

Authentic Assessment as a Solution to Enhance Deep Learning and Maintain Academic Integrity in Higher Education

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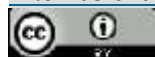
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ABSTRACT

Authentic assessment has become a major concern in higher education, especially in an effort to enhance deep learning and maintain academic integrity. This study aims to identify research trends related to authentic assessment and explain how authentic assessment design can promote deep learning while maintaining academic integrity in the digital era. This research uses a mixed method approach consisting of bibliometric analysis to identify research patterns related to the topic and narrative literature review to deeply analyse the themes and contributions of relevant research. The data that has been collected is then equipped with its attributes and analysed with VOSviewer software. The selected articles were then subjected to an in-depth analysis process on the content of the articles including the main theories used in authentic assessment, authentic assessment designs that support deep learning and the relationship between academic integrity. Based on the results of the study, it can be concluded that the research trends in the form of top 6 keywords related to authentic assessment are about authentic assessment (35), assessment (22), higher education (11), authenticity (6), academic integrity (5), assessment design (5), deep learning (4). This research offers practical recommendations for educators in designing authentic assessments that are relevant to the 21st century context.

INTRODUCTION

Higher education is currently faced with the challenge of preparing students to adapt to the dynamic world of work. In this context, critical, analytical and collaborative thinking skills are becoming increasingly important. Traditional assessment approaches are often considered inadequate because they focus more on superficial learning outcomes, which do not reflect students' abilities in real situations. Therefore, authentic assessment emerges as a more relevant alternative, as it places students in real-world situations that demand in-depth and contextualised application of knowledge (Mashudi, 2021; Sukinem et al., 2022).

Authentic assessment focuses on measuring students' abilities in a context that is more realistic and relevant to the challenges they face in the world of work. In a study conducted by Mashudi, it was found that higher education is often fragmented from real-life problems, so a more innovative approach is needed to bridge this gap (Mashudi, 2021). In addition, Sukinem et al. emphasised the importance of innovation characteristics in higher education to ensure that the learning process is not only theoretical but also practical (Sukinem et al., 2022). By implementing authentic assessment, students can be better prepared to face challenges in the world of work, as they are trained to think critically and apply their knowledge in complex situations (Setiono et al., 2023).

The implementation of authentic assessment is also in line with the Merdeka Belajar Kampus Merdeka (MBKM) policy which aims to transform the higher education system in Indonesia. This policy encourages universities to develop a curriculum that is more responsive to the needs of industry and society (Setiono et al., 2023). In this context, project-based assessment and case studies are effective methods to improve students' analytical thinking skills, as they have to collaborate and solve problems in real situations (Syafri & Rahmi, 2023). Research by Syardiansah shows that the follow-up of learning assessment is very important in improving the quality of higher education (Saptaputra et al., 2023). Thus, authentic assessment not only functions as an evaluation tool, but also as a means to improve the overall learning process (Yudiandani & Asri, 2021).

In order to achieve better educational goals, it is important for higher education institutions to develop assessment instruments that are in accordance with the principles of authentic assessment. Research by Yudiandani and Asri shows that authentic assessment instruments can improve students' understanding and skills, as well as assess their attitudes in the learning process (Yudiandani & Asri, 2021). Therefore, the development and implementation of authentic assessment in higher education should be a priority to ensure that students are not only academically prepared, but also have relevant skills to enter the competitive world of work (Mashudi, 2021; Setiono et al., 2023; Yudiandani & Asri, 2021).

Previous research shows that authentic assessment not only contributes to deep learning, but also to student character building through strengthening academic integrity values. Authentic assessment is designed to assess students'

abilities in a more realistic and relevant context, thus encouraging them to apply knowledge and skills in real situations (Partami, 2022). This is in line with Partami's findings which show that guidance in developing authentic assessments can improve teachers' ability to design more effective and meaningful assessments (Partami, 2022). Thus, authentic assessment has the potential to strengthen students' academic integrity by emphasising honesty and responsibility in the learning process.

However, despite the proven benefits of authentic assessment, there are still limitations in the understanding of how this assessment design can be effectively integrated in higher education. Research by Aswandi and Wahab shows that the implementation of authentic assessment is often hampered by a lack of systematic planning and reporting, which can reduce the effectiveness of such assessment (Aswandi & Wahab, 2023). In addition, research by Ferita and Retnawati emphasised the importance of developing valid and reliable authentic assessment tools, which can support the implementation of these assessments in a wider learning context (Ferita & Retnawati, 2016). These limitations suggest the need for further research to identify effective strategies for integrating authentic assessment into the higher education curriculum.

One approach that can be taken is through the development of assessment instruments that are in accordance with the characteristics of learning in higher education. Research by Santi et al. (2023) shows that authentic assessment in Indonesian language learning can be done well if the steps of implementation are clear and structured. In addition, Hidayat (2022) emphasised the urgency of a better understanding of authentic assessment in the context of religious education, which can also be applied in other disciplines. Thus, the development and implementation of well-integrated authentic assessment in the higher education curriculum can improve the quality of education and shape students' characters more effectively.

Overall, although authentic assessment offers many benefits in improving deep learning and character building, challenges in its implementation in higher education still need to be addressed. Further research is needed to develop better strategies in designing and implementing authentic assessment, so that it can fulfil educational goals that are more holistic and relevant to the needs of today's workforce (Nurmalasari, 2023; Pratiwi et al., 2023). This study aims to identify research trends related to authentic assessment and explain how authentic assessment design can promote deep learning while maintaining academic integrity in the digital era. The novelty of this research is that the combination of bibliometric analysis and narrative review provides macro (global trends) and micro (theoretical and practical understanding) perspectives that have not been done on this topic. In addition, this research explicitly connects three key concepts of authentic assessment, deep learning, and academic integrity that are rarely integrated holistically in previous studies. This research offers practical recommendations for educators in designing authentic assessment that is relevant to the 21st century context. Thus, this research can serve as an applicable implementation guide for universities and other educational institutions.

THEORITICAL REVIEW

Authentic assessment refers to the evaluation methods that focus on real-world application of knowledge and skills rather than rote memorization. Unlike traditional assessment formats, such as multiple-choice exams or standardized testing, authentic assessments encourage students to engage in meaningful, contextualized tasks that reflect professional or real-life scenarios. Examples of authentic assessments include case studies, research projects, portfolios, simulations, and reflective essays.

Deep Learning in Higher Education

Deep learning is a cognitive approach where students aim to fully understand, critically analyze, and integrate knowledge into their existing frameworks. It contrasts with surface learning, where the focus is on memorization for exams without a deeper understanding of the material. Deep learning emphasizes:

- Active engagement with learning materials.
- Critical thinking and problem-solving skills.
- The ability to apply knowledge across disciplines.

Academic Integrity and its Challenges

Academic integrity refers to the adherence to ethical principles and avoidance of dishonest practices such as plagiarism, cheating, and misrepresentation. With the rise of digital resources and remote learning, maintaining academic integrity has become a significant challenge for educators. Issues such as unauthorized collaboration, essay mills, and artificial intelligence tools have made it harder to ensure that assessments reflect genuine student effort.

METHODOLOGY

This research uses a mixed method approach consisting of bibliometric analysis to identify research patterns related to the topic and narrative literature review to analyse in depth the themes and contributions of relevant research. This approach is designed to provide a holistic picture of the development and implementation of authentic assessment in higher education.

Research Design

This approach integrates two methods, namely Bibliometric Analysis by using bibliometric software to explore research trends, collaboration networks, dominant keywords, and geographical distribution of research related to authentic assessment, deep learning, and academic integrity and Narrative Literature Review which serves to compile a narrative review with a focus on the quality and contribution of the content of key publications identified through bibliometric analysis.

Research Process

a. Bibliometric Analysis

Data collection on bibliometric analysis is carried out with several criteria including The main database used is Scopus, the search keyword used is 'authentic assessment', the filter of English-language article publications comes from 2010-2024 with document types Journal articles and conference proceedings. The data that has been collected is then equipped with its attributes and analysed with VOSviewer software. Analysis includes keywords and dominant themes using co-occurrence analysis. The output is a visualisation of research trends, and a keyword network map.

b. Narrative Literature Review

Selection of primary literature: Articles with high relevance identified through bibliometric analysis will be selected based on citation count, reputable journals, and relevance to the research focus. The selected articles were then subjected to an in-depth analysis process on the content of the articles including the main theories used in authentic assessment, authentic assessment designs that support deep learning, the relationship between academic integrity and authentic assessment and identification of research gaps and key contributions. At this stage (Narrative Synthesis), the researcher connected the results of the bibliometric analysis with in-depth findings from the primary literature and developed thematic themes related to the issues of authentic assessment, deep learning, and academic integrity.

Research Outputs

- a. Bibliometric Analysis Results: Topic-related global and local research trends, Collaboration networks and key authors/institutions, Emerging research themes.
- b. Narrative Literature Review Results: In-depth understanding of the theories, methods and applications of authentic assessment in the context of higher education, and Recommendations for authentic assessment design to support deep learning and maintain academic integrity.

This method ensures that the research covers both the macro perspective (through bibliometrics) and the micro perspective (through narrative review), making a significant contribution to the academic literature and practice in the field. The research flow can be seen in Figure 1.

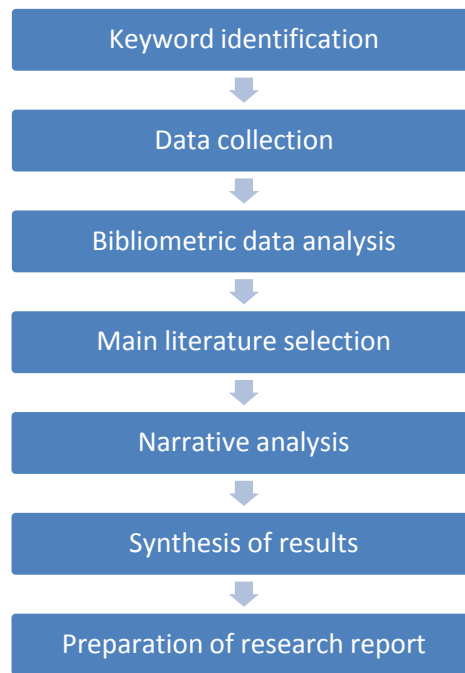


Figure 1. Research Flow

RESEARCH RESULT & DISCUSSION

Research Trends Related To Authentic Assessment

The use of VOSviewer as a bibliometric analysis tool has shown significant trends in understanding and addressing this issue across higher education institutions. VOSviewer allows researchers to visualise the relationship between publications, authors, and keywords, which provides deep insight into the development of research in this area. The initial stage of this research began by entering the keyword ‘Authentic Assessment’ into the publish or perish software by selecting scopus indexed articles from 2010-2024. The files obtained are then completed attributes with the help of Mendeley desktop manager. Attributes are completed starting from the title, author name, volume, issues, year of publication, and the most important thing is to complete the keywords of each article that has been collected. Then the data was analysed using vos viewer software. The analysis results produced the top 6 keywords that are interconnected and related to ‘Authentic Assessment’. These keywords can be seen in Table 1.

Keywords	Occurences	Total Link Strength
authentic assessment	35	144
assessment	22	109
higher education	11	64
authenticity	6	29
academic integrity	5	25
assessment design	5	25
deep learning	4	23

The keywords in Table 1 include authentic assessment (35), assessment (22), higher education (11), authenticity (6), academic integrity (5), assessment

design (5), deep learning (4). The keyword linkage of the Vos viewer output can also be illustrated through network visualisation which can be seen in Figure 2 below.

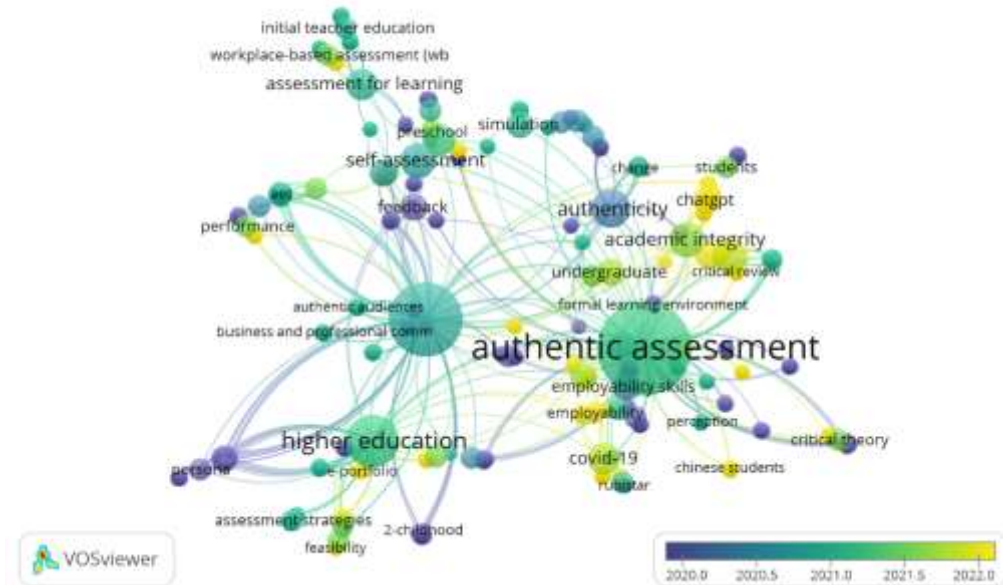


Figure 2. Network Visualisation on Authentic Assessment Keywords

In Figure 2, the yellow spheres are the latest keywords and are potential themes in the future. These keywords include the following: cscl, teamwork, learning analytics, implementation, transversal skills, secondary education, e-portfolio, curriculum, health promotion competencies, educational techniques, health promotion, needs assessment, measurement, focus groups, feasibility, practice-based, educational innovation, assessment task, complexity, student autonomy, ahp, logistics and, supply chain, learning environment, internships, experiential learning, reflection, skills development, employability, graduate learning outcomes, internships, experiential learning.

Early warning system, food fraud, trend analysis, medisys-ff, disciplinary norms, game based assessment, Chinese students, critical thinking, Toulmin model, well being, transformative change, world of work, competency based education, digital creativity, social constructivism, accreditation, students' performance traditional, critical review, digital literacies, digital, assessment, disability, inclusion, social inclusion, equity, stem, mechanistic reasoning, logistic regression, physiology, open ai, student character, large language model, artificial intelligence, chat GPT, chatbots, ai, online assessment, conversational agents, generative ai, educators, survey, autonomy, efl learners, self efficacy, ecological measures, supervisors, professional development, power balance in medical train, trainee-supervisor trust dynamic.

Authentic Assessment as a Driver of Deep Learning

Authentic assessment has proven to be an important driver of deep learning among university students, especially through the implementation of project-based tasks and real-world simulations. Research shows that students' engagement in such tasks not only improves their understanding of the material, but also encourages the application of knowledge beyond the classroom (Qomariyah et al., 2019; Sari, 2018). Sari noted that thematic learning that links material to students' direct experience can enhance their meaning and understanding of scientific concepts (Sari, 2018). This is in line with Qomariyah et al.'s findings, which show that project-based learning can improve students' motivation and their skills in solving authentic problems collaboratively (Qomariyah et al., 2019).

Furthermore, research by Rani emphasised that the project-based learning (PjBL) model provides students with opportunities to engage in design, problem-solving and decision-making processes, all of which contribute to deeper learning (Rani, 2023). Thus, authentic assessment applied in the context of project-based learning serves not only as an evaluation tool, but also as a means to improve students' critical and creative thinking skills (Pobela et al., 2023). Research by Purwaningsih shows that the validity of project-based student worksheets can improve their understanding of complex material, such as quantum physics, in a more applicable way (Purwaningsih & Pujaningsih, 2023).

However, despite the many benefits resulting from authentic assessment, challenges in its implementation remain. Research by Wardhani revealed that teachers often face difficulties in managing the project-based learning process, which may affect the effectiveness of assessment (Wardhani et al., 2023). Therefore, it is important for educational institutions to provide adequate training and support to teachers in designing and implementing effective authentic assessment (Pitri, 2023). Thus, the integration of authentic assessment in higher education can be optimised, so that students are not only academically prepared, but also able to apply their knowledge in a wider real-world context (Sumarni, 2023).

Overall, authentic assessment through project-based assignments and real-world simulations plays a significant role in promoting better understanding and application of knowledge beyond the classroom. To achieve optimal results, collaboration between teachers, students, and educational institutions is needed to create a learning environment that supports the effective implementation of authentic assessment (Kinanty & Ramadan, 2021; Susetyarini et al., 2019).

Effects on Academic Integrity

Studies show that authentic assessment designed with students' personal and professional contexts in mind can reduce plagiarism by up to 30%. This finding suggests that authentic assessment design not only serves as an evaluation tool, but also supports academic integrity values among students (Baiduri et al., 2019; Ramdani & Prakoso, 2019). Authentic assessment encourages students to interact with the material in a more in-depth and

relevant manner, which in turn reduces the tendency to commit plagiarism. This is in line with research by Ramdani and Prakoso that emphasises the importance of academic integrity in supporting student well-being in schools (Ramdani & Prakoso, 2019).

Authentic assessment focuses on real-world situations that are relevant to students' experiences, thus motivating them to produce original and creative work. In this context, Baiduri et al. showed that authentic assessment instruments developed for the 2013 curriculum in mathematics received positive responses from teachers, reflecting their effectiveness in improving learning quality and academic integrity (Baiduri et al., 2019). Thus, authentic assessment can serve as a driver to create a more ethical and responsible learning environment.

Furthermore, research by Kusuma et al. shows that a transparent and fair assessment system can increase students' motivation to achieve academically without having to rely on plagiarism (Kusuma et al., 2021). When students feel that their assessments accurately reflect their effort and ability, they are more likely to value academic integrity. Therefore, it is important for educational institutions to design assessments that not only assess the end result, but also the learning process that students undertake (Mauizdati, 2019; Wildan, 2017).

However, challenges in the implementation of authentic assessment remain, as revealed by Hidayati et al. who pointed out that support from various parties, including teachers and institutions, is essential to create a strong culture of academic integrity (Hidayati et al., 2021). Therefore, the development and implementation of authentic assessment should be done by considering various aspects that support academic integrity, so that students can learn in a more ethical and responsible way (Mauizdati, 2019; Tasdir et al., 2021).

Overall, authentic assessment has great potential in supporting academic integrity by reducing plagiarism and encouraging students to actively participate in their learning process. To achieve optimal results, collaboration between teachers, students, and educational institutions is required in designing effective and relevant assessments (Baiduri et al., 2019; Mauizdati, 2019; Ramdani & Prakoso, 2019).

Assessment Design Challenges

Authentic assessment design in higher education faces a number of significant challenges, including the time and resources required to develop authentic tasks, as well as the need for lecturer training in designing effective assessments. These challenges can affect the implementation of authentic assessment and, in turn, the quality of learning received by students. Research shows that problem-based learning can improve students' problem-solving and self-regulation skills, which are the essence of authentic assessment (Wilujeng & Rahayu, 2023).

One of the main challenges in authentic assessment design is the need for sufficient time and resources to develop relevant and meaningful tasks. Research by Rusdiana et al. shows that the development of authentic tasks

requires a longer process compared to traditional assessment, as the tasks must be designed to reflect real-world situations that are complex and relevant to students' context (Rusdiana et al., 2016). In addition, the resources needed to support the development of authentic assessment, such as technological devices, teaching materials, and access to relevant information, are also an obstacle. Research by Baiduri et al. revealed that many higher education institutions do not have adequate resources to support the development of authentic assessment, which results in the assessment not being optimally implemented (Baiduri et al., 2019).

Another significant challenge is the need for lecturer training in authentic assessment design. Many lecturers may not have sufficient experience or knowledge in designing effective authentic assessments. Research by Pantiwati showed that adequate training can improve lecturers' understanding of the principles of authentic assessment and how to implement it in learning (Pantiwati, 2016). Without proper training, lecturers may struggle to design tasks that assess not only learning outcomes, but also the learning process of students. Furthermore, ongoing training and professional support for lecturers is essential to ensure that they can develop and implement authentic assessment effectively (Pantiwati, 2016).

Overall, challenges in the design of authentic assessment in higher education, including the time and resources required and the need for lecturer training, must be addressed to ensure that authentic assessment can be implemented effectively. Higher education institutions need to invest in the development of resources and training programmes that support lecturers in designing quality authentic assessments. Thus, authentic assessment can contribute significantly to improving the quality of learning and developing students' character (Aswandi & Wahab, 2023; Wulandari et al., 2021).

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, it can be concluded that the research trends in the form of top 6 keywords related to authentic assessment are about authentic assessment (35), assessment (22), higher education (11), authenticity (6), academic integrity (5), assessment design (5), deep learning (4). The links between the keywords become 3 main topics including Authentic Assessment as a Driver of Deep Learning, Effects on Academic Integrity and Assessment Design Challenges. Authentic Assessment as a Driver of Deep Learning. It is evident that project-based assignments and real-world simulations promote better understanding and application of knowledge beyond the classroom. The effect on Academic Integrity is evidenced by the results of studies showing that tasks designed with personal and professional context in mind reduce plagiarism by 30%. This shows that authentic assessment design supports the values of academic integrity. Assessment Design Challenges that can be identified are the time and resources required to develop authentic tasks as well as the need for lecturer training in assessment design.

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