learning in the learners. In a nutshell, the learners reflected on SBA as a means to improve their autonomy and argued that it engendered independent learning. They also saw it as a way to acquire new skills and as a means to access knowledge on their own as well as in collaboration with others.

3.1 SBA improves learner autonomy and encourages ownership of learning

When the learners discussed their experiences of the SBA tasks they had to complete, most stated that they were 'made to go all out' as they needed to find information on their own in order to complete the tasks. Learners in all four of the focus groups maintained that SBA tasks encouraged them to learn on their own. Formative assessment tasks in Tourism thus improved the learners' sense of autonomy and helped them to develop the ability to engage in independent learning. The following comments exemplify what is most frequently expressed:

> *"When we work on the project task, we are able to learn new concepts until we master them while we are not under pressur*e." (FGD 2)

> "*With the project and PAT, one learns to work independently because you have to come up with your own design of a logo or brochure and in that way, you acquire new knowledge on your own."* (FGD 3)

The majority of the learners felt that SBA tasks guided independent learning. Participants believed these tasks encouraged them to become active learners, as they were required to complete certain tasks individually. Tackling SBA tasks also enhanced their ability to learn and apply various newly acquired concepts and jargon associated with tourism. Furthermore, they could complete these formative tasks without the fear typically associated with examination conditions.

The learners also agreed that they were naturally motivated to complete the SBA tasks because they wanted to pass the end-of-year examination. This suggests that their desire to complete the SBA tasks facilitated self-motivation to learn and acquire new skills, as pertinent instructions had to be followed to attain good marks. One learner stated the following in this regard:

> *"We work hard to respond to all the instructions so that we master the skill of reading instructions because the instructions in the examination will be similar."* (FGD 1)

According to the learners, the experience they gained by following task-based instructions for formative assessment helped them to follow similar instructions in the examination. Their examination writing skills were thus improved as the quality of their question analysis and learning was enhanced. They clearly understood that they had to place emphasis on understanding instructions in SBA tasks, as they would be confronted with similar instructions in the end-of-year examination. This finding implies that they had to master both reading and comprehension skills to be able to meaningfully express their knowledge, understanding, and insight into learned content knowledge.

The learners also indicated that they used SBA as a driver for learning. This is illustrated by the following excerpts:

> *"I have to read the textbook because the PAT is done every week, so I need to review that work before the day."* (FGD 1)
>
> *"You are forced to read and search for information on your own for the SBA which is very demanding in terms of reading."* (FGD 2)
>
> *"I always have to read the Tourism textbook at least once a week because there is always an SBA task, especially the PAT."* (FGD 4)
>
> *"When completing SBA tasks, you are forced to learn most of the things on your own and thus develop responsibility towards learning and gaining love for the subject."* (FGD 3)

Most of the learners stated that they had to study the work in their textbooks or other material to review the work before they started the PAT. This comment affirmed the role of SBA as a driver of self-regulated learning. The learners thus felt that they developed ownership of their learning when they engaged in research and additional reading to complete their SBA tasks. For instance, some learners offered the following comments:

> *"We attempted the project task many times [on our own] until we got it right."* (FGD 3)

"*When we do the PAT, you get an opportunity to express learning in your own way."* (FGD 4)

"You have to be creative with the design and do the research yourself, so you know what you have to learn." (FGD 1)

"*I feel I am more in command of my learning than ever before when the teacher gives us assessment tasks [to complete]."* (FGD2)

Most learners commented that, when they did an SBA project, they were given the opportunity to personalise their learning and to grow. They also agreed that their teachers would instruct them to look for pertinent information on their own. For example:

"We did most of the project on our own and the teacher only gave us instructions. We had to make sure that the information that we sourced for the SBA task was correct and accurate as per instructions." (FGD1)

"If we don't do the tasks correctly, in most cases our teachers would want us to look for corrections on our own. (FGD 3)

"Although the project was not much clearer to us, we managed to find our way." (FGD 4)

"If you get something wrong in the test, you would work to figure it out and I work on it on my own, which has really made me responsible for my learning." (FGD 2).

The learners emphasised that SBA tasks compelled them to work independently, and many stated that they always strove to complete the SBA tasks correctly. This finding implies that the learners were able to adjust their learning and make corrections when they identified their mistakes based on the feedback they received. The learners also agreed that, when engaging in SBA tasks, they were given the opportunity to personalise their learning. Developing independence and autonomy was viewed as an important reward that resulted from completing SBA tasks in Tourism, and many agreed that they used their engagement with SBA tasks to cultivate a degree of academic freedom. For these learners, engaging with SBA tasks provided opportunities to learn, even when producing tasks for assessment. This suggests that the desire to complete the SBA tasks facilitated self-motivation to learn and acquire new skills. In essence, the learners seemed to embrace the opportunities they had to complete SBA tasks to become aware of what they were learning and what they needed to (un)learn.

3.2 SBA enables learners to access knowledge in different ways

The findings revealed that the learners had very similar experiences regarding the skills they acquired while completing SBA tasks. It was evident that learners in all the focus discussion groups understood that SBA tasks involved various assessment methods that compelled them to learn in different ways. Many learners noted that SBA tasks motivated them to adopt a range of learning strategies, such as independent learning, collaborative learning, and accessing various source materials. The majority of participants indicated that SBA tasks were beneficial, as the

task requirements guided their ability to learn using these diverse strategies. One participant stated:

> *"I always read the Tourism textbook on my own at least once a week because there is always a formative task that we do weekly such as the PAT."* (FGD3).

Learners also indicated that doing SBA tasks pushed them to learn more in depth. For example, a learner mentioned the following:

> *"When you do SBA tasks, you are forced to go back to the work in the previous year because there is work that we did which is in the PAT and thus you are forced to spend more time reading by yourself."* (FGD 2)

The learners also revealed that they had to formulate their own task goals to complete a specific SBA task. This encouraged self-regulated learning as they had to assume control of their learning. Most of the learners affirmed that the teacher would give them a task and instruct them to look for information to complete it on their own. For example:

> *"Completing SBA tasks sometimes makes you look for information on your own. The teacher wants us to look for correct answers on our own before rendering assistance."* (FGD 4)

> *"The teacher expects us to look for information on our own. We think it is good as she gives us projects and a PAT that force us to study and acquire specific skills and knowledge. For me, that is important because we get that feeling of mastering something on our own."* (FGD 3)

These comments suggest that SBA tasks were used by some learners as a means to become actively involved in their learning. This was prompted by the fact that they naturally and willingly searched for information on their own. The learners also seemed keen to engage in self-discovery and knowledge acquisition processes, which suggests that SBA tasks encouraged the motivation to study, do research, and complete tasks individually.

While the learners affirmed that SBA tasks encouraged independent learning, they also highlighted that they used SBA tasks to interact and collaborate with their peers using various methods. Most learners were of the view that SBA promoted group work. This point was underscored by participants in all four focus discussion groups. The following excerpts illustrate what most said:

> "*Although we do not complete all SBA tasks in groups, some of us have set up our own support groups where we discuss tasks and study for the tests together. For the research skills project and the PAT, I had to work with my peers to do research with less help from the teacher. Although it felt difficult, we went to the library and asked people around us. In that sense we were able to learn from that and it felt good."* (FGD 1)

> *"The teacher gave us the practical assessment task [PAT] on different South African cultures, some of which we did not know but we had to do research on our own."* (FGD 4)

"Some of the tasks require us to work in groups and assist one another to complete the task. We can argue until we get the correct response; thus, we begin to learn from each other." (FGD 3)

"When we do the PAT, we have to share the resources and that forces collaboration amongst us. Group study helps with more commitment and [access to] a variety of resources." (FGD 2)

All the learners commented that when they had to complete an SBA task, particularly the PAT, they were given the opportunity to work with other learners in the class. During this process, information was exchanged, and learners helped one another. Completing SBA tasks played a major role in the learners' ability to learn, as it encouraged them to work together. Collaboration was embraced as a learning tool, as it was believed to assist learners in sharing available resources and information. Given that the schools were clearly under-resourced at the time of the study, as my field notes confirmed, it was common practice for learners to share resources. This helped them learn from and with one another while completing their SBA tasks. They also believed that collaboration facilitated a better understanding of content and maximised opportunities for achieving high marks. The learners thus agreed that engaging in SBA tasks encouraged collaboration and provided opportunities for adopting useful learning strategies.

4. Discussion of Findings

Motivation, engagement, and self-regulation are the primary determinants of students' learning outcomes and whether they will persist through challenging tasks (Gökteke & Ocak, 2024). The findings reveal that learners' cognitive beliefs and emotional states, as proposed by Bandura (1996), are central to driving self-regulated learning. The participants expressed the view that SBA tasks gave them the opportunity to engage personally and become more involved in what they were learning. They agreed that a valuable experience generated by SBA tasks was the ability to develop ownership of what they were learning during their engagement with these tasks, and these experiences were valuable to them. This finding corroborates the literature that argues that learners use formative SBA tasks to determine their own learning instead of the teacher always being the only source who knows how learners should learn (Biyiri & Dissanayake, 2021; Wiliam, 2014). This is in line with the theory of social cognition and self-regulated learning, which emphasises self-motivation that occurs when a learner independently uses one or more strategies to keep themselves on track toward a learning goal (Bandura, 1986; Zimmerman, 2002). Learners in this study seem to have a high level of self-efficacy to complete required SBA tasks. This implies that self-regulated learning is about learners approaching academic tasks, including SBA, in a planned way while adapting their learning activities or performance to the task in order to achieve progress towards the learning goal (Usher & Schunk, 2018).

Social cognitive theory is important to the process of self-regulation because it requires learners to assume control over their learning (Bandura, 1986). The learners in this study revealed that they were also required in some instances to formulate the goals for their tasks themselves to be able to complete a specific SBA task. In line with this perspective, Suhandoko and Hsu (2020),

in their studies addressing the importance of motivation within self-regulated learning, including self-efficacy beliefs, attributions, goal orientations, outcome expectations, and their interactions, aimed to enhance self-regulated learning skills. For instance, in this study, learners intentionally had to allocate sufficient time to read parts of the textbook and review work from a previous grade when they prepared for SBA tasks. These processes helped them to develop effective study habits and techniques, as suggested by Schunk and Green (2018). These efforts also encouraged self-regulated learning and guided the learners to assume control over their learning. This confirms the claim made by Bandura (1986) that the concept of self-regulated learning, as articulated in social cognitive theory, relates to how individuals manage their personal learning processes (Bandura, 1986). Most of the learners admitted that this was a novel experience but that it afforded them opportunities to work independently of the teacher while instilling in them a sense of self-motivation and encouraging self-regulated learning. This finding corroborates Zimmerman's (2015) notion that formative assessment tasks assist learners in regulating their own learning and in being less dependent on teacher support. This finding regards learning as a proactive action that learners take for themselves, as opposed to seeing it as a covert event that happens to learners as a result of educational experiences.

Social support from teachers and peers can serve an important role as learners are learning to be more self-regulative. Findings from this study revealed that learners' engagement in SBA tasks and use of self-regulated strategies were more prevalent in learners that regularly received support from their teacher and peers (Gökteke & Ocak, 2024). The learners commented that SBA tasks encouraged involvement and enhanced their ability to control their learning. This was achieved by accessing and following the instructions the teacher gave them to complete a task. Research has revealed that the guidance that supports SBA tasks is important, as accessing and following it develops self-regulated learning (Andrzejewski et al., 2016; Biyiri & Dissanayake, 2021; Brandmo et al., 2020; Shanker, 2017). As such, Brandmo et al. (2020) argue that guided practice and clear instructions are ways that teachers should use to encourage learners to attain self-regulated learning and independence. According to Zimmerman (2002), working collaboratively with peers is as important as working individually when tackling SBA tasks. Most of the participants in the current study agreed, as they affirmed that working on their SBA tasks provided opportunities to collaborate with and learn from other learners. This role of SBA is important as it encourages learners to exchange information and self-assess their insights and knowledge on their journey to self-regulated learning (Biyiri & Dissanayake, 2021; Maphosa & Chipfiko, 2020). This suggests that SBA inculcates a sense of responsibility in learners as they need to become actively involved in the search for information in a group without letting others down, or they have to learn individually without letting themselves down. The study thus affirms that SBA tasks invite learners to become self-motivated and responsible and to regulate their time and efforts for knowledge acquisition and positive learning outcomes.

The findings of the current study also revealed that the learners valued SBA tasks and developed a sense of ownership of their work, which were clearly drivers of self-regulated learning. In this regard, Biyiri and Dissanayake (2021) are of the view that learners learn key skills when they own the task and understand the learning process, and they argue that this sense of ownership plays a significant role in their learning. In social cognitive theory, human behaviour is extensively motivated and regulated by the ongoing exercise of self-influence. Bandura's (1986) social cognitive theory posits that learners are motivated and regulate their behaviour through self-influence. This theory also suggests that learners seek to have control over their learning. In essence, this finding suggests that if learners take ownership of their learning, it is beneficial and motivates them to want to do more to move forward. In this regard, Shanker (2017) is of the view that assessment fosters learners' autonomy as they develop a strong urge to complete a task and gain the capacity to direct their own learning in school and beyond.

Generally, the findings in this study suggest that social cognitive theory has assumed a less structured and learner-directed form of engaging in classroom assessment with respect to fostering self-regulated learning. The findings further suggest that SBA is a form of assessment practice that focuses on learners' cognitive processes as both directed by the teacher and learners. This suggests an alternative form of classroom assessment practice where learners appear to acquire fundamental skills through their participation in SBA tasks.

5. Conclusion

This paper focuses on the role of SBA in driving self-regulated learning as perceived by learners who take Tourism as an elective. Using social cognitive theory, the aim was to examine the alignment between the implementation of the tenets of SBA and self-regulated learning. The findings suggest that SBA is a driver of self-regulated learning (SRL), as the learners affirmed that this continuous assessment approach in Tourism improved their autonomy and helped them take ownership of their learning. It also enabled them to access knowledge and insights both individually and in collaboration with others. The findings indicate that SBA allows learners to take control of their own learning and thus become self-regulated learners. These findings have profound implications for the role of assessment in the schooling context, as it enhances learners' accountability and sense of ownership of their own learning. Moreover, the variety of SBA assessment practices facilitates knowledge construction and thus improves the quality of educational provision. The findings reveal that SBA is one of the determinants of self-regulated learning. The use of a case study design may limit transferability, as the findings may not be broadly applicable to other learners in different schools. However, the study will encourage other researchers to undertake further exploration in different contexts.

6. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The author declares no conflict of interest

References

Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*. Prentice-Hall.

Biyiri, E.W., & Dissanayake, D.M.M.I. (2021). A study on satisfaction towards online learning among Tourism and Hospitality Management students during COVID-19. *Pandemic Journal of Management and Tourism Research, 4*(1), 32-47.

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment: *Educational assessment, evaluation and accountability* (formerly *Journal of Personnel Evaluation in Education)*, *21*(1), 5. http://dx.doi.org/10.1007/s11092-008-9068-5

Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy: Assessment in Education. *Principles, Policy & Practice, 25*(6), 551–575.
https://psycnet.apa.org/doi/10.1080/0969594X.2018.1441807

Brandmo, C., Panadero, E., & Hopfenbeck, T.N. (2020). Bridging classroom assessment and self-regulated learning. *Assessment in Education: Principles, Policy & Practice, 2*(4), 319-331, https://doi.org/10.1080/0969594X.2020.1803589

Braun, V., & Clarke, V. (2023). Thematic analysis. In H. Cooper, M.N. Coutanche, L.M. McMullen, A.T. Panter, D. Rindskopf & K.J. Sher (Eds.), *APA handbook of research methods in psychology: Research designs: Quantitative, qualitative, neuropsychological, and biological* (2nd ed. pp. 65–81). https://psycnet.apa.org/doi/10.1037/0000319-004

Creswell, J.W., & Creswell, J.D. (2018). *Research Design: Qualitative, quantitative and mixed method approach* (5th ed). SAGE Publications

Department of Basic Education (DBE). (2011). *Curriculum and assessment policy statement Grade 10–12 (Tourism)*. Pretoria: DBE. https://www.education.gov.za/

Department of Basic Education (DBE). (2020). *National Curriculum Statement: Abridged Section 4: Tourism Grade 10 and 11*. Pretoria: DBE. https://www.education.gov.za/

Department of Basic Education (DBE). (2021). *National Curriculum Statement: Abridged Section 4: Tourism Grade 12*. Pretoria: DBE. https://www.education.gov.za/

Dube-Xaba, Z.H.W., & Xulu, R. (2020). Opportunities and challenges in school-based-assessment: Tourism learners' views. *African Journal of Hospitality, Tourism and Leisure, 9*(2),1-15. http://www.ajhtl.com/

Dube-Xaba, Z.H.W., & Qwabe, S.M. (2023). Teachers' views on the factors affecting their role in implementing SBA in Tourism. *African Journal of Hospitality, Tourism and Leisure, 12*(3), 957-972. https://doi.org/10.46222/ajhtl.19770720.410

Guest, G., Namey, E., & Mitchell, M. L. (2017). *Collecting Qualitative Data: A Field Manual for Applied Research*. SAGE Publications

Gökteke, Z., & Ocak, G. (2024). The concept of self-regulation and its place and importance in educational sciences. *European Journal of Education Studies, 11*(1), 159-169. http://doi.org/10.46827/ejes.v11i1.5160

Inan, F., Yukselturk, E., Kurucay, M., & Flores, R. (2017). The impact of self-regulation strategies on student success and satisfaction in an online course. *International Journal on E-Learning, 16*(1), 23-32. http://www.aace.org

Kanjee, A., & Bhana, J. (2020). *Using formative assessment to improve learning and teaching: Practical guidelines for teacher during the COVID-19 pandemic*. Oxford University Press.

Kanjee, A., Roberts, N., Sadeck, O., & Ramollo, J. (2022). Entrenching performativity or enhancing pedagogy: Addressing the challenge of assessment policy and practice. Journal of Education, (87), 1-23. http://dx.doi.org/10.17159/2520-9868/i87a01.

Maile, S. & Olowoyo, M.M. (2017). The causes of late coming among high school students in Soshanguve, Pretoria, South Africa. *Pedagogical Research, 2*(2), 04. https://doi.org/10.20897/pr/80951

Maphosa, C., & Chipfiko, J. (2020). Interrogating Complementarity in the Implementation of School-Based Assessment in South African Schools. *International Journal of Research and Review, 7* (8), 413–424. https://doi.org/10.4444/ijrr.1002/2202

Reyneke, M. (2016). School-based assessment in English language teaching: Weighing the cow will not fatten it. *Per Linguam*, 32(2), 1-14. http://dx.doi.org/10.5785/32-2-624

Schunk, D.H. & Greene, J.A. (Eds.). (2018). *Handbook of self-regulation of learning and performance* (2 ed.). Routledge.

Shanker, S. (2017). *What you need to know: Self-regulation: 5 domains of self-regulation*. The MEHRIT Centre. https://self-reg.ca/self-reg/self-regknowledge-series/

Shih, C., Liao, C., Lin, C., & Liao, T. (2016). A study on Hospitality and Tourism teachers' teaching competence to use inquiry-based teaching into "project study" curriculum of senior high and vocational schools. *International Journal of Information and Education Technology, 6*(11), 904-908. http://dx.doi.org/10.7763/IJIET.2016.V6.814

Suhandoko, A.D.J., & Hsu, C-H. (2020). Applying self-regulated learning intervention to enhance students' learning: A quasi-experimental approach. *International Journal of Instruction, 13*(3), 649-664. https://doi.org/10.29333/iji.2020.13344a

Van Staden, S., & Motsamai, P. (2017). Differences in the quality of school-based assessment: Evidence in Grade 9 mathematics achievement. *Pythagoras, 38*(1), a367. https://doi.org/10.4102/pythagoras.v38i1.367

Wiliam, D. (2014). Assessment: The bridge between teaching and learning. *Voices from the Middle*, *21*(2), 15–20. Retrieved from https://www.ncte.org

Yates, A., & Johnston, M. (2018). The impact of school-based assessment for qualifications on teachers' conceptions of assessment. *Assessment in Education: Principles, Policy & Practice*, 25(6), 638–654. https://doi.org/10.1080/0969594X.2017.1295020

Yin. R.K. (2018). *Case study research: Design and methods* (6th ed.). Thousand Oaks, CA: SAGE.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(1), 64-70. http://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B.J. (2015). *Self-regulated learning: Theories, measures, and outcomes*. Academic Press.

Assessment Practices Fit for a Fast-changing World: A South African Perspective

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Reference Formats (APA 7th Edition)
Cheryl Weston, C., Eadie, S., Croucamp, A., Morcowitz, S., & James, C. (2024). Assessment practices fit for a fast-changing world: A South African perspective. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 61–76). ERRCD Forum. https://doi.org/10.38140/obp2-2024-05

Abstract: In the face of global uncertainties and pressing local inequalities, education systems worldwide are prioritising the development of competencies to equip learners with the skills necessary for the 21st century. In South Africa, the Department of Basic Education (DBE) has initiated a Curriculum Strengthening process that emphasises the integration of social, emotional, and cognitive competencies into teaching, learning, and assessment. This study addresses the central question: How can the assessment of competencies be integrated into national assessment policy and practice? Adopting a mixed-methods approach, this study draws on a literature review, 15 semi-structured expert interviews, and primary research with 43 teachers and 118 learners across diverse school contexts. The thematic analysis of qualitative data is complemented by quantitative survey results to provide a comprehensive understanding of current assessment practices. Key findings highlight challenges such as over-reliance on summative assessments, resource constraints, and limited professional development for teachers. Nevertheless, opportunities exist in leveraging formative assessments and performance-based evaluations as key approaches to the assessment of competencies, as part of the broader national assessment regime. The study concludes that systemic changes are needed, including phased implementation, tailored teacher support, and flexible, context-appropriate assessment strategies. Recommendations emphasise aligning national assessment frameworks with the Basic Education Competency Framework (BECF), fostering inclusive and equitable classroom assessment practices, and supporting professional development to build teacher capacity.

Keywords: Competency assessment, 21st century skills, mixed-methods research, curriculum policy, teacher development.

1. Introduction

In a context of rapid global change, as well as pressing local challenges and inequalities, many education systems worldwide are focusing more deliberately on equipping learners with a broad range of knowledge, skills, attitudes, and values to enable them to thrive amidst increasing uncertainty. There is widespread global acknowledgment that education systems need to intentionally develop transversal skills and competencies in learners, which have been proven to equip them with the abilities they need to actively engage with and succeed in the workforce and in life more broadly. Countries worldwide have made strides toward incorporating competencies into their curricula. However, valid and reliable approaches to the assessment of competencies

are lagging due to the complexity of the domain and various capacity-related factors (Hoskins & Liu, 2019; USAID & UNICEF, 2024).

It is acknowledged that unless competencies are explicitly included in assessment, teaching, and learning practices, neither teacher nor learner mindsets and behaviours will change in the classroom (Schleicher, 2024; Human-Vogel, 2023). Global recognition of the importance of these competencies has resulted in considerable research and innovation on this topic in recent years (Hoskins & Liu, 2019). While several countries have made significant progress in competency-based policy and programming, many nations are still in the early stages of understanding what works in their context (USAID & UNICEF, 2024).

In South Africa, the Department of Basic Education (DBE) has embarked on a national Curriculum Strengthening initiative to improve the quality and relevance of teaching, learning, and assessment in South African schools. This initiative includes a deliberate focus on integrating social, emotional, and cognitive competencies into the curriculum, pedagogy, and assessment across the basic education system. Despite a well-articulated learner profile in Section 1 of the Curriculum and Assessment Policy Statement (CAPS), there is broad acknowledgment that many learners exit the basic education system without the essential skills and knowledge they need to thrive in post-school life (NEDLAC, 2019; DHET, 2022). Local and international research shows that South African learners consistently struggle to master foundational skills, particularly tasks that demand deep conceptual knowledge and higher-order cognitive skills (Reddy et al., 2021). Research among South African job seekers and employers further reveals that school grades are weakly correlated with skills such as planning, concept formation, communication, numeracy, and grit (Carranza et al., 2022). This indicates that the current formal education system does not adequately prepare learners with the transferable skills they need to succeed in the post-school world.

To guide the Curriculum Strengthening initiative, a Basic Education Competency Framework (BECF) was developed during 2022–2023 through extensive research and consultation with over 1,000 education stakeholders across all nine provinces, as well as input from local and international experts. This framework prioritises and defines the knowledge, skills, values, and attitudes that all learners should have the opportunity to develop throughout their schooling (Hoskins & Liu, 2019). The BECF was adopted by the Council of Education Ministers (CEM) in November 2023 as a tool to guide Curriculum Strengthening efforts.

***Figure 1**: The Basic Education Competency Framework. Reprinted from "Curriculum Strengthening Blueprint," by the Department of Basic Education, 2023.*

Over the past 30 years, South Africa's basic education system has developed robust mechanisms for measuring and reporting on learners' progress, particularly in relation to content knowledge. This includes the establishment of a reliable and efficient national examination system and school-based assessments (SBA). More recently, efforts have focused on improving the reliability of School-Based Assessments (SBA) and on introducing systemic evaluations to gauge the system's progress across phases. However, the system remains predominantly "assessment-focused and measurement-driven" (Kanjee & Sayed, 2013), emphasising summative assessments over formative practices and neglecting the assessment of competencies.

These challenges are compounded by contextual constraints such as resource limitations, large class sizes, a content-heavy curriculum, and insufficient teacher support (Kanjee et al., 2022). Research gathered from South African teachers indicates that they often experience significant difficulties in implementing effective assessment practices, which include a lack of training and professional development, especially in the assessment of competencies. Govender (2018) highlights that inadequate teacher support and professional development, particularly concerning the implementation of new approaches, stems from the assumption that teachers, being already qualified, possess the skills necessary to adopt new assessment strategies. Similarly, Sethusha (2013) found that many teachers lack foundational training in assessment during their initial teacher education, leaving them reliant on in-service workshops that often fail to provide the ongoing coaching and mentoring support required to implement these assessment practices effectively and meaningfully.

Class size further exacerbates the difficulty of implementing formative assessments, particularly in under-resourced schools where teachers face heavy administrative workloads (Mensah et al., 2023; Kanjee, 2009). Teachers in such contexts often resort to summative assessments or high-stakes testing, which limits opportunities for formative feedback and the development of competencies (Vandeyar & Killen, 2007). Additionally, infrastructure and resource limitations, such as inadequate school facilities and a lack of access to basic amenities like electricity and water, impede both teaching and assessment processes, particularly in rural and underprivileged areas (Mensah et al., 2023). These conditions create significant disparities in the quality of education and highlight the urgent need for flexible, context-sensitive approaches to the assessment of competencies.

To address these systemic challenges, effective policy development must consider teachers' experiences and provide ongoing professional development tailored to their needs. Furthermore, the diversity of the South African schooling system necessitates a flexible approach to assessment that accommodates learners from low socio-economic backgrounds and those in resource-constrained environments (Mensah et al., 2023). Without adequate teacher support and systemic adjustments, the shift towards the assessment of competencies risks being undermined by the very contextual factors it seeks to address.

1.1 Problem statement

Despite significant efforts to strengthen South Africa's basic education curriculum, the education system continues to fall short in equipping learners with the essential competencies required to thrive in a rapidly changing and uncertain world. While the Basic Education Competency Framework (BECF) provides a vision for integrating social, emotional, and cognitive competencies into teaching, learning, and assessment, the assessment landscape remains predominantly content-focused, summative, and measurement-driven. This mismatch undermines the development of transferable skills such as critical thinking, problem-solving, and communication, which are vital for learners' transitions into work, higher education, and entrepreneurial pathways.

Additionally, the contextual challenges mentioned above further hinder the adoption of formative assessment approaches. As a result, there is a critical need to explore how the assessment of competencies can be deliberately and effectively integrated into national policy and practice, ensuring that the system not only measures content learning outcomes but also fosters the broader competencies outlined in the BECF. Addressing this gap is essential to achieving the Department of Basic Education's goal of developing socially and economically thriving citizens.

1.2 Research question

This study seeks to explore the following primary research question:

Given the complexities of the South African basic education context, how can the assessment of competencies be integrated into national assessment policy and practice?

This question aims to address the growing need for a cohesive strategy to incorporate the assessment of competencies into South Africa's National Assessment Framework (NAF), leveraging best practices while tackling local challenges and priorities. The following sections outline the research's methodological approach, key findings, and their implications for education policymakers in South Africa.

2. Materials and Methodology

This study employed a mixed-methods, iterative, consultative approach to explore local and global practices in the assessment of competencies. Mixed-methods research (MMR) was chosen for its ability to enhance rigor, depth, and credibility by integrating qualitative and quantitative data (Schoonenboom & Johnson, 2017; Greene et al., 1989; Bryman, 2006). This approach ensured that findings were grounded in the South African context while being informed by global best practices. Schoonenboom and Johnson (2017) emphasise that MMR "expands and strengthens a study's conclusions" by providing both contextual richness and empirical evidence (p. 110). Greene et al. (1989) describe its value in addressing complementary aspects of a research question, which was critical in comprehensively examining the complexities of competency assessment in South Africa.

The study employed a concurrent mixed-methods design, allowing qualitative and quantitative data to be collected and analysed simultaneously. Qualitative methods, including semi-structured expert interviews and task team engagements, provided detailed insights into stakeholder perspectives. Quantitative data, derived from surveys, South Africa's General Education Certificate (GEC) pilot, and Save the Children Teacher and Learner surveys, validated and expanded these findings.

A temporary task team of DBE officials, academics, education experts, and practitioners provided critique and expertise during three cross-functional workshops. This group gathered for three cross-functional workshops during the research process. A literature review synthesised global and local research on competency assessment, offering a foundational understanding of trends, challenges, and best practices.

Fifteen expert interviews were conducted with representatives from diverse sectors, including two government officials, five NGO representatives, three education practitioners, two development specialists, one academic, one assessment agency representative, and one education specialist. These interviews explored global and local perspectives on competency assessment practices. The interviews were recorded with permission, transcribed for accuracy, and the data were thematically analysed to identify key recommendations and group findings.To ensure confidentiality, interviewees were assigned anonymous labels (e.g., Expert 1).

Primary research with 43 teachers and 118 learners included focus group discussions with teachers, interactive learner workshops, and surveys across six schools in five provinces. Schools were selected to capture diverse contexts, including rural, urban, and disability-focused settings, with most located in lower socio-economic (quintiles 1–3) areas and one higher socio-economic (quintile 5) school in the Western Cape. Teachers and learners were convenience-sampled by schools and represented a range of subjects and phases (grades 8–11). Thematic analysis of qualitative data and descriptive statistics from surveys provided an understanding of current assessment practices and contextual realities.

3. Presentation of Results

This section presents the findings of the study, structured to align with the research objectives and informed by insights from the literature, expert interviews, and primary research conducted in South African schools. It begins by unpacking the complexities of assessing competencies, highlighting their unique characteristics and the factors that make their measurement challenging. The discussion then transitions to cover emerging insights into effective assessment practices and perspectives from competency experts, teachers and learners.

3.1 Insights and emerging learnings from the literature

A common theme emerging from this research is that there is no universally "optimal" form of assessment for competencies (Siarova, Sternadel, & Mašidlauskaitè, 2017), and that a combination of assessment forms is necessary. Hoskins and Liu (2019) and Care et al. (2020) provide insight into the multifaceted nature of competencies, which makes them complex to assess. They highlight the developmental and malleable nature of competencies; they evolve and improve over time with experience, practice, and reflection, emphasising the importance of continuous growth and learning. Scoular et al. (2020) and Piacentini et al. (2023) demonstrate a strong relationship between competencies and domain knowledge, indicating that competencies are most often developed through the teaching and learning of content knowledge and domain-specific skills. This means that the development of competencies should be embedded within the unique conventions and "ways of knowing" of each subject or domain, with the additional possibility of encouraging learners to establish connections between domains through interdisciplinary tasks. Care et al. (2020) discuss the multifaceted and interlinked nature of competencies, which comprise multiple sub-constructs and other contingent elements. They stress that while there is an underlying universality of the competencies included in frameworks like the BECF, competencies can be expressed and interpreted differently depending on cultural contexts and informed by local values. Hoskins and Liu (2019) summarise these notions well by stating that competencies "should not be considered as distinct and mutually exclusive – they overlap, interconnect, and reinforce one another to combine within the individual learner." Given these characteristics, it is crucial to utilise a combination of assessment methods to

effectively capture the multifaceted, developmental, interlinked, and malleable nature of competencies.

Piacentini et al. (2023) indicate that learners develop competencies by engaging in activities that are "realistic, complex, meaningful, and motivating" within a positive social environment. Many of these teaching and learning practices align with research insights from the learning sciences, which suggest that social interaction, a sense of purpose, learner agency, active engagement, iteration, and curiosity are important aspects of effective teaching and learning. Examples of these pedagogies include active learning strategies, such as project-based learning (PBL) (Sarma and Yoquinto, 2020). It is important for teachers to cultivate an environment conducive to this type of deeper learning to create the conditions under which learners can develop their competencies and be assessed.

The starting point for assessing competencies is aligning terminology and definitions (Human-Vogel et al., 2023; Hoskins & Liu, 2019; Care et al., 2020). Official competency terminology and its associated definitions at the policy level must extend into classroom resources, including rubrics, checklists, memos, and rating scales, so that they can be more routinely assessed.

When deciding which assessment forms and tools to use in a given context, several factors must be considered. The assessment of competencies can be integrated into national assessment frameworks at any level, ranging from formative and summative assessments of individual learners in the classroom to large-scale national, regional, and international assessments (Scoular et al., 2020). Assessment at each of these levels has various goals, affordances, and limitations, which should be considered to inform where to focus competency assessment innovation within a particular education system (Hoskins and Liu, 2019).

Different forms of assessment and their tasks lend themselves to specific competencies, depending on the nature of the competency and the goal of the assessment task (Suto and Eccles, 2014). Assessment forms well-suited to assessing competencies include performance assessments, surveys, and situational judgement tests (SJT) (Darling-Hammond and Adamson, 2010; Hoskins and Liu, 2019). Fadel et al. (2024) advocate for a mix of formative and performance-based assessments that emphasise real-world application and continuous growth. They underscore the need to move beyond rote memorisation and focus on developing and assessing skills that artificial intelligence (AI) cannot easily replicate. Performance assessment has emerged as an overarching category with the potential to assess a broad range of competencies, depending on the nature of the performance required (Darling-Hammond and Adamson, 2010). SJTs are designed to evaluate a person's judgement or decision-making in specific or real-world scenarios, where learners are presented with realistic or hypothetical situations related to the skills or attributes being measured. Hoskins and Liu (2019) suggest that SJTs are well-suited to measure competencies such as problem-solving, teamwork, communication, and ethical reasoning. Fadel et al. (2024) explore how AI tools can support

competency assessment by providing real-time feedback, personalised learning pathways, and scalable assessment methods. Further research is required in this area, as the capabilities of AI rapidly improve and offer considerable opportunities for innovation in teaching, learning, and assessment approaches.

Given the developmental nature of competencies, they cannot be effectively measured in one-off, moment-in-time assessments. An alternative approach is needed that tracks a learner's progress over time (Zitha, 2024; Darling-Hammond et al., 2010). Many competencies are supported by domain-specific content knowledge and should be assessed in the context of that content (Piacentini et al., 2023). Assessment tasks should be designed to reflect meaningful real-world challenges and scenarios that require learners to apply their skills in contexts similar to those they will encounter outside the classroom (Scoular et al., 2020). Some assessments of competencies evaluate not only the final outcome or product but also the processes learners use to achieve that outcome (Care et al., 2020). This includes planning, decision-making, collaboration, and reflection.

Learners should be allowed to demonstrate their understanding and skills through various formats, such as written reports, oral presentations, multimedia projects, performances, and portfolios (Care & Anderson, 2016). This approach supports Inclusive Education by accommodating diverse strengths (UNESCO, 1994). Opportunities should be provided for learners to analyse their own thinking, learning processes, and growth (Damşa & de Lange, 2019). Providing detailed, actionable feedback is a key component of effective assessments of competencies, as it guides further learning and development, helping learners to refine their skills and address specific challenges (Dehaene, 2020).

Although competency assessments come with their own challenges and limitations, they provide significant advantages by fostering a more holistic, practical, and personalised approach to education. This shift not only enhances students' academic growth but also equips them for success in both their personal and professional lives (Human-Vogel et al., 2023).

3.2 Expert Interviews

Experts highlighted the importance of designing inclusive and equitable assessments that accommodate the diverse needs of learners through contextualised, localised approaches (Expert 1, Expert 7, personal communication). They advocated for both systemic and classroom-level approaches, combining large-scale assessments to inform policy and strategy with formative assessments that provide ongoing feedback to learners (Expert 9, Expert 2, personal communication). Experts emphasised the potential of project-based learning (PBL) and performance-based assessments to evaluate competencies in realistic, practical contexts, fostering collaboration, problem-solving, and interdisciplinary application (Expert 3, personal communication). Additionally, the role of technology and AI in streamlining assessments, enabling real-time feedback, and supporting personalised learning pathways was underscored as

a significant opportunity for innovation (Expert 6, Expert 8, personal communication). Finally, experts called for collaboration with teachers to develop clear rubrics and guidelines to ensure transparency and consistency in competency evaluations and stressed the need for continuous professional development to empower teachers with the skills and confidence to implement these methods effectively (Expert 4, Expert 2, personal communication).

3.3 Teacher and learner perspectives

The following section presents the key findings from the primary research phase of this study, which explored the experiences and perceptions of teachers and learners regarding assessment practices in South African classrooms. These insights, gathered through focus group discussions, workshops, and surveys conducted with 43 teachers and 118 learners across diverse school contexts, provide a grounded understanding of the challenges and opportunities within the existing assessment landscape. By capturing the voices of those directly involved in the education process, this section sheds light on the practical realities of assessment implementation and offers a critical foundation for the broader discussion on integrating the assessment of competencies into national policy and practice.

3.3.1 Teacher Perspectives

Teachers identified assessment as a tool for preparation, evaluation, and reflection, but expressed concerns about the dominance of summative assessments, which prioritise compliance over meaningful learning. Informal assessments, while valued for real-time feedback, were seen as time-consuming and difficult to manage, particularly in resource-constrained classrooms with large class sizes and rigid curriculum demands. Teachers noted that assessments often remain theoretical and fail to prepare learners for real-world challenges, as many learners focus on memorising content for exams rather than engaging in genuine learning.

Language barriers further hindered assessment processes, with teachers spending significant time explaining complex terminology to learners whose home language differed from the medium of instruction. Teachers emphasised the need for more professional development, basic resources, and tailored support to implement effective and inclusive assessments, particularly for newly qualified teachers.

3.3.2 Learner Perspectives

Learners generally viewed assessments as opportunities for self-improvement, helping them identify strengths and weaknesses and prepare for future success. However, they criticised the heavy reliance on tests and exams, which they associated with rote memorisation and significant stress. Surveys revealed that 86% of learners identified tests and exams as the predominant form of assessment, followed by projects (39%) and individual assignments (33%). While some learners acknowledged the value of developing memorisation skills, most felt that tests and exams failed to promote genuine understanding or meaningful learning.

Many learners expressed a preference for more diverse, hands-on assessments, such as projects, oral presentations, and group work, which they believed better aligned with their interests and aspirations. These formats were seen as more effective for developing critical skills such as collaboration, public speaking, and problem-solving. Learners also emphasised the importance of receiving regular, actionable feedback, though they noted that this was inconsistent across classrooms. Interestingly, learners from the quintile 5 school in the Western Cape, representing the highest socio-economic category, reported experiences similar to those of peers in quintile 1–3 schools. This finding, while based on a limited sample, suggests that systemic issues within assessment policy may play a greater role than resource disparities in shaping learners' experiences.

Overall, the teacher and learner data highlight the need for diverse assessment methods and pedagogical approaches that accommodate varied learning styles, enhanced classroom management training for teachers, more deliberate addressing of language barriers, and the integration of both theoretical and practical components in assessments to improve learning outcomes for all students.

4. Discussion of Findings

This study sought to answer the primary research question: Given the complexities of the South African basic education context, how can the assessment of competencies be integrated into national assessment policy and practice? The findings revealed insights into current assessment practices, barriers, and opportunities for embedding the assessment of competencies in South Africa's basic education system.

The findings indicate a gap between the aspirations of the Basic Education Competency Framework (BECF) and the realities of current assessment approaches. Teachers and learners identified challenges, including the predominance of rote, summative assessments, a burdensome assessment load, insufficient training for teachers, and limited resources. However, both groups recognised the value of integrating competencies to foster critical thinking, creativity, and real-world application.

Global studies underscore the importance of aligning assessment practices with domain knowledge and contextual realities (Care et al., 2020; Piacentini et al., 2023). This study reaffirms these findings, as teachers emphasised the need for tools that integrate competencies into their subject areas while accommodating the developmental and cultural nuances of their learners.

Both teachers and learners included in the primary research reiterated the value of informal assessment in enabling learning; however, it was recognised that these assessments are often time-consuming, adding to the already heavy workload experienced by teachers and learners. Both teachers and learners shared the concern that formal assessments, such as exams, often test the ability to memorise rather than to understand and apply knowledge. For local teachers,

the burden of assessment extended to the administrative and logistical demands placed on them, raising concerns about how to effectively implement innovative and updated forms of assessment required to assess competencies effectively (Bhabha et al., 2024).

While much of the international literature highlights the potential of technology and interdisciplinary approaches for competency assessment, South African teachers and learners prioritised simpler, contextually appropriate strategies, such as enhanced school-based or formative assessments and practical tools for classroom use. This divergence likely reflects resource constraints and large class sizes unique to the South African context. The focus on immediate, low-tech solutions contrasts with the tech-heavy strategies employed in more resourced education systems, highlighting the need for locally tailored approaches.

Another notable discrepancy involves professional development. International best practices often emphasise extensive teacher training programmes (OECD, 2023); yet South African participants advocated for scalable, ongoing support embedded in their daily work. This suggests the need for adaptive, on-the-job learning models that account for the high workload of teachers in resource-constrained environments.

Overall, the findings reveal the need to increase the diversity of assessment types to enable the effective development and measurement of competencies in learners while actively addressing issues of teacher and learner workload, as well as pedagogical and assessment practices well suited for large class sizes and phased teacher capacity building.

5. Implications for Policy and Practice

The findings underscore the importance of creating a coherent, phased strategy for the assessment of competencies in South Africa. This includes:

- **Aligning policy and practice**: Developing a unified language and framework for competencies to ensure consistency across curriculum, assessment, teacher development and teaching and learning materials.
- **Building teacher capacity over time**: Providing ongoing, context-specific professional development to enhance teachers' confidence and skills in assessing competencies.
- **Rebalancing assessment approaches:** Transitioning from rote memorisation toward performance-based and process-oriented assessments, which better reflect real-world skills.
- **Leveraging existing initiatives**: Expanding initiatives like the GEC and AfL initiatives to explicitly incorporate competencies.

These findings provide inputs for integrating the assessment of competencies into South Africa's basic education system, balancing emerging best practices with the unique challenges and opportunities of the local context. Further research and iterative implementation will be critical to refining these approaches and achieving systemic change.

6. Conclusions and Recommendations

This study provides emerging insights into how the assessment of competencies can be integrated into local assessment approaches to address gaps in learner outcomes and prepare students for a rapidly changing world. The findings reveal a misalignment between the aspirations of the Basic Education Competency Framework (BECF) and current assessment practices, which remain heavily focused on summative approaches that emphasise rote memorisation over critical thinking and real-world application.

Significant barriers, such as inadequate teacher training, limited resources, and overcrowded classrooms, hinder the adoption of innovative assessment practices. Nevertheless, the study identifies encouraging opportunities, including teachers' readiness to integrate competencies into teaching and learning, learners' enthusiasm for developing their skills, and the potential to build on existing initiatives like the General Education Certificate (GEC) and Assessment for Learning (AfL) to foster meaningful change.

The research underscores the importance of creating a coherent, phased approach to integrating competency assessments, tailored to South Africa's unique contextual realities. It calls for aligning curriculum, assessment, teacher development, and other strategic levers to ensure consistency and impact.

Based on the study's findings, the following considerations are proposed to guide the DBE's integration of the assessment of competencies into South Africa's education system:

- **Policy Alignment**
    a. Define clear goals and priorities for assessing competencies within the National Assessment Framework (NAF), ensuring alignment with national education objectives.
    b. Revise and enhance the NAF to integrate the competencies outlined in the Basic Education Competency Framework (BECF).
    c. Establish a standardised and updated assessment framework and terminology that explicitly embeds competencies into the national assessment structure, fostering consistency and coherence across policy and implementation processes.
- **Phased Implementation**
    d. Begin with a targeted rollout of one or two key competencies to build capacity, gather insights, and refine implementation strategies.
    e. Gradually increase the emphasis on school-based, formative assessments (SBA) while reducing the dominance of high-stakes examinations.
    f. Refine and address challenges emerging from existing pilots offering cross-curricular and interdisciplinary assessments to evaluate their practicality and effectiveness.
    g. Prioritise performance-based and process-oriented assessments that promote real-world application and critical thinking.

h. Introduce learner self-assessment tools to foster metacognitive skills, enhance learner agency, and alleviate the workload on teachers.
i. Provide targeted support for resource-constrained schools to strengthen educator capacity that address contextual challenges, ensuring teachers are equipped to effectively assess competencies within their unique environments.
j. Allow schools and educators to opt into competency assessment initiatives voluntarily, fostering autonomy and encouraging innovative practices with appropriate support mechanisms.

- **Teacher Development and Support**

k. Align initial teacher education and continuous professional development programmes with the objectives of the BECF.

l. Establish ongoing professional development programmes, including accredited online courses, to build educators' capacity in assessment literacy and pedagogical strategies that intentionally foster competencies and integrate them into daily teaching, learning, and assessment practices.

m. Collaborate with local educators to develop a centralised repository of assessment tools, resources, and best practices, designed to support teachers in assessing competencies, particularly during the initial stages of adoption.

- **Monitoring, Evaluation, and Communication**

n. Develop and implement robust systems for monitoring and evaluating the rollout of competency assessments to identify challenges, measure progress, and inform ongoing improvements.

o. Design and execute a comprehensive communication and advocacy strategy to engage key stakeholders—teachers, learners, parents, and policymakers—on the importance, objectives, and benefits of assessing competencies as part of the broader assessment regime.

Integrating competency assessments into South Africa's education system represents a significant step towards fostering holistic learner development. While challenges remain, the insights and recommendations provided in this study offer practical policy and implementation considerations for deliberation and further expansion by curriculum, assessment, and teacher development colleagues within the DBE. By leveraging existing initiatives, prioritising teacher support, and adopting a phased approach, South Africa can create an education system that equips learners with the skills they need to thrive in an uncertain and rapidly evolving world.

7. Future Research

Further research is required to deepen understanding of effective strategies for integrating competencies into national assessment policy and practice. Key areas of inquiry include:

- Explore cost-effective models for teacher professional development.
- Evaluate the long-term impact of competency assessments on learner outcomes.
- Investigate the scalability of successful pilot programmes across diverse contexts.

- Exploring the affordances and limitations of AI in assessment.

8. Declarations

Funding: The primary research in this study was sponsored by Save the Children South Africa.

Conflicts of Interest: The authors declare no conflict of interest

References

Bhabha, S., Molokwane, P., Mashaphu, T., Mashabathakga, M., Madiba, D. (2024). *Teacher and learner perceptions and experiences of current practices and future opportunities in assessment*. Save the Children South Africa and JET Education Services.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research, 6*(1), 7–113. https://doi.org/10.1177/1468794106058877

Care, E., & Anderson, K. (2016). *Assessment of transversal competencies: Policy and practice in the Asia-Pacific region*. Policy Commons.

Care, E., Kim, H., & Gul Sahin, A. (2020). *Optimising assessment for all: Developing 21st century skills-embedded curriculum tasks*. Brookings Institution.

Carranza, E., Garlick, R., Orkin, K., & Rankin, N. (2022). Job search and hiring with two-sided limited information about workseekers' skills. *American Economic Review, 112*(11), 3547–3583.

Damşa, C., & de Lange, T. (2019). Student-centred learning environments in higher education. *Uniped, 42*(1), 9–26.

Darling-Hammond, L., & Adamson, F. (2010). *Beyond basic skills: The role of performance assessment in achieving 21st century standards of learning*. Stanford University, Stanford Center for Opportunity Policy in Education.

Dehaene, S. (2020). *How we learn: The new science of education and the brain*. Allen Lane.

Department of Basic Education (DBE). (2012). *Curriculum and assessment policy statement*. WCED ePortal.

Department of Higher Education and Training (DHET). (2022). *Skills supply and demand in South Africa*. Labour Market Intelligence Research Programme.

Fadel, C., Black, A., Taylor, R., Slesinski, J., & Dunn, K. (2024). *Education for the age of AI*. Center for Curriculum Redesign.

Govender, S. (2018). South African teachers' perspectives on support received in implementing curriculum changes. *South African Journal of Education, 38*(1), S1-S12.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255–274. https://doi.org/10.3102/01623737011003255

Gravett, S. (2022). Teaching for learning: Insights from the science of learning. In S. Gravett (Ed.), *Teaching for learning in a fast-changing world* (pp. 1–23).

Hoskins, B., & Liu, L. (2019). Measuring life skills: In the context of Life Skills and Citizenship Education in the Middle East and North Africa. *UNICEF*.

Human-Vogel, S., Brown, M., Carnow, J., de Jager, S., Hewitt, J., Mutami, C., Pappa, C., Pittich, D., Prümmer, K., Trikoili, A., & Zondo, P. (2023). *Assessment of transversal competencies: A review of current evidence*. University of Pretoria; Jakes Gerwel Fellowship; Technical University of Munich.

Kanjee, A. (2009). Enhancing teacher assessment practices in South African schools: Evaluation of the assessment resource banks. *Education as Change, 13*(1), 73–89. https://doi.org/10.1080/16823200902940599

Kanjee, A., & Sayed, Y. (2013). Assessment policy in post-apartheid South Africa: Challenges for improving education quality and learning. *Assessment in Education: Principles, Policy & Practice, 20*(4), 442–469. https://doi.org/10.1080/0969594X.2013.838541

Kanjee, A., Roberts, N., Sadeck, O., & Ramollo, J. (2022). Entrenching performativity or enhancing pedagogy: Addressing the challenge of assessment policy and practice. *Journal of Education, (87),* 1–23. https://doi.org/10.17159/2520-9868/i87a01

Mensah, F., Pillay, P., & Mohammad, J. (2023). Examining the implementation and lessons learnt from the Annual National Assessment in a South African education district. *E-Journal of Humanities, Arts and Social Sciences, 4*(1), 214–229. https://doi.org/10.38159/ehass.202341419

National Economic Development and Labour Council (NEDLAC). (2019). *Futures of work in South Africa.* Stellenbosch: Institute for Futures Research.

Organisation for Economic Cooperation and Development (OECD). (2023, October 5). Key takeaways: *Meeting of the informal working group on assessment and certification in upper secondary education.*

Piacentini, M., Foster, N., & Nunes, C. (2023). Next-generation assessments of 21st-century competencies: Insights from the learning sciences. In N. Foster & M. Piacentini (Eds.), *Innovating assessments to measure and support complex skills.* OECD.

Reddy, V., Winnaar, L., Juan, A., Arends, F., Harvey, J., Hannan, S., Namome, C., Sekhejane, P., & Zulu, N. (2020). *TIMSS 2019: Highlights of South African Grade 5 results in mathematics and science.* HSRC.

Sarma, S., & Yoquinto, L. (2020). *Grasp: The science transforming how we learn.* Doubleday.

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *Kolner Zeitschrift fur Soziologie und Sozialpsychologie, 69*(2), 107–131. https://doi.org/10.1007/s11577-017-0454-1

Scoular, C., Ramalingam, D., Duckworth, D., & Heard, J. (2020). *Assessment of general capabilities: Skills for the 21st-century learner.* Australian Council for Educational Research. https://research.acer.edu.au/ar_misc/47

Sethusha, M. J. (2013). A vision of improvement of learning: South African teachers' conceptions of classroom assessment. *Perspectives in Education, 31*(2), 14-21.

Siarova, H., Sternadel, D., & Mašidlauskaitė, R. (2017). *Assessment practices for 21st century learning: Review of evidence.* NESET II report. Luxembourg: Publications Office of the European Union. https://doi.org/10.2766/71491

Suto, I., & Eccles, H. (2014). The Cambridge approach to 21st-century skills: Definitions, development, and dilemmas for assessment. Paper presented at the International Association for Educational Assessment (IAEA) Conference, Singapore.

UNESCO. (1994, June 7–10). *The Salamanca statement and framework for action on special needs education.* Adopted by the World Conference on Special Needs Education: Access and Quality, Salamanca, Spain. Paris: UNESCO.

USAID & UNICEF. (2024). *Social-emotional learning and soft skills measurement activity and gap analysis.* Data and Evidence for Education Programs (DEEP).

Zosh, J., Hopkins, E., Jensen, H., Liu, C., Neale, D., Hirsh-Pasek, K., Solis, L., & Whitebread, D. (2017). *Learning through play: A review of the evidence.* https://doi.org/10.13140/RG.2.2.16823.01447

List of abbreviations

- AfL – Assessment for Learning
- AI – Artificial Intelligence
- CAPS – Curriculum Assessment Policy Statement
- CEM – Council of Education Ministers
- DBE - Department of Basic Education
- BECF - Basic Education Competency Framework
- MMR – Mixed Methods Research
- MTBBE - Mother Tongue-Based Bilingual Education
- NAF - National Assessment Framework
- PBL – Project-Based Learning
- SBA – School-based Assessment
- SCSA- Save the Children South Africa
- SJT – Situational Judgement Tests
- UNICEF – United Nationals International Children's Emergency Fund
- UNESCO - United Nations Educational, Scientific and Cultural Organisation
- USAID - United States Agency for International Development

Assessment of Learners with Mild to Moderate Intellectual Disabilities

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Reference Formats (APA 7th Edition)
Johnstone, M. E. (2024). Assessment of learners with mild to moderate intellectual disabilities. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 77-92). ERRCD Forum. https://doi.org/10.38140/obp2-2024-06

Abstract: It is common practice to provide accommodations for learners who demonstrate mild to moderate intellectual disability (MID) in conventional assessments, including high-stakes examinations. Examples of these accommodations include extra time, readers and scribes, test formats and responses, and assistive devices. One concern is that even with these adjustments, academic success remains limited, as they do not address the cognitive load of the task. This study investigated the difficulties faced by learners with MID and how these challenges affect assessment practices. It followed a qualitative approach, using an online survey to collect qualitative data from 30 schools. Additionally, principals from six schools participated in semi-structured interviews. The data was analysed thematically. The findings indicate that learners with MID have limited cognitive abilities and, therefore, experience difficulties in processing and remembering large amounts of information at once. They also have limited executive functions, poor academic attitudes, and short attention spans. Regarding current assessment practices, the findings reveal that all formal tests consist primarily of various short-answer question formats; all summative assessments are brief and are sometimes administered once per semester, while practical assessments are given a higher weight than theoretical assessments. This study has uncovered that the use of conventional accommodations does not adequately provide learners with MID the opportunity to demonstrate their knowledge and competencies. It recommends that education policies be amended to address the current assessment challenges in order to encourage academic success for learners with MID.

Keywords: Mild to moderate intellectual disability, conventional assessment, high-stakes examination, accommodations, mainstream schools.

1. Introduction

In South Africa, Umalusi is established as a Quality Council (QC) mandated to be the custodian of general and vocational qualifications pegged at Levels 1–4 on the General and Further Education and Training Qualifications Sub-Framework (GFETQSF) of the National Qualifications Framework (NQF). To fulfil its mandate, Umalusi is governed and guided by its founding Act, the General and Further Education and Training Quality Assurance (GENFETQA) Act (Act No. 58 of 2001, as amended in 2008), and the NQF Act (Act No. 67 of 2008), as amended. Umalusi's responsibilities in fulfilling its mandate include, among others:

a. Ensuring the development of qualifications and part-qualifications that are necessary for the sector, which may include appropriate measures for the assessment of learning achievement.

b. Recommending qualifications or part-qualifications to the South African Qualifications Authority for registration.
c. Advising the relevant Minister on matters relating to the GFETQSF

In performing its responsibilities, Umalusi continues to contribute to the achievement of the objectives of the NQF, which are to:

a. create a single integrated national framework for learning achievements;
b. facilitate access to, and mobility and progression within, education, training, and career paths;
c. enhance the quality of education and training; and
d. accelerate the redress of past unfair discrimination in education, training, and employment opportunities.

One way of redressing unfair discrimination and facilitating access and progression within education and training is through inclusive education, which has, over the years, emerged as one of the best approaches to addressing challenges of fairness and diversity (Kalyanpur, 2020). South Africa has a commendable history of attempting to address the unique needs of learners through the development of legislation and policies such as the *Education White Paper 6, Special Needs Education* (Laher & Cockcroft, 2015), which is herein referred to as the *Education White Paper 6*. According to Mpu and Adu (2021), *Education White Paper* 6 recognises that each learner is unique and therefore has unique features of learning needs. *Education White Paper 6* further acknowledges that learners may require more intense and specialised support due to their unique educational needs and may require placement in special schools. The Policy on Screening, Identification, Assessment, and Support (SIAS) (2014), which, amongst others, regulates the referral of learners who have cognitive learning barriers as their principal learning barrier for placement in special schools and the subsequent assistance thereto, is another important policy that is worth highlighting. Therefore, while the goal is to promote inclusive education, South Africa also has special schools catering to learners with mild to moderate intellectual disabilities (MID) and severe intellectual disabilities (SID). The emphasis on the right of every learner to access quality education, regardless of disability or special educational needs, is therefore evident. Notwithstanding the advancements in the realm of education reform, South Africa still faces challenges with fairness, quality, and accessibility to education (Luthuli, 2018). One key challenge faced in the attempt to reform education systems to be more inclusive is issues relating to the assessment of learning achievement, discussed in the section below.

1.1 Inclusive assessments

According to the Policy on SIAS (DBE, 2014), curriculum and assessment adjustments necessary for learners at various levels of functioning to access the curriculum and assessment tasks best suited to their needs are outlined in Chapter 9 of the *National Protocol for Assessment Grades R - 12*. The *National Protocol for Assessment Grades R - 12* differentiates three types of alternative assessments as follows:

a. Alternate assessments based on alternate attainment of knowledge (content concepts and skills).
b. Alternate assessments based on modified attainment of knowledge (content concepts and skills).
c. Alternate assessments based on Grade-level attainment of knowledge (content concepts and skills) (DBE, 2012 pg. 36).

Practice has shown that the implementation of the assessment approaches stipulated in the above-mentioned policies proves to be a challenge due to the requirements in the curriculum documents. Systemically, the Policy on SIAS provides a blueprint for the provision of relevant intervention to learners who experience barriers to learning, with regard to curriculum instruction and assessment. However, the successful implementation of this policy is highly dependent on the implementation process (Hudson et al., 2019). According to Mahlaule et al. (2024), the lack of clarity in policies always presents challenges to successful implementation. This lack of clarity leaves the policy's interpretation for implementation to the schools' and teachers' discretion.

According to research by Chauke and Tabane (2024), teachers exercise discretion in deciding how to assess learners in inclusive classrooms. Depending on the needs of each learner, teachers may modify the language used in the assessment instruments to be at a lower cognitive level, use visuals, or allow oral responses. This is congruent with the findings of a study by Kuhnert (2003) wherein the teachers modify assessments through font enlargement, using readers and scribes, putting tests onto tape, as well as extra time. The use of simplified language for students who struggle with comprehension was another noteworthy finding from the study by Kuhnert (2003); however, this would only be used as a last resort for students who follow the personalised education programme. Although some studies indicate that teachers may not be adequately trained to implement inclusive practices, a study by Themane and Thobejane (2018) indicates that teachers are willing and able; however, the schools lack sufficient resources to support inclusive education.

Lin (2021) posits that there is a need for appropriate assessment methods that provide learners with MID opportunities to demonstrate their knowledge and competencies, without changing what the assessment is intended to measure. Lin (2021) further recommends the importance of ensuring that assessment practices used in large-scale assessments such as high-stakes assessments should remain consistent with regular classroom assessment practice. Given this backdrop, despite the policies and guidelines that exist in South Africa regarding various components of inclusive education, learners with MID remain marginalised as, at present, they are unable to achieve any qualification in the general and further education and training band due to the rigidity of the requirements of traditional assessment methods. The ultimate benefit of using inclusive assessment practices lies in making learning accessible to all learners, in a way that is cognisant of the learners' cognitive abilities (Kaur et al., 2018); which is the primary goal of inclusive education.

1.2 Schools of skills

South Africa, through the Department of Basic Education (DBE), has been transforming some special schools into Schools of Skills, which are primarily intended to accommodate learners aged 13 to 18 who experience cognitive barriers to learning and are unable to cope within mainstream schools due to their innate cognitive abilities. These learners have been screened and identified through the Policy on SIAS as having Mild Intellectual Disabilities (MID). Additionally, South Africa is moving towards the development of a new NQF Level 1 qualification to mark the end of compulsory schooling, specifically Grade 9. In light of these developments, Schools of Skills have been piloting occupation-oriented four-year curricula since 2017. These curricula provide learners with a skills-based education, allowing them to build and master occupation-specific skills, and offering them the opportunity to transition to the world of work or pursue further qualifications in the post-education and training (PSET) sector. Completion of the four-year occupation-oriented curricula is intended to signify the achievement of Grade 9. According to the curriculum documents for the pilot occupation-oriented curricula, Schools of Skills must administer school-based assessments throughout the academic year, as well as traditional end-of-year examinations, leading to the attainment of a qualification at Level 1 of the NQF.

1.3 Problem statement

The transformation of selected South African special schools into Schools of Skills, with a focus on occupation-oriented curricula, is a commendable step towards the recognition and acknowledgment of the diverse needs of learners who experience cognitive barriers to learning. Given the intention to develop a qualification proposed for registration at Level 1 of the NQF and possibly certify learners at the end of Grade 9, there has been a delay in the finalisation of the proposed qualification, as well as the underpinning curricula. The occupation-oriented curricula have been under pilot since 2017, as the DBE attempts to establish how best the learners at the Schools of Skills can be accommodated in the qualification proposed for registration at Level 1 of the NQF. One of the various causes of the delay is related to the assessment of learners at the Schools of Skills, given the learners' identification as learners with MID. Therefore, the occupation-oriented 4-year curricula remain under the pilot, and as such, there is no nationally standardised recognition of learner achievement for the learners within the Schools of Skills, as would be the case for Grade 9 learners in mainstream schools. The finalisation of the 4-year occupation-oriented curricula, and by extension, the inclusion of the learners in the new qualification to mark the achievement of Grade 9, is dependent, amongst others, on the appreciation of the cognitive abilities of the learners. This can be achieved by first understanding the learning challenges experienced by the learners with MID and secondly, obtaining insights into the assessment practices employed by the Schools of Skills in a way that is cognisant of the cognitive abilities of the learners with MID.

1.3.1 Research questions

The study sought to answer the following questions:

- What are the learning barriers experienced by the learners at the Schools of Skills?
- How do the Schools of Skills assess the learners at the Schools of Skills?

2. Literature Review

2.1 Learning Barriers Experienced by Learners with MID

Intellectual disability is defined by the South African Department of Health (DoH) as "a significantly reduced ability to understand new or complex information and to learn and apply new skills (impaired intelligence). This results in a reduced ability to cope independently (impaired social functioning) and begins before adulthood, with a lasting effect on development" (DoH, 2001, p. 14). The Australian Disability Clearinghouse on Education and Training (ADCET, n.d.) posits that a notable characteristic of intellectual disability is in the cognitive limitations of the individual affected.Research by Zaqueu et al. (2021) found a strong correlation between academic performance and intellectual impairment, which increases the likelihood of school failure. This is attributed to an assertion by Keskinova and Ajdinski (2018) that learners with MID experience significant learning barriers such as language and speech, in addition to their limited cognitive abilities. Studies also indicate that learners with MID are often comorbid, presenting with specific learning disorders such as dyscalculia and dyslexia, and, as Miranti (2024) further adds, the combination of these has a detrimental effect on the learners' academic and emotional elements, leading to frustration and poor self-confidence. Miranti (2024) further asserts that such learning challenges necessitate a multidisciplinary approach and suitable learning strategies in the education of children with special needs.

Thus far, numerous studies also indicate that individuals who struggle with fundamental academic domains, especially reading and mathematics, are more likely to experience long-term challenges in many spheres of life (Richmond-Rakerd et al., 2020). Therefore, interventions are necessary to lessen academic difficulties and increase the potential of these individuals and the societies they are a part of (Geary et al., 2020). Fuchs et al. (2020) also argued that the interventions provided are influenced by each individual's pre-existing general abilities, such as their working memory, and that the effectiveness of these interventions can be enhanced through the provision of support that addresses any domain-general weaknesses.

2.2 Assessment practices to accommodate learners with MID

According to Camedda et al. (2024), assessment is a crucial part of teaching and learning, as it traditionally determines how well students have grasped the material to which they have been exposed. The general and further education and training sector in South Africa is currently characterised by the use of high-stakes examinations, whose marks contribute to learner certification. This feature, however, is not unique to South Africa. Mustafa (2023) asserts that

various educational systems face the challenge of ensuring that students, irrespective of their impairments, experience assessment processes that are engaging, beneficial, and conducive to their learning. Bouck and Long (2021) agree that, as with all learners, assessments impact the education of learners with intellectual impairments, particularly regarding the achievement of qualifications.

Although it is common for students pursuing the same qualification to take the same standardised test, Noman and Kaur (2020) argue that this approach diminishes the advantages of a differentiated curriculum. According to Lin (2021), assessment accommodations for learners with special educational needs typically focus on "changing regular test administration conditions" during examinations. However, it is well known that other factors, such as a learner's cognitive ability, can impact academic success (Peng & Kievit, 2020).

Standardised examinations, as noted by Awad (2024), tend to prioritise linguistic and logical-mathematical intelligence over other types.This supports the claims made by Sternberg (2003) that occupational skills in which students with disabilities may excel are not covered by standardised tests. To meet the diverse needs of learners, Awad's (2024) study recommends the use of alternative assessments, including performance-based assessments (such as presentations, projects, and portfolios), authentic assessments (real-world activities and simulations), and assessments via technology.

2.3 Theoretical Framework

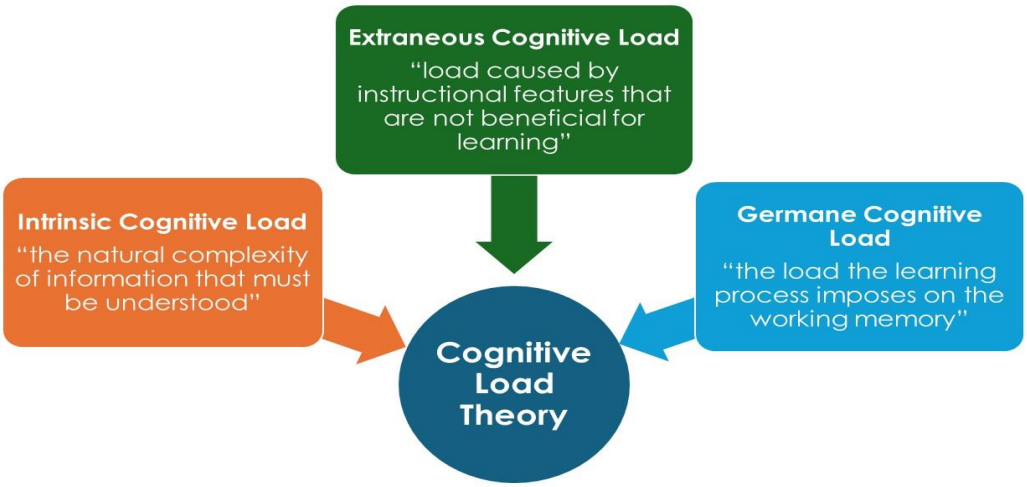

Figure 1: *Jon Sweller's cognitive load theory*

This study is grounded in Cognitive Load Theory (CLT), coined by the Australian cognitive psychologist Jon Sweller in the late 1980s (Sweller, 1988). According to Patel and Alismail (2024), Sweller described cognitive load as the maximum amount of information that working memory can hold at once.Xu et al. (2020, p. 9) differentiated among the three types of cognitive loads which are:

> "*the intrinsic load which refers to the complexity of the information being processed, which is determined by the number of interacting elements in a task; the extraneous load, also determined by the number of interacting elements, is part of cognitive load that is irrelevant or unnecessary, caused by the way the information is presented to the learner, or the procedure required to perform the task; and the germane load which refers to the cognitive resources that are allocated to meaningful, effective learning of the information represented by the intrinsic load".*

The Centre for Education Statistics and Evaluation (2017) claimed that CLT is based on two widely accepted theories: first, that the human brain has a finite capacity to process new information at a given time; and second, that there are no known restrictions on the amount of stored information that can be processed in a given amount of time. Asma and Dallel (2020) concurred that CLT, amongst others, emphasises that the human brain has a limited capacity for information processing, as well as the significance of efficiently managing cognitive load to maximise learning. Although CLT has been used since the 1990s by researchers worldwide in a variety of fields, Schnotz and Kürschner (2007) stated that because CLT deals with how the human brain retains and processes information, it may be used in many educational contexts. The question at hand is: 'If a normally developing human brain has limited capacity for information processing, what is the case for human brains with developmental limitations, such as in the case of learners with MID?'

There is a considerable amount of literature on the relationship between CLT and human memory, and more specifically, working memory. According to Paas and van Merriënboer (2020), human memory can be divided into working memory and long-term memory; therefore, to understand CLT, it is necessary to understand how the two types of memory process and store information. However, more recently, Patel and Alismail (2024) highlighted that in addition to working memory and long-term memory, CLT builds on a widely accepted model of human information processing in the brain, which includes sensory memory, which retains significant information long enough to go to working memory while filtering out irrelevant sensory data that we are constantly bombarded with. However, given the cognitive abilities of learners with MID at the Schools of Skills, who are expected to sit for final end-of-year examinations on work studied throughout the academic year, academic success cannot be guaranteed.

Cockroft (2015, p. 1) defines working memory as the *"ability to temporarily store and manipulate information."* Several studies indicate that children with intellectual disabilities perform poorly on working memory tests compared to their typically developing peers, as stated by Bhati and Sharma (2023). In their study, El Wafa et al. (2020) attributed working memory impairments as a contributing factor to specific learning disabilities and asserted that evidence shows that learners facing this challenge also exhibit central executive dysfunction. Furthermore, El Wafa et al. (2020) claimed that a learner's executive function may influence their reading development, as well as their ability to monitor and manipulate information (working memory), which plays a significant role in the development of mathematical proficiency. This is particularly relevant

since learners with moderate intellectual disabilities (MID) are known to have limited cognitive abilities, and those with comorbidities often present with specific learning disabilities such as dyscalculia and dyslexia.

Sweller's Cognitive Load Theory (CLT) suggests that, due to the limited capacity of working memory, instructional methods must be effective and should not overload the memory with unnecessary activities and information that do not contribute to learning (Patel & Alismail, 2024). This current study posits that this is even more critical in the support of learners with MID, given their innate cognitive limitations. Research indicates that interventions provided for learners with MID typically include conventional accommodations such as extra time, isolated seating, readers, and scribes (Guez et al., 2024), while other researchers mention test formats and presentation or response methods, as well as assistive devices, as additional reasonable accommodations. However, for learners with MID at the Schools of Skills, these measures do not adequately address the cognitive load of the tasks as outlined in curriculum policy documents. Therefore, in the context of this study, the focus is on how various factors impose an additional cognitive load on learners with MID and how this influences the assessment practices used by their schools.

3. Methodology

3.1 Research paradigm

A paradigm in research is a collection of ideas, principles, practices, and presumptions that direct the planning, execution, and interpretation of investigations by researchers (Creswell & Creswell, 2017). The interpretive research paradigm serves as the foundation for this study. According to Ugwu et al. (2021), interpretivism's epistemology maintains that both the researcher and research participants are involved in the knowing process and the reality that is influenced by the context, whereas its ontology assumes that knowledge can be generated from the point of view of the individual who is directly involved. As such, in the context of this study, the researcher's focus was on interpreting data received from the principals of the Schools of Skills within the context in which they operate, and also interpreting their lived experience with the accommodation of learners with MID.

3.2 Research approach

This study employed a qualitative research approach characterised by data collection methods that utilise non-numerical data (Bhangu et al., 2023). According to Taherdoost (2022), qualitative research involves a more naturalistic and interpretive approach to phenomena. The objective of this research was to understand the learning challenges experienced by learners at the Schools of Skills, which informs how they are assessed. This approach was deemed appropriate, as Mulisa (2022) stated that qualitative research provides the potential to deeply explore the area of interest

to achieve the research objectives. Taherdoost (2022) further indicated that qualitative research primarily relies on the collection of primary data through methods such as interviews.

3.3 Research design

Qualitative research techniques focus on humanistic, descriptive, and qualitative aspects of phenomena (Cresswell, 2007) and necessitate the use of a qualitative research design. The nature of a qualitative research design informed the researcher's choice to use an open-ended survey, the data from which was substantiated through follow-up semi-structured interviews with the school principals of the Schools of Skills. As posited by Tümen-Akyıldız and Ahmed (2021), in qualitative research, the researcher is concerned with providing a descriptive explanation of a phenomenon under investigation; hence, a qualitative research design was deemed more appropriate to provide the researcher with an in-depth understanding of the lived experiences of the principals of the Schools of Skills in the provision of education to learners with MID, more particularly in the context of this study, their assessment.

3.4 Target population and sampling

A research population is the entire group of individuals or items with one or more characteristics of interest (Asiamah et al., 2017). In the context of this study, this refers to the principals of the Schools of Skills in South Africa that are piloting the occupation-oriented curricula. However, the researcher had to select a sample of these principals to serve as participants in the study using convenience sampling. According to Johnson and Christensen (2019), sampling is a procedure where the researcher specifies the characteristics of interest and tries to locate individuals with those characteristics. Schools of Skills are a relatively new concept, with various special schools gradually joining the piloting of the occupation-oriented curricula. Due to issues of accessibility, the researcher opted for convenience sampling, which, as defined by Stratton (2021, p. 374), is a "non-probability sampling that is often used for clinical and qualitative research." The use of convenience sampling in this context ensured that the researcher focused on a sample that was easily accessible. Consequently, the sample for this study comprised 30 principals of Schools of Skills who responded to the online survey and six principals from Gauteng and Western Cape provinces of South Africa, who were visited for in-depth semi-structured interviews.

3.5 Data collection tools

Data collection occurred in a sequential manner, wherein data collection was done in phases, with phase 1 being data collection through an open-ended online survey sent to Schools of Skills within the researcher's access. The open-ended survey questions afforded a qualitative description of the opinions of the school principals by providing insight into the current nature of the Schools of Skills. The use of an open-ended survey allowed the researcher to reach as many principals of the Schools of Skills in South Africa as possible, including the receipt of

qualitative data which the researcher deemed beneficial to achieve the objectives of this study.

The second phase of data collection was through in-depth semi-structured interviews with principals of Schools of Skills from the Gauteng and Western Cape provinces of South Africa. Semi-structured interviews allow for in-depth analysis from a relatively small sample size and place the research's focus on participants' views (Paradis et al., 2016). For this reason, semi-structured interviews were regarded as appropriate to strengthen and substantiate the data collected from the first phase of data collection through surveys.

3.6 Data analysis

Data collected through the online survey and in-depth semi-structured interviews were analysed through content analysis, a process of categorising data and grouping data into patterns or themes (Theron, 2015). According to Dawadi (2020), thematic analysis is a technique used in research to methodically collect and examine large, complicated data sets, and it is an exploration into themes that might encapsulate the stories found within the data sets' accounts. For this study, the use of content analysis into themes allowed the researcher to integrate and organise all data collected into a coherent whole.

3.7 Ethical considerations

This study considered various ethical principles by obtaining permission to conduct the study from the Department of Basic Education and the Provincial Education Departments, and fostering voluntary participation and informed consent from the schools/school representatives. Lastly, all participants were assured confidentiality.

4. Presentation of Results

4.1 Learning barriers experienced by learners in schools of skills

The first objective of the study was to provide an understanding of the learning challenges experienced by learners at the Schools of Skills. Results reveal that learners enrolled in Schools of Skills experience a varied range of challenges mainly attributed to their limited cognitive abilities. The limitations to the learners' cognitive abilities are often coupled with mild to moderate intellectual disabilities related to dyslexia, autism, physical disabilities, specific learning barriers, and attention deficit hyperactivity disorder (ADHD). As a result, learners exhibit limited executive functions, struggle with reading and writing, and general comprehension. Another common challenge attributed to their limited cognitive abilities is that learners at the Schools of Skills struggle to grasp and retain copious amounts of information as required by the draft curricula, as well as the pace at which the curricula are delivered.

The draft curricula of compulsory academically inclined subjects such as English and Mathematics are found to be too heavy for the learners to cope with, further playing a role in

their inability to process such information in line with required assessments. However, contrary to their struggle with academic subjects, findings further indicate that learners at the Schools of Skills excel in the elective occupation-oriented subjects, which are more practically inclined. Learners whose home language is not the Language of Learning and Teaching (LOLT) are reported to be experiencing language barriers, further intensifying their existing cognitive challenges. Furthermore, other challenges highlighted include psychosocial difficulties, which, when coupled with cognitive challenges, lead to behavioural problems, short attention spans, and poor academic attitudes. Lastly, concerns were raised that all these challenges have led to poor self-motivation, drug abuse by some learners, and high absenteeism rates, especially in academic subjects.

4.2 Current assessment practices

The current assessment regime within the Schools of Skills is not standardised, as the curricula being piloted are still in draft format. Therefore, schools use various assessment practices to meet the needs of their respective learners. For example, while some schools conduct examinations once a year in October/November, others have adapted their practices to conduct examinations semesterly, aiming to reduce the workload for learners. Additionally, it has been observed that the examination question papers set for learners are not of the same standard; most schools opt to assess out of 50 marks, while a few assess up to 100 or even 150 marks for exit-level learners.

Furthermore, schools have chosen to use various short-answer question formats, which are kept brief. Some Schools of Skills have opted to further deviate from the prescripts of the draft occupation-oriented curricula by assigning a higher weight contribution for practical assessments to the overall learner mark. Lastly, although this is not current practice, some schools have recommended that the DBE consider the introduction of integrated subjects (interdisciplinary curricula), where compulsory academically inclined subjects (especially English and Mathematics) can be infused into occupation-oriented subjects, making them more manageable for learners. The rationale behind this recommendation is that learners with MID struggle to cope with the curricula and are more likely to experience academic failure if expected to sit for the same standardised examinations as their mainstream peers.

4.3 Accommodations and concessions

The study also sought to understand and suggest accommodations that can be considered and subsequently incorporated for the accommodation of learners from schools of skills. Schools of Skills accommodate the learners through the use of teachers as readers and scribes for the learners, whereas a few schools use e-assessments administered through artificial intelligence applications that can read and type for the learners, additional time, isolated examination rooms due to restlessness when with large crowds, and rest periods.However, due to the innate cognitive abilities of the learners, such accommodations are not adequate; therefore, the schools

have introduced additional accommodations such as semesterly (bi-annual) examinations instead of one examination at the end of the year; examinations of between 50 and 100 marks that last one to one-and-a-half hours instead of the traditional two or three-hour examinations, short response question formats, and the use of assessment instruments that have less text and more illustrations/images.

5. Discussion of Findings

The findings of this study identify the learning challenges faced by learners at the Schools of Skills due to the limitations of their cognitive abilities and further confirm the high likelihood of academic failure among these learners. The learning challenges highlighted in this study are seen as common indicators of limitations in an individual's working memory, which, as noted by El Wafa et al. (2020), contributes to learning disabilities. Bhati and Sharma (2023) also stated that working memory is essential for learning and contributes to the development of cognitive ability, further emphasising the link between working memory impairments and limited cognitive abilities. For learners with MID, CLT elucidates the formidable task that learners from Schools of Skills encounter in managing the cognitive demands of the curriculum and assessments due to their working memory limitations.

Although CLT is primarily associated with instructional design, assessment is an integral component of teaching and learning; therefore, the reduction of cognitive load, as suggested by Sweller, should be extended to assessment practices if the education system is to fully accommodate learners with MID. Thus far, the assessment practices employed by different Schools of Skills at their discretion appear effective, although they have yet to be endorsed through policy. Houichi and Sarnou (2020) alluded to several ways of managing cognitive load, such as using integrated sources of information from multiple sources and limiting or eliminating stressful situations like traditional high-stakes examinations. This supports the recommendations provided by the schools regarding the consideration of interdisciplinary curricula and alternative assessments that do not subject learners to traditional assessment practices. However, the success of such innovative strategies requires endorsement through policy.

6. Conclusions and Recommendations

This study sought to investigate the assessment of learners with MID by first understanding the learning barriers experienced by these learners and, secondly, the assessment practices employed by the Schools of Skills. With regard to the learning barriers faced by learners with MID, findings indicate that they have limited cognitive abilities and therefore experience difficulties processing and remembering large amounts of information at once. Additionally, they have limited executive functions, poor academic attitudes, and short attention spans. Furthermore, the findings regarding current assessment practices reveal that all formal tests primarily consist of various short-answer question formats; all summative assessments are brief and sometimes administered semesterly, and practical assessments are given higher weight than theoretical

assessments. This study also indicates that for learners with MID to be accommodated within an education system that is cognisant of their innate cognitive abilities, traditional accommodations such as extra time, isolated seating, and the use of readers and scribes do not adequately provide these learners with the opportunity to demonstrate their knowledge and competencies.

Therefore, the study recommends that education policies be amended to address the current assessment challenges and encourage academic success for learners with MID. This includes the consideration of developing a qualification that adopts an interdisciplinary approach to education, such as integrating core subjects like Mathematics and English with elective subjects; using innovative assessment practices that take into account the learner's innate cognitive abilities; and embracing technological advances that can alleviate some of the learning barriers experienced by learners with MID.

A methodological shortcoming of this research is that the six principals who participated in the semi-structured interview phase of the study were all from urban and semi-urban Schools of Skills. Therefore, including principals from Schools of Skills located in rural parts of South Africa may yield additional findings to contribute to this body of knowledge on the operations of the Schools of Skills.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The author declares no conflict of interest.

References

Asiamah, N., Mensah, H., & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*. https://doi.org/10.46743/2160-3715/2017.2674

Asma, H., & Dallel, S. (2020). Cognitive load theory and its relation to instructional design: Perspectives of some Algerian university teachers of English. *Arab World English Journal*, *11*(4), 110–127. https://doi.org/10.24093/awej/vol11no4.8

Bhati, L., & Sharma, H. (2023). Working memory and activities of daily living among children with intellectual disability. *Journal of Namibian Studies: History Politics Culture*, *35*, 1342-1350.

Bouck, E. C., & Long, H. (2021). Traditional and Innovative Assessment Techniques for Students with Intellectual Disabilities. In *Advances in special education* (pp. 59–74). https://doi.org/10.1108/s0270-401320210000036004

Camedda, D., Banks, J., & Ringwood, B. (2024). Empowering Diversity: A Case Study on Inclusive Assessment and Universal Design for Learning in a Post-secondary Programme for Students with Intellectual Disabilities. *All Ireland Journal of Higher Education*, *16*(2), 1-12.

Cockcroft, K. (2015). The role of working memory in childhood education: Five questions and answers. *South African Journal of Childhood Education*, *5*(1), 18. https://doi.org/10.4102/sajce.v5i1.347

Creswell J. W. (2007). Qualitative Inquiry and Research Design: Choosing among Five Approaches. 2nd ed. Thousand Oaks, CA: Sage Publications.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage publications.

Dawadi, S. (2020). Thematic Analysis Approach: A step-by-step guide for ELT research practitioners. *Journal of NELTA*, *25*(1–2), 62–71. https://doi.org/10.3126/nelta.v25i1-2.49731

Department of Basic Education (DBE). (2015). Policy on screening, identification, assessment, and support. Pretoria: Government printers.

Department of Education (DoE). (2001). Education White Paper 6. Special needs education: Building an inclusive education and training system. Pretoria: Government Printers.

Department of Education (DoE). (2012). National Protocol for assessments. Pretoria: Government Printers.

Fuchs, L. S., Seethaler, P. M., Sterba, S. K., Craddock, C., Fuchs, D., Compton, D. L., Geary, D. C., & Changas, P. (2020). Closing the word-problem achievement gap in first grade: Schema-based word-problem intervention with embedded language comprehension instruction. *Journal of Educational Psychology*, *113*(1), 86–103. https://doi.org/10.1037/edu0000467

Geary, D. C., Hoard, M. K., Nugent, L., Ünal, Z. E., & Scofield, J. E. (2020). Comorbid Learning Difficulties in Reading and Mathematics: The role of intelligence and In-Class Attentive Behavior. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.572099

Guez, A., Ketan, & Piacentini, M. (2024). Mapping study for the integration of accommodations for students with Special Education Needs (SEN) in PISA. In *OECD Education Working Papers*. https://doi.org/10.1787/ed03c717-en

ADCET. (n.d.). *Inclusive teaching: Intellectual disability*. https://www.adcet.edu.au/inclusive-teaching/specific-disabilities/intellectual-disability

Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage publications.

Kalyanpur, M. (2020). Disrupting the narrative of universality of inclusive education: The new marginalization of Low-Income, English Language Learners in India. *The Educational Forum*, *84*(4), 296–308. https://doi.org/10.1080/00131725.2020.1796071

Kamran, M., Siddiqui, S., & Adil, M. S. (2023). Breaking Barriers: The Influence of Teachers' Attitudes on Inclusive Education for Students with Mild Learning Disabilities (MLDs). *Education Sciences*, *13*(6), 606. https://doi.org/10.3390/educsci13060606

Kamran, M., Siddiqui, S., & Adil, M. S. (2023b). Breaking Barriers: The Influence of Teachers' Attitudes on Inclusive Education for Students with Mild Learning Disabilities (MLDs). *Education Sciences*, *13*(6), 606. https://doi.org/10.3390/educsci13060606

Keskinova, A., & Ajdinski, G. (2018). Learning problems in children with mild intellectual disability. *International Journal of Cognitive Research in Science Engineering and Education*, *6*(1), 31–37. https://doi.org/10.5937/ijcrsee1801031k

Lin, P. Y. (2021). Teachers Differentiated Assessment Practices for Secondary Students with Exceptionalities: The More, the Better? Journal of Disability Studies, 7(2), 64-74.

Miranti, S. A. (2024). Analysis of written language difficulties in asynchronous gifted children in the lower grades.

Mpu, Y., & Adu, E. O. (2021). The challenges of inclusive education and its 0implementation in schools: The South African perspective. *Perspectives in Education*, *39*(2), 225-238.

Mujere, N. (2016). Sampling in research. In Mixed methods research for improved scientific study (pp. 107-121). IGI Global.

Mulisa, F. (2022). When Does a Researcher Choose a Quantitative, Qualitative, or Mixed Research Approach?. *Interchange*, *53*(1), 113-131.

Mustafa, W. (2023). A proposed conception of the requirements for improving the effectiveness of innovative assessment techniques for students with mental disabilities and autism spectrum disorders in the light of the skills of the twenty-first century" a field study in Sohag Governorate. *Journal of Research in Education and Psychology*, *38*(4), 185-288.

Noman, M., & Kaur, A. (2020). Differentiated Assessment A New Paradigm in Assessment Practices for Diverse Learners. *International Journal of Education and Cognitive Sciences*, *1*(3), 1-7.

Paas, F., & Van Merriënboer, J. J. G. (2020). Cognitive-Load Theory: Methods to manage working memory load in the learning of complex tasks. *Current Directions in Psychological Science*, *29*(4), 394–398. https://doi.org/10.1177/0963721420922183

Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. (2016). Design: Selection of data collection methods. *Journal of Graduate Medical Education*, *8*(2), 263–264. https://doi.org/10.4300/jgme-d-16-00098.1

Patel, D., & Alismail, A. (2024). Relationship between Cognitive Load Theory, Intrinsic Motivation, and Emotions in Healthcare Professions Education: A Perspective on the missing link. *Advances in Medical Education and Practice*, *Volume 15*, 57–62. https://doi.org/10.2147/amep.s441405

Peng, P., & Kievit, R. A. (2020). The Development of Academic Achievement and Cognitive Abilities: a Bidirectional perspective. *Child Development Perspectives*, *14*(1), 15–20. https://doi.org/10.1111/cdep.12352

Richmond-Rakerd, L. S., D'Souza, S., Andersen, S. H., Hogan, S., Houts, R. M., Poulton, R., Ramrakha, S., Caspi, A., Milne, B. J., & Moffitt, T. E. (2020). Clustering of health, crime, and social-welfare inequality in 4 million citizens from two nations. *Nature Human Behaviour*, *4*(3), 255–264. https://doi.org/10.1038/s41562-019-0810-4

Schnotz, W., & Kürschner, C. (2007). A reconsideration of cognitive load theory. *Educational Psychology Review*, *19*(4), 469–508. https://doi.org/10.1007/s10648-007-9053-4

Stratton, S. J. (2021). Population Research: Convenience sampling strategies. *Prehospital and Disaster Medicine*, *36*(4), 373–374. https://doi.org/10.1017/s1049023x21000649

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

Taherdoost, H. (2022). What are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and Limitations. *Journal of Management Science & Engineering Research*, *5*(1), 53–63. https://doi.org/10.30564/jmser.v5i1.4538

Theron, P. M. (2015). Coding and data analysis during qualitative empirical research in Practical Theology. *In Die Skriflig/in Luce Verbi*, *49*(3). https://doi.org/10.4102/ids.v49i3.1880

Tümen-Akyıldız, S., & Ahmed, K.H. (2021). An overview of qualitative research and focus group discussion. Journal of Academic Research in Education, 7(1), 1-15. DOI: 10.17985/ijare.866762

Ugwu, C. I., Ekere, J. N., & Onoh, C. (2021). Research paradigms and methodological choices in the research process. *Journal of Applied Information Science and Technology*, *14*(2), 116-124.

El Wafa, H. E. a. E., Ghobashy, S. a. E. L., & Hamza, A. M. (2020). A comparative study of executive functions among children with attention deficit and hyperactivity disorder and those with learning disabilities. *Middle East Current Psychiatry*, *27*(1). https://doi.org/10.1186/s43045-020-00071-8

Xu, K. M., Koorn, P., De Koning, B., Skuballa, I. T., Lin, L., Henderikx, M., Marsh, H. W., Sweller, J., & Paas, F. (2020). A growth mindset lowers perceived cognitive load and improves learning: Integrating motivation to cognitive load. *Journal of Educational Psychology*, *113*(6), 1177–1191. https://doi.org/10.1037/edu0000631

Zaqueu, L., Teixeira, M. C. T. V., Lowenthal, R., Mari, J. J., Miguel, E. C., Rohde, L. A., & Paula, C. S. (2021). Disability in children and adolescents: the extent of the impact on psychiatric disorders and educational deficits. *Trends in psychiatry and psychotherapy*, *43*(3), 235-239.

Kuhnert, A. (2003). *Exploring the assessment process in an inclusive classroom: A case study* [MEd Thesis, Stellenbosch University]. https://scholar.sun.ac.za/items/f61d17ce-a4e1-4ddc-9e6e-da7034235403

Themane, M., & Thobejane, H. R. (2018). Teachers as change agents in making teaching inclusive in some selected rural schools of Limpopo Province, South Africa: implications for teacher education. *International Journal of Inclusive Education*, *23*(4), 369–383. https://doi.org/10.1080/13603116.2018.1434690

Chauke, M., & Tabane, R. (2024). Educators' adaptive assessment procedures in teaching English First Additional Language in Grade 6 inclusive classrooms in South Africa. *South African Journal of Education*, *44*(3), 1–10. https://doi.org/10.15700/saje.v44n3a2461

Redefining Assessment Standards: A Framework for Examination Guidelines in South African Basic Education

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Reference Formats (APA 7th Edition)

Ngema, M. H. (2024). Redefining assessment standards: A framework for examination guidelines in South African basic education. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 93–106). ERRCD Forum. https://doi.org/10.38140/obp2-2024-07

Abstract: Umalusi quality assures assessments for exit qualifications such as the National Senior Certificate (NSC) through various processes, including the evaluation of examination guidelines. The NSC is examined by three assessment bodies, and each body must develop its own examination guidelines, which must be comparable across the assessment bodies. Previous research by Umalusi identified differences in the components contained in the examination guidelines of the three assessment bodies. These differences arose from the absence of a common framework for developing examination guidelines and pose a threat to the maintenance of NSC assessment standards over time, which could undermine the credibility of this qualification. This study aimed to address this gap by developing a framework specifying compulsory components for NSC examination guidelines. Data was collected through qualitative methodology, employing document analysis and systematic literature review. Purposive sampling was used to select six countries and four subjects for evaluation; the sampled subjects were also used to pilot the framework. The findings identified five compulsory components, including general information, subject-specific details, examinable content specifications and weighting, item specifications, and scoring and response specifications. The existence of a common framework is crucial for assessment bodies to produce comparable examination guidelines, ensuring the maintenance of NSC assessment standards. The study recommends that Umalusi adopt the proposed framework and use it as a standard for the development of NSC examination guidelines across assessment bodies. Furthermore, education researchers should consider conducting further research to extend this framework to other qualifications within and outside the Umalusi sub-framework.

Keywords: Assessment standards, quality assurance framework, UMALUSI, national senior certificate, examination guidelines.

1. Introduction

Umalusi, the Quality Council for General and Further Education and Training, is mandated by the *General and Further Education Quality Assurance Act No. 58 of 2001*, as amended, to quality assure assessments at all exit points of all qualifications within the General and Further Education and Training Qualifications Sub-framework (GFETQSF). One such exit point qualification is the National Senior Certificate (NSC), which serves as an access qualification for various post-schooling opportunities. The NSC is assessed by three assessment bodies, namely the Department of Basic Education (DBE), the South African Comprehensive Assessment Institute (SACAI), and the Independent Examinations Board (IEB).

Umalusi fulfils the mandate for quality assurance of assessments by setting assessment standards. In the case of the NSC, the assessment standards are prescribed by the National Curriculum and

Assessment Policy Statement (CAPS), and the examination guidelines provide clarity on the content depth and scope to be assessed.

Various researchers, such as Pawade et al. (2020), Ismail et al. (2020), Raymond and Grande (2019), AlFallay (2017), Mathur et al. (2021), Obilor and Miwari (2022), Osebhohiemen (2019), and Aziz (2021), define examination guidelines differently, but they all emphasise the importance of these guidelines in ensuring that exam question papers align with curriculum and assessment standards.

In South African Basic Education, the purpose of the examination guidelines is to guide examiners on the setting of the NSC examinations and to guide teachers in preparing learners for the examinations. Furthermore, the examination guidelines are used by moderators and Umalusi to establish the compliance of examination papers with the prescribed assessed curricula. Therefore, examination guidelines must provide clear information, and their development should be guided by a standardised framework.

Currently, each of the three assessment bodies is responsible for developing its own examination guidelines. These assessment bodies were inherited by Umalusi and had already established systems in place, each using its own framework for developing examination guidelines. As a result, there was no common framework to guide the development of the NSC examination guidelines across the assessment bodies. This absence of a common framework led to assessment bodies including different components in their examination guidelines. This variation of components raised concerns about the maintenance of NSC assessment standards over time, as inconsistent examination guidelines could undermine the credibility of the NSC. Since examination guidelines are used for the setting and moderation of NSC examination question papers, any potential compromise in their quality could negatively impact the integrity of the NSC.

The absence of a standardized framework necessitated a redefinition of Umalusi's standards, informed by empirical evidence. In its efforts to redefine the quality assurance of assessments, Umalusi has conducted several research studies to evaluate the extent to which the assessment bodies were meeting the required standards and maintaining them over time. In 2017, a study titled "A Comparison of the NSC Subject Assessment Guidelines" examined the comparability of examination guidelines across assessment bodies. Additionally, annual Post Exam Analysis (PEA) projects in 2021 and 2022 evaluated these guidelines further. These studies found inconsistencies in the components of NSC examination guidelines among assessment bodies. This challenge was persistent and long-standing, and addressing it required the undertaking of additional research. This necessitated Umalusi to investigate essential components needed in examination guidelines for the NSC subjects. The research aimed to create a standardized framework providing adequate guidance for developing examination question papers. The focus was on the NSC qualification because it provides access to various post-school opportunities in

the GFETQSF. Additionally, due to public interest in NSC results and examination standards, it is essential to ensure these standards are maintained.

This study aimed to develop a framework potentially applicable to other qualifications within and beyond the Umalusi sub-framework. It also sought to contribute to quality assurance debates and literature on assessed curricula, emphasising the role of standardized frameworks in aligning exams with established standards, particularly in the South African context.

1.1 Problem statement

Examination guidelines are among the documents used to prescribe the assessment standards for the NSC. The role of these guidelines includes guiding examiners in setting NSC examinations and assisting teachers in preparing learners for these examinations. Moreover, they are used by moderators and Umalusi to ensure that examination papers align with the prescribed curriculum and assessment standards. Since the NSC is examined by three assessment bodies, each developing its own guidelines, the examination guidelines must be comparable across these bodies. However, research conducted by Umalusi, including the Umalusi Comparison of the NSC Subject Assessment Guidelines project and the Post Exam Analysis projects in 2021 and 2022, revealed notable differences in the components of the NSC examination guidelines across various subjects and assessment bodies. This is due to the fact that each assessment body currently develops its own examination guidelines based on its own framework, resulting from the absence of a common framework. This challenge has been inherited by Umalusi, which took over already established assessment bodies. The lack of a standardized framework compromises the comparability of assessment standards over time, potentially undermining the credibility of the NSC. To address this challenge, there is a need to develop a standardized framework to guide the development of these guidelines. This framework would ensure that the NSC examination guidelines include all essential components, providing examiners, moderators, and teachers with the necessary clarity and information for effective assessment practices. Furthermore, the framework would ensure comparability of standards across assessment bodies, thereby leading to the maintenance of standards over time and ensuring the credibility of the NSC.

1.2. Research purpose

- To identify components that are essential for the development of a framework to guide the development of the NSC examination guidelines.

1.3. Research question

- What are the essential components necessary for developing a framework to guide the creation of the NSC Examination Guidelines?

2. Literature Review

Examinations aim to accurately measure the acquisition of desired knowledge and skills; they serve as effective assessment tools when thoughtfully designed (Rudolph et al., 2019).

Consequently, developing an examination necessitates a comprehensive consideration of both subject matter content and the targeted behaviour (Osebhohiemen, 2019). Furthermore, the development of an examination includes providing a marking guide with clear scoring guidance to promote consistency in the scoring of items on an examination (American Educational Research Association [AERA], et al., 2014).

Rudolph et al. (2019) underscore the importance of meticulous planning in developing well-structured examinations. This planning phase involves creating an examination question paper guided by a distinct document known by various names worldwide, such as test blueprints, test plans, tables of specifications, or test specifications. In the context of the South African GEFTQSF, the document is commonly referred to as examination guidelines. Throughout this study, the term "examination guidelines" will encompass these diverse aforementioned terms.

Various scholarly sources provide nuanced definitions of examination guidelines, shedding light on their multifaceted nature and indispensable role in ensuring assessment practices aligned with prescribed assessment and curriculum standards. According to Pawade et al. (2020), examination guidelines are intricately designed comprehensive roadmaps that meticulously incorporate and harmonise all dimensions of the curriculum, encompassing diverse domains and their contributions to the examination process.

Likewise, Ismail et al. (2020) liken guidelines to navigational tools, ensuring the inclusion of all curriculum components, thereby guaranteeing the thoroughness of assessment. Raymond and Grande (2019) assert that examination guidelines delineate the essential attributes of a test, offering a clear framework for its design. Expanding on this, AlFallay (2017) highlights that guidelines not only define the overarching structure and orientation of the test but also furnish precise specifications for each task type to be included.

Mathur et al. (2021) conceptualise examination guidelines as the creation of a template that establishes the test's content, specifying the number and types of questions across the course content while assigning relative weight to each topic in accordance with learning objectives. These guidelines furnish a systematic, multi-step approach to assessment by outlining the purpose, scope, content, and method of evaluation. In line with these perspectives, Obilor and Miwari (2022) outline four pivotal steps in test blueprint development: determining instructional objectives, content areas, item types, and preparing a three-way chart or table of specifications.

Concurring with these notions, AlFallay (2017) emphasises that examination guidelines serve the dual purpose of defining the test's overall structure and the specifics of individual task types. This comprehensive nature contributes to the creation of valid, reliable, and fair examinations. This sentiment is further supported by Osebhohiemen (2019), who emphasises that examination guidelines function as empirical tools, ensuring assessments adhere to educational objectives, thus fostering the development of valid examinations.

Aziz (2021) echoes these sentiments, underscoring the role of examination guidelines in aligning objectives with examinations, effectively allocating marks for each question, and appropriately distributing weight across different aspects. According to Abdellatif (2023), Berman et al. (2020), and Fain et al. (2019), mark allocation, time allocation, topic significance, and cognitive complexity are essential in examination guidelines to prevent the over-representation or under-representation of content in examination question papers. In essence, the range of definitions offered by various authors collectively emphasises the pivotal role of examination guidelines as a tool for strategic planning and the development of valid examination question papers. However, their development should be approached with a critical perspective, acknowledging the need for adequate details for those involved in the development of examinations.

3. Conceptual Framework

The NSC examination is a standardized high-stakes examination that is also categorised as an achievement test, as it is used to make a decision on candidates' competency in relation to the NSC qualification. According to Mamolo (2021), high-stakes examinations must prioritise validity. Therefore, this study was framed on the concept of validity, specifically examination validity. Examination validity means the exam is officially accepted and credible (Astuti, 2020). This means that an examination must be valid before trusting its results (Khan, 2019). In other words, an examination should test the skills and content outlined in the curriculum. If it measures unrelated things, it is as ineffective as using a tape measure to measure the weight of a person. Ray et al. (2018) argue that for exams to be valid, they should ensure that the measured learning objectives are a representative measure of the curriculum and are aligned with the stated objectives. Literature identifies varied forms of validity; this study focused on content and construct validity.

Content validity refers to how well an examination aligns with the material taught (Alemayehu et al., 2021). A fundamental requirement is that the examination must accurately reflect the covered content, ensuring thoroughness and inclusivity across the subject area (Alemayehu et al., 2021). Content validity is how well an examination measures its intended target and whether its items represent the entire domain it aims to assess (Adiyaa et al., 2022). It delineates a test's ability to capture a representative sample of subject matter, content, skills, and behavioural transformations under consideration (Astuti, 2020). This conception extends to the degree to which assessment elements align with and embody the intended construct for a specific assessment purpose, embodying relevance and representativeness (Yusoff, 2019). Moreover, content validity encapsulates the alignment of items with the curriculum and objectives, the adequacy of item representation for the intended objectives, the measurement of cognitive levels, and the appropriateness of item difficulty for testing purposes (Sireci & Benítez, 2023). This study drew on the aforementioned scholars' definitions of content validity.

In assessment, the construct is the specific attribute or domain targeted by the examination, excluding unintended attributes (Adiyaa et al., 2022). It is imperative that this construct is measured at an appropriate level of difficulty for the learners (Adiyaa et al., 2022). This understanding aligns with the delineation that construct signifies the knowledge and skill domain assessed in an educational test or a personal attribute gauged in a psychological test (Sireci & Benítez, 2023). Al Lawati (2023) emphasises the importance of outlining item types and providing instructions on how each item type should be assessed to enable accurate assessment of skills. This study considered definitions provided by Adiyaa et al. (2022) and Sireci and Benítez (2023) to define construct validity.

Considering content validity in this study ensured that essential details for the NSC examination guideline development covered all necessary content, guiding the creation of exam papers comprehensively. Emphasising content validity was crucial to prevent exams from deviating from their intended scope and compromising validity.

Similarly, construct validity guided the alignment of question paper development with theoretical constructs of NSC subjects. It ensured that essential details identified would lead to exam guidelines that align with the curriculum in cognitive weighting and skills assessment. Construct validity was crucial here, as neglecting it could compromise exam validity.

4. Materials and Methods

This study adopted a pragmatic research paradigm, following Maarouf's (2019) definition, which identifies three distinct forms of pragmatism. Firstly, functional pragmatism focuses on knowledge for action, wherein the purpose of knowledge is to enhance action and generate practical outcomes. Secondly, referential pragmatism emphasises knowledge about action, viewing the world through an action-oriented lens. Lastly, methodological pragmatism underscores knowledge through action, suggesting that knowledge is constructed or acquired through active engagement with the world.

Although pragmatism is often linked to mixed methods, Kaushik and Walsh (2019) emphasise that for pragmatists, the most appropriate method is the one that most effectively produces the desired outcomes of the inquiry, whether through a single method, multiple methods, or a combination thereof. Adopting a pragmatic approach was, therefore, well-suited to this research, as it informed the research design with a focus on practicality and contextual relevance. Priority was given to practicality and usefulness to optimise the effectiveness and efficiency of examination guidelines. Contextual relevance ensured alignment with the South African Basic Education goals. The principle of continuous improvement supported ongoing reflection and refinement, incorporating feedback from stakeholders, experts, and practical outcomes.

Thus, a qualitative methodological approach was chosen based on the pragmatic paradigm. The qualitative method offered flexibility in data collection and analysis, facilitating rich data

collection by enabling observation and identification of unforeseen issues that were not initially considered or included in the inception stage of the study (Mwita, 2022). Despite the subjectivity inherent in qualitative research, this study mitigated it through an analytical framework developed from academic literature obtained via a systematic literature review approach.

Document analysis served as the primary research method, offering non-obtrusive data collection (Vurayai, 2020). Purposive sampling was employed to select the countries from which examination guidelines would be sourced. Additionally, it was utilised to identify the subjects on which the framework would undergo piloting. Purposive sampling was chosen for its ability to precisely target sources providing pertinent information to address the research question and achieve objectives (Campbell et al., 2020).

Therefore, three international countries outside Africa and three African countries were selected as a sample. The inclusion criteria for countries were the examination of school leaving qualifications and the accessibility of documents. The sampled countries were Swaziland, Botswana, Namibia, Australia, the United Kingdom, and Singapore. The United Kingdom, Australia, and Singapore were chosen for their highly developed education systems, high enrolment rates, and strong academic outcomes. Furthermore, Botswana, Namibia, and Swaziland were selected because their examinations have been quality assured by Cambridge International Examinations. Four subjects were chosen, with the inclusion criteria that the subjects should have been part of the 2023 PEA, with one subject selected per organising field. The chosen subjects were English First Additional Language (FAL), Accounting, Geography, and Mathematics. The DBE NSC examination guidelines were used for piloting, as the DBE is regarded as the minimum standard for assessment bodies examining the NSC.

The data collection technique was document analysis; examination guidelines for the sampled subjects were retrieved directly from the examination council websites of the purposively sampled countries. The steps of document analysis, as described by Morgan (2022), which include determining the sample and type of documents, collecting the documents, establishing authenticity, credibility, and representativeness, and conducting the analysis, were followed to conduct the study.

A literature review on the development of examination guidelines was also used as a data collection method. A literature review was conducted to understand what academic literature considers to be the components of examination guidelines. Various electronic databases were used, and the literature studied represented various educational disciplines in different fields such as education and medical education. The review focused on literature published between 2017 and 2023. The literature review on the development of examination guidelines served as a data collection method and was guided by the research question of this study.

Various electronic databases, such as ERIC, Google Scholar, JSTOR, and SABINET, were used. The keywords employed included "examination guidelines," "assessment guidelines,"

"examination specification," "examination blueprint," "test blueprint," "test specification," "developing question papers," "developing examination guidelines," and "developing test items." These keywords were used separately to ensure the acquisition of as many academic articles as possible. Publications, including grey literature, were selected based on their relevance to the research objectives. The title and abstract of 23,200 publications were screened. The applied filter consisted of articles published from 2017 to 2023 in the field of education to obtain more pertinent information. This resulted in 746 articles, of which 721 full publications were reviewed to remove duplicates and ensure they met the eligibility criteria. The exclusion criteria for academic articles included those not discussing components of examination guidelines in the body of literature. Thus, a total of 24 studies were selected for analysis.

Framework analysis, as described by Goldsmith (2021), was applied to analyse the data obtained from academic literature. The study began with a literature review to identify key themes for an analytical framework, resulting in five main themes and thirty subthemes. These themes were then used to analyse the examination guidelines from selected countries, and new themes that emerged during the analysis were also considered. Finally, common themes and subthemes informed the development of a Framework for the development of examination guidelines for NSC subjects. The Framework for the development of examination guidelines for NSC subjects was piloted using four subjects. A pilot study, as outlined by Lowe (2019), is crucial for testing methods earmarked for a larger study. The purpose of the pilot was to strengthen the framework.

The pilot study was conducted by a panel of four subject experts, comprising a provincial Deputy Chief Education Specialist or a curriculum expert from a tertiary institution, who also served as the team leader, along with one experienced Grade 12 teacher. The panel was provided with the 2023 examination question papers, including their marking memoranda, recent NSC examination guidelines for the evaluated subject, the curriculum policy for the evaluated subject, and Umalusi evaluation instruments.

The instruments for evaluation were framed on the concept of content and construct validity, as espoused in the Framework for the development of the NSC examination guidelines and the Umalusi framework regarding question difficulty. The initial evaluation tool was a Word document containing thematic questions that gathered qualitative data. The second tool, an Excel sheet, collected quantitative data on examination guidelines and question papers to assess alignment. This approach helped gauge the effectiveness of the examination guidelines in the development of valid exam questions.

5. Presentation of Results

The findings from the analysis of the academic literature review and examination guidelines from the selected countries indicate five key categories that are essential for a framework guiding the development of examination guidelines. These categories are further divided into sub-categories for greater specificity.

The first category is general information about the examinations. It includes key details such as background information on the examination guidelines, including the intended purpose of the examination,a description and accommodation of the intended examinee population, the mode of administration, an indication of materials that are needed and will be provided to examinees, guidelines for general instructions to be provided to examinees, an outline of the structure and sections of the examination question paper, an indication of mark allocation for each section of the examination question paper, and the total amount of time allotted for the examination question paper.

The second category is subject-specific information, which refers to details that are directly related to a particular subject area. It encompasses information such as the outline of the learning objectives, the outline of the assessment objectives/specific aims, and the outline of the desired skills to be assessed in the examination guidelines.

The third category is content specification and weighting, which entails a comprehensive breakdown of the subject matter, topics, concepts, or knowledge eligible for assessment in an examination. This process also involves the allocation of marks or points to each of these content areas. Content specification and weighting include an outline of examinable content, an indication of mark allocation for each examinable topic, weighting for each cognitive level per examination question paper, and the weighting of the expected level of difficulty in the examination question paper.

The fourth category is item specification, which provides detailed guidelines or descriptions that outline the specific characteristics and requirements for individual test items (questions) within an assessment. Item specification provides specific information about how each item should be constructed, formatted, and assessed. Item specifications include an indication of item types to be included in the examination, general instructions on how each item type should be assessed, and an indication of skills assessed by each item type.

The fifth category is scoring and response specifications, which refers to the detailed instructions and criteria provided in examination guidelines for evaluating and scoring student responses to different types of items or questions within an examination. These specifications ensure a standardised and consistent approach to scoring across different examiners and examination sessions. Scoring and response specifications include general scoring guidelines for different item types, guidelines for responding to different item types, and sample marking guidelines for each item type.

These five categories, including their sub-categories, are presented as a framework in Figure 1 below.

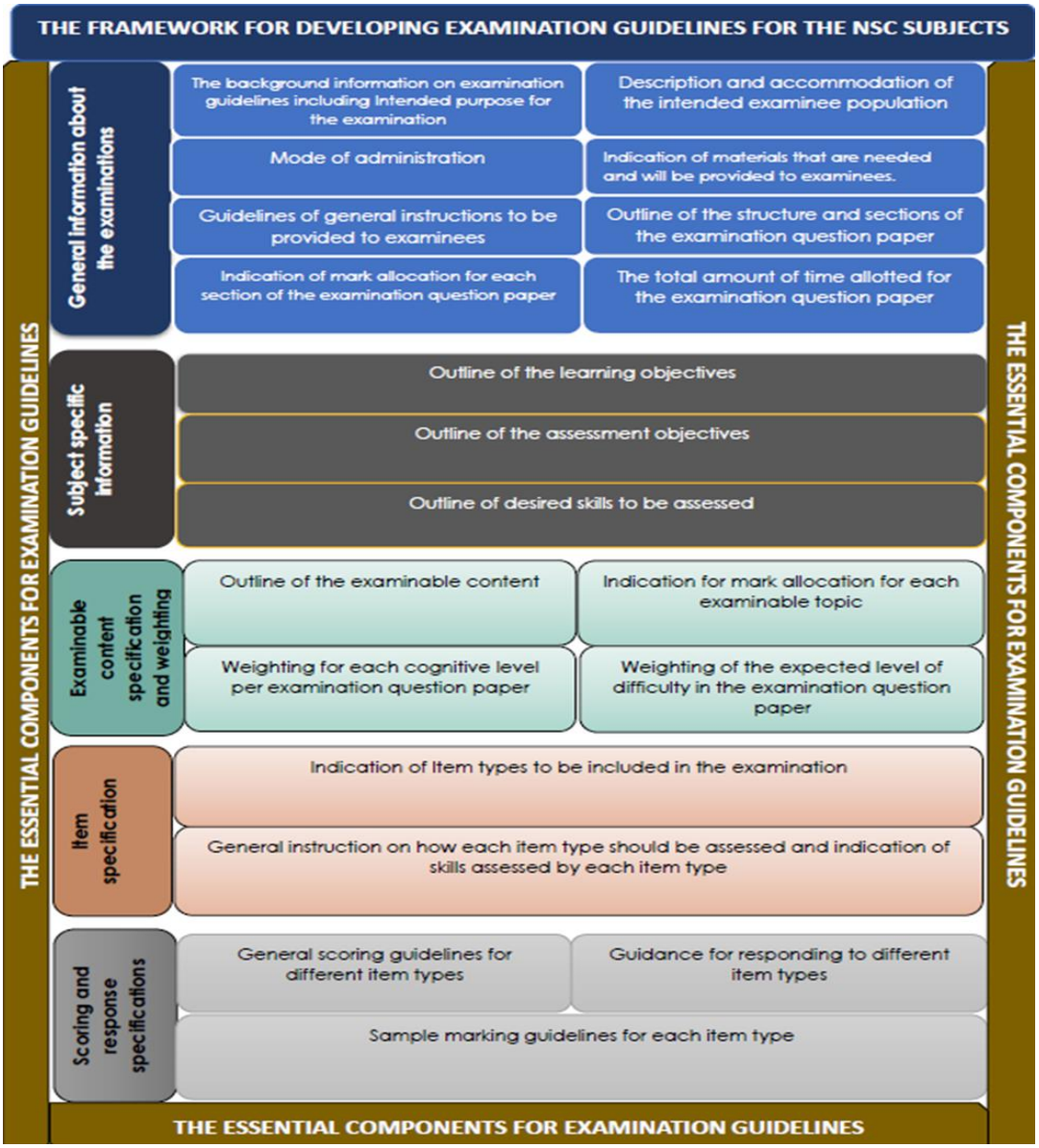

Figure 1: *The Umalusi framework for development of examination guidelines for NSC subjects*

6. Discussion of Findings

The findings show that examination guidelines must include the five key components listed in Figure 1. Rudolph et al. (2019) highlight the importance of these guidelines for meticulous examination planning. Osebhohiemen (2019) and Mamolo (2021) stress the need for thorough planning that considers content, targeted behaviours, and validity. These components ensure that examinations are both construct-valid and content-valid.

Primarily, the inclusion of general information in examination guidelines is essential and adheres to the principles of construct and content validity. This entails specifying the intended examinee

population, the target grade, and acknowledging potential learning barriers to tailor questions appropriately. The latter is crucial in ensuring the inclusivity of the examination question paper. Moreover, clarifying the examination's purpose ensures the accurate measurement of the intended construct, aligning with educational objectives. Furthermore, specifying the mode of administration, indicating necessary materials, and providing clear instructions ensures consistent delivery and alignment with the curriculum and assessment prescripts. Guidelines for structure and mark distribution prevent content under- or over-representation. Time allocation aligns the examination's difficulty with examinees' abilities. These findings align with the views of Adiyaa et al. (2022) and Alemayehu et al. (2021) regarding the development of valid examination question papers.

In addition, the inclusion of subject-specific information is imperative in examination guidelines and adheres to content and construct validity principles. As elucidated by Obilor and Miwari (2022), clearly defined learning or assessment objectives are vital for identifying measurable behaviours and ensuring appropriate item types. The integration of these objectives enhances alignment with learning outcomes and content. This approach aids in the development and selection of suitable assessment items for accurate assessment of skills.

Furthermore, the incorporation of examinable content specifications and weighting in examination guidelines is indispensable and aligns with content and construct validity principles. Outlining examinable content ensures a representative sample of the entire content area, reducing the risk of repetition or omission. Additionally, considering mark allocation, time allocation, topic significance, and cognitive complexity is essential to prevent the overrepresentation or underrepresentation of significant topics and to focus examinations appropriately, as emphasised by Abdellatif (2023), Berman et al. (2020), and Fain et al. (2019).

Including item specifications and weighting in examination guidelines is vital for adhering to content and construct validity principles. Outlining item types helps align the skills to be examined with the learned content, and allocating marks to different item types prevents biased sampling of assessed skills. Moreover, providing general instructions on assessing each item type clarifies examiner understanding, enabling precise skill assessment, as argued by Al Lawati (2023).

Lastly, incorporating scoring and response specifications in examination guidelines is crucial for maintaining content and construct validity principles. Scoring guidance ensures consistency among markers when evaluating similar items, thus upholding scoring standards over time. Elucidating how specific items should be responded to helps establish clear scoring rules, contributing to the development of marking guidelines that maintain comparable standards over the years. Sample marking guidelines further promote consistency in assessment practices, mitigating subjective biases, and ensuring fairness in the assessment process, as highlighted by AERA et al. (2014).

7. Conclusions and Recommendations

This study addressed the challenge of inconsistencies identified in the NSC examination guidelines across three assessment bodies by developing a standardized framework to ensure alignment with curriculum and assessment standards. The research aimed to identify essential components for examination guidelines and to use them to create a framework that guides the development of comparable NSC examination guidelines.

The study identified five essential components for inclusion in examination guidelines: general information about the examinations, subject-specific details, examinable content specifications and weighting, item specifications, and scoring and response specifications. Piloting the framework demonstrated its effectiveness in fostering consistency and validity, potentially mitigating discrepancies among assessment bodies and enhancing alignment with principles of content and construct validity.

Despite its contributions, the study faced limitations as the scope was confined to the NSC qualification, which may limit the applicability of the findings to other qualifications or educational contexts. Future research is recommended to extend the application of the Umalusi framework to additional subjects and qualifications, both within and beyond the Umalusi sub-framework, to test its robustness across diverse contexts.

For practical implementation, it is essential for Umalusi to adopt the proposed framework as a standard for developing the NSC examination guidelines. Furthermore, regular reviews of the framework are necessary to adapt to evolving educational needs; this will maintain its relevance over time.

In conclusion, this study contributes to redefining the quality assurance of assessments in South African basic education by offering a common framework for developing the NSC examination guidelines. It highlights the importance of standardized frameworks in fostering comparability in assessments, thereby laying the foundation for improved quality assessment practices.

8. Declarations

Funding: This research did not receive any external funding.

Acknowledgements: This research project was conceptualised, executed, and supervised by Ms. Mbalenhle Ngema. The report was reviewed by Dr Agness Matsie Mohale, Dr Stephen Mchunu, and Mr Emmanuel Sibanda from Umalusi, whose invaluable contributions are gratefully acknowledged. The piloting phase, which involved four subjects, was conducted by subject experts contracted by Umalusi, and their contributions are deeply appreciated.

Conflicts of Interest: The author declares no conflict of interest.

References

Abdellatif, H. (2023). Test results with and without blueprinting: Psychometric analysis using the Rasch model. *Educación Médica*, *24*(3), 100802. https://doi.org/10.1016/j.edumed.2023.100802

Adiyaa, O., Appiah, K. E., & Osei-Poku, P. (2022). Achieving content validity of teacher made test in general knowledge in Art: A prerequisite assessment need for SHS teachers in Ghana. *Steadfast Arts and Humanities, 2*(1). https://orcid.org/0000-0002-5179-2576

Alemayehu, W., G., Fufa, S., & Seyoum, Y. (2021). Evaluating the Content Validity of Grade 10 Mathematics Model Examinations in Oromia National Regional State, Ethiopia. *Education Research International*, *2021*, 1-11. http://dx.doi.org/10.1155/2021/5837931

Al Lawati, Z. A. (2023). Investigating the characteristics of language test specifications and item writer guidelines, and their effect on item development: a mixed-method case study. *Language Testing in Asia*, *13*(1), 21. https://doi.org/10.1186/s40468-023-00233-5

AlFallay, I. S. (2017). Test specifications and blueprints: Reality and expectations. *International journal of instruction*, 11(1), 195-210. https://doi.org/10.12973/iji.2018.11114a

American Educational Research Association. (2014). *Standards for educational and psychological testing. American Educational Research Association.* https://www.testingstandards.net/uploads/7/6/6/4/76643089/standards_2014edition.pdf

Astuti, P. (2020). Analysis of Content Validity in English Examination Test on Public Health's Students. *Journal of Industrial Engineering & Management Research*, *1*(4), 100-113. https://doi.org/10.7777/jiemar.v1i2

Aziz, J. (2021). *Evaluating the role of exam blueprinting as a tool to improve the exam quality and students' achievements* [PowerPoint slides]. Researchbank.

Berman, A. I., Haertel, E. H., & Pellegrino, J. W. (2020). *Comparability of Large-Scale Educational Assessments: Issues and Recommendations.* National Academy of Education.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K., (2020). Purposive sampling: complex or simple? Research case examples. *Journal of research in Nursing, 25*(8), 652-661. https://doi.org/10.1177%2F1744987120927206

Fain, R., Newton, W. P., & O'Neill, T. R. (2019). Creating a new blueprint for ABFM examinations. *Ann Fam Med, 17(6),* 562–4. https://doi.org/10.1370%2Fafm.2480

Goldsmith, L. J. (2021). Using Framework Analysis in Applied Qualitative Research. *Qualitative Report*, *26*(6), 2061-2076. https://doi.org/10.46743/2160-3715/2021.5011

Ismail, M. A. A., Pa, M. N. M., Mohammad, J. A. M., & Yusoff, M. S. B. (2020). seven steps to Construct an Assessment Blueprint: A practical guide. *Education in Medicine Journal.12*(1), 71-80. https://doi.org/10.21315/eimj2020.12.1.8

Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social sciences*, *8*(9), 255. http://dx.doi.org/10.3390/socsci8090255

Khan, M. A. (2019). Achieving the Validity of Essay Questions in the Subject of English at BA Level Examinations. *Global Language Review (GLR), IV (I)*, 55-59. http://dx.doi.org/10.31703/glr.2019(IV-I).07

Lowe, N. K. (2019). What is a pilot study? *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *48*(2), 117-118. https://doi.org/10.1016/j.jogn.2019.01.005

Maarouf, H. (2019). Pragmatism as a supportive paradigm for the mixed research approach: Conceptualizing the ontological, epistemological, and axiological stances of pragmatism. *International Business Research*, *12*(9), 1-12. http://dx.doi.org/10.5539/ibr.v12n9p1

Mamolo, L. A. (2021). Development of an Achievement Test to Measure Students' Competency in General Mathematics. *Anatolian Journal of Education*, 6(1), 79-90. http://dx.doi.org/10.29333/aje.2021.616a

Mathur, M., Verma, A., Mathur, N., Kumar, D., Meena, J. K., Nayak, S., ... & Parmar, P. (2023). Blueprint designing and validation for competency-based curriculum for theory assessment in community medicine. *Medical Journal Armed Forces India*, *79*, S47-S53. https://doi.org/10.1016/j.mjafi.2021.10.003

Morgan, H. (2022). Conducting a qualitative document analysis. *The Qualitative Report*, *27*(1), 64-77. https://doi.org/10.46743/2160-3715/2022.5044

Mwita, K. (2022). Strengths and weaknesses of qualitative research in social science studies. *International Journal of Research in Business and Social Science (2147-4478)*, *11*(6), 618-625. https://doi.org/10.20525/ijrbs.v11i6.1920

Obilor, E. I., & Miwari, G. U. (2022). Content Validity in Educational Assessment. *International Journal of Innovative Education Research*, 10(2), 57-69.

Osebhohiemen, E. (2019). Use of Table of Specification in Construction of Teacher-Made Achievement Test in Mathematics in the Primary and Secondary Schools. *The Melting Pot, 5*(2), 1-15.

Pawade, Y. R., Mehta, S., Mahajan, A. S., Patil, S. N., Barua, P., Desai, C., & Supe, A. N. (2020). 'Blueprinting in assessment'–an online learning experience. *South-East Asian Journal of Medical Education*, 13(2), 77-85. https://doi.org/10.4038/seajme.v13i2.214

Ray, M. E., Daugherty, K. K., Lebovitz, L., Rudolph, M. J., Shuford, V. P., & DiVall, M. V. (2018). Best practices on examination construction, administration, and feedback. *American journal of pharmaceutical education*, *82*(10), 7066. https://doi.org/10.5688%2Fajpe7066

Raymond, M. R., & Grande, J. P. (2019). A practical guide to test blueprinting. *Medical teacher, 41*(8), 854-861. https://doi.org/10.1080/0142159x.2019.1595556

Rudolph, M. J., Daugherty, K. K., Ray, M. E., Shuford, V. P., Lebovitz, L., & DiVall, M. V. (2019). Best practices related to examination item construction and post-hoc review. *American journal of pharmaceutical education*, 83(7), 7204. https://doi.org/10.5688%2Fajpe7204

Sireci, S., & Benítez, I. (2023). Evidence for Test Validation: A Guide for Practitioners. *Psicothema, 35*(3), 217-226. https://doi.org/10.7334/psicothema2022.477

Vurayai, S. (2020). Rurality and exclusion in ordinary level mathematics in Zimbabwe: A document analysis. *International Journal of Learning, Teaching and Educational Research*, *19*(6), 370–386. http://dx.doi.org/10.26803/ijlter.19.6.22

Yusoff, M. S. B. (2019). ABC of content validation and content validity index calculation. *Education in Medicine Journal*, *11*(2), 49–54. http://dx.doi.org/10.21315/eimj2019.11.2.6

An Exploration of the Mathematics Assessment Practices Linked to Poor Learner Performance

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Reference Formats (APA 7th Edition)
Kekana, M. C. (2024). An exploration of the mathematics assessment practices linked to poor learner performance. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 107-121). ERRCD Forum. https://doi.org/10.38140/obp2-2024-08

Abstract: South African learners are performing below the international average across the board. Mathematics has been performing below 60% for years in the NSC. Mpumalanga has been performing below the national average. CAPS provides clear guidelines on assessment practices to be utilised in order to improve learner performance. Additionally, the DBE introduced a framework called MTLF to guide teachers in teaching and assessing effectively in order to improve learning outcomes in Mathematics. Clearly, there are good policies and guidelines in place to improve learner performance in Mathematics; however, learner performance is low. Hence, the importance of conducting this study. The aim of this paper was to explore the assessment practices linked to the poor performance of learners in Mathematics in Mpumalanga Province. The paper answers the question, "What are the assessment practices linked to poor learner performance in Mathematics?" Document analysis and interviews were used as data collection techniques. Mathematics teachers in the sampled schools were interviewed. It was found that the assessment practices as prescribed in the CAPS document were used for compliance. Due diligence was not done in the moderation of scripts; learners were struggling with questions on the application of knowledge, and formative assessment was not adequately given to learners. It was recommended that learners be exposed to adequate formative assessments and that the departmental heads should moderate tasks and scripts closely. Districts should monitor assessment practices in schools. It is concluded that the assessment practices linked to the poor performance of learners were associated with the superficial implementation of the MTLF and CAPS.

Keywords: Assessment practices, MTLF, learner performance, CAPS, formative assessment.

1. Introduction

Literature indicates that from time immemorial learners have complained about the hardship of learning, and teachers have complained about learners who are lazy to practise Mathematics (Alexander, 2016). He argued that some problems in Mathematics are universal; they are not necessarily experienced in a particular country or province. It is the manifestation of these problems in different countries that could make them seem unique; otherwise, they are similar in nature. It has become common knowledge that South African (SA) learners are performing below the international average across the board (Reddy, 2021). Nationally, Mathematics is not performing well, and the picture is not looking better in Mpumalanga province. Tables 1 and 2 depict the 5-year trends nationally and provincially, respectively.

Table 1*: National trends of learner performance in Mathematics over the past 5 years (RSA, 2024).*

Year	**Mathematics pass %**
2023	63,5

2022	55
2021	57,6
2020	53,8
2019	54,6

***Table 2**: Provincial trends of learner performance in Mathematics over the past 5 years (RSA, 2024).*

Year	**Mathematics pass %**
2023	58
2022	52,8
2021	54
2020	50,9
2019	51,6

It is evident from Tables 1 and 2 that learner performance is poor nationally and in the province. It was only in 2023 that learners' performance nationally reached 60% after many years. Mpumalanga is still lagging behind; it has not yet reached the 60% mark, and this is concerning.

1.2 Problem statement

Mathematics is one of the subjects that provide the necessary skills for learners to succeed in other subjects, fields of study and in life. Lamichhane (2018) said Mathematics is a tool that is effective for the development of other human disciplines and has a universal role in all disciplines. It is accepted that there are a myriad of factors impacting learner performance in Mathematics. For example, Msila (2014, p. 344) cited "low educational level of parents, unemployment, abuse and neglect, substance abuse, dangerous neighbourhoods, homelessness, mobility and exposure to inadequate educational experiences" as factors impacting learner performance. Sayac and Veldhuis (2022) mentioned assessment practices as one of the factors impacting learner performance. This study will then explore the assessment practices linked to the poor performance of learners in Mathematics in Mpumalanga Province. The writing of this paper was motivated by poor learner performance in Mathematics amidst the clear policies and guidelines on assessment practices in Mathematics as reflected in CAPS and in the DBE MTLF.

1.2.1 Research Questions

The aim of this paper was to explore the assessment practices associated with poor performance of learners in Mathematics in Mpumalanga Province. The paper addresses the question: What are the assessment practices linked to poor learner performance in Mathematics? To answer this question, literature was reviewed and data was collected from the DBE MTLF, CAPS, and the sampled schools.

2. Literature Review

A literature review was conducted to situate this study within existing ideas related to assessment practices in Mathematics. Assessment practices in the context of this study encompass formal

and informal assessment, assessment design, programme of assessment, marking and moderation of assessment tasks, as well as moderation of learners' scripts. The literature review helped the study understand assessment practices in Mathematics and their impact on learner performance. The DBE framework, known as the Mathematics Teaching and Learning Framework (MTLF), was used as the conceptual framework for this paper and is discussed briefly here.

2.1. Assessment practices in mathematics: An international perspective

Different authors are in agreement that assessment practices in Mathematics impact learner performance. Learners who were exposed to formative assessments were found to be performing better compared to those who never participated prior to the writing of summative assessments (Oyinloye & Imenda, 2019). This finding was in agreement with what Palm, Andersson, Bostrom, and Vingsle (2017), as well as Wafubwa and Csikos (2022), found in their study. They found that there is a positive link between learner performance in Mathematics and formative assessment. Also, Moyosore (2015), who wrote about the effect of formative assessment on students' achievement in secondary school Mathematics, had a similar finding and recommended that teachers should be trained to develop good formative assessment activities.

Daka, Chipindi, and Mwale (2020) conducted a study to establish a relationship between assessment practices and student academic performance. They found that improper assessment practices impacted the academic performance of students. Improper assessment practices mentioned in the study included untimely feedback and feedback that was not properly guiding the students to improve. Clearly, giving learners assessment tasks without marking and providing feedback constitutes bad assessment practice.

There are a number of studies that were conducted pointing out that there is a link between formative assessment and learner performance in Mathematics (Wafubwa & Csikos, 2022; Moyosore, 2015; Palm, Andersson, Bostrom, & Vingsle, 2017). Moyosore (2015), in his study, recommended that teachers should be trained in the development of formative assessment. Training teachers could assist them in developing quality assessment tasks. Quantitative studies conducted are in alignment with the notion that there is a positive correlation between learner performance and formative assessment in Mathematics. Surely, these authors found formative assessment to be a good assessment practice for enhancing learner performance in Mathematics.

Sayac and Veldhuis (2022) conducted a study where they investigated French teachers' assessment practices. These authors explored formal and informal assessment, the design of assessment tasks focusing on cognitive levels, the management of assessment tasks focusing on marking of tasks, moderation of tasks and scripts, as well as providing feedback to learners, as some elements they considered when they explored the assessment practices of Mathematics teachers. They found that in France, assessment practices were still traditional, where the focus

was on summative assessment. There are similarities between the assessment practices of France and South Africa, except that in South Africa other forms of assessment are considered as part of the assessment.

Another study conducted in grades 7–10 in Ontario, Canada, examined the implementation of reform in Mathematics. In this study, the authors found that the assessment practices went beyond ordinary testing of learners. Teachers were observed incorporating self-assessment and some form of quizzes to enhance learning (Suurtamm, Koch & Arden, 2010). Pegg (2003) said assessment is an integral part of teaching and learning and advocated that the new assessment practices should complement the traditional teaching practices of Mathematics. He further argues that assessment in Mathematics is designed such that it is easier to mark as opposed to testing the skills and competencies of learners. Assessment in Mathematics is associated with the identification and appraisal of learners' knowledge, understanding, skills, and performance (Pegg, 2003). The identification and appraisal of learners' knowledge, understanding, skills, and performance could be done by using both formative and summative assessments. Considering Chapter 4 of the CAPS document, one could notice similarities between the South African and Canadian assessment practices.

There are authors who believe that current assessment practices are not in alignment with the use of technology for learning and teaching Mathematics, especially for FET learners. Stacey and Wiliam (2012) argued that a more principled approach to the design of Mathematics assessments can provide a framework for future developments in Mathematics assessment practices. They proposed that assessment in Mathematics should be guided by the mathematical concepts that are most important for learners to learn; enhance the learning and support every learner to learn important concepts and demonstrate this learning (Stacey & Wiliam, 2012). In contrast, the design of an assessment task in South Africa is guided by the weightings of cognitive levels provided in the CAPS document, see Table 3 in this paper (RSA, 2011). The weightings of the cognitive levels were designed for a phase in order to make assessment fair. So, I am of the view that these weightings provide a framework for the development of assessment tasks.

Lamichhane (2018) conducted a study where the assessment practices of countries that are doing well in international assessments like TIMSS were explored. The study focused on assessment practices in Nepal, China, the USA, and Finland. He found that there are two assessment approaches followed in the four countries. Three of the four countries, namely Nepal, China, and the USA, were found to be following the positivist approach, where teaching, learning, and assessment are viewed as isolated. According to the positivist approach, teachers have confidence in using tests for ranking learners' performance, while Finland followed an integral approach to assessment, where assessment is viewed as an integral part of teaching and learning. Different forms of assessment are utilized to determine learners' achievement in Mathematics when using the integral approach (Lamichhane, 2018). Clearly, Finland is in favour of formative

assessment, while the other three countries are confident that summative assessment can be relied upon to determine learner performance.

2.2 Assessment practices in Mathematics: A South African perspective

The South African perspective on assessment practices is outlined in the CAPS document. According to CAPS, "the assessment practices that will improve learning in Mathematics should be such that learners' mathematical knowledge, skills, and understanding of Mathematics are constructed" (RSA, 2011, p. 51). CAPS states that assessment should be both formal and informal to enhance learning experiences in Mathematics. It identifies tests, the June/trial examination, and projects/investigations as formal assessment programmes (RSA, 2011). The design of the formal tasks should cover the content and consist of different assessment types. Moreover, assessment tasks should address various cognitive levels, as shown in Table 3 (RSA, 2011).

***Table 3**: Cognitive levels for FET and GET requirements (RSA, 2011)*

Cognitive levels	FET Weightings in %	GET Weightings in %
Knowledge	20	25
Routine procedure	35	45
Complex procedure	30	20
Problem-solving	15	109

As already indicated, both formal and informal tasks are important in Mathematics. Additionally, tasks are weighted according to grades, and this weighting of tasks guides the assessment practices of teachers in Mathematics (RSA, 2011).

Learners studying Mathematics should be adequately exposed to informal, formative assessment to enable them to practise Mathematics.

2.3 Lessons learnt from international assessment

There are also lessons on assessment practices that can be learned from international assessments. The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) conducts large-scale cross-national research studies in member countries in Southern and Eastern Africa. SACMEQ achievement results indicate that there is a need to expose learners to examples of applying skills associated with the higher SACMEQ levels in both reading literacy and mathematics (Moloi & Chetty, 2010). This finding from SACMEQ suggests that curriculum planners should design assessments that evaluate learners' application of knowledge acquired. Education planners should consider how to mitigate the challenge of learners performing poorly on questions that require the application of knowledge.

The Department of Basic Education (DBE) is responsible for ensuring that every teacher receives a minimum amount of in-service training (INSET) within a defined period. For example, "every teacher is by law entitled to a defined number of hours of INSET every year" (Moloi & Chetty, 2010, p.12). There is a need to expose learners to examples of applying skills

related to the higher SACMEQ levels in both reading literacy and mathematics. The National Curriculum Statement (NCS) emphasises the importance of teachers designing tasks to ensure that a variety of skills are assessed (Moloi & Chetty, 2010, p.61). The variety of skills to be assessed is outlined in Chapter 4 of all the Curriculum and Assessment Policy Statements (CAPS). The cognitive levels are detailed in the CAPS document (RSA, 2011) and are also included in section 2.2 as Table 3.

As indicated in the introduction, South African learners have been underachieving in mathematics both nationally and internationally. Studies such as the Trends in International Mathematics and Science Study (TIMSS) have shown that South Africa's scores are even lower than those of countries with fewer resources (Reddy, Prinsloo, Visser, Arends, Winnaar, Rodgers, Janse Van Rensburg, Juan, Feza & Mthethwa, 2012). South Africa has a history of poor performance in mathematics. Tables 4 and 5 depict the average scores for grades 9 and 5 obtained in the 2019 TIMSS. Column 1 indicates the country, and column 2 presents the score (standard error (SE)).

***Table 4**: Trends in South African Mathematics Achievement in 2019 grade 9 (Reddy, 2021)*

GRADE 9	
Country	**Score(SE)**
Singapore	616(4)
Chinese Taipei	612(2,7)
Korea	607(2,8)
Japan	594(2,7)
Hong Kong SAR	578(4,1)
Cyprup	501(1,6)
Portugal	500(3,2)
TIMSS Scale Centre point (500)	
Italy	497(2,7)
Turkey	496(4,3)
Kazakhstan	488(3,3)
Oman	411(2,8)
Kuwait	403(5)
Saudi Arabia	394(2,5)
South Africa	389(2,3)
Morocco	388(2,3)

Table 5: Trends in South African Mathematics Achievement in 2019 grade 5 (Reddy, 2021).

GRADE 5	
Country	**Score(SE)**
Singapore	625(3,9)
Hong Kong SAR	602(3,3)
Korea	600(2,2)
Chinese Taipei	599(1,9)
Japan	593(1,8)

Serbia	508(3,2)
Spain	502(2,1)
TIMSS Scale Centre point (500)	
Armenia	498(2,5)
Albania	494(3,4)
New Zealand	487(2,6)
Morocco	383(4,3)
Kuwait	383(4,7)
South Africa	374(3,6)
Pakistan	328(12)
Philippines	297(6,4)

Clearly, South Africa is still at the bottom of the list with regard to performance in international assessment studies. There were interventions put in place by the government to improve learning outcomes in the past. Examples include the Revised National Curriculum Statement (RNCS), the Foundation for Learning Campaign (FLC), CAPS, and the provisioning of workbooks to schools (RSA, 2012). Some of these interventions were specifically directed at improving learner performance in Mathematics. It is acknowledged that these interventions have made an impact on learner performance; however, there is room for further improvement.

2.4 Theoretical framework for the study: DBE MTLF.

The DBE Mathematics Teaching and Learning Framework (MTLF) for South Africa is a document developed by the DBE for teaching mathematics for understanding. It has been developed for South African teachers to guide and assist them in teaching Mathematics in a way that improves learner outcomes. Assessment is integral to teaching and learning. Therefore, improving the quality of teaching and learning in Mathematics using the MTLF will imply improving the assessment practices in Mathematics. The following diagram, Figure 1, depicts the model of the Framework.

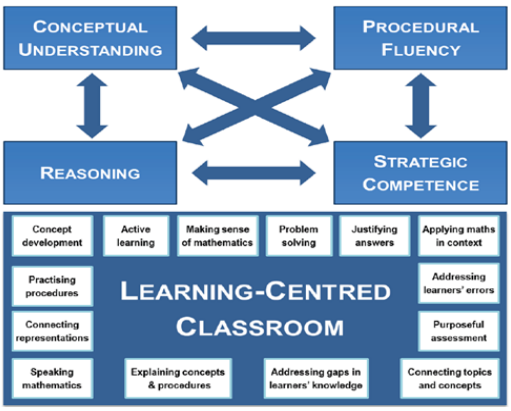

***Figure 1**: Framework model of mathematics teaching and learning (RSA, 2018, p.11).*

The base of this model is about the learning-centred classroom. In the learning-centred classroom, the four dimensions of the model interact with one another, as represented by the

double arrows in the model. It will be the assessment practices of the mathematics teacher that will enhance active learning, making sense of mathematics, problem-solving, justifying answers, and all the elements listed in the base of the model possible.

3. Methodology

This was an interpretive study aimed at understanding the assessment practices associated with poor learner performance in Mathematics as a phenomenon (Maree, 2007). A purposive sample was drawn from the Mathematics, Science and Technology Academy (MSTA) schools within the Mpumalanga Department of Education. The sample for the study was sourced from a population of 101 MSTA schools.. Two grades were targeted namely, grades 9 and 12. A set of six learners' scripts and workbooks was requested from the sampled schools. Two from high performers, two from middle, and the last two from low-performing learners. Document analysis was done using the CAPS documents for the Senior and FET phases in order to check the assessment practices as prescribed in the Curriculum and Assessment Policy Statement (CAPS).

Mathematics teachers were interviewed on the link between assessment practices and learner performance. The interviews were semi-structured, and responses were captured. In addition, for triangulation of data purposes, lead teachers for Mathematics were given a list of semi-structured questions to investigate what they think are the assessment practices linked to the poor performance of learners in Mathematics. The lead teachers were attending the MSTA training, and this was a convenient sample. There were 26 lead teachers in attendance, and eight were conveniently sampled to respond to the interview questions. These were the lead teachers responsible for Mathematics in the MSTA schools. Four of the eight were General Education and Training band (GET) lead teachers, and the other four were Further Education and Training band (FET) lead teachers.

The sampled schools, lead teachers, and teachers involved in the study were formally informed about the purpose of the study. They were told that participation in the study was voluntary and that they could withdraw at any time without any penalty if they wished (Bless, Higson-Smith and Sithole, 2013). They were informed that their names and those of their schools would not be mentioned in the paper for confidentiality purposes. However, findings and recommendations would be shared with them so that they were appraised on the assessment practices linked to poor learner performance in Mathematics.

4. Presentation of Results

As already indicated, the aim of this paper was to explore the assessment practices linked to the poor performance of learners in Mathematics in Mpumalanga Province. The findings that emerged from the study are discussed in this section. It was found that the assessment practices used in the sampled schools are in line with those prescribed in the CAPS document. For

example, learners were exposed to different forms of assessment, the programme of assessment was followed, each assessment task comprised different cognitive levels, departmental heads moderated the tasks before they were written, and they moderated scripts after marking had been concluded. However, due diligence was not exercised when moderating the learners' scripts. I concluded that these assessment practices are followed for compliance purposes; see Figures 2 and 4, where the departmental head moderated the script in a different colour pen.

It was also found that there is little informal assessment in the learners' workbooks, and the few items that were found were recall-type assessment items. Some learners' workbooks contained classwork that was not marked. I concluded that formative assessment is not viewed as important by some teachers. Consequently, learners might not receive feedback or corrections to learn from if formative assessment is not marked. It was learned from the literature review that learners become demotivated when they do not receive feedback on time (Daka, Chipindi & Mwale, 2020). A number of authors agree that there is a correlation between formative assessment and learner performance (Wafubwa & Csikos, 2022; Moyosore, 2015; Palm, Andersson, Bostron & Vingsle, 2017). Linked to this finding was the observation that learners lack strategic competence to deal with multiple-choice questions (MCQs). Learners write examinations underprepared, and they have adopted the habit of writing and cancelling, which consumes their time to finish tests or examinations. This indicates that formative assessment is not sufficiently conducted. Therefore, formative assessment, as found in the literature, is an important part of the assessment practice in Mathematics.

Learners performed poorly on questions that required the application of knowledge. For example, they struggled with the application of theorems to solve riders in Euclidean geometry, simplifying expressions containing fractions, and using formulae to perform calculations. Figures 1 and 2 are examples indicating that learners are struggling with activities that necessitate the use of theorems and rules of Mathematics to solve problems. There is still much research that can be done in the area of applying mathematical knowledge to solve problems. In addition, the analysis revealed that English as the Language of Learning and Teaching (LoLT) poses a challenge; learners struggled with word problems in related assessment questions.

5. Discussion of Findings

As already indicated, the aim of this paper was to explore the assessment practices linked to poor performance of learners in Mathematics in Mpumalanga Province. The study attempted to respond to the question, "What are the assessment practices linked to poor learner performance in Mathematics?" The summary findings and detailed findings will be discussed in this section.

5.1 Summary findings

The study found that the assessment practices prescribed in the CAPS document were primarily used for compliance. Due diligence was not exercised in the moderation of scripts, and learners

struggled with questions requiring the application of knowledge. Additionally, formative assessment was not adequately provided to learners. Furthermore, learners performed poorly in multiple-choice questions and word problems.

5.2 Detail discussion of the findings

Data collected was organized and analysed under five themes namely, teaching mathematics for conceptual understanding, developing procedural fluency in learners, learners' strategic competence, opportunities for learners to develop mathematical reasoning skills, and challenges in mathematics teaching. These themes were taken from the DBE MTLF (RSA, 2018), which was used as a theoretical framework for this study. The last theme, which is challenges, emerged from the data collected.

5.2.1 Teach mathematics for conceptual understanding

Though assessment practices in terms of exposing learners to different types of assessment were evident in the assessment tasks, learners are still struggling with questions where they needed to apply knowledge, probably because mathematics was not taught for conceptual understanding. Figure 2 depicts an example of learners' scripts who did not even attempt the questions requiring the application of theorems learned.

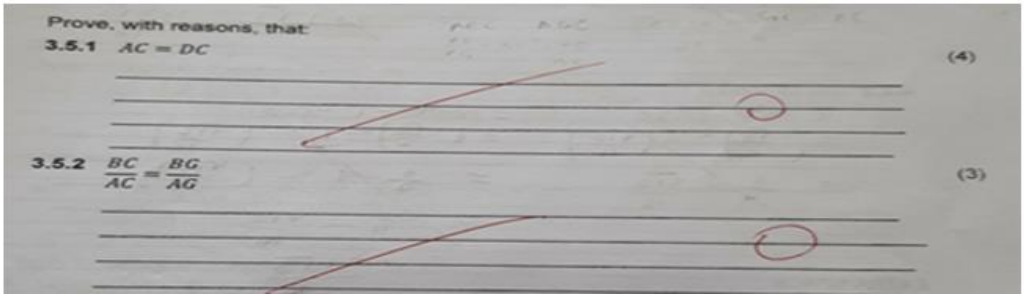

***Figure 2**: Image depicting a learner who did not attempt the problem*

5.2.2 Develop procedural fluency in learners

Learners should be taught procedure in problem solving (RSA, 2018). Data analysis revealed that some learners lack procedural fluency in solving the mathematical problems.

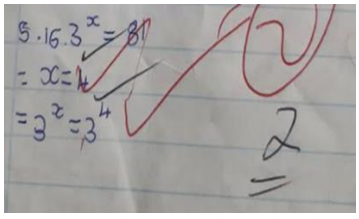

***Figure 3**: Image depicting a learner who solve the problem haphazardly*

For example, some steps were mixed up when solving problems. Presumably, learners are not following the rules and procedures of mathematics when solving problems. Clearly, teachers do not emphasise the importance of rules and procedures in problem-solving in mathematics.

Hence, this learner was awarded full marks and, in my view, the teacher is not so concerned about procedure when assessing problem-solving. Figure 3 indicates that the departmental head moderated and agreed that this learner was to be awarded full marks.

5.2.3 Learners' strategic competence

It was found from data analysis that learners have a habit of writing and erasing. Mathematics is a "doing" subject where learners should practise to acquire strategic competence. This will require assessment practices that focus on formative assessment, allowing learners to gain confidence from small victories in sections of the curriculum. Writing and erasing was found to waste a significant amount of the learners' time during tests and examinations. Some learners write entire questions in pencil, and data analysis revealed that not all learners were able to erase the pencil marks. Clearly, the act of writing and erasing or cancelling was linked to learners' lack of strategic competence when solving problems. Writing and deleting could also be associated with a lack of confidence in what they are writing. I concluded from this that learners approach tests and examinations without adequate practice. Literature points out that learners' challenges in mathematics are linked to insufficient time spent on the content taught (Pegg, 2003). Pegg (2003) found in his study that teachers acknowledged that some learners were underperforming because they were not given sufficient time to engage with the content taught. Formative assessment plays a crucial role in preparing learners for summative assessment, as found in the literature. Figure 4 shows examples where learners displayed a lack of confidence that results from inadequate exposure to formative assessment.

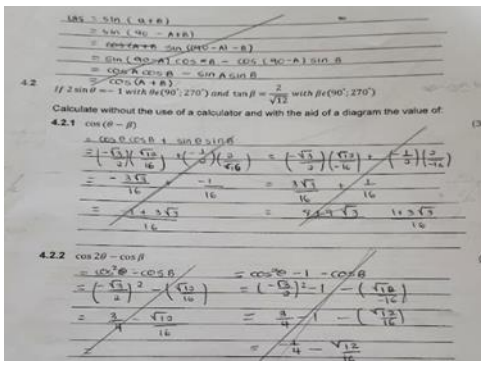

Figure 4*: Image depicting portion of scripts where learners were writing and erasing*

Learners do not have strategies for writing tests and examinations. Also, they performed badly in multiple-choice questions (MCQs), probably because they lack strategic competence; they lack a strategy to deal with MCQs. I concluded from this that learners lack a strategy to answer MCQs. Assessment practices in mathematics should be such that these challenges are addressed.

5.2.4 Mathematics reasoning

Learners were also found to be struggling with word problems in the different phases, namely, GET and FET phases. Data analysis revealed that translating an English sentence into a

mathematical expression was poorly performed, as seen in Figure 5. Some learners did not know where to start, and they resorted to leaving blanks.

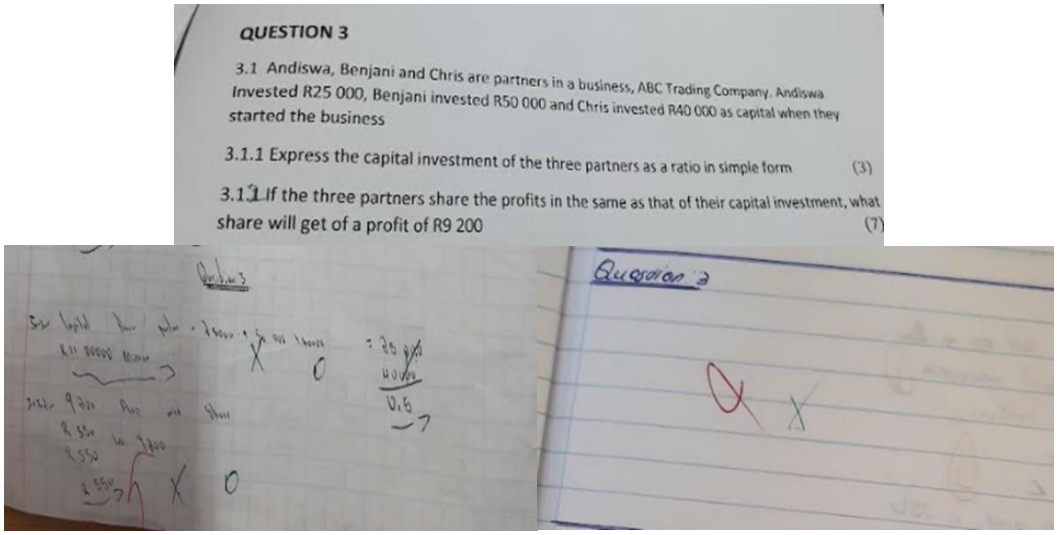

***Figure 5**: Image depicting poor performance of learners in word problems*

I concluded that the assessment practices in Mathematics classrooms are not promoting the implementation of English across the curriculum in schools.

5.2.5 Challenges in Mathematics teaching linked to assessment practice

It was found from the analysis of the scripts that some teachers are not well grounded in teaching Mathematics. It is evident from the figure that the teacher is also struggling with the Mathematics content. Some questions in learners' scripts were not fully marked, as seen in Figure 6. This is in alignment with the findings of other studies. Also, the departmental heads are not performing due diligence when moderating learners' scripts.

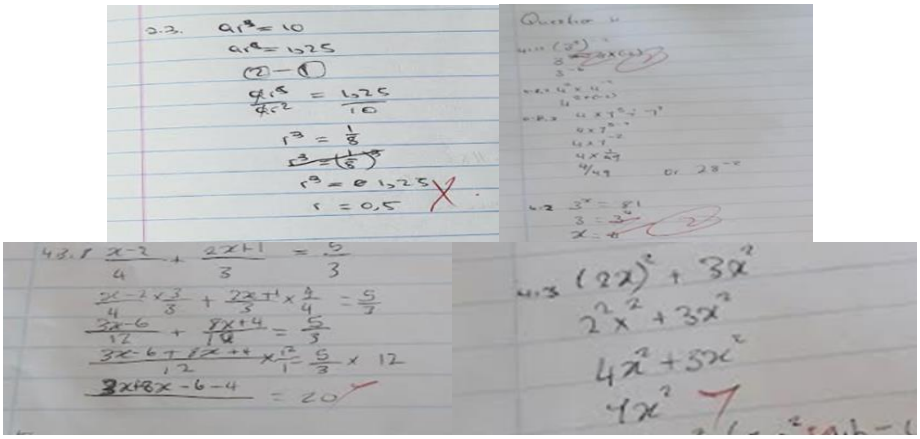

***Figure 6**: Image depicting scripts where teachers did not do due diligence when marking*

They do not award marks for correct steps. Some do not mark all the questions in the learners' books; see Figure 7 below. Sometimes, some teachers mark correct answers as wrong. Learners

could be demotivated by all these assessment practices. This finding is in alignment with what Lamichhane (2018) stated, that learners are demotivated to do Mathematics in higher grades because of being discouraged by failing the subject. Learners might not learn from destructive feedback like the one depicted in Figure 8.

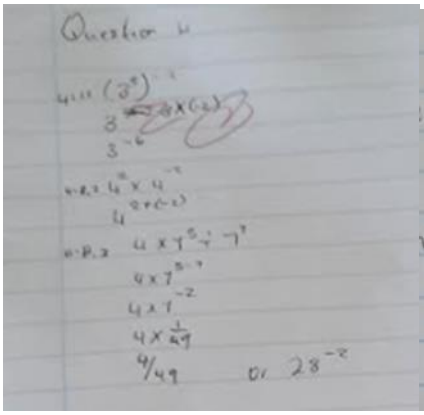

***Figure 7**: Unmarked question*

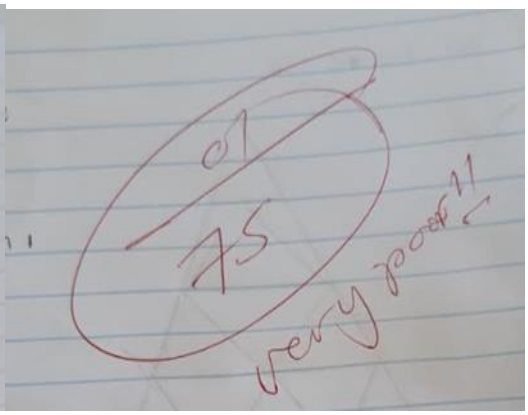

***Figure 8**: Destructive comments*

6. Conclusions and Recommendations

Assessment practices in Mathematics should be designed to assess what learners know and understand. Therefore, teachers should guard against demotivating learners by minimising inaccuracies in the marking of scripts. The aim of this paper was to explore the assessment practices linked to the poor performance of learners in Mathematics in Mpumalanga Province. The study identified several assessment practices associated with this poor performance, including a lack of due diligence when moderating learners' scripts, an inability to train learners to answer questions that require the application of knowledge learned, inadequate exposure to formative assessment, and exposing learners to different forms of assessment superficially, merely for compliance. These assessment practices led learners to display a lack of confidence in their answers, often resulting in writing and erasing.

The paper provides recommendations aimed at mitigating the identified challenges. Policymakers are urged to consider these recommendations. Consequently, schools should implement the recommendations to improve assessment practices in Mathematics. Teacher training on assessment practices in Mathematics is necessary. The McKinsey and Company report argued that the quality of any education system cannot exceed the quality of its teachers (Barber, Mourshed & Whelan, 2007). Therefore, teachers are change agents in influencing the assessment practices that will enhance learner performance.

It is recommended that further studies be conducted in the area of assessment practices and learner performance in Mathematics. Future studies can focus on assessment practices linked to good learner performance. This paper recommends that teachers be trained to set questions requiring the application of knowledge learned, that districts develop an assessment item bank

and distribute it to schools for formative assessments. These assessment items should comprise different cognitive levels to ensure fairness. Departmental Heads in schools should monitor the use of these items in formative assessments; the Departmental Heads of Mathematics should be trained in the moderation of tasks before they are administered and in the moderation of scripts after marking has concluded; teachers should be trained in solving word problems, and the implementation of English across the curriculum should be monitored; finally, the utilisation of the DBE MTLF should be overseen to improve theassessment practices of teachers.

6.1 Limitations of the study

As indicated, the study adopted a qualitative method approach to research that involved purposeful sampling. The purposive sampling might not allow for the generalisation of the findings; however, transferability will be possible in this study because data was collected until a saturation point was reached. Also, data collection targeted schools from lower quintiles that face challenges related to resources and some teachers who are not adequately trained. Therefore, the findings may not be transferable to high quintile schools.

7. Declarations

Funding: This research did not receive any external funding.

Acknowledgements: A word of appreciation goes to the schools that data to be collected from their schools.

Conflicts of Interest: I declare that there is no conflict of interest.

References

Alexander, K. (2016). *Current issues in Mathematics Education*. Moscow State Pedagogical University.

Barber, M., Mourshed, M., & Whelan, F. (2007). Improving education in the Gulf. *The McKinsey Quarterly*, 3947, 101-116.

Bless, C., Higson-Smith, C. & Sithole, S.L. (2013). *Fundamentals of social research methods (5th ed.)*. Juta and Company.

Daka, H., Chipindi, F. M., & Mwale, M. (2020). The Relationship between Assessment Practices and Students' Academic Performances. *Zambian Journal of Educational Management, Administration and Leadership,* 1(1), 143-156.

Lamichhane, B. R. (2018). Assessment practices in mathematics: local to global contexts. *Saptagandaki Journal, 9,* 1-16.

Maree, K. (Ed.). (2007). *First steps in research*. Van Schaik.

Moloi, M. Q., & Chetty, M. (2010). *The SACMEQ III Project in South Africa. A study of the conditions of schooling and the quality of education. SACMEQ (Southern and Eastern Africa Consortium for Monitoring Educational Quality) Educational Policy Research Series.* Department of Basic Education.

Moyosore, O. A. (2015). The effect of formative assessment on students' achievement in secondary school mathematics. *International Journal of Education and Research,* 3(10), 481-490.

Msila, V. (2014). Transforming society through quality primary education in South Africa: Lessons from two decades after apartheid. *Mediterranean Journal of Social Sciences*, 5(6), 339-346.

Oyinloye, O. M., & Imenda, S. N. (2019). The Impact of Assessment for Learning on Learner Performance in Life Science. *EURASIA Journal of Mathematics, Science and Technology Education*, 15(11).

Palm, T., Andersson, C., Boström, E., & Vingsle, C. (2017). A review of the impact of formative assessment on student achievement in mathematics. *Nordic Studies in Mathematics Education*, 22(3), 25-50.

Pegg, J. (2003). Assessment in mathematics. *Mathematical cognition*, 227-259.

Reddy, V., Prinsloo, C., Visser, M., Arends, F., Winnaar, L, Rodgers, S., Janse Van Rensburg, D., Juan, A., Feza, N. & Mthethwa, M. (2012). *Mathematics and Science Achievement at South African Schools in TIMSS 2011*. HSRC Press.

Reddy, V (Ed). (2021). *Mathematics and Science Achievement at South African Schools in TIMSS 2019*. HSRC Press.

RSA. (2011). Curriculum and Assessment Policy Statements (CAPS). DBE.

RSA. (2012). Report on the Annual National Assessments. DBE.

RSA. (2018). Mathematics Teaching and Learning Framework for South Africa. Teaching Mathematics for Understanding. DBE.

RSA. (2024). *School Subjects Diagnostic Report Book 1*. DBE.

Sayac, N., & Veldhuis, M. (2022). Mathematics assessment practices of primary school teachers in France. *International Journal of Science and Mathematics Education*, 20(7), 1595-1610.

Stacey, K., & Wiliam, D. (2012). Technology and assessment in mathematics. *Third international handbook of mathematics education,* 721-751.

Suurtamm, C., Koch, M., & Arden, A. (2010). Teachers' assessment practices in mathematics: Classrooms in the context of reform. *Assessment in Education: Principles, Policy & Practice*, 17(4), 399-417.

Wafubwa, R. N., & Csíkos, C. (2022). Impact of formative assessment instructional approach on students' mathematics achievement and their metacognitive awareness. *International journal of instruction*, 15(2), 119-138.

Navigating Online Peer Assessment in Land Surveying Education: Enablers and Constraints

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Reference Formats (APA 7th Edition)
Harinarain, H., & Kramm, N. (2024). Navigating online peer assessment in land surveying education: Enablers and constraints. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 122-133). ERRCD Forum. https://doi.org/10.38140/obp2-2024-09

Abstract: This paper presents an observational study focused on online student peer assessment within the context of land surveying education. Conducted over the course of one semester, the study aimed to identify the enablers, constraints, and impacts of peer assessment on learning outcomes among final-year land surveying students. Enablers included the promotion of critical thinking, collaboration, and self-reflection among students However, constraints such as time limitations and variability in peer feedback quality posed challenges to the effective implementation of peer assessment. From my perspective as an academic observer, online student peer assessment holds potential benefits for enhancing learning outcomes. When properly implemented, online peer assessment can serve as a valuable complement to traditional assessment methods, offering students a more holistic learning experience. However, allocating time and energy towards peer assessment must be carefully balanced against its perceived benefits for students. The implementation of online student peer assessment significantly influenced the outcomes of this particular module. Through online peer assessment activities, final-year students were encouraged to actively engage with course content, develop critical evaluation skills, and provide constructive feedback to their peers. This active involvement in the assessment process facilitated a deeper understanding of the module concepts and fostered a supportive learning community within the classroom. Despite challenges, the potential benefits of online peer assessment for learning outcomes justify its integration into educational practices. By leveraging online peer assessment effectively, educators can empower students to take ownership of their learning journey and cultivate essential skills for their future careers in the field.

Keywords: Enablers and constraints, learning outcomes, observational study, online assessment, peer assessment.

1. Introduction

Peer assessment is an increasingly popular educational tool used in higher education assessment due to its pedagogical value and potential to enrich student learning. Peer assessment has been established in research literature developed over the last 30 years, and the efficacy of an effective assessment method has been well debated in the literature (Kerman et al., 2024). An evaluation of this literature finds a generally positive sentiment towards peer assessment as a method that supports student learning with a host of additional benefits for students (Adachi et al., 2018; Kerman et al., 2024). Peer assessment is understood as a method that involves students assessing work, providing feedback, and engaging in and critically evaluating each other's work (Chin, 2016). Peer assessment flips the traditional assessment practice and power relations around from

one in which the academic grades and provides feedback into a system in which students are actively engaged in the entire assessment process.

The research literature on peer assessment has focused on different elements of peer assessment. The positive effects of peer assessment have been extensively studied, as well as the challenges associated with peer assessment. Similarly, the design considerations required to implement peer assessment successfully have been well researched (Adachi et al., 2018; Kerman et al., 2024). The rise of ICTs during the 1990s fuelled the development of web-based services for peer assessment, which, in turn, led to the development of peer assessment research on design considerations and best practices for the effective implementation of online peer assessment (Latifi et al., 2021). Based solely on this literature, assessment researchers can easily advocate for an ideal form of peer assessment and what needs to be considered in the assessment design for peer assessment (Adachi et al., 2018). Peer assessment research in higher education is supported by a considerable body of literature on student perceptions and experiences of peer assessment (Chin, 2016; McGarr and Clifford, 2013). In contrast, studies focused on teaching academics' perspectives on peer assessment have received limited attention in research. Specifically, this research focuses on the enablers and constraints academics experience in implementing peer assessment in their courses (Adachi et al., 2018).

Peer assessment in land surveying and geospatial disciplines has not been extensively researched. Where it has been, research has focused on the correlation between student grade allocation and that of the tutor/academic. McLaughlin and Simpson (2003) studied peer assessment with a focus on the differences between students' and tutors' grades. El-Mowafy (2014) examined if peer assessment could support students' practical training by evaluating peer fieldwork and found that students could develop a critical understanding of the fieldwork and improve their practical knowledge. Similarly, Kelly (2019) studied the effects of peer assessment on students' ability to develop professional skills and foster lifelong learning. The limited studies indicate a broader limitation of peer assessment research, which is focused primarily on the validity and reliability of assessment rather than the learning outcomes of assessment. Regardless of the limited literature on land surveying, where practical and theoretical knowledge must be integrated, online peer assessment proves particularly beneficial. It leverages digital platforms to foster a collaborative and interactive learning environment, encouraging students to engage more deeply with the material and one another. Therefore, this paper aims to address the gaps by focusing on the experience of one academic and an academic developer in peer assessment.

2. Enablers of Peer Assessment

This section outlines some potential enablers of peer assessment that have theoretical or empirical support in the literature.

2.1 Development of soft skills

One of the most frequently reported benefits of peer assessment is the enhancement of writing and communication, which is attributed to the student feedback provided and received. This not only provides students with exposure to the work of others but also gives them the opportunity to reflect on their own writing in a structured manner (Huisman et al., 2018; Noroozi et al., 2023). Evaluating peer work supports argumentation and critical thinking skills (Noroozi & Hatami, 2019). Topping (2009) argues that peer assessment forces students to engage actively in cognitive engagement by participating in peer evaluations. This requires students to engage with the course material and the work they critically evaluate. Critical evaluation is a central part of peer assessment, which develops students' ability to evaluate the work of others within the confines of the discipline's knowledge.

2.2 Fostering collaboration

Peer assessment is social in nature and requires student engagement with the work of others. Providing feedback and facilitating discussion in class or online establishes the conditions for reviewing, discussing, and sharing insights about the work of others. Offering constructive feedback supports critical thinking and evaluative judgment and can lead to a deeper understanding of the course content (Van Gennip, Segers, & Tillema, 2010). Creating a collaborative learning environment encourages students to take responsibility for their own learning. It enhances student learning through knowledge diffusion and the exchange of ideas, which all motivate the active engagement of students with the course material (Chin, 2016).

2.3 Promotes active learning

Assessment is usually considered an activity in which lecturers and tutors (any experts in the field) conduct with or to students. Students are passive assessment participants and receive criticism from others who are more knowledgeable. Peer assessment can reverse this relationship and empower students to be more active as assessors and developing experts in their field (Brindley and Scoffield 1998). Peer assessment allows students to be more reflective about their own work and the work of others, and this self-reflection enables students to identify areas for improvement (Boud & Falchikov, 2006). Taking an active self-reflective stance towards student learning can improve students' understanding of course content.

2.4 Developing professional skills

Peer assessment develops transferable skills, which are often the ones that future workplaces demand of our students when they enter the workforce (Kearney 2013). Peer assessment requires making evaluative judgements, understanding assessment standards, and providing feedback. This combination provides opportunities for students to develop a range of transferable, cognitive, and behavioural skills (Reinholz, 2016). These skills include communication, conflict management, developing evaluative judgement, teamwork, and the

ability to provide feedback (Nicol, Thomson, and Breslin, 2014). A significant benefit of using peer assessment is that it develops students' personal skills, which differ based on the discipline and the type of assessment outcomes, whether authentic or functional. For example, an assessment designed to improve writing and communication would have different outcomes from an assessment evaluating project plans of competing student groups. However, it would still develop some generic skills, such as communication and writing abilities. Chin (2016) argues that some of the primary benefits of peer assessment are the promotion of social interaction among students, which may have a social benefit, the development of a social network of support, and the development of self-confidence, which are crucial to assisting students in developing their own capabilities. Brill (2016) and Lowell & Ashby (2018) further highlight the positive impact of peer feedback in developing the professional skills of students.

Peer assessment also develops decision-making, judgement, and evaluative skills needed later in a professional career by enhancing the ability to evaluate the quality of ideas and the communication (Bayat et al., 2022). The most significant benefit of peer evaluation is the development of communication skills within the discipline and the enhancement of students' ability to communicate appropriately in disciplinary ways (Ritzhaupt & Kumar, 2015). Implementing peer feedback in classrooms not only helps teachers activate students' engagement but also assists students in broadening and deepening their understanding of the subject matter (Bayat et al., 2022; Noroozi et al., 2022).

3. Constraints of Peer Assessment

This section outlines some constraints of peer assessment.

3.1 Reliability and variability in the quality of peer feedback

The peer assessment literature views students' feedback as unreliable, with significant variability in the quality of the feedback. This is a central concern, as can be seen in the significant focus on the correlation between student and academic staff grading (Kulkarni et al., 2015). This view is problematic in the assessment literature, which is centrally focused on the validity and reliability of assessment instead of focusing on how peer assessment supports student development and learning.

3.2 Students' resistance to peer assessment

Students view other students as novices in the discipline and in evaluating the work of others, and they regard peer feedback as inferior to the tutor's or lecturer's feedback. This lack of trust in their abilities and that of their peers is sometimes met with scepticism or even student resistance (Wanner & Palmer, 2018). Students could view peer assessment as unfair and biased if they are unprepared (Brindley & Scoffield, 1998). This ultimately results in students viewing assessment as part of the academic role and placing less value on alternative forms of assessment, like peer assessment (Tai et al., 2014).

Involving students as assessors could influence the power relationship between academics and students, with some academics feeling uneasy about giving power to students in assessment

(McGarr and Clifford, 2013), while students themselves may not be willing or able to take on this role.

3.3 Time and resource limitations

Some studies have argued that peer assessment saves time for academics (Kerman *et al.*, 2024), while others have cautioned that the design and implementation of a successful peer assessment is complex and demanding on academics in terms of administrative planning and managing the process, especially if it is the first time implementing the peer assessment and impact on limited time academics have to balance all their responsibilities (Berg & Seeber, 2016).

3.4 Need for adequate training and support

The planning, design, and training of students and academics are important to ensure a successful peer assessment. Ensuring that students know what peer assessment is and how to conduct it is a crucial element that could determine the success or failure of its pedagogical value (Chin, 2016). This requires time in class and discussions with students to ensure they receive adequate support (Kerman et al., 2024). When peer assessment is conducted online, familiarity among academics and students is important, and adequate planning and backup plans must be in place to ensure the successful implementation of peer assessment.

4. Research Methodology

This study aims to provide insight into some of the enablers and constraints experienced by an academic when implementing peer assessment for the first time in a land surveying course. To achieve this, a qualitative study was designed using autoethnography and critical reflection to deeply explore the social context in which the study occurs(Chang, 2016). Additionally, focus groups were conducted with 14 final-year students to triangulate the academic experiences and observations (Ellis et al., 2011).The autoethnographic data was generated through reflections from the first author, which were then analysed by writing a narrative of these reflections and ultimately evaluating and analysing them for themes (Ellis et al., 2011). Data analysis of the focus group data was completed via thematic analysis, allowing for the identification of themes emerging from the data (Braun & Clarke, 2006, 2017). Thematic analysis is a flexible method that can be applied to different forms of data and can be used to delve into deeper meanings by looking beyond the surface (Braun & Clarke, 2017). The two sets of data were triangulated with the identified themes, which were then further triangulated with literature in the findings section below.

5. Presentation and Discussion of Findings

The findings reveal both the potential benefits and challenges associated with this assessment method.Through detailed observation and analysis, several themes emerged that highlight the strengths and areas for improvement of this assessment method. These themes aim to provide

insights into the enablers and constraints experienced by academics when deploying peer assessment in a module.

5.1 Enablers of online peer assessment

Online peer assessment in higher education, particularly within specialised fields such as land surveying, offers several enablers that enhance the learning process. These enablers include promoting critical thinking, fostering collaboration, encouraging self-reflection, and developing professional skills. Each aspect plays a crucial role in providing a holistic and enriched learning experience. It should also be noted that many of these aspects overlap, and the complexity of the interplay between the enablers is difficult to untangle.

5.1.1 Promotion of critical thinking

The primary enabler was the promotion of critical thinking. Critical thinking is a fundamental skill in higher education, and online peer assessment is a powerful tool for cultivating it. When students evaluate their peers' work, they must engage deeply with the material, analyse it from various angles, and provide constructive feedback. This process goes beyond passive learning; it requires active cognitive engagement (Topping, 2009).

The lecturer found that one of the most notable enablers of online peer assessment was its ability to promote critical thinking. Students were required to engage deeply with their peers' work, analyse it critically, and provide constructive feedback. This process necessitated a thorough understanding of the subject matter, as students had to identify both strengths and weaknesses in their peers' projects. Student 3 remarked, *"Reviewing my peer's work forced me to think critically about the methodologies we use and question why we do things a certain way.*"

By critically assessing their peers' work, students are able to understand the underlying concepts thoroughly. This analytical process aligns with Bloom's Taxonomy of higher-order thinking skills, particularly analysis, evaluation, and synthesis (Bloom, 1956). For example, in a land surveying course, students might evaluate a peer's surveying project, scrutinising the accuracy of data, the appropriateness of the methodologies used, and the clarity of the final report. Such detailed scrutiny necessitates a deep understanding of both theory and practice.

Moreover, this continuous practice of critical evaluation can lead to improved problem-solving skills. As students encounter various approaches and solutions through peer assessments, they learn to compare and contrast different methods, fostering a more comprehensive understanding of the subject matter (Noroozi & Hatami, 2019).

5.1.2 Fostering collaboration

The peer assessment process fostered a sense of community and teamwork among students. As they reviewed and discussed each other's work, they shared insights and constructive feedback, leading to a richer understanding of the course content. This collaborative learning environment

aligns with previous findings that highlight the social benefits of peer assessment (Van Gennip et al., 2010). Such interaction exposes students to diverse perspectives and ideas, significantly enriching their learning experience (Van Gennip et al., 2010).

This collaborative environment was instrumental in enhancing the learning experience. Student 5 commented, *"The discussion forums were great for debating different techniques and approaches. I learned a lot from seeing how others approached the same problems."* These interactions not only enriched students' understanding but also mirrored the teamwork and communication skills required in professional settings, motivating active student engagement in the learning process (Chin, 2016).

5.1.3 Encouraging self-reflection

Self-reflection was significantly enhanced through peer assessment. Students reported that evaluating their peers' work prompted them to reflect critically on their own. Self-reflection is a vital component of effective learning, and online peer assessment strongly encourages this practice. When students assess their peers' work, they inevitably compare it to their own, which prompts them to reflect on their performance. This reflective practice helps students identify their strengths and areas for improvement (Boud & Falchikov, 2006). Over time, this habit of self-reflection can lead to continuous improvement and a deeper understanding of the subject matter (Nicol et al., 2014).

Online peer assessment strongly encouraged self-reflection among students. By comparing their own work with that of their peers, students were prompted to reflect on their performance and identify areas for improvement. Student 8 noted, "*Reading my peer's feedback made me realise some mistakes I hadn't noticed before. It was a humbling and enlightening experience."* This reflective practice is crucial for continuous improvement and a deeper understanding.

5.1.4 Developing professional skills

The peer assessment process also contributed to the development of essential professional skills, including communication, critical evaluation, teamwork, and time management. Student 6 highlighted, "*Providing feedback helped me improve my ability to articulate my thoughts clearly and constructively, which I know will be valuable in my future career."* These skills are directly transferable to professional settings and are crucial for students' future success.

The process of critically assessing peers' work enhances analytical skills. Students learn to evaluate various aspects of a project, identify strengths and weaknesses, and suggest improvements. This ability to critically evaluate work is invaluable in professional roles where quality assurance and continuous improvement are key (Nicol et al., 2014).

Participating in peer assessment requires students to manage their time effectively. They must balance their own work with the responsibility of reviewing their peers' work, meeting deadlines, and providing timely feedback. This practice helps students develop strong time management skills, which are essential for professional efficiency and productivity (Topping, 2009). As an

academic observer, the study underscores the potential benefits of online peer assessment in complementing traditional assessment methods by providing a more holistic learning experience when properly implemented.

5.2 Constraints of online peer assessment

Despite these benefits, the study also identified several constraints that posed challenges to effectively implementing online peer assessment. These constraints include time limitations, variability in the quality of peer feedback, students' resistance to peer assessment, and the need for adequate training and support. Addressing these constraints is crucial for optimising the benefits of peer assessment.

5.2.1 Time limitations

One of the primary constraints of online peer assessment is the significant time commitment required from students. Both the students and I encountered challenges in managing the time necessary for thorough peer assessments. Student 4 noted, "*Balancing my own assignments with the responsibility of reviewing my peers' work was quite challenging. It felt overwhelming at times."*This issue is particularly pronounced in courses with heavy workloads, where students may already struggle to manage their time effectively. Consequently, this time constraint sometimes leads to rushed or superficial evaluations, undermining the potential benefits of the peer assessment process.When students lack adequate time to engage deeply with the peer review process, the quality of feedback diminishes, and the learning outcomes are compromised. Therefore, according to Adachi, Hong-Meng Tai, & Dawson (2018), careful planning and scheduling are essential to ensure that students have sufficient time to engage meaningfully in peer assessment. Adjusting the assessment design and pacing in our case could significantly enhance the quality and depth of student engagement with peer assessment in the future.

5.2.2 Variability in the quality of peer feedback

Another constraint was the variability in the quality of peer feedback (Adachi et al., 2018). Some students provided detailed, constructive comments, while others offered only superficial critiques (Tai et al., 2014). Student 7 observed, *"The feedback I received varied a lot. Some of it was really helpful, but some comments were too vague to be useful."* This inconsistency can reduce the overall effectiveness of peer assessment and lead to frustration among students who receive less useful feedback. Addressing this issue requires targeted training to ensure all students are equipped with the skills needed to provide high-quality evaluations (McGarr & Clifford, 2013; Tai et al., 2014).

The quality and utility of feedback received from peers were generally viewed positively, with most students acknowledging that the feedback was insightful and constructive. However, the variability in feedback quality noted by some students suggests that, while many students are capable of providing high-quality feedback, further training is needed to ensure consistency. This could be addressed by incorporating more comprehensive training sessions focused on

developing students' evaluative skills and providing ongoing support throughout the peer review process.

5.2.3 Students' resistance to peer assessment

Resistance to peer assessment among students is another constraint that we, as academics, must address. Some students may be sceptical about the value of peer feedback, doubting their peers' ability to provide meaningful evaluations. Others might feel uncomfortable critiquing their classmates or fear negative repercussions from offering honest feedback (Wanner & Palmer, 2018). Some students expressed a preference for instructor feedback over peer feedback, questioning the reliability of their peers' evaluations. Student 9 remarked, "I value my peers' opinions, but I still feel more confident in the feedback provided by the instructor." This sentiment highlights the importance of balancing peer and instructor assessments to ensure credibility and trust in the evaluation process.

5.2.4 Need for adequate training and support

Adequate training and support are essential for the success of online peer assessment. Without proper guidance, students may struggle to understand the assessment criteria, provide constructive feedback, and use the online platforms effectively. A lack of training can result in poor-quality feedback and negative experiences for students (Zhang, Schunn, & Baikadi, 2017).

To conduct this online peer assessment, the academic had to learn how to use and set up the systems.In addition to the workshop the academic attended, there was also a process of trial and error until the system worked properly.The academic then had to train the students on how to use the system. From the students' perspective, one session was sufficient, as most of the work went into setting up the online peer evaluation. Once they understood it, the students could easily navigate the system.

As an academic observer, it was evident that the success of peer assessment hinges on careful planning and support, as well as recognising the time and possible discomfort of both academics and students when undertaking this for the first time.To maximise the benefits of online peer assessment, it is crucial to allocate sufficient time and resources to train students in providing effective feedback. Workshops and clear guidelines can help standardise the quality of evaluations and ensure that all students are prepared to participate meaningfully in the process. Furthermore, integrating regular check-ins and feedback on the peer assessment process can help maintain high standards and address any issues promptly. This continuous support can alleviate some of the time pressures and ensure that the process remains beneficial for all participants.

6. Conclusion and Recommendations

Online peer assessment presents a dynamic and interactive method for enhancing student learning in higher education. While the process is enriched by multiple enablers, such as

promoting critical thinking, fostering collaboration, encouraging self-reflection, and developing professional skills, it is also accompanied by notable constraints. These constraints, including time limitations, variability in the quality of peer feedback, students' resistance, and the need for adequate training and support, must be strategically addressed to optimise the benefits of peer assessment.The positive impacts observed in terms of increased student engagement, deeper understanding of course material, and improved evaluative skills demonstrate the potential of online peer assessment. However, the challenges identified through student feedback and academic observations highlight areas for improvement.By understanding both the enablers and constraints, educators and institutions can better design and implement online peer assessment strategies that maximise benefits while minimising drawbacks. This balanced approach will enhance the learning experience and prepare students for professional environments that demand critical thinking, collaboration, and continuous self-improvement.

To fully harness the potential of online peer assessment and address the identified constraints, it is recommended that academics offer initial and ongoing training sessions to familiarise students with the online peer assessment process, including the use of digital platforms, understanding assessment rubrics, and techniques for providing constructive feedback.Developing and distributing clear, detailed guidelines outlining the objectives, expectations, and criteria for peer assessment will also benefit students.Technical support is important to assist students in navigating any technological issues.Standardised assessment rubrics to guide students in providing consistent and objective feedback would also be very helpful.

By implementing these recommendations, educational institutions can create a more effective and supportive environment for online peer assessment. This, in turn, will enhance the learning experience for students, helping them develop critical skills that are essential for their academic and professional success.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

Adachi, C., Hong-Meng Tai, J., & Dawson, P. (2018). Academics' perceptions of the benefits and challenges of self and peer assessment in higher education. *Assessment & Evaluation in Higher Education*, 43(2), 294-306.

Bayat, M., Banihashem, S. K., & Noroozi, O. (2022). The effects of collaborative reasoning strategies on improving primary school students' argumentative decision-making skills *The Journal of Educational Research* 1-10.

Berg, M., and B. Seeber. 2016. Slow Professor: Challenging the Culture of Speed in the Academy. Toronto: University of Toronto Press.

Bloom, B. S. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals*. Longmans, Green.

Boud, D., & Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment & Evaluation in Higher Education*, 31(4), 399-413.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology *Qualitative Research in Psychology* 3(2), 77-101.

Brindley, C., & Scoffield, S. (1998). Peer Assessment in Undergraduate Programmes Teaching in Higher Education 3(1), 79-90.

Chang, H. (2016). *Autoethnography as a method*. Routledge.

Chin, P. (2016). Peer Assessment *New Directions in the Teaching of Physical Sciences* 13-18.

Ellis, C., Adams, T. E., & Bochner, A. P. (2011). Autoethnography: an overview. Historical social research/Historische sozialforschung, 273-290.

Huisman, B., Saab, N., Van Driel, J., & Van Den Broek, P. (2018). Peer feedback on academic writing: undergraduate students' peer feedback role, peer feedback perceptions and essay performance *Assessment & Evaluation in Higher Education* 43(6), 955–968. https://doi.org/10.1080/02602938.2018.1424318

Kearney, S. (2013). "Improving Engagement: The use of 'Authentic Self-and Peer-assessment for Learning to Enhance the Student Learning Experience." Assessment & Evaluation in Higher Education 38 (7): 875–891.

Kerman, N.T., Banihashem, S.K., Karami, M., Er, E., van Ginkel, S & Noroozi, O. (2024). Online peer feedback in higher education: A synthesis of the literature *Education Information Technologies,* 29, 763–813. https://doi.org/10.1007/s10639-023-12273-8

Kelly, W. (2019). Innovative Pedagogy for Geospatial Lifelong Learning. FIG Working Week 2019: Geospatial Information for a Smarter Life and Environmental Resilience, Hanoi, Vietnam, 22-26 Apr 2019.

Kulkarni, C., Wei, K. P., Le, H., Chia, D., Papadopoulos, K., Cheng, J., Koller, D., & Klemmer, S. R. (2015). Peer and self-assessment in massive online classes. In H. Plattner, C. Meinel, & L. Leifer (Eds.), *Design thinking research* (pp. 131–168).. Cham: Springer.

Latifi, S., Noroozi, O., & Talaee, E. (2021). Peer feedback or peer feedforward? Enhancing students' argumentative peer learning processes and outcomes *British Journal of Educational Technology*,52(2), 768–784.

McLaughlin, P. & Simpson, N. 2003. Peer assessment for construction management and quantity surveying students. *Australian Journal of Construction Economics and Building, 3(*2), pp.43-49.

McGarr, O., and A. M. Clifford. 2013. Just Enough to make you take it Seriously': Exploring Students'Attitudes Towards Peer Assessment. *Higher Education,* 65 (6): 677–693.

Nicol, D., A. Thomson, and C. Breslin. 2014. Rethinking Feedback Practices in Higher Education: A Peer Review Perspective. *Assessment & Evaluation in Higher Education,* 39(1), 102–122.

Noroozi, O., & Hatami, J. (2019). The effects of online peer feedback and epistemic beliefs on students' argumentation-based learning. *Innovations in Education and Teaching International,* 56(5), 548–557.

Noroozi, O., Banihashem, S. K., Biemans, H. J., Smits, M., Vervoort, M. T., & Verbaan, C. L. (2023). Design, implementation, and evaluation of an online supported peer feedback module to enhance students' argumentative essay quality. *Education and Information Technologies,* 1–28. https://doi.org/10.1007/s10639-023-11683-y

Noroozi, O., Banihashem, S. K., Taghizadeh Kerman, N., Parvaneh Akhteh Khaneh, M., Babayi, M., Ashrafi, H., & Biemans, H. J. A. (2022). Gender differences in students' argumentative essay writing, peer review performance and uptake in online learning environments *Interactive Learning Environments* 1-18.

Reinholz, D. (2016). The Assessment Cycle: A Model for Learning Through Peer Assessment. *Assessment & Evaluation in Higher Education*, 41(2), 301–315.

Ritzhaupt, A. D., & Kumar, P. (2015). The impact of peer feedback on communication skills in online discussions. *Journal of Educational Computing Research,* 53(1), 31–50. https://doi.org/10.1177/0735633115592429

Tai, J. H.-M., Haines, T. P., Canny, B. J., & Molloy, E. K. (2014). A study of medical students' peer learning on clinical placements: What they have taught themselves to do. *Journal of Peer Learning, 7(*6), 57–80.

Topping, K. J. (2009). Peer assessment. *Theory into Practice,* 48(1), 20-27.

Van Gennip, N. A. E., Segers, M. S. R., & Tillema, H. H. (2010). Peer assessment as a collaborative learning activity: The role of interpersonal variables and conceptions. *Learning and Instruction*, 20(4), 280-290.

Wanner, T., & Palmer, E. (2018). Formative self-and peer assessment for improved student learning: the crucial factors of design, teacher participation and feedback. *Assessment & Evaluation in Higher Education*, *43*(7), 1032–1047.

Zhang, F., Schunn, C.D. & Baikadi, A. Charting the routes to revision: An interplay of writing goals, peer comments, and self-reflections from peer reviews. *Instr Sci 45*, 679–707. https://doi.org/10.1007/s11251-017-9420-6

A Critical Review of the Purposes and Authenticity of E-Assessment Policies and Practices

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Reference Formats (APA 7th Edition)
Ngema, D. (2024). A critical review of the purposes and authenticity of e-assessment policies and practices. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 134–153). ERRCD Forum. https://doi.org/10.38140/obp2-2024-10

Abstract: In general, the overall purpose of assessment is to account for the knowledge, skills, dispositions, and attitudes that learners possess as a result of their educational experiences. In recent times, there has been an increased emphasis on the role of technology-enhanced assessments, which have mainly been referred to as e-assessments, to improve assessment designs through the use of innovative digital tools. However, it is important that these changes are directed and driven by appropriate education policies to ensure that the attendant practices remain authentic by demonstrating alignment between the pedagogies used in curriculum coverage and the digitised assessment tools and modalities. This was a literature-based study examining the purposes of e-assessment and reflecting on the authenticity of attendant policies and practices in South Africa, in relation to the extant pedagogical practices and learners' classroom experiences. From the literature, four most-cited purposes of e-assessment were identified and described, namely (a) efficiency and scalability, (b) enhanced feedback, (c) data-driven insights, and (d) accessibility and flexibility. The policy challenges faced by the country in relation to authentic e-assessment are presented and described. These include questions of validity and reliability, equity and inclusion, pedagogical alignment, and academic integrity, while implementation challenges encompass technical, training and support, ethical and privacy concerns, technological infrastructure, cultural and linguistic relevance, and data management and privacy considerations. It is argued that a better understanding of these challenges and opportunities brought about by these reflections would contribute significantly towards the development and implementation of well-rounded digital education policies in South Africa.

Keywords: Assessment policy, e-assessment, pedagogical practices, authenticity, challenges, opportunities.

1. Introduction

E-assessment, or electronic assessment, is the use of digital tools and platforms to design, deliver, and manage assessments (Chirumamilla & Sindre, 2019; Doğan et al., 2020). The rise of e-assessment has transformed educational practices, aiming to enhance learning experiences, streamline administrative processes, and provide richer data for evaluating learner performance (Doğan et al., 2020). In South Africa, despite the publication of the White Paper on e-Education in 2004, which required that "every South African learner in the general and further education and training bands should be able to use ICTs confidently and creatively to help develop the necessary skills and knowledge needed to achieve personal goals and to be active participants in the global community by 2013" (De Beer, 2022, p. 1), this was not achieved by the set target date. Consequently, e-assessment remained in an early, experimental phase, generally limited to a few progressive and well-resourced schools when the COVID-19 pandemic struck

(Labuschagne, 2023, p. 3). Most teachers and learners had insufficient access to online platforms and lacked the necessary devices, such as computers and/or tablets, as well as internet connectivity to implement widespread e-assessment (Yakobi et al., 2022, p. 110).

In a significant way, the COVID-19 pandemic acted as a catalyst, forcing a rapid shift toward digital education and assessment across South Africa. As schools transitioned to remote education, there was a marked shift towards using online platforms for assessments. The COVID-19 period highlighted the need for more robust digital infrastructure and e-assessment tools. Some private and progressive public schools made major strides with e-assessment tools. Schools in urban areas, especially private schools, performed much better in adopting e-assessment, using computers and digital platforms to assess learners. However, the majority of South African schools still relied on traditional paper-based methods for assessments, as the digital divide and infrastructural challenges hindered the widespread adoption of both e-learning and e-assessment, particularly in rural and underserved areas. Other challenges included shortages of resources, leadership, government funding, and infrastructure (Yakobi et al., 2022, p. 110).

This situation still largely prevails across the country. South Africa has been gradually incorporating e-assessment technologies into its educational systems, but various challenges and considerations continue to affect widespread implementation. These are highlighted in this paper.

1.1 Problem statement

The purposes and authenticity of e-assessment policies and practices raise important questions about their effectiveness, equity, and impact on education (Mimirinis, 2019). Key principles include the importance of developing assessments offline to ensure quality and reliability, the use of Bloom's Taxonomy to structure assessments, and the selection of appropriate tools to match specific skills and learning objectives (vd Westhuizen, 2016; Mohan, 2023; Maphalala et al., 2024).The focus is also on maintaining the integrity and security of assessments while adapting to both synchronous and asynchronous learning environments. Indeed, as Maphalala et al. (2024) observe, securing online assessments against academic misconduct has been a major concern in e-assessment practices, thereby necessitating the use of proctoring software. Typically, e-proctoring systems "employ various methods, such as webcams, screen sharing, and biometric identification, to ensure the integrity and security of assessments delivered over the Internet" (Terblanche, vanRooyen & Enwereji, 2024, p. 1).

Post Covid-19, South Africa still faces challenges such as the lack of technological knowledge and internet connectivity, as well as poor digital infrastructure at schools, homes, towns, and cities (Labuschagne, 2023). These issues are compounded by the imperative of enforced utilisation of Annual Teaching Plans (ATPs), along with insufficient targeted and comprehensive continuous teacher professional development (CTPD) programmes and concomitant e-learning

materials that can facilitate the meaningful enactment of e-assessment in various educational settings (Labuschagne, 2023). At the centre of all this is an enabling policy framework to ensure that every student has access to data and internet resources.

This paper examines the purposes of e-assessment in South Africa's schooling sector and reflects on the authenticity of South Africa's policies and practices in relation to existing pedagogical practices and learners' classroom experiences. In doing so, it is envisaged that the paper will contribute towards a better understanding of the challenges and opportunities that must inform the development and implementation of digital education policies, including digitised assessment.

2. The Benefits and Purposes of E-Assessment

There is a danger that the rush towards the establishment of policies, frameworks, and practices for e-assessment may be driven by the desire to appear modern as well as the need to attain efficiencies, at the expense of validity and authenticity. In this paper, the four most-cited purposes and benefits of e-assessment are identified and described, namely (a) efficiency and scalability, (b) enhanced feedback, (c) data-driven insights, and (d) accessibility and flexibility. These are now briefly described. The paper ends by presenting some challenges and matters for consideration.

2.1 Efficiency and scalability

In the domain of education, one commonly cited benefit of e-assessment is its efficiency. As Didmanidze et al. (2023, p. 1) point out, e-learning and e-assessment "have become a transformative force, revolutionising the learning process to enhance accessibility, engagement, and efficiency." In particular, various forms of e-assessment offer significant improvements in efficiency and scalability, making them increasingly popular in educational and professional settings (Ion & Mercader, 2024; Zinke et al., 2024). They enable large numbers of learners to be assessed simultaneously and, through the automation of scoring and feedback processes, reduce the administrative burden on educators (Parker, 2023).

Typically, e-assessments include objective-type questions and other formats that can be graded automatically, thereby reducing the workload for educators and ensuring faster feedback for learners. Thus, one important benefit of e-assessment is that it helps learners better understand their performance and areas for improvement (Garcia, Macaballug & Perez, 2024; Ion & Mercader, 2024). Furthermore, e-assessment eliminates the need for paper, printing, and physical storage, leading to cost savings and environmental benefits (Perry et al., 2022; Alfarisy & Patria, 2023). Indeed, managing tests online simplifies scheduling, distribution, and invigilation, further reducing administrative burdens (Ghimire & Khanal, 2022).

Another aspect of the efficiency of e-assessment is accessibility. Test-takers can often choose the time and place for their assessment, thereby increasing accessibility for those with different

schedules or needs (Iderima, 2023). Furthermore, e-assessment platforms can be designed to accommodate various accessibility requirements, including screen readers and adjustable text sizes. Iderima (2023) further points out that accessibility is enhanced as wide-area networks expand connectivity, allowing remote networks to be connected across multiple long-distance locations, making e-assessment available anywhere, anytime. By doing so, this "empowers learners by offering flexibility, personalisation, and instant feedback, while also enabling educators to gather valuable insights for continuous improvement" (Iderima, 2023, p. 122).

Regarding scalability, e-assessments are easily scalable to large numbers of learners, making it feasible to administer standardised tests across multiple classrooms, schools, or even regions, thereby allowing for the collection of large datasets that can inform broader educational strategies and policies (Huber et al., 2022; Isaias et al., 2023). In particular, Huber et al. (2022) point to the potential benefit of e-assessment in enabling scaled-up assessment-for-learning. Furthermore, online platforms ensure that all test-takers have a consistent testing experience, which can help maintain standardisation and fairness (Gürbüz et al., 2024). In addition, digital assessments facilitate easy collection, analysis, and reporting of data on a large scale, providing valuable insights for educators and administrators (Fischer et al., 2020; Maki & Shea [eds.], 2023). Therefore, overall, e-assessments enhance the efficiency, scalability, and effectiveness of the assessment process, benefiting both educators and learners.

2.2 Enhanced feedback

E-assessments can provide immediate feedback, which is crucial for learning, allowing learners to understand their mistakes and learn from them promptly (Ghouali et al., 2020; Joshi et al., 2020). This immediate response helps learners identify their strengths and areas for improvement, thereby reinforcing learning, aiding better retention of information, and fostering a more responsive learning environment (Olasina, 2023). In a study involving South African and Nigerian students, Olasina (2023, p. 144) reported that e-assessments enhanced students' knowledge construction and accessibility by offering "benefits like instant feedback and personalised learning experiences, leading to improved problem-solving skills and decision-making."

Indeed, formative assessments and timely feedback support self-regulated learning, helping learners monitor their performance and make necessary adjustments. This enhances learner engagement and the attainment of learning outcomes (Gikandi et al., 2011; Mafenya, 2016; Anastasopoulou et al., 2024). In particular, immediate feedback from e-assessments plays a crucial role in facilitating effective learning by allowing learners to quickly address misconceptions and reinforce their understanding of the material. As Anastasopoulou et al. (2024, p. 115) elaborate, the integration of e-assessment into formative assessment has revolutionised modern education by enhancing the learning experience and transforming how

educators evaluate student progress to, inter alia, provide "real-time feedback, personalised learning pathways, and increased engagement."

2.3 Data-driven insights

One important purpose and benefit of e-assessment relates to the extent and depth of data that can be collected within a very short period of time (Kaspi & Venkatraman, 2023). Worldwide, many educational institutions have completely switched to online teaching and assessments following the Covid-19 pandemic. South Africa is also attempting to follow suit.The digital nature of e-assessments allows for the collection and analysis of extensive data on learner performance (Kaspi & Venkatraman, 2023; Mukherjee & Pandey, 2023; ALKursheh, 2024). The collected data can be used to personalise learning experiences, identify at-risk learners, and inform instructional strategies (Anastasopoulou et al., 2024). By harnessing the power of data, e-assessments can transform the assessment process from a simple measure of performance to a dynamic tool for enhancing educational outcomes (Parker, 2023; Didmanidze et al., 2023). This is because e-assessment platforms collect a wide range of data points, including time spent on questions, patterns of answers, and specific areas where learners struggle (Didmanidze et al., 2023). The data can be analysed to identify trends and pinpoint areas where learners need additional support. Using insights gained from e-assessment data, educators can tailor their teaching methods and materials to better suit individual learner needs. Personalised learning pathways can be created to address each learner's strengths and weaknesses, leading to improved overall performance (Parker, 2023). This is possible because advanced e-assessment systems use predictive analytics to foresee potential future performance based on current data. Educators can identify at-risk learners early and provide targeted interventions to prevent future academic difficulties (Bagunaid et al., 2022). Teachers can use the detailed analytics from e-assessments to refine their instructional strategies. For example, if data show that the majority of learners are struggling with a particular concept, teachers can revisit and reinforce that topic in their lessons.

Additionally, e-assessments streamline the administrative aspects of testing, such as grading and record-keeping, freeing up educators' time to focus more on teaching and learner interaction (Didmanidze et al., 2023). Automated grading ensures consistency and reduces the likelihood of human error (Chen & Xu, 2024; Gambo et al., 2024). Furthermore, e-assessments allow for continuous monitoring of learner progress over time by enabling educators to track improvements and regressions, thereby providing a clearer picture of a learner's learning journey. Benchmarking against class or school-wide performance can also highlight where interventions are needed (Chen, 2023). Importantly, e-assessments can be designed to be more accessible to learners with disabilities, offering accommodations such as text-to-speech, screen readers, adjustable font sizes, high-contrast modes, and alternative input methods (Nacheva-Skopalik & Green, 2020; Laamanen et al., 2021). Such accommodations ensure that all learners, regardless of their physical or cognitive abilities, can participate in classroom activities effectively. This inclusivity ensures that all learners have an equal opportunity to perform well.

2.4 Accessibility and flexibility

The flexibility offered by e-assessments makes them a powerful tool for accommodating diverse learner needs and schedules, as they can be accessed from various locations and devices (Alruwais et al., 2018; St-Onge et al., 2022). By providing location and device independence, accommodating different learning styles, and integrating accessibility features, e-assessments ensure that all learners have the opportunity to demonstrate their knowledge and skills in a manner that best suits their individual circumstances (Bagunaid et al., 2022). This flexibility is particularly beneficial for learners who balance school with other commitments, such as part-time jobs, those who are homebound due to illness or disability, those engaged in distance learning and inclusive education, as well as those involved in extracurricular activities or family responsibilities (Iderima, 2023). It also allows assessments to be taken during optimal times for individual peak performance, which can vary from learner to learner. This flexibility not only enhances learner performance but also promotes inclusivity and equity in education by eliminating the need for physical presence in a specific location, such as a classroom or examination hall (Alruwais et al., 2018). To facilitate this, e-assessments should generally be designed to be compatible with various types of devices—such as desktops, laptops, tablets, and smartphones. This ensures that learners can take assessments using the devices they are most comfortable with or that are readily available, thereby reducing barriers to participation.

3. Questions Concerning the Authenticity of E-Assessment

Some of the most prominent issues raised in the literature concerning the authenticity of e-assessment include (a) validity and reliability, (b) equity and inclusion, (c) pedagogical alignment, and (d) academic integrity (Doğan et al., 2020; Ahmed & Sidiq, 2023; Tat & Kilic, 2024). These issues are briefly reflected upon below.

3.1 Validity and reliability

In recent times, many teachers and learners have been forced to engage in teaching and learning in a relatively unknown space – the digital space, mainly as a result of the Covid-19 pandemic. The pandemic has had the impact of an accelerated adoption of online assessments across the global educational spectrum (Terblanche et al., 2024). On the face of it, many schools, educators and learners may appear to have embraced the new reality of, inter alia, remote teaching and learning. However, at the back of their minds, many of them remain with many questions, while uncertainties linger, which still need to be addressed and clarified about different aspects of this new reality. Some of these questions include the accuracy, validity, security, integrity, and quality of e-assessment (Ningsih, 2024). In the middle of all this, there is a realisation that developing good online assessments that are reliable, fair, valid, and transparent is hard and often happens offline (Krans et al., 2022).

Some learners experience significant anxiety in traditional testing environments (Zhao, 2022; Solati et al., 2024). The ability to take e-assessments in a familiar and comfortable setting can help reduce this anxiety, potentially leading to better performance and a more valid assessment of their abilities and achievements (Meccawy et al., 2021). This control of the environment can make a substantial difference in how learners approach and complete their assessments. So, for assessments to be authentic and accurately measure the intended learning outcomes, concerns about the validity and reliability of e-assessments must be addressed, including any technical glitches that may arise, the potential for academic dishonesty, and the challenge of designing assessments that fail to go beyond rote memorisation to evaluate higher-order thinking skills. The reality of e-assessment, like other forms of assessment, is that it must be conducted before the learning, during the learning, and after the learning, because assessment has a triple function of diagnostic, formative, and summative (Aburumman, 2021; Venkateswari, 2020). Good teaching must be associated with learner assessment before, during, and after the learning.

3.2 Equity and inclusion

As already pointed out, the digital divide remains a significant barrier to e-education in many schools in South Africa. A considerable portion of the South African population lacks access to reliable internet connections and digital devices (Labuschagne, 2023; Terblanche et al., 2024). This digital divide is particularly pronounced in rural and underserved urban areas, where learners may not have the necessary technology to participate in e-assessments. Many schools in South Africa do not have the required infrastructure, such as stable electricity and adequate computer laboratories, to support e-assessments. This can severely limit learners' ability to engage with digital learning and e-assessment tools. Furthermore, economic inequalities mean that learners from low-income families may not be able to afford personal computers, tablets, or even internet access at home (Olasina, 2023). These disparities can lead to unequal opportunities in preparing for and taking e-assessments.

Additionally, learners with disabilities may require specific accommodations to ensure equal participation (Nacheva-Skopalik & Green, 2020). Therefore, addressing equity and inclusivity in e-assessments in South Africa requires a multifaceted approach that tackles the digital divide, infrastructure deficiencies, socioeconomic disparities, and technical skills gaps. By implementing targeted strategies such as improving access to technology, investing in infrastructure, providing financial support, enhancing digital literacy, and ensuring language and cultural sensitivity, South Africa can move towards a more inclusive and equitable e-assessment system (Olasina, 2023).

3.3 Pedagogical alignment

Authenticity in e-assessment also involves aligning assessments with pedagogical goals (Ahmed & Sidiq, 2023). Assessments should measure learning outcomes, whereby learners demonstratewhat they know and, more importantly, what they can do (skills) (Gane et al., 2018). Learning outcomes can be low-level orhigh-level in reference to Bloom's Taxonomy. The

taxonomy is a valuable resource for designing assessments, as it provides access to verbs that can be matched with learning outcomes. A taxonomy oflearning outcomes, along with accompanying language, helps the assessor scaffoldthe construction of their assessment items—bearing in mind the purpose of the assessment and ensuring alignment between instructional activities and the espoused learning outcomes (Bijsterbosch et al., 2024). Furthermore, the assessor must ensure the use of correct and appropriate language to avoid confusing respondents. Lastly, they must ensure that e-assessment is the most suitable tool for what is being assessed. It is unjustified to impose e-assessment where other assessment modalities are better suited for the task (Saleh et al., 2022). Cognisance should be taken of the many different types of assessments that can be used—ranging from tests toprojects to performance-based tasks to essays, among others. Each of these has a particular function that may be appropriate orinappropriate, depending on what needs to be assessed. Therefore, choosingthe right assessment tool or method is crucial. Additionally, effective e-assessments should be integrated into the learning process rather than being a separate, summative event (Agostini & Picasso, 2024). This integration ensures that assessments support learning and development. Without these practices, even the best technologywill not rectify a poorly designed assessment.

3.4 Academic integrity

E-assessment presents unique challenges and opportunities regarding academic integrity (Raza, 2023; Terblanche et al., 2024). While e-assessments offer numerous benefits such as flexibility, accessibility, and data-driven insights, maintaining academic integrity requires careful planning and the implementation of various strategies. The ease of accessing information online raises concerns about plagiarism and cheating, necessitating robust systems in schools to monitor and prevent dishonest practices. This can be achieved by using invigilation software or designing assessments that minimise opportunities for cheating (Huber et al., 2022; Sabrina et al., 2022). Copying and pasting answers from the internet or from other learners becomes more feasible in an online environment.

Identity verification is another challenge in e-assessment, as ensuring that the learner taking the assessment is the one enrolled in the course can be difficult without face-to-face verification (Farrow et al., 2021). Furthermore, unauthorized collaboration among learners during an assessment can be harder to detect online, while technical problems such as poor internet connectivity, software glitches, and hardware failures can lead to dishonest behaviour if learners exploit these issues to gain extra time or attempt multiple submissions (Labuschagne, 2023; Pillay & Balele, 2024).

Balancing the benefits of e-assessments with the need to maintain academic integrity involves a combination of technological solutions, thoughtful assessment designs, clear policies, and ongoing education (Huber et al., 2022). By addressing the unique challenges posed by e-assessments and implementing robust integrity measures, schools can uphold high standards of

honesty and fairness in the digital learning environment. Some strategies have been suggested to enhance academic integrity in e-assessments (Pagaling & McDermott, 2022; Turner et al., 2022).

4. Policies and Practices in Relation to Pedagogical Practices

This discussion is divided into two sections, as indicated below.

4.1 Policies and practices

South Africa's educational policies emphasise the need for continuous improvement and standardisation in e-assessment practices to accommodate the diverse educational needs across the country (Mafenya, 2016; Yakobi et al., 2022). Over time, the country has increasingly integrated e-assessment practices into its educational framework, driven by the demand for more flexible and accessible assessment methods. The e-assessment framework incorporates various forms of electronic assessments, such as e-testing, e-portfolios, and e-moderation, to ensure comprehensive evaluation methods (Keengwe, 2022). These assessments aim to be fair, reliable, valid, and transparent. To achieve this, there must be an effective alignment between espoused knowledge and skills on one hand and learning outcomes on the other. This necessitates the development of an e-assessment framework supported by policies and practices designed to leverage digital technologies to enhance educational outcomes, thus improving the quality and reach of education through digital means (Mafenya, 2016; Uunona & Goosen, 2023).

The South African Qualifications Authority (SAQA) outlines comprehensive policies for the recognition of prior learning (RPL), which also impact e-assessment practices. Considering that RPL seeks to foster inclusivity, equity, and redress, e-assessment in RPL must ensure that assessments are accessible and fair for all learners, irrespective of their diverse backgrounds and needs (Snyman & Van den Berg, 2018; Hlongwane, 2019). The policies are designed to support strategic planning and quality assurance in e-assessment practices. The authenticity of South Africa's e-assessment policies and practices can be evaluated by examining how well these policies integrate with existing pedagogical practices and the real classroom experiences of learners. For its part, the National Development Plan Vision 2030 highlights the importance of ICT in education, aiming for all learners to be ICT-capable.

4.2 Classroom experiences of learners

With respect to the classroom experiences of learners, there are three major issues to consider: accessibility and equity, engagement and motivation, and feedback and improvement (Kelly & Zakrajsek, 2023). Starting with accessibility and equity, one of the main challenges in implementing e-assessments in South Africa is ensuring that all learners have equal access to the necessary technology (Olasina, 2023; Didmanidze et al., 2023). This relates not only to hardware and software but also to reliable internet connectivity, device availability, and digital literacy

(Pillay & Balele, 2024). Thus, there is a need for policies that address these disparities to ensure that e-assessment is equitable.

The second point concerns engagement and motivation. E-assessments should be designed to engage learners and motivate them to perform well by, among other things, incorporating gamified elements, interactive content, and instant feedback mechanisms that make the learning process more dynamic and enjoyable (Anastasopoulou et al., 2024; Majjate et al., 2024). Indeed, interactive and adaptive e-assessments can make the assessment process more engaging for learners, while features such as gamification, multimedia elements, and adaptive difficulty levels can maintain learner interest and motivation (Parker, 2023). This personalised approach helps sustain engagement and appropriately challenge learners, thereby improving their learning outcomes.

Finally, feedback and improvement are vital aspects of assessment. Authentic e-assessment practices should provide timely and constructive feedback to help learners understand their strengths and areas for improvement (Mukherjee & Pandey, 2023; Parker, 2023). This feedback should be actionable and guide learners in their ongoing learning journey. Indeed, e-assessment practices can play a crucial role in modern education, and one of their key features should be the provision of timely and constructive feedback. This can significantly enhance the learning experience by ensuring that feedback is not only timely and constructive but also fosters continuous improvement and deeper understanding (Pillay & Balele, 2024).

There are various ways through which learners can receive immediate feedback from e-assessment tools. These include (a) automated feedback systems that provide instant grading, thereby allowing learners to receive immediate feedback on their performance; (b) personalised feedback, even with respect to open-ended questions, where teachers leave detailed comments to help learners understand their mistakes and learn from them. This may also include providing more nuanced feedback, such as highlighting areas where the learner made mistakes and suggesting resources for improvement; (c) providing learners with clear rubrics to help them understand the grading criteria and what was expected of them; (d) tracking learner performance in real-time, allowing teachers to identify and address issues promptly; (e) offering balanced feedback that highlights both strengths and areas for improvement, along with specific suggestions on how to improve, such as additional reading materials, practice exercises, or tips on study techniques; (f) setting up online forums where learners can ask questions about their feedback; (g) encouraging learners to provide feedback on the quality and usefulness of the feedback they receive; and (h) regularly updating e-assessment tools based on user feedback to enhance their effectiveness and usability (Mukherjee & Pandey, 2023; Parker, 2023; Pillay & Balele, 2024).

5. Challenges And Considerations

The above, notwithstanding, there are some challenges in implementing the policies and strategic plans aimed at achieving e-assessment as envisaged in planning documents. These include the following:

5.1 Technical challenges

The successful implementation of e-assessment depends on a reliable technology infrastructure (Ngqondi et al., 2021; Ahmed & Sidiq, 2023). Issues such as software malfunctions, cybersecurity threats, and inadequate technical support can undermine the effectiveness of e-assessments (Parker, 2023). Key aspects include system reliability and availability, ensuring that e-assessment platforms are consistently accessible to users without unexpected downtimes, which is crucial for maintaining the integrity of the assessment process (Raza, 2023; Terblanche et al., 2024). Furthermore, the technology infrastructure must be scalable to accommodate a large number of concurrent users, particularly during peak assessment periods (Tat & Kilic, 2024).

5.2 Training and support

Proper training ensures that technology is used to its full potential, enhances the learning and assessment experience, and minimises technical issues (Parker, 2023; Ion & Mercader, 2024). Effective training for both educators and learners is crucial for the successful implementation of e-assessment tools. By focusing on comprehensive, practical, and ongoing training programmes, schools can ensure that both groups are well-prepared to leverage digital assessments to enhance the learning experience (St-Onge et al., 2022). Therefore, both educators and learners need adequate training to use e-assessment tools effectively. Educators must be proficient in designing digital assessments and interpreting the data generated by these systems. Continuous professional development and technical support are essential to address these needs (Ahmed & Sidiq, 2023).

For educators, understanding e-assessment tools is very important. They should undergo detailed training sessions on the functionalities and features of e-assessment platforms (St-Onge et al., 2022). Training should focus on designing effective e-assessments that are fair, valid, and reliable, aligning with learning objectives. This should include hands-on practice to familiarise them with the tools and troubleshoot common issues. Educators should also learn to use e-assessment tools to provide timely and constructive feedback to their learners, as well as how to configure automated feedback options to enhance learner learning (Agostini & Picasso, 2024).

For learners, skill development is essential, particularly in navigating e-assessment platforms. They should be provided with step-by-step guides and video tutorials to help them understand how to use the tools effectively (Alruwais et al., 2018). Furthermore, familiarity with e-assessments can be enhanced through 'practice tests', which help learners become comfortable with the formats and timing of digital assessments (Ahmed & Sidiq, 2023). Training should also

include strategies for managing test anxiety and ensuring a calm, focused approach to e-assessments (Tat & Kilic, 2024). Joint training initiatives, such as educator-learner workshop sessions, are important where both groups learn together. Continuous technical support and troubleshooting assistance for both educators and learners are vital to address issues as they arise (Parker, 2023; Ion & Mercader, 2024). Additionally, it is important to collect feedback from both educators and learners about their experiences with the e-assessment tools to identify areas for further improvement and additional training needs.

5.3 Ethical and privacy concerns

The use of e-assessments raises ethical issues related to data privacy and security (Anastasopoulou et al., 2024; Majjate et al., 2024). Schools must ensure that learner data is protected and used responsibly. These ethical issues include data privacy with respect to (a) confidentiality – considering that e-assessments involve the collection and storage of sensitive personal information, including learner identities, performance data, and sometimes biometric data for authentication purposes; ensuring the confidentiality of this data is paramount to protecting learner privacy; (b) ensuring that only the necessary data is collected and retained for the shortest time required, i.e., data minimisation (Anastasopoulou et al., 2024); (c) ensuring that strong encryption methods are employed to protect data during transmission and storage, thereby preventing unauthorised access (Ally, 2024); (d) having robust access control mechanisms to ensure that only authorised personnel can access sensitive data (Kiennert et al., 2017); (e) ensuring that participants are fully informed about what data is being collected, how it will be used, who will have access to it, and the measures in place to protect it (Ally, 2024); (f) ensuring that consent to participate in e-assessments is obtained freely, without coercion, and that participants have the option to opt out; and (g) minimising and, where possible, completely eliminating intrusiveness (Babo et al., 2020).

Online invigilation tools, which may involve webcam monitoring, screen recording, and keystroke tracking, can be perceived as intrusive and raise concerns about surveillance and the potential for misuse of data (Maphalala et al., 2024). Furthermore, fairness and equity must be guaranteed, such that the use of surveillance tools, where necessary, is balanced against the need for academic integrity with respect to learners' privacy and equity considerations (Selwyn, 2020). It is also important to ensure that automated grading/marking and invigilation systems do not incorporate biases that disadvantage certain groups of learners, inadvertently or otherwise, which could lead to unfair assessment outcomes (Gambo et al., 2024). Lastly, it is important to ensure that all learners have equal access to the necessary technology and internet connectivity to participate in e-assessments, thereby avoiding exacerbating existing inequalities (Noble, 2018).

Overall, while e-assessments offer many advantages, addressing the ethical issues related to data privacy and security is crucial. Implementing robust data protection measures, ensuring transparency and informed consent, mitigating the intrusiveness of surveillance technologies,

and addressing potential biases are all essential steps in the ethical deployment of e-assessments. Transparency about data collection practices and obtaining informed consent from learners are crucial components of ethical e-assessment practices.

5.4 Technological infrastructure

The effectiveness of e-assessment depends heavily on the technological infrastructure available in schools. In many parts of South Africa, especially in rural areas, schools lack the necessary resources to support e-learning and e-assessment (Yakobi et al., 2022). The successful implementation of e-assessments hinges on a reliable and robust technological infrastructure that ensures system reliability, scalability, security, accessibility, technical support, and effective data management (Tat & Kilic, 2024). These factors collectively ensure a seamless and effective assessment experience for all stakeholders involved. Additionally, adequate technical support is essential to address any issues that arise during e-assessments, ensuring a smooth experience for both administrators and learners (Tat & Kilic, 2024). As Tat & Kilic (2024) further elaborate, the lack of technical support can have significant adverse consequences for e-assessments. Furthermore, security measures are crucial to protecting the integrity of e-assessments, including secure login processes, data encryption, and robust invigilation solutions to prevent cheating (Ketab, 2017; Sabrina et al., 2022). The infrastructure must support a variety of devices and internet connections to ensure that all learners can access the assessments equally (Yakobi et al., 2022; Labuschagne, 2023). Moreover, efficient data management systems are necessary to handle the large volumes of data generated by e-assessments, ensuring secure storage, easy retrieval, and effective analysis of assessment results (Striewe, 2022; Al-Ali, 2024). Although South Africa's policies seek to address the evident infrastructure gaps in the country, much still remains to be done beyond the capabilities and mandates of schools. The macro issues of internet connectivity and other enabling ICT capabilities extend beyond what schools can provide.

5.5 Cultural and linguistic relevance

E-assessment tools and content must be culturally relevant for South African learners (Yakobi et al., 2022; Khoza & Mpungose, 2024). This entails creating content that reflects the diverse cultural contexts of South African learners to make learning and assessments more relevant and engaging, as well as developing e-assessment platforms that support multiple South African languages to ensure inclusivity for all. Cultural relevance and contextual appropriateness require that assessment content reflects the diverse cultural contexts of South African learners, including references to local events, traditions, and societal norms (Ahmed & Sidiq, 2023; Khoza & Mpungose, 2024). Using culturally relevant content increases learner engagement with assessment tasks and motivates learners by making these tasks more relatable and meaningful

Regarding linguistic relevance, South Africa has twelve official languages. This requires consideration of the diverse linguistic backgrounds of learners and ensuring that assessments are fair and comprehensible by providing instructions, questions, and feedback in the learner's

home or preferred language (Yakobi et al., 2022). Additionally, assessments must take into account the varying levels of language proficiency among learners and ensure that language barriers do not unfairly impact performance. This means that e-assessment tools should support multiple languages to accommodate all learners (Singh & Gokool, 2018; Naidoo & Gokool, 2020).

5.6 Data privacy

With the increased use of digital platforms for assessments, ensuring the privacy of learners' data is paramount (Anastasopoulou et al., 2024; Majjate et al., 2024). Accordingly, digital platforms must incorporate various security measures, such as randomised question order, secure login, and browser lockdown to prevent unauthorised access. The data must remain secure from interception or breaches, both in transit and at rest. Access should be granted based on the principle of least privilege, and multi-factor authentication (MFA) should be used as it adds an additional layer of security by requiring users to provide two or more verification factors to gain access (Terblanche et al., 2024). Furthermore, there should be clear policies in place to, inter alia, direct how long data is retained and how it should be disposed of once it is no longer needed (Parker, 2023). In addition, explicit consent should be obtained from learners and/or their guardians, as applicable, before access by third parties is granted. There should also be clear and accessible privacy policies outlining data handling practices (Raza, 2023). Regular security audits and vulnerability assessments should be conducted to identify and address potential security risks and weaknesses in the e-assessment platform, as well as a well-defined incident response plan to ensure that any data breaches or security incidents are handled promptly and effectively—thereby minimising damage and restoring security quickly (Okada et al., 2019). Finally, clear procedures should be in place for notifying affected individuals in the event of data breaches, and e-assessment platforms should comply with relevant data protection regulations, such as South Africa's Protection of Personal Information Act (POPIA) (Rodrigues et al., 2017; Stallings, 2017). Thus, policies must include robust measures to protect learners against data breaches and misuse.

6. Conclusion

E-assessment policies and practices have the potential to revolutionise education by enhancing efficiency, feedback, data-driven insights, and accessibility. However, the authenticity of these assessments depends on addressing concerns related to validity, equity, pedagogical alignment, academic integrity, and ethical considerations. For e-assessments to be truly effective and fair, countries and schools must invest in reliable technology, provide adequate training and support, and uphold rigorous ethical standards. By doing so, they can harness the full potential of e-assessments to improve learning outcomes and educational equity. In South Africa, ensuring the authenticity of the country's e-assessment policies and practices requires a concerted effort to align them with current pedagogical practices and the real-world experiences of learners in the

classroom. This involves addressing issues of access, teacher preparedness, engagement, feedback, infrastructure, cultural relevance, and data security. By taking these steps, South Africa can leverage the potential of e-assessments to enhance learning outcomes and provide a more equitable and effective education system. Indeed, it should not be the case that a country rushes towards the establishment of policies, frameworks, and practices for e-assessment, driven mainly by the desireto appear modern, while failing to explicitly address how the e-assessments intersect with the learning processes. The danger is that such a rush may achieve some efficiencies and other practical advantages but may do so at the expense of validity and authenticity, especially for developing countries.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The author declares no conflict of interest.

References

Aburumman, M. F. (2021). E-assessment of students' activities during COVID-19 pandemic: Challenges, advantages, and disadvantages. *International Journal of Contemporary Management and Information Technology*, *2*(1), 1-7.

Agostini, D., & Picasso, F. (2024). Large language models for sustainable assessment and feedback in higher education: Towards a pedagogical and technological framework. *Intelligenza Artificiale*, *18*(1), 121-138.

Ahmed, M. R., & Sidiq, M. A. (2023). Evaluating online assessment strategies: A systematic review of reliability and validity in e-learning environments. *Computer*, *6*(12), 1-18.

Al-Ali, M. (2024). Assessment Management in Higher Education. *International Review of Management and Marketing*, *14*(3), 105–112.

Alfarisy, F., & Patria, A. N. (2023). Designing Online English Test: View from Natural Environmental Preservation. In *E3S Web of Conferences* (Vol. 448, p. 02008). EDP Sciences.

ALKursheh, T. (2024). Higher Tertiary Education Perspectives: Evaluating the Electronic Assessment Techniques of the Blackboard Platform for Fairness and Reliability. *Innoeduca. International Journal of Technology and Educational Innovation*, *10*(1), 144-165.

Ally, S. (2024). A national e-assessment implementation framework: Assessing readiness in secondary schools and teacher education in Tanzania. *Journal of Issues and Practice in Education*, *16*(1), 1–30.

Alruwais, N., Wills, G., & Wald, M. (2018). Advantages and challenges of using e-assessment. *International Journal of Information and Education Technology*, *8*(1), 34-37.

Anastasopoulou, E., Konstantina, G., Tsagri, A., Schoina, I., Travlou, C., Mitroyanni, E., & Lyrintzi, T. (2024). The Impact of Digital Technologies on Formative Assessment and the Learning Experience. *Technium Education and Humanities*, *10*, 115–126.

Babo, R., Babo, L. V., Suhonen, J. T., & Tukiainen, M. (2020). E-Assessment with Multiple-Choice Questions: A 5 Year Study of Students' Opinions and Experience.

Bagunaid, W., Chilamkurti, N., & Veeraraghavan, P. (2022). Aisar: Artificial intelligence-based student assessment and recommendation system for e-learning in big data. *Sustainability*, *14*(17), 10551.

Bijsterbosch, E., Béneker, T., Kuiper, W., & van der Schee, J. (2019). Teacher professional growth on assessment literacy: A case study of prevocational geography education in the Netherlands. *The Teacher Educator*, *54*(4), 420-445.

Chen, D. (2023). *Use of Technology-Based Assessments: A Systematic Review*. Global Education Monitoring Report.

Chen, D., & Xu, F. (2024). Design and implementation of machine learning algorithms in automatic grading of students' assignments. *Journal of Electrical Systems*, *20*(3s), 899-919.

Chirumamilla, A., & Sindre, G. (2019). E-assessment in programming courses: Towards a digital ecosystem supporting diverse needs?. In *Digital Transformation for a Sustainable Society in the 21st Century: 18th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2019, Trondheim, Norway, September 18–20, 2019, Proceedings 18* (pp. 585-596). Springer International Publishing.

De Beer, M. (2022). *Intermediate Phase Educators' Experiences of the Use of Online Tools to Enact Formative Assessment in Social Sciences Teaching and Learning* [Doctoral dissertation, University of Johannesburg].

Didmanidze, I., Tavdgiridze, L., Zaslavskyi, V., Khasaia, I., Dobordginidze, D., & Olga, Y. (2023, October). The Impact of Digital Technologies in Education. In *2023 13th International Conference on Dependable Systems, Services and Technologies (DESSERT)* (pp. 1-7). IEEE.

Doğan, N., Kıbrıslıoğlu, N., Kelecioğlu, H., & Hambleton, R. K. (2020). An overview of e-assessment. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *35*(Special Issue), 1-5.

Farrow, R., Ferguson, R., Weller, M., Pitt, R., Sanzgiri, J., & Habib, M. (2021). Assessment and recognition of MOOCs: the state of the art. *Journal of Innovation in Polytechnic Education*, *3*(1), 15-26.

Fischer, C., Pardos, Z. A., Baker, R. S., Williams, J. J., Smyth, P., Yu, R., ... & Warschauer, M. (2020). Mining big data in education: Affordances and challenges. *Review of Research in Education*, *44*(1), 130-160.

Gambo, I., Abegunde, F. J., Gambo, O., Ogundokun, R. O., Babatunde, A. N., & Lee, C. C. (2024). GRAD-AI: An automated grading tool for code assessment and feedback in programming course. *Education and Information Technologies*, 1-41.

Gane, B. D., Zaidi, S. Z., & Pellegrino, J. W. (2018). Measuring what matters: Using technology to assess multidimensional learning. *European Journal of Education*, *53*(2), 176-187.

Garcia, R. E., Macaballug, M. E. R., & Perez, E. I. (2024). Remote assessment of learning during the pandemic: junior high school teachers' experiences. *Int J Eval & Res Educ*, *13*(2), 731-741.

Ghimire, S., & Khanal, J. (2022). Experiences of University Staff in Online Proctored Examination: A Phenomenological Study. *J Mod Educ Res*, *1*(8), 1-15.

Ghouali, K., Benmoussat, S., & Ruiz Cecilia, R. (2020). E-assessment on the spotlight: Present and future prospects. *REIDOCREA, 9,* 52-62.

Gikandi, J. W., Morrow, D., & Davis, N. E. (2011). "Online formative assessment in higher education: A review of the literature." Computers & Education, 57(4), 2333-2351.

Gürbüz, A., Canlı, B. & Abi, M. (2024). The opportunities and burdens of online test processes. *Adiyaman Univesity Journal of Educational Sciences, 14*(1), 1-9.

Hlongwane, I. (2019). Compliance with quality assurance principles of recognition of prior learning (RPL) by library and information science schools in South Africa. *Innovation: journal of appropriate librarianship and information work in Southern Africa*, *2019*(58), 78-95.

Huber, E., Harris, L., Wright, S., Raduescu, C., White, A., Cram, A., ... & Brodzeli, A. (2022). Cost-effective, scalable online assessment solutions to assure academic integrity, privacy and equity of access: Towards a framework for success.

Iderima, C. E. (2023). Implications Of Computer Based Testing On Open And Distance Learning. *International Journal of Innovative Information Systems & Technology Research 11*(3), 122-134.

Ion, G., & Mercader, J. C. (2024). D-Eva Programme: Supporting Academics to Use Digital Tools for Students' Assessment. In *Digital Assessment in Higher Education: Navigating and Researching Challenges and Opportunities* (pp. 225-240). Singapore: Springer Nature Singapore.

Isaias, P., Miranda, P., & Pifano, S. (2023, November). E-Assessment Systems: An Evaluation Framework from the Perspective of Higher Education Experts. In *2023 International Symposium on Computers in Education (SIIE)* (pp. 1-6). IEEE.

Joshi, A., Virk, A., Saiyad, S., Mahajan, R., & Singh, T. (2020). Online assessment: Concept and applications. *Journal of Research in Medical Education & Ethics*, *10*(2), 49-59.

Kaspi, S., & Venkatraman, S. (2023). Data-Driven Decision-Making (DDDM) for Higher Education Assessments: A Case Study. *Systems*, *11*(6), 306.

Keengwe, J. (Ed.). (2022). *Handbook of research on digital-based assessment and innovative practices in education*. IGI Global.

Kelly, K., & Zakrajsek, T. D. (2023). *Advancing online teaching: Creating equity-based digital learning environments*. Taylor & Francis.

Ketab, S. (2017). E-invigilation of e-assessments. A thesis submitted to Plymouth University in partial fulfilment for the degree of Doctor of Philosophy, School of Computing, Electronics and Mathematics, Faculty of Science and Engineering.

Khoza, S. B., & Mpungose, C. B. (2024). Academics' Responses to COVID-19 and 4IR Resources for Authentic E-Assessment. *Curriculum Development and Evaluation: Curriculum Components in Action*, *24*, 135.

Kiennert, C., Rocher, P. O., Ivanova, M., Rozeva, A., Durcheva, M., & Garcia-Alfaro, J. (2017, July). Security challenges in e-assessment and technical solutions. In *2017 21st International Conference Information Visualisation (IV)* (pp. 366-371). IEEE.

Krans, N. A., Ammar, A., Nymark, P., Willighagen, E. L., Bakker, M. I., & Quik, J. T. K. (2022). FAIR assessment tools: evaluating use and performance. *NanoImpact*, *27*, 100402.

Laamanen, M., Ladonlahti, T., Uotinen, S., Okada, A., Bañeres, D., & Koçdar, S. (2021). Acceptability of the e-authentication in higher education studies: views of students with special educational needs and disabilities. *International Journal of Educational Technology in Higher Education*, *18*, 1-17.

Labuschagne, C. (2023). *Online formative assessment challenges experienced by Grade 10 Physical Sciences teachers* (Doctoral dissertation, University of Johannesburg).

Mafenya, N. P. (2016). *Effective assessment in open distance and e-learning: using the signature courses at the University of South Africa as a model for future practice* [Doctoral dissertation, University of South Africa].

Majjate, H., Bellarhmouch, Y., Jeghal, A., Yahyaouy, A., Tairi, H., & Zidani, K. A. (2024). Assessing the impact of ethical aspects of recommendation systems on student trust and engagement in E-learning platforms: A multifaceted investigation. *Education and Information Technologies*, 1-25.

Maki, P. L., & Shea, P. (Eds.). (2023). *Transforming digital learning and assessment: A guide to available and emerging practices and building institutional consensus*. Taylor & Francis: Abingdon, UK, 2023.

Maphalala, M. C., Mpofu, N., & Adigun, O. T. (2024). The Dynamics of e-Assessment in South African Higher Education: Narratives for and Against Proctoring in Higher Education During Covid-19 and Beyond. In *Online Teaching and Learning in Higher Education: Issues and Challenges in an African Context* (pp. 183-199). Cham: Springer Nature Switzerland.

Meccawy, Z., Meccawy, M., & Alsobhi, A. (2021). Assessment in 'survival mode': student and faculty perceptions of online assessment practices in HE during COVID-19 pandemic. *International Journal for Educational Integrity*, *17*, 1-24.

Mimirinis, M. (2019). Qualitative differences in academics' conceptions of e-assessment. *Assessment & Evaluation in Higher Education*, *44*(2), 233-248.

Mohan, R. (2023). *Measurement, evaluation and assessment in education*. PHI Learning Pvt. Ltd.

Mukherjee, S., & Pandey, P. (2023). Empowering future oriented learning ecosystem through E-assessment tools. *International Journal of Advanced Research and Development, 8*(6), 5-9.

Nacheva-Skopalik, L., & Green, S. (2020). Intelligent adaptable e-assessment for inclusive e-learning. In *Learning and Performance Assessment: Concepts, Methodologies, Tools, and Applications* (pp. 1185-1199). IGI Global.

Naidoo, S., & Gokool, R. (2020). Towards the implementation of E-assessment in L2 IsiZulu: An examination of four listening comprehension tests. In *ICT-based assessment, methods, and programs in tertiary education* (pp. 149-168). IGI Global.

Ngqondi, T., Maoneke, P. B., & Mauwa, H. (2021). A secure online exams conceptual framework for South African universities. *Social Sciences & Humanities Open*, *3*(1), 100132.

Ningsih, W. (2024). Lecturers' Perceptions of The Use Of E-Evaluation In Assessing The Academic Achievement of Students Of The Islamic Religious Education Study Program. *Fitrah: Journal of Islamic Education*, *5*(1), 74-97.

Noble, S. U. (2018). "Algorithms of Oppression: How Search Engines Reinforce Racism." NYU Press.

Okada, A., Noguera, I., Alexieva, L., Rozeva, A., Kocdar, S., Brouns, F., ... & Guerrero-Roldán, A. E. (2019). Pedagogical approaches for e-assessment with authentication and authorship verification in Higher Education. *British Journal of Educational Technology*, *50*(6), 3264-3282.

Olasina, G. (2023). Using new assessment tools during and post-COVID-19.*International Journal of Technology and Educational Innovation, 10*(1), 144-165. https://doi.org/10.24310/ijtei.101.2024.17813

Pagaling, R., Eaton, S.E., & McDermott, B. (2022, April 4). Academic Integrity: Considerations for Accessibility, Equity, and Inclusion. University of Calgary. Calgary, Canada. http://hdl.handle.net/1880/11451

Parker, O. (2023). Cloud Computing and AI in Education: Revolutionizing Personalized Learning While Ensuring Data Security. http://dx.doi.org/10.13140/RG.2.2.24764.65921

Perry, K., Meissel, K., & Hill, M. F. (2022). Rebooting assessment. Exploring the challenges and benefits of shifting from pen-and-paper to computer in summative assessment. *Educational Research Review*, *36*, 100451.

Pillay, P., & Balele, R. (2024). First-year pre-service teachers' e-formative feedback experiences at a university during emergency remote learning in South Africa. In *Edulearn24 Proceedings* (pp. 8955-8962). IATED.

Raza, A. (2023). Harnessing AI and Cloud Technology for Personalized Learning: Ensuring Data Integrity in Modern Education. http://dx.doi.org/10.13140/RG.2.2.15643.68643

Rodrigues, R., de la Torre, J., & Carcedo, J. (2017). Ethics of Emerging Information and Communication Technologies: On the Implementation of Responsible Research and Innovation. *Science and Engineering Ethics, 23*(4), 1139-1157.

Sabrina, F., Azad, S., Sohail, S., & Thakur, S. (2022). Ensuring academic integrity in online assessments: a literature review and recommendations. *International Journal of Information and Education Technology, 12*(1), 60–70. https://doi.org/10.18178/ijiet.2022.12.1.1587.

Saleh, M. N. E. D., Salem, T. A. R. O., Alamro, A. S., & Wadi, M. M. (2022). Web-based and paper-based examinations: Lessons learnt during the COVID-19 pandemic lockdown. *Journal of Taibah University Medical Sciences*, *17*(1), 128-136.

Selwyn, N. (2020). The risks of learner surveillance. *The British Journal of Sociology of Education, 41*(5), 638-646.

Singh, U. G., & Gokool, R. (2018). Students' perceptions of the Moodle Quiz E-assessment tool in an isiZulu language course. *Journal for Language Teaching*, *52*(1), 128-150.

Snyman, M., & Van den Berg, G. (2018). The significance of the learner profile in recognition of prior learning. *Adult Education Quarterly*, *68*(1), 24-40.

Solati, A., Amani, A., & Armat, M. R. (2024). Impact of learning environment on reading anxiety: a study of medical students in online and traditional settings. *BMC Medical Education*, *24*, 1502.

Stallings, W. (2017). "Effective Cybersecurity: A Guide to Using Best Practices and Standards." Addison-Wesley.

St-Onge, C., Ouellet, K., Lakhal, S., Dubé, T., & Marceau, M. (2022). COVID-19 as the tipping point for integrating e-assessment in higher education practices. *British Journal of Educational Technology*, *53*(2), 349-366.

Striewe, M. (2022). Where Does All the Data Go? A Review of Research on E-Assessment Data. *CSEDU, 1*, 157-164.

Tat, O., & Kilic, A. F. (2024). Electronic assessment anxiety scale: Development, validity and reliability. *Turkish Online Journal of Distance Education*, *25*(4), 16-32.

Terblanche, E. A. J., van Rooyen, A. A., & Enwereji, P. C. (2024). Auditing students' perceptions of online assessments and e-proctoring systems. *Discover Education*, *3*(1), 207, 1-19.

Turner, K. L., Adams, J. D., & Eaton, S. E. (2022). Academic integrity, STEM education, and COVID-19: a call to action. *Cultural studies of science education*, *17*(2), 331-339.

Uunona, G. N., & Goosen, L. (2023). Leveraging ethical standards in artificial intelligence technologies: A guideline for responsible teaching and learning applications. In *Handbook of research on instructional technologies in health education and allied disciplines* (pp. 310-330). IGI Global.

Venkateswari, S. L. (2020). Using E-Assessment to Attain the Desired Learning Outcome in Higher Education. *Language in India*, *20*(4), 15-26.

vd Westhuizen, D. (2016). Guidelines for online assessment for educators. Commonwealth of Learning, 4710 Kingsway, Suite 2500 Burnaby, British Columbia Canada.

Yakobi, S., Yakobi, K., Lose, T., & Kwahene, F. (2022). E-Assessment Implementation and Implications for the Success of Historically Disadvantaged Institutions (HDIs) in South Africa. *Journal of Educational Studies*, *21*(4), 110-122.

Zhao, B. (2022). The role of classroom contexts on learners' grit and foreign language anxiety: online vs. traditional learning environment. *Frontiers in Psychology*, *13*, 869186.

Zinke, N., Lenski, S., Brocker, A., Merkt, M., Gropengießer, K., Stürmer, S., & Schröter, H. (2024). Towards Fair and Diversity-Appropriate E-assessments. In *Assessment Analytics in Education: Designs, Methods and Solutions* (pp. 373-394). Cham: Springer International Publishing.

Towards a Framework for the Assessment and Quality Assurance of Non-Traditional Learning Experiences

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Reference Formats (APA 7th Edition)
Dumezweni, N., Nxesi, N., & Mkhonza, L. (2024). Towards a framework for the assessment and quality assurance of non-traditional learning experiences. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 154–169). ERRCD Forum. https://doi.org/10.38140/obp2-2024-11

Abstract: Non-traditional learning experiences have arguably gained momentum and prevalence in the education system due to their perceived flexibility, broader outreach, responsiveness, and inclusivity. However, the speed at which these alternative learning experiences have been institutionalised parallels growing concerns and antagonisms regarding their quality. First, the sluggish and rigid response to developing effective frameworks for assessing and quality-assuring non-traditional learning experiences can be counterproductive, stifling innovation and adaptation to new demands. Second, the lack of quality assurance hinders quality improvement, compromising the overall quality of the education system. These limitations have made it difficult for stakeholders to advocate for the uptake and integration of these non-traditional learning experiences into the broader education system. In light of these issues, the study employed a mixed-method approach to investigate what assessing and quality-assuring non-traditional learning experiences will entail, through the examination of literature and the development of survey questionnaires for participation from the following quality assurance bodies: Council on Higher Education (CHE), South African Qualifications Authority (SAQA), Council for Quality Assurance in General and Further Education and Training (UMALUSI), Quality Council for Trades and Occupations (QCTO), and Sector Education and Training Authorities (SETAs) provided valuable insights. The results indicated the key design considerations for institutions when developing their respective frameworks for quality assurance and assessment of non-traditional learning experiences. Respondents highlighted the importance of prioritising factors such as academic integrity, student information integrity, equity of access, and quality student experiences. The study's findings are anticipated to significantly contribute to the body of knowledge regarding non-traditional learning experiences in South Africa, offering a promising future for these innovative learning methods.

Keywords: Quality assurance, assessment, non-traditional learning experiences, regulatory framework, skills.

1. Introduction

The incremental adoption of teaching and learning technologies, accelerated by shocks such as COVID-19, has generated an appetite for the transition to online teaching and learning. Consequently, the education sector has experienced growth in the adoption of several non-traditional learning experiences (NTLEs) (Makalula-Kalumbi & Pitsoe, 2024, p. 63).

In line with these expansions, the formation of NTLEs has taken various forms, including online and/or e-learning, blended learning, internships/apprenticeships, self-directed learning, experiential learning, peer learning, and gamification, all aimed at meeting the needs of key

stakeholders. These educational formats have proliferated across all levels of the education system, including early childhood education, primary and secondary schooling, tertiary studies, and adult education. Technological advances have driven this shift by expanding digital tools and internet access, allowing for greater accessibility, flexibility, and personalised learning opportunities (Haleem et al., 2022). Additionally, changing workforce demands have prioritised skills over traditional credentials, demonstrating the ability to quickly equip individuals with the requisite skill sets—often at lower costs and in shorter timeframes (OECD, 2024, p. 30). Fundamentally, education has arguably evolved and become more democratic, facilitating greater access and inclusion, wherein personalised learning paths are supported by a focus on students' strengths and the ability to advance at their own pace—a component of the traditional format that has been repressed.

1.1. Problem statement

Correspondingly, quality assuring and assessing these NTLEs has presented a unique challenge due to the diverse and often unconventional nature of these educational formats. Compared to traditional methods, these approaches often lack standardised benchmarks and encompass a wide range of teaching methodologies and learning outcomes, making it difficult to achieve uniform quality assurance measures (Shet, 2024). The challenges are further compounded by the fact that traditional quality assurance and assessment frameworks have been designed for stable and predictable education models and have, to this extent, struggled to keep up with the dynamic and fluid nature of these programmes and platforms.

1.2 Research questions

- What should be the key principles and dimensions in quality assuring and assessing online learning experiences?
- What challenges are related to quality assuring and assessing non-traditional learning experiences?
- What methods or instruments are suitable for assessing and quality-assuring non-traditional learning experiences?

2. Literature Review

2.1. Non-traditional Learning Experiences

According to Tularam and Machisella (2018), traditional learning experiences are structured so that students sit and listen while the teacher directs the lesson. Similarly, Martirosov et al. (2023)define traditional learning as a teacher-centred approach that focuses on explaining topics from a textbook through lectures or reading texts. Parasuram et al. (2014) note that traditional learning experiences exhibit characteristics of rigidity, wherein problem-solving and critical thinking competencies are not prioritised. As a result, critics of conventional learning experiences consider non-traditional learning experiences (NTLEs) a favourable alternative for addressing these gaps. Proponents of non-traditional teaching methods praise them as

alternatives that offer a student-centred perspective, encouraging curiosity, creativity, and student participation in class activities. However, advocates of NTLEs have not fully illustrated the extent to which these approaches can ensure uniform standardisation, making quality assurance and assessment practices challenging to quantify and replicate. One example of an NTLE that has gained popularity in education is online learning.

2.1.1 Online learning

Kuhlmann et al. (2024) define online learning as a multidimensional ecosystem that occurs across different times and places, characterised by various instructional methods (such as in-person, blended, formal, and informal) and encompassing numerous types of media (including social media platforms, learning management systems, mobile devices, computers, and advanced technologies).

Similarly, the definition provided above aligns with Allen and Seaman's (2007) assertion that the spectrum between online education and traditional teaching to online learning is as follows:

- Traditional: Course content is typically delivered in writing or orally. Technology use is absent or limited.
- Web-facilitated: Lessons are facilitated through course management systems or web-based technologies.
- Blended/Hybrid: A course that combines online and face-to-face delivery.
- Online: These courses typically do not have face-to-face meetings and are facilitated chiefly online.

Broadbent and Poon (2015) caution that success in online learning environments requires learners to be more independent and to engage in the learning process autonomously and actively. The physical separation between student and teacher increases the demand for self-regulation in students' engagement in e-learning contexts. Consequently, Banson (2022) recognises that traditional regulation methods for learning are ineffective in this environment. Non-traditional learning experiences culminate in the transformation of teacher-led learning into self-directed and self-determined learning (Scott, 2015). As a result, self and co-regulation are increasingly gaining importance as methods of measuring learning progress, and these need to be reflected in the quality assurance and assessment structures of the education system. Where the literature falls short is in addressing the challenges associated with the quality assurance and assessment of non-traditional learning experiences.

To this end, Snyder (2013: p. 6) posits that the crux of the tension with these emerging non-traditional learning experiences in the form of online learning lies with "the centre (government), which is held responsible for the steering of the educational system but often finds itself confronted with a diffuse field of demanding and increasingly data-savvy stakeholders and fewer direct levers of control available to it." As such, the current landscape is characterised by

sprawling education networks, formats, and emerging platforms that present immense opportunities for the large-scale education of entire societies, no longer restrained by space or time.

At the same time, however, systemic paralysis or outright rejection of these innovative practices can result from these unorthodox learning and teaching methods due to a perceived lack of control and agility in quality assurance and clear assessment processes. Long-term studies tracking the effectiveness of quality assurance measures over time will be crucial for further understanding how the system needs to be structured and supported.

2.1.2 Quality Assurance and Assessment Regime in South Africa

Bond et al. (2023, p. 5) have described quality assurance as processes that ensure that provision is accountable, controlled, and compliant, and that it is improved using accreditation, audit, assessment, and external review approaches. This definition denotes that quality assurance has a dual mandate of enforcing accountability and facilitating enhancement or innovation. Furthermore, governance and regulation issues, medium of delivery, qualifications, organisational processes, administrative support, financial viability, course content, learning experience, and curriculum design become pertinent indicators of quality.

Within the South African context, the institution entrusted with ensuring the above attributes is Umalusi, which quality assures the assessments for public schooling and further quality assures and accredits assessments provided by private/independent schooling administered by the Independent Examinations Board (IEB).

2.1.3 Umalusi: Council for Quality Assurance in General and Further Education and Training

- Monitors and moderates students' achievements, primarily through external examinations.
- Evaluate whether education and training providers can deliver and assess qualifications and learning programmes and whether they are doing so to expected quality standards. Umalusi sets the accreditation standards that providers must meet.
- Evaluate the quality of qualifications. This mainly means looking at the curricula of different qualifications, the rules for how many subjects must be passed, and at what level to obtain a qualification. The issue surrounds the notion that educational institutions face contradictory pressures for change.

Quality assurance finds itself at a crossroads, balancing the autonomy required by private education providers with the need to standardise quality assurance and assessment frameworks. This standardisation is essential to ensure fit-for-purpose assessments in the schooling sector. Given this context, Umalusi's task is to facilitate an agile and responsive regulatory system that is self-critical and transparent, capable of matching the speed at which NTLEs emerge.

2.1.4 Challenges with quality assuring and assessing online learning

Some of the challenges associated with the quality assurance and assessment of online learning and its ecosystem are complicated by the diverse platforms through which online learning is administered, characterised by different features, tools, and capabilities, which make it difficult to establish uniform standards. Secondly, overarching questions regarding cheating and identity verification in virtual classrooms compromise academic integrity and authenticity. Thirdly, accrediting bodies may have different criteria for online programmes, and ensuring compliance with these standards can be challenging (Demir, 2021).

Moreover, access and equality in terms of affording opportunities for students of all socioeconomic and geographical backgrounds, particularly in South Africa, are pertinent considerations that online education needs to address. Timmis et al. (2015) underscore this structural flaw by highlighting concerns over social exclusion, new forms of digital divide, and the increasing risks associated with big data and the rise of learning analytics. Lastly, educators require continual professional development and adapted quality assurance processes to keep up with the rapid changes in technology and educational approaches (Yan, 2019; Mukalula-Kalumbi & Pitsoe, 2024).

Similar sentiments are illustrated by Baillie et al. (2013), who note that the challenges of introducing digital assessment in an online education framework comprise the following:

- Lack of relevant knowledge concerning alternative assessment forms and how to use digital technology in assessment.
- Lack of digital competence among academics and administrative staff.
- Major organizational changes cause a lack of time to learn and implement new digital solutions.
- No risk analysis/legal challenges.
- Lack of assessment policy within the institution.
- Lack of motivation among staff.
- Economic challenges/lack of resources
- Lack of cooperation within and between organisations.

In the final analysis, Bengoetxea et al. (2011: p. 8) contend that the "focus should not be on building one integrated quality assurance system for all sectors, but rather on increasing transparency and improving understanding of the different quality assurance systems, as well as fostering practical cooperation between the main quality assurance actors across various sectors, particularly in resolving bottlenecks for the recognition of qualifications."

2.2. Theoretical framework: Complex Adaptive Systems (CAS) theory

The Complex Adaptive Systems (CAS) theory is a framework used to understand the dynamics and behaviours of systems comprising interacting components. These systems exhibit high adaptability and complexity due to the interactions between their parts (Snyder, 2013). Inherent

in this understanding is the acknowledgement that the systems under review are in constant flux and present increased unpredictability, where the system is informed by diverse behaviours rather than linear, singular actions. It then becomes critical for quality assurance and assessment that these entities facilitate a conducive environment for trends to emerge by increasing interaction and communication within the system to its highest manageable level (ibid). Flexibility and feedback mechanisms become crucial components in regulating complex systems in the form of NTLEs, where it is difficult to enforce a one-size-fits-all approach to quality assurance and assessment.

NTLEs present a complex system as they involve a significant number of varying individuals engaged in simultaneous interactions, resulting in a plethora of behaviours geared towards adaptation to emerging circumstances. Moreover, system complexity is compounded by these agents devising projections and anticipating outcomes to better align themselves with what they believe the outcome of the change will be. Naturally, this evolving structure makes the quality assurance and assessment of NTLEs challenging to regulate (Holland, 1992). Ellis and Herbert (2011) argue that the "origins of quality assurance were predicated on rational reductionism and linearity. As a result, new forms of governance do not and fundamentally cannot neutralise traditional models but rather add further dimensions to them." Thus, Online Learning, viewed through the lens of the CAS framework, has the potential to illustrate the interacting component units, which can result in system-wide governance wherein quality assurance and assessment doctrines influence rather than control the regulation of NTLEs.

Preiser et al. (2018) note the following six features that characterise a complex system. The contextual feature denotes the importance of context, roles, and identities that give meaning to actions and behaviours. The second feature acknowledges that information and interactions are porous, and systems are open and not isolated. The CAS framework also highlights that systems exhibit diverse relational components and networks, including elements of hierarchical structures, emphasising that relationships matter.

Furthermore, systems are dynamic in that they illustrate periods of static and rapid change as a result of feedback loops, wherein there is no one clear action pathway. Systems are also adaptive through their ability for self-organisation, institutional memory, and capacity to anticipate. Finally, a key consideration in the analysis of complex systems is the understanding that some conditions can produce different outcomes, wherein small inputs have the potential to cause significant effects, and interventions can lead to unintended consequences.

Informed by the above considerations, the CAS framework assisted the study in recognising that the quality assurance and assessment of NTLEs is a dynamic process consisting of various complex features. These features were tested in the questionnaire design and data collected for the study. The utilisation of the CAS framework allowed the study to recognise the importance

of interactions and relationships between different components, which coincide and are critical in the quality assurance and assessment of NTLEs. Table 1 below illustrates these interactions.

2.2.1 Complex Adaptive Systems (CAS) theory framework – Quality assurance and assessment of online learning

- Acknowledges the dynamic and interconnected nature of educational environments

Table 1: CAS Framework illustrating interactions and relationships between various units

Indicators	System Design
Agents & Roles	**Students** Active participants and learners (engaging with non-traditional learning experiences).
	Instructors/Educators Facilitates and guides (supports the learning process) ☐ Experienced Data Science Educators
	Quality Assurance & Assessment Bodies Organisations/committees responsible for monitoring and ensuring quality education.
	Content Modules Learning materials and resources used. ☐ Video lecturers, Learner Management System, interactive assignments and assessment,support Services
	Technology Platforms Tools and systems used for delivering learning experience.
	Quality Assurance Interaction Agents
Mapping Interactions between Agents	**Students with Instructors** Engagement through feedback, assessment, and support.
	Students with content modules Interaction with learning materials, assignments, and activities.
	Students with Technology platforms Usage patterns, engagement metrics, and technical support.
	Instructors with content modules Course design, updates, and customization.
	Instructors with technology platforms Utilisation of tools and resources for effective teaching.
Evaluating Adaptation and feedback loops	Assess the ability of the system to respond to student needs and feedback.
	Mechanisms for regular updates and improvements based on data and feedback
	Evaluate how well the system supports personalised learning paths and adapts to different learning styles.
Analysing emergent Outcomes	Identify and measure emergent properties, i.e., student engagement, knowledge retention, and skills acquisition.
	Impact of the learning experience on student competence and quality of education.
	Consider unintended consequences and emergent challenges that may arise from the interactions within the system.
	Establish guidelines and standards to ensure quality without stifling innovation.

Indicators	System Design
Balancing regulation and innovation	Promote a culture of life learning and experimentation.
	Encourage collaboration and sharing best practices among stakeholders.
	Training and professional development for staff and instructors are needed to help them implement innovative practices while adhering to quality standards.
	Collaborative Networks: Collaboratively develop solutions

Adapted by the Study Researcher

3. Materials and Methods

The study adopted a mixed-method approach, involving both qualitative (desktop analysis) and quantitative research designs. A purposively sampled online survey was sent to experts from four quality assurance bodies and four quality assurance public entity directorates. The final response rate (n=7) included one quality assurance body, four SETA Quality Assurance (QA) Units, one Teacher Union, and one provincial education department. The participants were requested to rate the level of priority with which the predetermined design considerations and contextual factors should be prioritised when developing quality assurance and assessment frameworks. Some design considerations tested by the research tool included academic integrity, equity of access, and integrity of student information. The priority scale which the respondents utilised to score each design dimension had five options, where 1 = very high priority, 2 = high priority, 3 = moderate priority, 4 = low priority, and 5 = very low priority. The study aimed to validate the design considerations and contextual factors that should shape the development of the framework to ensure quality and assess NTLEs for online learning in South Africa, with the active participation of the stakeholders.

3.1 Data analysis

The survey tool was developed using the Google Forms application, and responses were collected and prepared for analysis by exporting the results via an Excel spreadsheet. The data were then formatted to identify the frequency of the same responses recorded per question and the differences in responses posed. A frequency analysis was conducted where respondents had to rate the priority level for each design dimension. The design dimensions that scored higher on the priority scale were noted, and the design dimensions that scored lower were equally added and analysed. The survey results were cross-referenced with the literature to validate and finalise findings.

4. Presentation of Results

This section presents the respondents' perceptions of the priority level of various design considerations when developing a framework for quality assurance and online learning

assessment. The results are based on the seven respondents (n = 7) who ultimately completed an online questionnaire consisting of both closed and open-ended questions.

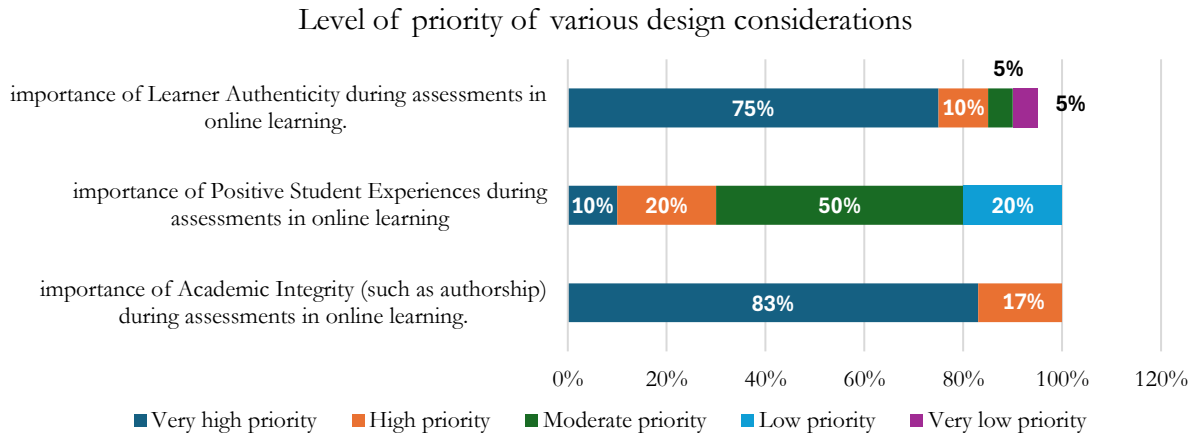

Figure 1: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers.

The relatively high consideration for learner authenticity and academic integrity in developing frameworks for quality assurance and assessment of NTLEs underscores the importance of an education system that offers an authentic learning experience. As demonstrated above, fail-safe systems that validate learner identity and protect learners' learning outcomes indicate a critical value system. Positive student experiences illustrate a variety of responses as opposed to the relative consensus and uniformity demonstrated by responses for learner authenticity and academic integrity.

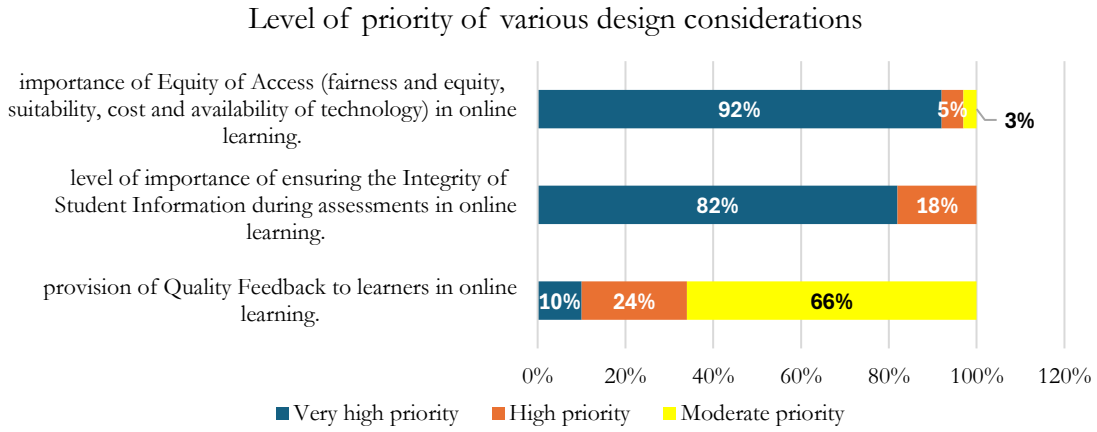

Figure 2: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers

Sustainable Development Goal 4 (SDG 4) states that for education to be for all, concerted efforts must be made to facilitate and ensure access, inclusion, equity, equality, and lifelong

learning. Online learning requires further efforts due to the material costs involved in the continuous design, maintenance, and upgrading necessitated by this teaching and learning medium, particularly for a highly unequal society to meet this objective. For quality assurance and assessment frameworks to be relevant and practical, and arguably to mitigate against adverse behaviours and promote the democratic principles they seek to espouse, access is critical to ensure legitimacy. Furthermore, the protection of student information is essential to maintain legitimacy and trust among all stakeholders. Similarly, as demonstrated by Figure 1, design considerations show relative uniformity and consensus regarding equity of access and integrity of student information, with more varied responses for considerations related to providing feedback to learners.

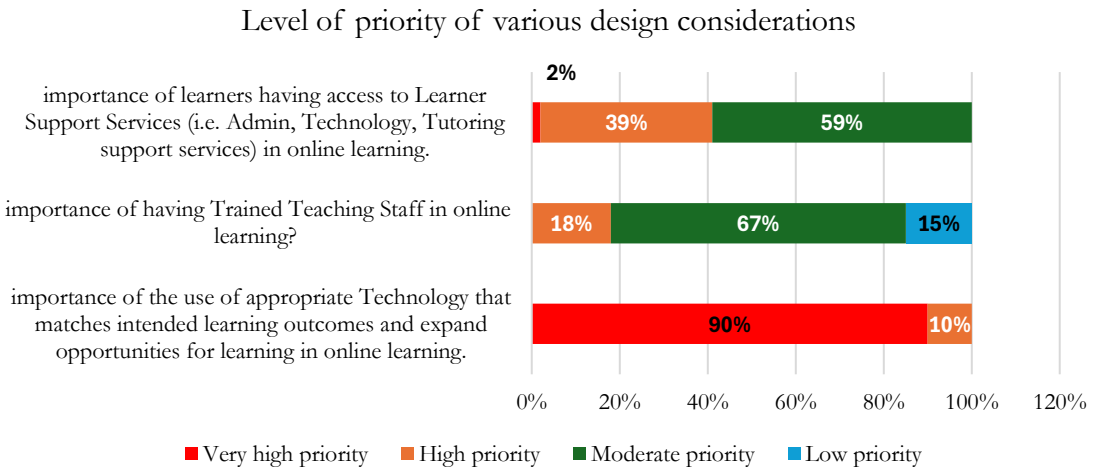

Figure 3: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers

Figure 3 continues to illustrate that the primary design considerations identified by respondents as foundational building blocks for quality assurance and assessment frameworks relate to concerns about system legitimacy, trustworthiness, and technological resources. Understandably, appropriate technology that aligns with intended learning outcomes received a very high priority rating. A flaw in this design consideration arguably undermines the overall objective of an education system. Technologies will require constant updating and upgrading to ensure that learning outcomes are achieved and the integrity of the education system is maintained. The design considerations for trained staff and support services received moderate consideration, indicating that while these are necessary, they may not be central to quality assurance and assessment frameworks.

5. Discussion of Findings

The initial research questions of this study concerned understanding the key principles and dimensions of quality assuring and assessing online learning experiences. Further to that, the

challenges and methods related to quality assuring and assessing non-traditional learning experiences were also of primary concern.

With this in mind, the design considerations that recorded the highest priority amongst respondents are related to the importance of equity of access, the use of appropriate technologies that match intended learning outcomes, and academic integrity. These dimensions indicate that if not adequately addressed in quality assurance and assessment frameworks, programme integrity is undermined as fairness and a level playing field, wherein everyone is assessed based on their capabilities and circumstances, are not guaranteed. These prioritised design considerations also illustrate that they are the potential building blocks upon which a quality assurance and assessment system should be built. This is in line with the literature, which illustrates that the dimensions of some of the features that quality assuring and assessment frameworks should exhibit are oriented around developing a system that meets its intended objective, does not disadvantage anyone on the basis of access, and is secure from manipulation, gaming, and hacking (Bond et al., 2023; Butler et al., 2020; Foerster et al., 2020).

In a developing country such as South Africa, it is encouraging to witness the recognition of the importance of having quality assurance and assessment frameworks that are highly cognisant of class and inequalities in society. This has seen the study participants advocating for frameworks that consider fairness and equity in online assessments. The frameworks must take, among other aspects, the challenges that may arise for learners living with disabilities and learners with different technical backgrounds into account. The cognisance of contextual factors such as equity of access aligns with the features of complex adaptive systems theory, which advocates for contextual factors to be considered as one of the components that shape systems. Academic integrity is one dimension that the respondents of this study felt should be highly prioritised by frameworks of quality assurance and assessment. As noted by the literature, having frameworks that are academic integrity-proof will ensure that student assessments have value and credibility (Foerster et al., 2020); thus, frameworks for quality assuring and assessing online learning need to ensure learner authentication and authorship (ibid).

According to the study results, educational digital technologies that match intended learning outcomes are one of the dimensions of the quality assurance framework that should be prioritised. One indicator of this dimension's presence is the adequate allocation of resources, which will ensure the system's uninterrupted running. As guided by the literature (ibid), the deployed technologies must ensure wide coverage and alignment with the various e-assessment approaches.

Dimensions that received a moderate priority response include the provision of quality feedback to learners, the importance of having trained staff, and access to learner support services. These dimensions speak to administrative and personnel arrangements within the system. The importance of feedback between the end user (students) and the online learning platform,

according to the literature, is a crucial design feature that enables information sharing, allowing for the system to adapt and reconfigure where it is necessitated for learning to be fit for purpose and responsive to the students' needs. Feedback mechanisms also allow for assessing student progress and identifying entry points for intervention to enhance learner self-regulation when the learning outcomes are not reflected in the learners' progress and improve future assessment design (Huber et al., 2024).

The moderate response concerning trained staff as a priority in design considerations is concerning, as it was anticipated that it would have scored higher. A highly educated and competent workforce is integral to ensuring that online learning is engaging, interactive, and aligned with learning objectives through efficient navigation of the online learning platform. Trained staff can also detect ways the system may be abused, thereby being an effective watchdog of originality in student work. Okada et al. (2019) note that "there is evidence that insufficient resource provision for staff training constrains the efficacy of online assessment." Trust is also a value fostered when educators are seen to be competent and knowledgeable, thereby providing credibility to the system and the competencies of the graduates of the respective programmes. This moderate consideration indicates that these are secondary to the elements indicated above. The final consideration that recorded a moderate response relates to learner support services, whose primary goal is to enhance the learning experience by promoting engagement and resolving technological challenges promptly, not compromising learner outcomes. Furthermore, access to these services allows for the retention of learners and facilitates inclusivity and responsiveness.

Moreover, the results of this study demonstrate the complexity that encapsulates the education system as it relates to NTLEs and, specifically, online learning. In line with Ellis and Herbert's (2011) assertions that the evolving structure of the education systems makes regulation difficult, NTLEs, in this way, present a complex system in that they involve a significant number of varying individuals engaged in simultaneous interactions, which results in a plethora of behaviours. Moreover, system complexity is compounded by stakeholders devising projections and anticipating outcomes to better align themselves with what they think the outcome of the change will be. Based on this understanding, it becomes clear that the quality assurance and assessment frameworks must be agile and responsive to this environment. This signals that design considerations that strengthen and support factors related to equity of access, academic integrity and learner authenticity, the integrity of student information during assessment, and appropriate technologies that match intended learning outcomes are at the core of system legitimacy and trust, upon which every other consideration is built.

6. Conclusions and Recommendations

This paper centres on key dimensions and factors that need to be prioritised when developing quality assurance and assessment frameworks for nontraditional learning experiences, utilising

online learning as the primary unit of analysis. The design dimensions, as sourced from the literature tested by this paper, include Academic Integrity, Positive Student Experiences during assessments, Learner Authenticity, Integrity of Student Information, Quality Feedback, Equity of Access, Appropriate Technology, Trained Teaching Staff, and Learner Support Services in online learning. The priority level of these dimensions in the design of quality assurance and assessment frameworks for nontraditional learning experiences was tested with participants who are stakeholders in the quality assurance of basic education. The framework dimensions highlighted in this paper should not be viewed as a compliance exercise that must be addressed in a single assessment item. Instead, they need to be considered in the unique context of each assessment design decision and afforded the agility and responsiveness they require.

It is also important to note that, due to the limited sample size, the results are not comprehensive enough to ensure rigorous validation of the design considerations presented in the study. As such, this study has presented only preliminary considerations for quality assurance and assessment frameworks for stakeholders to observe when developing frameworks. The complexity of nontraditional learning experiences and the quality assurance and assessment regime required to maintain them will necessitate ongoing research and investigation; soliciting more stakeholder input over time will be crucial in further understanding how the system needs to be structured and supported, rather than attempting to develop an integrated quality assurance and assessment system for all forms of teaching and learning (Bengoetxea et al., 2011).

The following are the recommendations of the study:

- It is suggested that a comprehensive analysis of the technological requirements needed by the system to effectively implement online learning assessment and quality assurance frameworks at a scalable level should consider contextual, access, and resource factors in South Africa.
- The upskilling and reskilling of staff to effectively support the online learning environment require investment and continuous professional development. Skilled teaching staff must be among the key dimensions when designing quality assurance and assessment frameworks for non-traditional learning experiences.
- The framework needs to be responsive to the requirement for technical support during assessments. This must involve a seamless and efficient navigational system to enhance the credibility and reliability of the system.
- The assessment frameworks need to ensure that non-traditional learning experiences receive the necessary investment in up-to-date software applications for remote invigilation of online examinations that are not susceptible to security breaches, which is critical.
- It is suggested that student feedback become a central feature of assessment frameworks and should be personalised to ensure fit-for-purpose learning.

- Finally, due to the relational and technical complexity underlying the development of quality assurance and assessment frameworks for online learning, the literature, as well as responses from the survey, recognise that certain design principles can lead to various unintended outcomes. Prioritising one dimension of a design consideration can cause bottlenecks or trade-offs in another aspect, leading to overall inefficiency in the system (Snyder, 2013). It is, therefore, critical to understand the interrelated and dynamic factors highlighted by the Complex Adaptive System when developing these frameworks.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

Baillie, C., Bowden, J., & Meyer, J. (2013). Threshold capabilities: Threshold concepts and knowledge capability linked through variation theory. *Higher Education. 65,* 227–246. https://doi.org/10.1007/s10734-012-9540-5

Banson, J. (2022). Co-regulated learning and online learning: A systematic review, *Social Sciences & Humanities Open, 6*(1). 1–12. https://doi.org/10.1016/j.ssaho.2022.100376.

Bengoetxea, E., Kallioinen, O., Schmidt-Jortzig, I., & Thorn, R. (2011). Quality Assurance in Lifelong Learning. *European Association for Quality Assurance in Higher Education (ENQA) Workshop Report 18,* 5-28.

Bond, K., Gibbs, B., Harris, G., Lewis, E., Pate, A., Renyard, J., Wint, N. & Wood, G.C. (2023). Literature Reviews: When Quality Assurance Meets Innovation in Higher Education. *Working Paper.* 3–15.

Broadbent, J., & Poon, W.L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education,* 27, 1–13. https://doi.org/10.1016/j.iheduc.2015.04.007

Butler-Henderson, K., & J. Crawford. (2020). A Systematic Review of Online Examinations: A Pedagogical Innovation for Scalable Authentication and Integrity. *Computers & Education.* 159, 1–9. https://doi.org/10.1016/j.compedu.2020.104024

Campbell, M., Saltmarsh, S., McPherson, A., & Drew, C. (2013). Issues of teacher professional learning within 'non-traditional' classroom environments. *Improving Schools, 16*(3), 209–222. https://doi.org/10.1177/1365480213501057

Demir, M. (2021). Alternative Assessment Methods in Primary Education: Review and Future Directions. In Kiray, S.A. & Tomevska-Ilievska, E. (Eds.), *Current Studies in Educational Disciplines.* (227–272). International Society for Research in Education and Science (ISRES).

Ellis, B. & Herbert, S.I. (2011). Complex adaptive systems (CAS): An overview of key elements, characteristics and application to management theory. *Informatics in Primary Care. 19*(1), 33-37. https://doi.org/10.14236/jhi.v19i1.791

Foerster, M., Gourdin, A., Huertas, E., Möhren, J., Ranne, P., & Roca, R. (2020). Framework for the Quality Assurance of e-Assessment. *Trust based Authentication and Authorship e- E-assessment Analysis (TESLA*). 5-21.

Greenhow, C., Graham, C. R., & Koehler, M. J. (2022). Foundations of online learning: Challenges and opportunities. *Educational Psychologist*, *57*(3), 131-147. https://doi.org/10.1080/00461520.2022.2090364

Haleem, A., Javaid, M., Qadri, M.A. & Suman, R. (2022). Understanding the role of digital technologies in education: A review, Sustainable Operations and Computers, 3, 275-285. https://doi.org/10.1016/j.susoc.2022.05.004

Holland, J.H. (1992). Complex Adaptive Systems. *American Academy of Arts & Sciences and The MIT Press*, 121, 17-30.

Huber, E., Harris, L., Wright, S., White, A., Raduescu, C., Zeivots, S., Cram, A., & Brodzeli, A. (2024). Towards a framework for designing and evaluating online assessments in business education. *Assessment and Evaluation in Higher Education*, *49*(1), 102–106. https://doi.org/10.1080/02602938.2023.2183487

Jung, I., & Latchem, C. (2007). Assuring quality in Asian open and distance learning, *Open Learning: The Journal of Open, Distance and e-Learning, 22*, 235-250. https://doi.org/10.1080/02680510701619885

Kuhlmann, S.L., Greene, J.A. & Bernacki, M.L. (2024). Online learning. *Reference Module in Neuroscience and Biobehavioral Psychology*. 1-8. https://doi.org/10.1016/B978-0-323-96023-6.00089-0

Leadbeater, C., & Wong, A. (2010). Learning from the Extremes: A White Paper.Learning-centred educational experiences in the higher education classroom. *International Journal of Instructional Media, 29*(1), 69–77. CISCO.

Maddison, T., Doi, C., Lucky, S., & Kumaran, M. (2017). Literature Review of Online Learning in Academic Libraries. In Maddison, T & Kumaran, M. (Eds.), *Distributed Learning, (*13–46). Chandos Publishing. http://doi.org/10.1016/B978-0-08-100598-9.00002-7

Martirosov, A. L., Alex, J., Doane, A., Patel, R., Aprilliano, B., & Kale-Pradhan, P. (2023). Podcasts and videos and slides… oh my!: Traditional vs. nontraditional teaching methods in remote settings. *Currents in Pharmacy Teaching and Learning*, *15*(6), 587-592. https://doi.org/10.1016/j.cptl.2023.06.007

McLean, S. (2022). Understanding the evolving context for lifelong education: global trends, 1950–2020. *International Journal of Lifelong Education*, *41*(1), 5–26. https://doi.org/10.1080/02601370.2021.2015634

Moore, M. G., & Kearsley, G. (2012). *Distance education: A systems view of online learning* (3rd Ed.), Wadsworth Publishing Company.

OECD (2024), *Bridging Talent Shortages in Tech: Skills-first Hiring, Micro-credentials and Inclusive Outreach, Getting Skills Right,* OECD Publishing https://doi.org/10.1787/f35da44f-en

Okada, A., Noguera, I., Alexieva, L., Rozeva, A., Kocdar, S., Brouns, F., Ladonlahti, T., Whitelock, D., & Guerrero-Roldán, A. E. (2019). Pedagogical approaches for e-assessment with authentication and authorship verification in higher education. *British Journal of Educational Technology, 50*(6), 3264–3282. https://doi.org/10.1111/bjet.12733

Petrides, L. A. (2002). Web-based technologies for distributed (or distance) learning: Creating learning-centred educational experiences in the higher education classroom. *International Journal of Instructional Media,* 29(1), 69–77.

Preiser, R., Biggs, R., De Vos, A., & Folke, C. (2018). Social-ecological systems as complex adaptive systems: organising principles for advancing research methods and approaches. *Ecology and Society*, *23*(4), 1-15. https://doi.org/10.5751/ES-10558-230446

Scott, C.L. (2015). The Futures of learning 2: What kind of learning for the 21st century? *Education, Research and Foresight: Working papers, 14 (UNESCO).* 1–14.

Shet, A. (2024). New Horizons in Teaching: A Comparative Review of Online and Traditional Teaching Method. *International Journal for Multidisciplinary Research, 6*(3), 1–8. https://doi.org/10.36948/ijfmr.2024.v06i03.22785

Snyder, S. (2013). The Simple, the Complicated, and the Complex: Educational Reform Through the Lens of Complexity Theory. *OECD Education Working Papers*, 6–29. https://doi.org/10.1787/5k3txnpt1lnr-en

UNESCO. (2015). *UNESCO and Education 2030: Framework for Action and Sustainability Development goals 4, SDG4*. UNESCO.

Timmis, S., Broadfoot, P., Sutherland, R., & Oldfield, A. (2015). Rethinking assessment in a digital age: opportunities, challenges and risks. *British Educational Journal. 42*(3), 454–476. https://doi.org/10.1002/berj.3215

Tularam, G.A., & Machisella, P. (2018). Traditional vs Non-Traditional Teaching and Learning Strategies -- The Case of E-Learning! *International Journal for Mathematics Teaching and Learning, 19* (1), 129-158. https://doi.org/10.4256/ijmtl.v19i1.21

Yang, C. (2019). *The Fourth Industrial Revolution, Aging Workers, Older Learners, and Lifelong Learning. Adult Education Research Conference.* Conference Proceeding. Buffalo, New York. 1–7.

Key Principles for Over-Arching National Assessment Policy: A South African Perspective

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Reference Formats (APA 7th Edition)
Bolton, H., Ntshayintshayi, N., Bolton, S., Hleza, T., Mokwele, T., Eve, C., Lebooa, C., & Mahlangu, Z. (2024). Key Principles for over-arching national assessment policy: A South African perspective. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 170-191). ERRCD Forum. https://doi.org/10.38140/obp2-2024-12

Abstract: The South African system for education, training and development is framed by the National Qualifications Framework (NQF), intended to reform pre-democracy unfair practices. The NQF objectives of access, redress, mobility, progression, quality, and transparency are achieved by implementing the NQF policy suite, including policies for qualifications, assessment, and recognising learning. The National Policy for Designing and Implementing Assessment, developed by the South African Qualifications Authority (SAQA), frames assessment across diverse NQF contexts. This paper seeks to address the questions: (1) *'What does the literature say about the features of good assessment policy?* (2) *'What aspects feature in the assessment policies of high-achieving schooling systems, higher education institutions and vocational bodies internationally?'* and (3) *What lessons can be drawn from the literature and sourced policies.* The paper presents a literature review on sought-after criteria in assessment policy and a qualitative analysis of the overarching national, schooling, higher education, and vocational assessment policies of the 16 countries selected. It draws on the literature and policies to develop recommendations to enhance South African assessment policy. The findings pointed to key aspects for development in South African national assessment policy, particularly in the areas of academic integrity and ethics; plagiarism; online assessment and technology and assessment; greater guidance in enabling and supporting diverse groups; closing the loop between current and future learning or work; and greater clarity in, and accessibility of, guidance for policy implementers. Drawing on these findings could potentially strengthen South African assessment policy in the NQF context.

Keywords: Assessment policy, assessment principles.

1. Introduction

The South African system for education, training, and development is framed by the National Qualifications Framework (NQF), a relational device to integrate and reform pre-democracy unequal and unfair practices. The NQF objectives of access, redress, mobility, progression, quality, and transparency are achieved by implementing the NQF policy suite, comprising policies for qualifications, recognising learning, credit transfer, and assessment, amongst others. The South African Qualifications Authority (SAQA) oversees the development and implementation of these policies, providing leadership and guidance for the three Quality Councils – for general and further, higher, and occupational qualifications respectively – in this regard.

The National Policy and Criteria for Designing and Implementing Assessment for NQF Qualifications and Part-Qualifications and Professional Designations (SAQA, 2014) broadly frames assessment across these diverse contexts, serving, on one hand, to align assessment policies in the system with the NQF objectives and values in the South African Constitution, and on the other hand to uplift the different traditions, encouraging good assessment practices. SAQA is in the process of reviewing, updating, and strengthening this overarching national assessment policy.

8.1 Problem statement

The research presented in this paper was designed to inform the South African national assessment policy review.It explored the literature on the qualities delineated for good assessment policy and sought to understand the features of assessment policies in highly ranked schooling systems, associated Vocational Education and Training (VET) entities, and top-rated higher education institutions (HEIs). The intention was to triangulate the assessment principles highlighted in the literature with those identified in the selected policies. It was believed that a comparative analysis might reveal gaps in both the literature and the policies, both of which had the potential to enhance overarching assessment policy in South Africa.

1.2. Research questions

The research presented in this paper sought to address the following questions.

- What does the literature say about the qualities of good assessment policy?
- What aspects are included in the assessment policies of high-achieving schooling systems, higher education institutions and vocational bodies internationally?
- What aspects in the literature and assessment policies studied offer insights to enhance the National Policy for Designing and Implementing Assessment (SAQA, 2014) in South Africa?

The hypothesis informing the research was that while the literature could highlight the principles of good assessment policy, the analysis of existing policies in high-performing systems and institutions might shed further light on what features are elaborated, and how these are combined and delineated.

1.3 Paper overview

The paper presents a literature review of the principles found in good assessment policy. It then outlines an analysis of the features in the assessment policies of selected high-performing systems and entities. A comparative analysis follows, between qualities identified in the literature and features of the selected policies, that points to elements that could contribute to the literature and strengthen overarching assessment policy in South Africa and elsewhere.

2. Principles of Good Assessment Policy Found in the Literature

Principles that shape assessment design and application are known to play a vital role in the success of learning (Islam et al., 2021). The literature review utilised various search techniques for articles that interrogated the notion of *good assessment policy* and *policy for quality assessment*. While

the implementation contexts of assessment policy are diverse (Organisation for Economic Cooperation and Development [OECD], 2013), this variance makes a narrow categorisation of key assessment principles difficult; several aspects are either commonly used or their importance can be inferred from their use. Such aspects highlighted in the literature.

2.1 Validity and reliability

There is extensive literature on the extent to which assessments accurately measure what they intend to assess (validity) and whether these produce consistent results (reliability), including how related challenges can be addressed (Jackson et al., 2023; Rasooli et al., 2019; Roy et al., 2018; Sireci, 2014). There are different views surrounding the validity of assessments that measure higher-order thinking skills and other complex competencies, and there is general agreement that traditional assessments, such as multiple-choice tests, fail to capture these skills effectively (Rintayati et al., 2021).

2.2 Clarity and transparency

Clarity and transparency are essential components of good assessment practice. Clearly defining the desired learning outcomes and assessment criteria, along with contextually appropriate supportive pedagogic practices, enables learners to understand and work towards achieving the assessment goals (Bolton, 2013). Clarity and transparency in assessment refer to the degree to which assessment expectations, criteria, and purpose are clear and accessible to students, ensuring that learners understand what is being evaluated and how they can effectively demonstrate their learning (Roy et al., 2018). Assessment policy must ensure that these aspects are clearly elaborated in context-specific ways that are easy to understand, interpret, and apply, fostering an awareness of the consequences of assessment.

2.3 Alignment with educational goals

The alignment of assessment policies and assessments with broader educational goals is essential to ensure that they are relevant and contribute to desired learning outcomes (Butler et al., 2018; Islam et al., 2021). Gaps between policy and practice can be detrimental to learning, so policy developers need to collaborate with implementers to create effective policies and guidelines (Doucet & Pont, 2021).

2.4 Inclusivity and fairness

Internationally, there are efforts to enhance inclusivity and accommodations in assessment policy to ensure fairness by addressing individuals' special needs, providing equitable opportunities for different cultural, language, and socio-economic groups, as well as for those with varying physical and mental abilities and learning styles. Recent studies have highlighted these efforts across various educational contexts (Tai et al., 2023). Assessment accommodations are implemented globally in higher education systems, for instance, to ensure that students with disabilities can participate fairly (Nieminen & Eaton, 2024; Tai et al., 2023). While discrimination

and bias impact feelings of belonging in a learning environment (Hussain et al., 2019), feelings of trust and inclusion enhance learner achievement levels and narrow the gaps between demographically different learners (Yeager et al., 2014). Although the field of inclusivity and fairness in some contexts is relatively new and growing, with a need for empirical research and theoretical frameworks (Bain, 2023), inclusivity is a well-established national approach in democratic South Africa, which has a diverse population and an entrenched legislative framework to support it (Bolton & Matsau, 2022).

2.5 Flexibility and standardization

The objective nature of standardised processes enables the creation and efficient external adjustment of structured curricula and assessments that guide learning environments (Yang, 2023). However, a concern with standardised systems is their relative inability to evaluate creativity, imagination, conceptual thinking, and other higher-order skills, as well as their association with assessment processes that can be stressful for both teachers and learners, all of which potentially affect the validity of such assessments (Yang, 2023). Standardised curricula and assessments may also exclude certain groups in a diverse society.

Policy that allows more flexibility in assessments enables teachers to tailor assessments to the needs of learners and focus on active engagement, which has been shown to enhance the achievement of learning outcomes (Errisuriz et al., 2021; Phothongsunan, 2020; Wu et al., 2021). Similarly, effective pedagogy for groups of learners in diverse socio-economic contexts has been found to include detailed, explicit, and frequent feedback in formative assessments (Bolton, 2013). An approach that combines teacher and school flexibility in designing and implementing assessments within a framework of standardised criteria has been linked to student success (Ministry of Education Ontario [MEO], 2024b).

2.6 Assessing soft skills

The idea of assessing soft skills refers tothe evaluation of non-technical personal attributes such as communication, teamwork, problem-solving, adaptability, leadership, and emotional intelligence, which are important for success in the workplace (Succi & Wieant, 2019). Soft skills are often assessed through interviews, situational judgment tests, and role-playing, where learners are observed regarding their behaviour in simulated work environments, among other methods (Succi & Wieant, 2019). Hard skills are generally understood to be technical and quantifiable (Succi & Wieant, 2019) and can be field-specific or cross-cutting.

A topic of discussion in recent literature is the role of soft skills in employability and their essentiality in today's labour markets (Succi & Wieant, 2019; Yang, 2023). There is general agreement that new technologies are powerful tools in the teaching, learning, and assessment of soft skills (Cimatti, 2016). Čubrić & Čubrić (2016) address a range of ICT tools used in the teaching of such skills, while O'Connor et al. (2016) highlight the role of technology in

integrating the development of soft skills into pedagogical processes. However, the teaching, learning, and assessment of soft skills remain a relatively new area.

2.7 Role of technology in assessment

Technology has been described as a cornerstone in the transformation of assessment methods in education and training (Kusmawan, 2023). The impact of technology on assessment is a complex and evolving topic. Extensive research has been conducted on various aspects of current technologies, such as the benefits and challenges of Artificial Intelligence (AI) and its applications in assessment, the adaptability of assessments, and the automation of assessment (Bennett, 2011; Kusmawan, 2023). However, there are cautionary voices warning against an over-reliance on technological tools. Critics argue that excessive dependence on technology can create barriers for students lacking adequate resources, lead to potential technical failures, and diminish the role of human judgement in assessment processes (Sintonen, 2020). The 2020 pandemic highlighted some of the benefits of technological advances in remote learning and assessment (Takar, 2020).

2.8 Contextual relevance

Assessment policies are contextually situated and can refer to country aspirations, education and training system goals, and assessment and learner contexts, as well as regional, continental and global foci, and others. Assessment policy developed in one context – country, socio-economic, cultural, learner capability, technological, teaching advancements, and others – may not be valid when applied in other contexts (OECD, 2013). It is argued that contextual relevance should be a key component of good assessment policy.

2.9 Assessment integrity

Assessment integrity isthe practice of ensuring that assessments are fair, accurate, and trustworthy.It involves designing assessments to prevent cheating and plagiarism while promoting student learning (Holden et al., 2021). In the literature, the topic of integrity frequently arises in discussions about dishonesty in post-secondary education and how assessment design can be structured to enhance academic integrity (Holden et al., 2021). The role of technology in assessment integrity is also an increasingly important topic, particularly in the field of AI (Bin-Nashwan et al., 2023).

3. Method and Sampling

The research was designed to inform the review of overarching national assessment policy. First, principles of good assessment policy were sought in the literature. Secondly, a sample of policies from high-performing countries and entities was selected, covering the national, schooling, VET, and higher education sectors. Principles from the literature, along with additional aspects

identified in any sampled policy, were systematically sought across all policies in the sample. The following studies and rankings were used for the selection.

- Progress in International Reading Literacy Study (PIRLS) (Mullis et al., 2023)
- Trends in International Mathematics and Science Study (TIMSS) (Mullis at al., 2020)
- Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ IV) (Awich, 2021)
- Quacquarelli Symonds Universities Rankings 2024 (QS)
- Edurank.org rating system 2024

3.1. Selection of countries for schooling assessment policies

The starting point was to use PIRLS and TIMSS scores above the midpoint in the respective studies to select a single country per area corresponding with the world regions outlined in the United Nations (UN, 1999) M49 Geoscheme. To include a range of African countries, SAQMEQ IV scores for Reading and Mathematics were employed to choose countries across the UN M49 Geoscheme regions. In the case of SACMEQ IV, a mean score was generated for Reading and Mathematics based on the scores of male and female learners per country. From this dataset, a midpoint was established from the average of the scores, and data were selected from above this midpoint.

The countries included in the initial sample were Australia, Botswana, Canada, eSwatini, Ethiopia, Ghana, Ireland, Kenya, Mauritius, Namibia, New Zealand, Seychelles, Singapore, South Africa, the United Arab Emirates (UAE), the United Kingdom (England), the United States of America (USA), and Zimbabwe – a total of 18 countries, with 72 policies expected for analysis.

3.2 Selection of post-school assessment policies

Higher education institutions (HEIs) were then selected for the chosen countries using two systems. The first, QS, ranks the top 1500 universities globally based on numerous factors, including academic and employer-related reputation, student numbers, citations per faculty, international faculty and students, research networks, employment outcomes, and sustainability.

This system did not adequately cover the desired geographic spread of regions for the sample. Therefore, to expand regional reach, an additional rating system, Edurank.org, was used to identify high-ranking HEIs in the selected countries. Edurank.org ranks HEIs based solely on academic publications and citations. National, vocational, and occupational training assessment policies were sourced from the high-achieving countries that had already been selected.

3.3 Final sample

Sourcing policies required an understanding of the country systems and entity responsibilities regarding assessment, with some countries charging prohibitive fees for this information.

Additionally, policies were not always available on websites, leading to a general lack of accessibility to vocational and occupational assessment policies.

The structuring of assessment policy varied widely across countries and institutions. In some instances, there were combined policies for the schooling and vocational sectors, the national and schooling sectors, or the national and vocational sectors, and sometimes multiple policies per sector. The reach of these policies could be national, provincial, or institutional. The assessment policies could be standalone or combined with those for national qualifications frameworks, or VET/HEI policies for quality assurance or student guidance. The latter included, or were separate from, policies on plagiarism and the use of technology in teaching, learning, and assessment. Where there were multiple complementary policies within a sector per country, the policies were analysed as a policy set.

The final sample used for analysis was a subset of the intended sample, based on the selection criteria described and the availability of documents. For each country in the sample, at least one assessment policy was sought for each of the national, schooling, VET, and HE sectors. Of over 100 policies sourced, 75 were included in the sample and analysed. These documents, notwithstanding their diversity, contained areas of elaboration potentially useful for countries seeking to update and strengthen their national educational assessment policies.

Table 1 shows the 16 countries comprising the final sample.

Table 1: *Assessment policies sourced for analysis by country and sector*

Country (Coded)	Types of assessment policies sourced			
	National assessment policy	**Schooling assessment policy**	**Trade/ Occupational/ Vocational assessment policy**	**HEI assessment policy**
0001	O1, O2, O3	S1	V1, V2	H1, H2
0002	O1	S1	V1	H1
0003		S1	V1	H1
0004	O1	S1 (Also V1)	V1 (Also S1)	H1, H2
0005	O1	S1		H1
0006	O1 (Also V1)	S1, S2, S3	V1 (Also O1)	H1, H2
0007	O1	S1	V1, V2	H1
0008	O1, O2, O3	S1, S2	V1	H1
0009	O1	S1	V1	H1
0010	O1 (Also S1, V1)	S1 (Also O1, V1)	V1 (Also O1, S1)	H1, H2
0011	O1	S1	V1	H1
0012	O1	S1	V1	H1, H2

0013	O1	S1, S2	V1, V2	H1, H2
0014		S1, S2	V1	H1
0015		S1, S2, S3		H1, H2
0016	O1	S1		H1

Legend:

- **Green** = Policies sourced; **Yellow** = Policies not found
- O=Overarching, S=Schooling, V=Trade/ Occupational/ Vocational, H=Higher Education
- 1, 2, 3 refer to the number of policies of the specific type sourced

Table 1 shows the 16 countries in the final sample, in code form, and the policy types sourced and analysed. Documents were found in some instances (highlighted in green) and not in others (highlighted in yellow). Where a single document applies to more than one sector, it is indicated in all the sectors that apply.

3.4 Analysis

A thematic analysis (Naeem et al., 2023) was conducted to explore the background and contextual information included in the sampled policies, the principles of good assessment policy identified through the literature survey, and additional areas within the policies that could potentially enhance South African and other assessment policies. The three aspects not elaborated on in the literature, but found in several policies within the sample, were, firstly, currency, or the extent to which the policy reflects current expectations, standards, and good practice. Secondly, multi-faceted assessments, which refer to the use of multiple forms of assessment to increase the effectiveness and fairness of the evaluation process. Thirdly, Recognition of Prior Learning (RPL), which encompasses processes through which prior knowledge and skills—whether formal, non-formal, or informal—are made visible, mediated, and assessed for the purposes of alternative access and admission to studies, recognition and certification, or further learning and development (SAQA, 2019).

The analysis thus identified the following in all the sampled policies:

A. Validity
B. Reliability
C. Clarity
D. Transparency
E. Alignment with Educational Goals
F. Inclusivity and Fairness
G. Flexibility
H. Standardization
I. Assessing Soft Skills
J. Role of Technology in Assessment
K. Contextual Relevance
L. Recognition of Prior Learning (RPL)
M. Integrity (Responsibility/Accountability/Plagiarism)

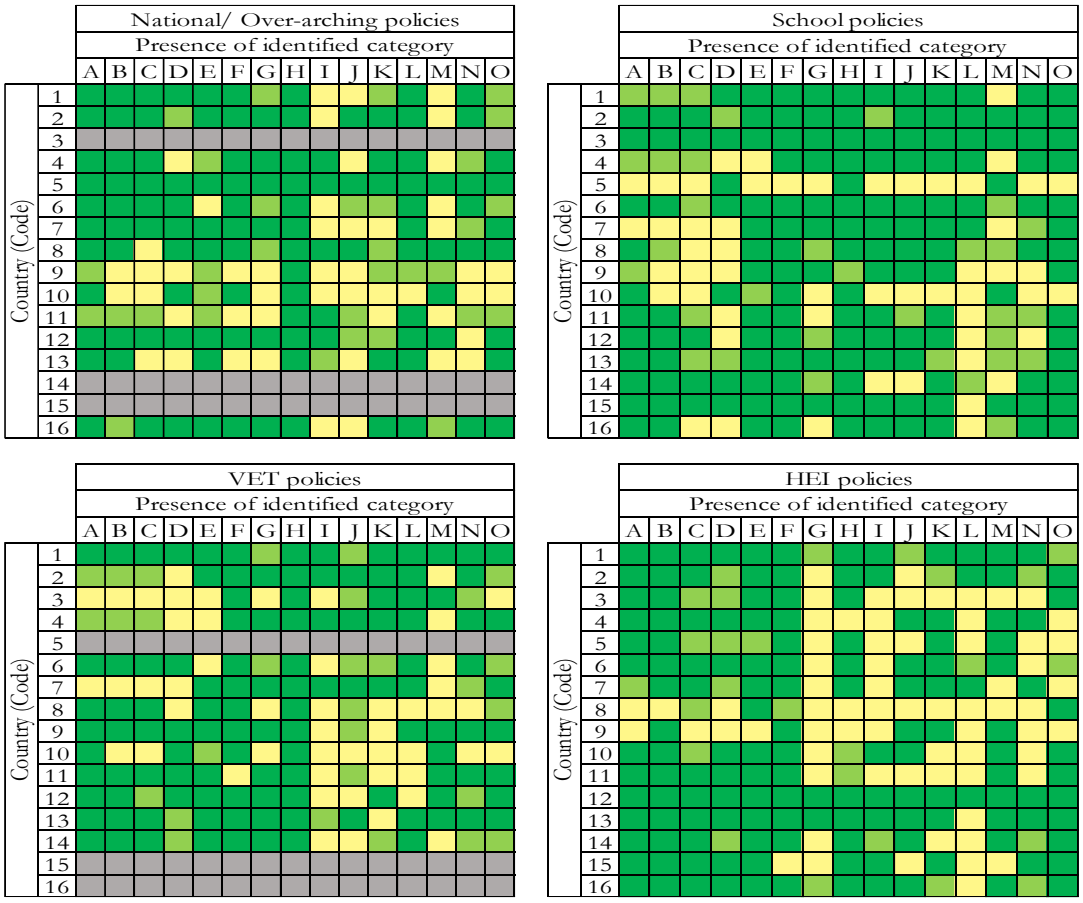
N. Currency
O. Multifaceted assessment

The presence of these aspects was noted as being *explicit* when referred to by name, and *implicit* when interpretation could *infer* the quality. Aspects thought to be too context-specific and *not* analysed were policy purposes and objectives, implementation procedures, and implementation roles and responsibilities. Information from the analysis was captured using an Excel spreadsheet and compared with that in existing national South African assessment policy (SAQA, 2014) towards its potential enhancement.

4. Results

Table 2 shows the presence in the analysed policies, of features associated in the literature with good assessment policy, and additional features identified across the sourced policies. Countries are assigned numbers for anonymity.

Table 2: *Analysis of sourced national, schooling, HEI and VET policies*



Legend: (See list of assessment features in Section 3.4)

- **Dark green** = Explicit
- **Light green** = Implicit

- **Yellow** = Feature not found
- **Grey** = Policy not found

Table 2 shows that the principles and features identified in the literature review and policies were well represented in the sourced policies of the selected countries. In the sample overall, across all sectors, 530 of 870 (61%) of the references to the features were found to be explicit; 119 (14%) were categorised as implicit, and 221 (25%) were deemed not present. However, differences in how the information was elaborated appeared to be important for the revision of South African national policy and assessment policies elsewhere.

In the four sectors investigated, the most common principles were found to be as follows, with numbers and percentages for the sub-sample provided in brackets.

- National
    - Standardization (13 explicit, 100% of sub-sample)
    - Validity (11 explicit, 2 implicit, 100%)
    - RPL (11 explicit, 1 implicit, 92%)
    - Reliability (9 explicit, 2 implicit, 85%)
    - Alignment with educational goals (8 explicit, 4 implicit, 92%)
    - Multifaceted assessment (7 explicit, 4 implicit, 85%)
- Schooling
    - Standardization (15 explicit, 1 implicit, 100% of sub-sample)
    - Inclusivity and fairness (15 explicit, 94%)
    - Multifaceted assessment (14 explicit, 88%)
    - Alignment with educational goals (13 explicit, 1 implicit, 88%)
    - Contextual relevance (13 explicit, 1 implicit, 88%)
    - Validity (11 explicit, 3 implicit, 88%)
- VET
    - Standardization (13 explicit, 100% of sub-sample)
    - Inclusivity and fairness (12 explicit, 92%)
    - Validity (9 explicit, 2 implicit, 85%)
    - Relevance and/or currency (7 explicit, 4 implicit, 85%)
    - Multifaceted assessment (7 explicit, 4 implicit, 85%)
- HEI
    - Inclusivity and fairness (15 explicit, 94% of sub-sample)
    - Reliability (14 explicit, 1 implicit, 94%)
    - Clarity (14 explicit, 1 implicit, 94%)
    - Alignment with educational goals (11 explicit, 4 implicit, 94%)
    - Validity (13 explicit, 1 implicit, 88%)
    - Transparency (9 explicit, 5 implicit, 88%)

5. Discussion of Findings

Overall, the policy analysis (Table 2) showed that the fifteen key assessment aspects were present in the documents of highly ranked systems and institutions, but unevenly so. Of the fifteen

principles identified, six were found in over 70%-80% of the assessment policies sourced, namely validity, reliability, alignment with educational goals, inclusivity and fairness, and using multifaceted assessments – with validity and standardisation being present in over 80% of policies across all four sectors. Features found less often overall were assessing soft skills, using technology in assessments, and RPL, amongst others.

Patterns varied across the four sectors – national, schooling, higher education, and VET. In the HEI policies, almost all documents elaborated on validity, reliability, clarity, transparency, alignment with educational goals, inclusivity, fairness, and standardisation, and over 70% detailed contextual relevance, transferability, academic integrity, and the use of multifaceted assessments. The focus on clarity and transparency was more frequent in this sector than in the others. Just under two-thirds explained the use of technology in assessment, and around half had requirements for currency and the assessment of soft skills. Internationally, notably, only a quarter of the policies touched on the flexibility of assessments or RPL, while in South Africa this is a major focus (Bolton & Matsau, 2022; Bolton, Blom & Matsau, 2020).

In contrast, while over 80% of the assessment policies at national level elaborated on validity, reliability, alignment with educational goals, standardisation, and multifaceted assessments, and over 70% on contextual relevance, transferability, inclusivity, and fairness – over 80% also elaborated on the need for flexibility in assessment and RPL, showing that these are national imperatives. Less frequently, in around two-thirds of the national policies, detail was found on clarity, transparency, and currency; around half of the national policies required the assessment of soft skills and detailed the use of technology in assessment, and 40% addressed integrity in assessment.

The schooling sector policies showed clear parallels with the national policies, with the latter more frequently referring to clarity and transparency. Over 70% of the schooling policies addressed the assessment of soft skills and the use of technology in assessment – in this regard, it seems that the schooling sector is ahead of the other sectors. Academic integrity was covered as such in around two-thirds of policies sourced, and RPL in around 40% – the low percentage of the latter being a challenge when basic education policies provide for adult learners.

Over 80% of the VET assessment policies elaborated on validity, inclusivity and fairness, currency, and multifaceted assessments – with VET being the only sector in which currency was emphasised in most (85%) of the documents sourced. Similarly, over 70% detailed requirements for clarity, flexibility, and using technology in assessment. Two-thirds of the VET policies addressed RPL, a higher proportion than that in the schooling and HEI documents. While only two-thirds of VET policies explicitly detailed the need for transparency and contextual relevance, the policies themselves were found generally to be transparent and clear, and developed for specific contexts. Some 38% referred to the assessment of soft skills.

Content in the assessment policies differed in the extent to which it was explicitly expressed or implied, but where content was present, it was explicit in over 60% of instances.

The features in the sourced policies broadly matched those identified in the literature, but in varied frequencies and combinations, and extent of elaboration. The study thus focused on how the features were elaborated in the policies sourced. The dimensions of six of the fifteen principles identified in the literature are sketched for their usefulness for the South African assessment policy review, namely, those relating to policy context; inclusivity and fairness; online assessment and using technology in assessment; academic integrity, ethics and plagiarism; closing the loop; and clarity, transparency, and guidance.

5.1. Policy context

Most of the policies analysed framed assessment within country, legislative, institutional, or curriculum contexts, or combinations of these aspects. This framing was elaborated to differing extents, although all served to align the assessment policy with its implementation context(s). Ghana's National Pre-Tertiary Education and Curriculum Framework (Republic of Ghana Ministry of Education, 2018) provides a useful example of policy embedded in *country, regional, continental, and global aspirations, as well as the legislative context*, where the contexts are nested and linked explicitly to curriculum and assessment.

The *country aspiration* of quality education for all is laid out, including curriculum and assessment goals, intended learning experiences, and the resources needed. The curriculum, assessment, and approach are intended to be catalysts for achieving the Sustainable Development Goals (SDGs) (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2017) and for broadly educated citizens for whom schooling is the foundation for lifelong learning and work. These goals are, in turn, aligned with the *African Union Agenda 2063* (African Union Commission, 2015) of quality education, inclusive socio-economic development, entrepreneurship, scientific literacy, industrial transformation, and responsible citizenship – rooted in Pan-Africanism and the African Renaissance.

These country and African contexts are positioned within the *global context* (Republic of Ghana, 2018), where learners need to be fluent in key global as well as local languages and possess global competencies such as critical thinking, problem-solving, creativity and innovation, communication and collaboration, local cultural identity and global citizenship, as well as leadership qualities, digital literacy, awareness of climate change, and skills for a green economy, among others. The *teaching and learning context* is, in turn, linked to the country, continental, and global contexts, with the requirement that teachers have deep subject and pedagogical knowledge and undergo regular continuing professional development (CPD). *Implementation factors* such as quality leadership and management, quality assurance, and monitoring and evaluation frame all aspects, and the *legislative context* mirrors the other contexts described.

5.2. Diverse learner groups and inclusivity

Equity and inclusivity are central concerns in post-democratic South Africa and elsewhere, as evidenced by the frequency of these items in the sourced policies. Useful elaborations, while not necessarily directly transportable across contexts, illustrate principles that could be adapted.

Australia's Tertiary Education Quality and Standards Agency (TEQSA, 2021) policy, Clause 2.2[1], for example, requires the institutional policies of HEIs to accommodate student diversity, especially under-represented and disadvantaged groups, and "create equivalent opportunities for academic success regardless of students' backgrounds." Specified (named) groups receive targeted attention and are tracked and monitored towards enhancing admission policies, as well as teaching, learning, and support for these groups.

Similarly, in Australia, the Queensland Department of Education (QDE, 2023, p. 14) Curriculum, Assessment, and Reporting Framework promotes a whole-school approach to teaching, learning, and assessment where teachers "differentiate to ensure every student is engaged, challenged, and supported and develops the knowledge, skills, and dispositions necessary to realise their potential" and "provide learning opportunities and tailored supports that recognise/respond to individual learning needs." The QDE established and maintains an Assessment and Moderation Hub with resources for all teachers. Schools analyse assessment and reporting data to identify diverse learner groups and address the student needs through "increasingly personalised differentiation" and "tailored support" for curriculum access or an "individual curriculum plan" (ICP) or "highly individualised curriculum plan" (HICP) (QDE, 2023, pp. 16-17). The policy lists groups who may require additional support – including learners who are deaf, hard of hearing, or who have deaf parents; learners with home languages other than English; learners whose families are immigrants from countries where English is not a main language; learners with refugee backgrounds; learners who are "international students" or "children of international students"; and learners returning from living in countries where English is not a main language, amongst others (QDE, 2023, p. 19). This clarity provides guidance for inclusive practices.

In the Botswana Examinations Council's (BEC, 2018) *Issues and Options Paper*, similarly, the principles of inclusivity, fairness and flexibility, including adjusting assessment practices to support the achievement of learning outcomes, are elaborated. While the later National Policy on Assessment for General Education and TVET summarises these aspects, the details in the Paper comprise a rich source of information for policy writers and implementers. For example, disabilities can be physical, intellectual, psychological, sensory, neurological, learning-related, disfigurement-related, and disease-related (BEC, 2018, p. 20). The definition of *disadvantage* includes learners whose families or socio-economic circumstances hinder their ability to learn and can relate to gender, ethnicity, socio-economic status, AIDS/HIV status, poverty, lack of adequate family support, or discrimination. The resulting "reasonable adjustments" need to

uphold the needs of individual learners, the integrity of learning outcomes and standards, and equity, fairness, and consistency, and can include adjusted assessment procedures, methods, venues, adaptive technologies, scheduling, and others to create accommodating timeframes, types of assessments, and equipment (BEC, 2018, pp. 20-21). General Education and Training Providers need to develop a Reasonable Adjustment Policy (RAP) and share it with learners and their families, train staff to implement it, and prevent related victimisation (BEC, 2018, p. 21).

In a fourth example, Canada's Ministry of Education Ontario (MEO, 2024c) publishes detailed information on Indigenous education and supporting First Nation Schools. The Ministry seeks to enhance access, close the achievement gap between Indigenous students and all students, and build awareness of Indigenous histories, cultures, languages, and perspectives. Support is provided through School Boards and other mechanisms such as formal agreements with traditional councils. School Boards develop and report on the related policies, and every Board must have a full-time position dedicated to supporting Indigenous education, as formally guided by an Indigenous Education Council (IEC). Boards are encouraged to have Indigenous Graduation Coaches to support students in their studies and transitioning into further learning and work (MEO, 2024c). The Ministry funds initiatives towards the success of specified Indigenous groups, including programmes on Indigenous knowledge and ways of knowing, Indigenous cultures, and Indigenous languages (MEO, 2024c). The website (MEO, 2024c) provides the necessary information and links.

While many assessment policies sourced had accommodations for learners with special needs, the Ministry of Ontario's *Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools, P-12* (MEO, 2024b, pp. 69-79) was unusually comprehensive and clear. In this document, the early identification of special needs is imperative so that Individual Education Plans (IEPs) can be developed. An IEP can include *accommodations only*, individualised assessment strategies (e.g. extended assessment times, large text size, oral testing, assistive devices, alternative methods and settings), or *modified learning expectations* together with such accommodations, where course outcomes are not compromised, or an *alternative curriculum programme*. The starting point for an IEP is an individual's learning strengths and needs, investigated via a variety of assessment methods. The policy provides detailed resources for each type of IEP, and its implementation and monitoring.

The notion of "credit recovery" was found in Ontario's *Growing Success* policy (MEO, 2024b, pp. 83-89), designed to keep secondary school students who have failed summative assessments in the system. It is implemented with strict quality control measures to maintain its credibility. Credits may be recovered from the daily teaching, learning, and assessments of a qualified teacher, and there are no limits to the amounts of credits recovered. It is based on an inclusive school culture and considers multiple factors that may have hindered learning achievements, and not assessment grades alone. It is regulated by teachers, the School Credit Recovery Team, the

principal, and the School Board. Emphasis is placed on the school *providing opportunities for students to demonstrate* how course outcomes have been met.

5.3. Online assessment and using technology in assessment

Most of the sourced policies, especially those pre-dating the 2020 COVID pandemic, did not elaborate on online assessment and the use of technology in assessment. However, useful examples were found.

The website of the Ministry of Education in Ontario (MEO, 2024a) contains links to valuable resources for online teaching, learning, and assessment, where items can be sourced by user type (teachers, families, carers), by school grade and school subject. The resources are designed to support student learning at home, with or without parental-type support, and are state-branded or sanctioned and freely available. The policy *Growing Success* (MEO, 2024a) provides for e-learning to supplement classroom learning. School Boards deliver provincially developed e-learning credit courses; Boards and teachers utilise the Ontario Educational Resource Bank (OERB). These online resources include roles and responsibilities, e-learning contacts and help desks, and information on the hardware, software, and technologies needed for e-learning.

The United Arab Emirates (UAE) Ministry of Education's National Qualification Centre (UAE-MOE, 2023) TVET Assessment Guidelines detail, amongst others, useful descriptions of diagnostic, formative, and summative assessments, and a range of example tools for each. The policy notes that online learning environments increase access to learning and assessment and states that good practices are still evolving. It cautions that some content areas are more suitable for online assessments than others and requires that Assessment and Training Providers (ATPs) obtain the prior approval of the relevant assessment body before utilising online tools, for which the structures, resources, and expertise must meet the standards specified.

The policy refers to international guidelines for online assessment in VET that are to be monitored and reviewed by assessors and internal and external quality assurers (UAE-MOE, 2023). One set of standards (UAE-MOE, 2023, pp. 9-10) relates to the integrity of the assessment processes, where ATPs must use secure online proctoring systems with "technology-enabled monitoring software" that confirms learner identity and supervises online assessments from start to finish. The proctoring systems should have a range of features to detect and prevent cheating, including multi-factor identification such as facial detection, continual facial recognition, "keystroke dynamics for continuous authentication" during online assessments, and systems that "allow for manual surveillance" (UAE-MOE, 2023, p. 9). Candidates should be interviewed prior to online assessments to determine their levels of knowledge and skills and provide an idea of expected performance levels.

Another set of standards (UAE-MOE, 2023) relates to fairness in online assessment processes, specifying that ATPs should use standardised assessment models and methods in the delivery

of online assessments that are aligned with the programme learning outcomes. Learners must be given a manual and clear guidelines on online assessment processes, methods and tools – including opportunities to do mock online assessments before the formal tests and examinations, to familiarise themselves with the software and test the computer hardware and internet connections. These practice sessions help to reduce anxiety around the online environments.

A third set of standards (UAE-MOE, 2023) relates to quality assurance and contingency plans and accommodates online assessment environment failures. ATPs should have back-up assessment plans, including plans for learners without the necessary equipment (e.g., webcam and microphone) or inconsistent internet access, and for partial or full system failures. Assessors and internal quality assurers (IQAs) must record all evidence of online assessments and store it securely for external quality assurance. Examples given of online assessments include case studies, multiple-choice questions, portfolios of work, presentations, simulations, video evidence, virtual labs, quizzes, and reflective texts.

5.4. Academic integrity, ethics, plagiarism

The use of technology in assessment increases the need to monitor the integrity of assessments. In the sourced higher education policies, there were many explicit references to academic integrity, embedded in policies for curriculum, assessment, or quality assurance, or in standalone documents – the latter were not sought systematically but were included when part of, or readily available with, other assessment policies.

The University of Ghana's (UOG, 2016) Plagiarism Policy provides a useful example of a comprehensive, detailed, clearly structured, systematic and easy-to-read standalone policy in this regard. Section 1 covers its fourfold purpose of supporting the HEI's mission to be relevant in national and global developments, clarifying what plagiarism comprises and ways of preventing plagiarism. Sections 2 and 3 further expand on types of plagiarism, including self-plagiarism or re-using one's own work without citing original sources; plagiarism of ideas, methods, results, and words; and intentional and unintentional plagiarism – the latter often being perpetrated by second-language students. Plagiarism is described as academic fraud or theft, punishable, depending on the severity of the case, by public apology, withdrawing material, losing a position, and/or prosecution, and retrospective punishment may apply. The remaining nine sections of the policy detail the evaluation and reporting of plagiarism; student, staff and institutional responsibilities regarding plagiarism; and plagiarism in different types of assessments, with sanctions.

5.5. Closing the loop

An aspect not encountered in the assessment literature and not covered explicitly as such in the South African assessment policy is *closing the loop*, involving establishing, monitoring, and

improving systems to support students transitioning into employment. The University of Sharjah's College of Communication (n.d., p. 32) *Assessment: Strategy, Policy and* Processes_ includes guidance towards students "galvanising learning from four-year programmes" into a set of knowledge, self-awareness, and operational competences that support their transition into workplaces and entrepreneurship. Assessment is designed to support these processes and includes graduate exhibitions for employers, workplace learning, freelancing and entrepreneurship projects, and others that encourage innovation.

At the University, closing the loop includes using assessment to inform managers and faculty leadership around where curricula and focal knowledge, skills, and competencies need updating to enhance student transitioning. To enable this process, course leaders produce annual reports taking account of student surveys, Chair Report findings (based on departmental surveys of syllabi, delivery, student employability, and student satisfaction), and Advisory Board advice that is framed by inputs from external stakeholders such as industry professionals, NGO incubators, government, and faculty from related disciplines in other HEIs (University of Sharjah, n.d.).

A more frequently found understanding of *closing the loop* in the sourced policies was the idea of using formative assessments to enhance learning currently underway and using summative assessment results to improve curricula for future student cohorts.

5.6. Clarity, transparency, guidance

The policy descriptions provided illustrate clarity of intent and resulting transparency and guidance for implementers. For schooling, Canada's *Growing Success* (MEO, 2024b), which elaborates assessment principles, types, contexts, standards, examples, and resources for every type of stakeholder, was a particularly useful example. Learners are required to *apply* knowledge and skills, and communicate and innovate, and are graded below, approaching, at, or above the provincial standard. This grading and movement from *norm-referenced* to *criterion-referenced* assessments can enhance learning achievements (Orekhova et al., 2021). Emphasising assessment *for learning* rather than *of learning* guides learners to desired achievement levels (Bin Mubayrik, 2020). The policy includes ensuring the safety of learning and assessment environments (MEO, 2024b).

In a second example, in the VET context, the Australian Skills Quality Authority (ASQA, 2015) publishes explicit learning and assessment standards for Registered Training Organisations (RTOs) that are implemented in four of Australia's six states. One standard details, for instance, *how* RTO training and assessment strategies and practices must be "responsive to industry and learner needs, and the requirements of VET accredited courses" (ASQA, 2015, p. 14). The contexts and requirements to meet the standards are provided, including the only options permitted for VET trainers' and assessors' qualifications and types and years of experience in relation to competences specified. RTOs must implement systematic alignment to VET system requirements, where what is validated, by whom, and how it is documented and acted upon, are

recorded – at least once every five years, for at least 50% of learning offerings. Validation must be undertaken by staff with the relevant current vocational competences, according to lists of qualifications and experience.

The University College Dublin (UCD, 2021) *Assessment Code of Practice* provides a third example of clear, detailed, explicit, and supportive content. The purposes and outcomes of, and the expectations for, assessment; key terms; relevant academic regulations; and assessments under extenuating circumstances and for students with disabilities are laid out. A pre-assessment section details good practices regarding designing assessments, assessment strategies, the approval processes and timelines needed, and *communicating* assessment arrangements, requirements, and expectations to students. The main section of the policy explains how different types of assessment should be conducted, and a post-assessment section covers feedback, processing of results, appeals, and archiving assessment records, amongst others.

6. Conclusions and Recommendations

The study sought to identify, in the literature, the qualities of good assessment policy. A systematic analysis followed to ascertain the presence of these features in 75 assessment policies selected from high-achieving schooling systems and associated national, HEI, and VET entities internationally. Where an additional aspect was identified in one of the policies, it was factored into the analysis for all 75 policies.

The analysis showed that the fifteen key features were present in the 75 policies analysed, although not uniformly so in every instance. Distinct patterns were found within sectors; for example, system flexibility and RPL occurred more frequently in the national overarching and VET assessment policies, while academic integrity and plagiarism featured more frequently in the schooling and HEI policies. Assessing soft skills and using technology in assessment were notably absent in around half of the policies but present in 70% of the schooling policies. The VET policies addressed the aspect of currency more frequently than those in the other sectors. An additional aspect not expressed as such in the literature but noted explicitly in several policies was that of closing the loop – feeding assessment results back into enhancing learning or supporting transition into the workplace. The hypothesis regarding identifying good assessment principles for policy through a literature survey and enhancing the findings through policy analysis was supported.

The study had two main limitations. Firstly, it was difficult to source the assessment policies, necessitating prior understanding of the country systems of which they were part. VET assessment policies were especially hard to locate. The different ways in which the policies themselves were structured created an additional layer of complexity, as not all countries had the types of policies sought. A second limitation comprised the lack of space to analyse the *voicing* in the policies: some were more authoritarian, using legal language, while others used a narrative,

guiding, and encouraging style. Understanding the impact of these styles would require additional research.

A key finding of the research was *how* the principles of policy context; inclusivity; online assessment and using technology in assessment; academic integrity; closing the loop; and providing clarity, transparency, and guidance for policy users were elaborated. The research offers insights towards the revision of South Africa's National Policy for Designing and Implementing Assessment (SAQA, 2014) and other policies seeking to enable good practice across all sectors – for general and further, higher, and vocational and occupational education and training. It is recommended that these insights be factored into the relevant policy development and form the basis of further related research.

7. Declarations

Funding: This research did not receive any external funding. The conference costs were covered by the South African Qualifications Authority (SAQA).

Acknowledgements: Deep gratitude to Mr Vonani Mabunda of the South African Qualifications Authority (SAQA) for providing tools and expertise in support of identifying and sourcing national, higher education, schooling, and VET policies across countries, which increased the sample of policies found.

Conflicts of Interest: The authors declare no conflict of interest.

References

African Union Commission. (2015). *Agenda 2063: The Africa we want*. https://tinyurl.com/Agenda-2063

Australian Skills Quality Authority. (2015). *Standards for Registered Training Organisations (RTOs) 2015*. https://tinyurl.com/3m99wwvm

Awich, M. (2021). *Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) IV International Report*. SACMEQ. https://tinyurl.com/SacmeqIV

Bain, K. (2023). Inclusive assessment in higher education: What does the literature tells us on how to define and design inclusive assessments? *Journal of Learning Development in Higher Education*, *27*, 1-23. https://doi.org/10.47408/jldhe.vi27.1014

Bennett, R. E. (2011). Formative assessment: A critical review. *Assessment in Education: Principles, Policy & Practice*, *18*(1), 5–25. https://doi.org/10.1080/0969594X.2010.513678

Bin Mubayrik, H. F. (2020). New Trends in Formative-Summative Evaluations for Adult Education. *Sage Open*, *10*(3), 2158244020941006. https://doi.org/10.1177/2158244020941006

Bin-Nashwan, S. A., Sadallah, M., & Bouteraa, M. (2023). Use of ChatGPT in academia: Academic integrity hangs in the balance. *Technology in Society*, *75*, 102370. https://doi.org/10.1016/j.techsoc.2023.102370

Bolton, H. (2013). Developing standards using the language of teaching and learning. *Per Linguam*, *28*(2), 47-64. https://doi.org/10.5785/28-2-530

Bolton, H., & Matsau, L. (2022). Creating a robust policy framework supporting flexible learning pathways in South Africa. *SDG-4: Flexible learning pathways in higher education–from policy to practice: An international comparative analysis.* (pp. 288-306). UNESCO. https://tinyurl.com/yd57r48p

Bolton, H., Matsau, L., & Blom, R. (2020). Flexible learning pathways: The national qualifications framework backbone. *Report for the IIEP-UNESCO Research 'SDG4: Planning for Flexible Learning Pathways in Higher Education'.*

Botswana Examinations Council. (2018). *Issues and Options Paper Used to Inform the Development of a National Assessment Policy for General Education.* https://tinyurl.com/BECissuesandoptions

Butler, D., Leahy, M., Twining, P., Akoh, B., Chtouki, Y., Farshadnia, S., Moore, K., Nikolov, R., Pascual, C., Sherman, B., & Valtonen, T. (2018). Education Systems in the Digital Age: The Need for Alignment. *Technology, Knowledge and Learning*, *23*(3), 473–494. https://doi.org/10.1007/s10758-018-9388-6

Cimatti, B. (2016). Definition, development, assessment of soft skills and their role for the quality of organizations and enterprises. *International Journal for Quality Research*, *10*, 97–130. https://doi.org/10.18421/IJQR10.01-05

Čubrić, G., & Čubrić, I. S. (2016). Technology–based assessment of soft skills in higher education. *ENTRENOVA-ENTerprise REsearch InNOVAtion*, *2*(1), 208–213.

Doucet, A. & Pont, B. (2021*). Bridging the gap between policy and practice in education.* OECD Education and Skills Today. https://tinyurl.com/3sr4uvcm

EduRank.org (2024, May). *EduRank: Discover University Rankings by Location.* https://edurank.org/

Errisuriz, V. L., Dooley, E. E., Burford, K. G., Johnson, A. M., Jowers, E. M., & Bartholomew, J. B. (2021). Implementation Quality Impacts Fourth Grade Students' Participation in Physically Active Academic Lessons. *Prevention Science*, *22*(7), 950–959. https://doi.org/10.1007/s11121-021-01233-8

Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic Integrity in Online Assessment: A Research Review. *Frontiers in Education*, *6*, 639814. https://doi.org/10.3389/feduc.2021.639814

Hussain, M., & Jones, J. M. (2021). Discrimination, diversity, and sense of belonging: Experiences of students of color. *Journal of Diversity in Higher Education*, *14*(1), 63–71. https://doi.org/10.1037/dhe0000117

Islam, M. S., Hasan, M. K., Sultana, S., Karim, A., & Rahman, M. M. (2021). English language assessment in Bangladesh today: Principles, practices, and problems. *Language Testing in Asia*, *11*(1), 1. https://doi.org/10.1186/s40468-020-00116-z

Jackson, D. J. R., Michaelides, G., Dewberry, C., & Englert, P. (2023). Clarifying the scope of generalizability theory for multifaceted assessment. *New Zealand Journal of Psychology*, *51*(2), 53-64. https://tinyurl.com/36fkfat3

Kusmawan, U. (2023). Shaping the Future Assessment: The Evolution of Assessment and its Impact on Student Learning and Success. *Teaching and Learning Symposium 2023: The Future of Assessment.* https://tinyurl.com/528wnab9

Ministry of Education Ontario. (2024a, February 9). E-Learning. *Ontario.* https://www.ontario.ca/page/ministry-education

Ministry of Education Ontario. (2024b). Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools. *Ontario.* https://tinyurl.com/5453etba

Ministry of Education Ontario. (2024c, January 19). Indigenous Education in Ontario. *Ontaria.* https://www.ontario.ca/page/indigenous-education-ontario

Mullis, I. V., Martin, M. O., Foy, P., Kelly, D. L., & Fishbein, B. (2020). *TIMSS 2019 International Results in Mathematics and Science*. https://tinyurl.com/3rpjewp5

Mullis, I., Von Davier, M., Foy, P., Fishbein, B., Reynolds, K., & Wry, E. (2023). *PIRLS 2021 International Results in Reading*. TIMSS & PIRLS International Study Center. https://doi.org/10.6017/lse.tpisc.tr2103.kb5342

Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2023). A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model in Qualitative Research. *International Journal of Qualitative Methods*, *22*, 16094069231205789. https://doi.org/10.1177/16094069231205789

Nieminen, J. H., & Eaton, S. E. (2024). Are assessment accommodations cheating? A critical policy analysis. *Assessment & Evaluation in Higher Education*, *49*(7), 978–993. https://doi.org/10.1080/02602938.2023.2259632

O'Connor, A., Buckley, J., Seery, N., & Cleveland-Innesq, M. (2016). Identifying, developing and grading'soft skills' in higher education: A technological approach. *The Proceedings of the 2016 Higher Education in Transformation (HEIT) Symposium, Oshawa, Ontario, Canada. https://tinyurl.com/43urndca*

OECD. (2013). *Synergies for Better Learning: An International Perspective on Evaluation and Assessment*. https://doi.org/10.1787/9789264190658-en

Orekhova, T., Neretina, T., Ustselemova, N., Krujilina, T., & Goncharova, A. (2021). Methodological approaches to the development of criteria-based assessment of educational results. *SHS Web of Conferences*, *98*, 01026. https://doi.org/10.1051/shsconf/20219801026

Phothongsunan, S. (2020). Student and teacher engagement in Learning and assessment with portfolios. *Cypriot Journal of Educational Sciences*, *15*(6), 1569–1573. https://doi.org/10.18844/cjes.v15i6.5317

Quacquarelli Symonds. (2024, May). *QS World University Rankings 2024: Top global Universities*. https://www.topuniversities.com/world-university-rankings/2024

Queensland Department of Education. (2023). *Curriculum, Assessment, and Reporting Framework (P-12 Framework)*. https://education.qld.gov.au/curriculum/stages-of-schooling/p-12

Rasooli, A., Zandi, H., & DeLuca, C. (2019). Conceptualising fairness in classroom assessment: Exploring the value of organisational justice theory. *Assessment in Education: Principles, Policy & Practice*, *26*(5), 584–611. https://doi.org/10.1080/0969594X.2019.1593105

Republic of Ghana Ministry of Education. (2018). *National Pre-Tertiary Education and Curriculum Framework*. https://tinyurl.com/2p5xwt5j

Rintayati, P., Lukitasari, H., & Syawaludin, A. (2021). Development of Two-Tier Multiple Choice Test to Assess Indonesian Elementary Students' Higher-Order Thinking Skills. *International Journal of Instruction*, *14*(1), 555–566.

Roy, S., Beer, C., & Lawson, C. (2020). The importance of clarity in written assessment instructions. *Journal of Further and Higher Education*, *44*(2), 143–155. https://doi.org/10.1080/0309877X.2018.1526259

SAQA. (2014). *National Policy and Criteria for Designing and Implementing Assessment for National Qualifications Framework (NQF) Qualifications and Part-Qualifications and Professional Designations in South Africa*. https://tinyurl.com/45mzx6r2

SAQA. (2019). *National Policy and Criteria for the Recognition of Prior Learning*. https://tinyurl.com/4rvtxv5n

Sintonen, S. (2020). From an experimental paper to a playful screen: How the essence of materiality modulates the process of creation. *British Journal of Educational Technology*, *51*(4), 1322–1333. https://doi.org/10.1111/bjet.12906

Sireci, S., & Faulkner-Bond, M. (2014). Validity evidence based on test content. *Psicothema*, *1*(26), 100–107. https://doi.org/10.7334/psicothema2013.256

Succi, C., & Wieandt, M. (2019). Walk the talk: Soft skills' assessment of graduates. *European Journal of Management and Business Economics*, *28*(2), 114–125. https://doi.org/10.1108/EJMBE-01-2019-0011

Tai, J., Ajjawi, R., Bearman, M., Boud, D., Dawson, P., & Jorre De St Jorre, T. (2023). Assessment for inclusion: Rethinking contemporary strategies in assessment design. *Higher Education Research & Development*, *42*(2), 483–497. https://doi.org/10.1080/07294360.2022.2057451

Tarkar, P. (2020). Impact of COVID-19 pandemic on education system. *International Journal of Advanced Science and Technology*, *29*(9), 3812–3814.

Tertiary Education Quality and Standards Agency. (2021). *Higher Education Standards Framework: Threshold Standards*. https://tinyurl.com/mtpnwd86

UNESCO. (2017). *Education for Sustainable Development Goals: Learning objectives*. https://doi.org/10.54675/CGBA9153

United Arab Emirates Ministry of Education. (2023). *Technical and Vocational Education and Training (TVET) Assessment Guidelines*. https://tinyurl.com/4pr9ep48

United Nations. (1999). *Standard Country Area Codes for Statistical Use, Revision 4*. https://tinyurl.com/yz9wudea

University College Dublin. (2021). *University College Dublin Assessment Code of Practice Version 1.5*. https://tinyurl.com/43v7yne3

University of Ghana. (2016). *University of Ghana Plagiarism Policy*. University of Ghana Special Reporter, 23 September 2017, Vol. 54(4), No. 857. http://ugspace.ug.edu.gh/handle/123456789/35474

University of Sharjah College of Communication. (n.d.). *The Assessment: Strategy, Policy and Processes*. https://tinyurl.com/bdevfr9c

Wu, X. (Molly), Zhang, L. J., & Liu, Q. (2021). Using Assessment for Learning: Multi-Case Studies of Three Chinese University English as a Foreign Language (EFL) Teachers Engaging Students in Learning and Assessment. *Frontiers in Psychology*, *12*, 725132. https://doi.org/10.3389/fpsyg.2021.725132

Yang, Q. (2023). Should Standardization Tests be Used to Assess Student Ability? An Evaluation on Effects of Standardization Tests. *Journal of Education, Humanities and Social Sciences*, *8*, 319–326. https://doi.org/10.54097/ehss.v8i.4268

Yeager, D. S., Purdie-Vaughns, V., Garcia, J., Apfel, N., Brzustoski, P., Master, A., Hessert, W. T., Williams, M. E., & Cohen, G. L. (2014). Breaking the cycle of mistrust: Wise interventions to provide critical feedback across the racial divide. *Journal of Experimental Psychology: General*, *143*(2), 804–824. https://doi.org/10.1037/a0033906

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The 40th Annual Conference of the Association for Educational Assessment in Africa (AEAA), hosted by Umalusi, the Council for Quality Assurance in General and Further Education and Training, marks a significant milestone in fostering dialogue and collaboration among education stakeholders across the continent. Held from August 19–23, 2024, at the Century City Conference Centre in Cape Town, South Africa, this year's conference brought together experts, policymakers, researchers, and practitioners under the theme: Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society.

This Book of Proceedings contains a selection of high-quality papers that have undergone a rigorous double-blind peer-review process, ensuring academic integrity and relevance to the conference theme. The papers explore critical topics such as digital pedagogy, non-traditional learning assessments, and strategies to enhance the quality and accessibility of education in the face of global challenges.

We extend our sincere gratitude to the keynote speakers, workshop presenters, and the Conference Abstract Review Committee for their dedication and expertise in shaping this event. Special thanks are due to the reviewers for their valuable contributions in refining the manuscripts and to the editors for their diligent efforts in producing this proceedings volume.

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As an affiliated member of the AEAA, Umalusi takes pride in facilitating this platform for robust discussions and knowledge sharing. We trust that this collection of papers will contribute to advancing educational assessment practices, inspire innovation, and foster collaboration within and beyond the African continent.

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9781037042782