Analysis of Lecturers' Understanding of The Outcome-Based Education (OBE) Curriculum and the Four Literacies at Universitas Negeri Medan in 2024

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Abstract. The aim of this research is to analyze lecturers' understanding of the Outcome-Based Education (OBE) curriculum and the four literacies (basic literacy, digital literacy, human literacy, and technological literacy) at Universitas Negeri Medan. The method used is a quantitative approach with a survey conducted on 150 lecturers from various faculties at Universitas Negeri Medan. Data were collected through questionnaires that had been validated and tested for reliability. The results of the study indicate that the level of lecturers' understanding of the OBE curriculum falls into the medium category, while their understanding of the four literacies is in the low category. These findings suggest the need to enhance the lecturers' capacity through training and workshops related to the implementation of the OBE curriculum and the four literacies.

Keywords: Lecturers, OBE, Four Literacies, Universitas Negeri Medan.

1 Introduction

In the era of globalization and the Fourth Industrial Revolution, universities face significant challenges in producing graduates who are not only academically proficient but also capable of adapting to rapid and dynamic changes. The ever-evolving demands of the workforce require universities to develop curricula that not only focus on theoretical knowledge but also emphasize practical skills relevant to industry needs. Outcome-Based Education (OBE) has emerged as an effective approach in this effort (Fuller, 2022). OBE emphasizes the achievement of specific, measurable learning outcomes, where graduates are expected to possess skills and competencies that can be directly applied in the workplace.

Universitas Negeri Medan, as one of the leading universities in Indonesia, has adopted the OBE approach in its curriculum in response to these global demands. However, the success of OBE implementation largely depends on the faculty's understanding and readiness to design,

implement, and evaluate an outcome-oriented learning process. Additionally, in facing global challenges, it is crucial for both faculty and students to master four key literacies: basic literacy (reading, writing, and arithmetic skills), digital literacy (the ability to effectively use information technology), human literacy (the ability to interact and collaborate with others), and technological literacy (the ability to understand and use technology proficiently) (Almazova et al., 2020).

Although OBE and these four literacies have become the focus of various educational policies, the level of understanding and implementation among faculty members remains a question. Therefore, this research aims to analyze the extent to which faculty members at Universitas Negeri Medan understand and implement the OBE curriculum and the four literacies in the learning process. This study will also explore the factors influencing the faculty's understanding of this approach, as well as the challenges encountered in its application. The results of this research are expected to provide insights for policymakers at Universitas Negeri Medan in formulating more effective strategies to support the implementation of OBE and the mastery of literacies by the faculty.

2 Method

This study employs a quantitative approach with a survey method to explore lecturers' understanding of the Outcome-Based Education (OBE) curriculum and the four literacies (data, digital, human, and technological literacies) at Universitas Negeri Medan. The quantitative method was chosen because it can provide an objective and measurable depiction of lecturers' perceptions and understanding levels of the variables being studied (Martin et al., 2019).

The subjects of this study consist of 150 lecturers from various faculties at Universitas Negeri Medan. The selection of lecturers was done through stratified random sampling, ensuring proportional representation from each faculty to guarantee balanced representation. The inclusion criteria for participants were lecturers who had been teaching at the university for at least ten years and had experience in using the OBE curriculum.

The main instrument used in this study is a questionnaire specifically designed to measure the level of lecturers' understanding of OBE and the four literacies. Before being used, the questionnaire underwent a validation process by three experts in education to ensure that each item in the questionnaire could accurately measure the intended construct. Additionally, a reliability test of the questionnaire was conducted using the Cronbach's Alpha method, which yielded a score of 0.85. This score indicates a high level of internal consistency, ensuring that the questionnaire is reliable for consistently measuring lecturers' understanding.

Data were collected through the distribution of the questionnaire online, using a secure and easily accessible digital survey platform for the lecturers. The collected data were analyzed using descriptive statistics to describe the general characteristics of the research subjects and the distribution of responses to each statement in the questionnaire. Furthermore, inferential statistics were employed to test the research hypotheses and determine the relationships between lecturers' levels of understanding of OBE and the four literacies with other demographic variables. Regression and correlation analyses were also used to identify the factors that most significantly affect lecturers' understanding of these two concepts.

3 Result and Discussion

3.1 Lecturers' Understanding of the OBE Curriculum

Based on the analysis of lecturers' understanding of the OBE curriculum, the findings are as follows:

- 75% of lecturers have a good understanding of the basic concepts of OBE. This understanding includes the core principles of OBE, such as a focus on learning outcomes and the importance of designing a curriculum centered on student competencies.

- 55% of lecturers are able to implement OBE in the classroom learning process. Although most understand the basic concepts, many still face difficulties in effectively applying OBE in daily teaching activities.

- 60% of lecturers understand how to design assessments that align with the expected learning outcomes in OBE. The main challenge they face is accurately measuring students' learning outcomes in accordance with OBE principles..
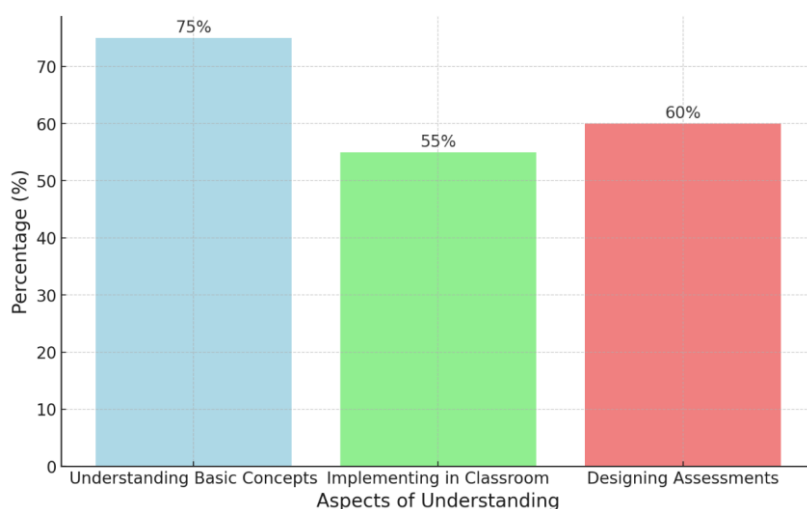

Fig. 1. analysis of lecturers' understanding of the OBE curriculum

The level of understanding among lecturers at Universitas Negeri Medan regarding the Outcome-Based Education (OBE) curriculum is generally classified as moderate. The data obtained shows that most lecturers have a reasonably good understanding of the basic concepts of OBE, particularly related to its focus on learning outcomes and the importance of designing a curriculum centered on student competency achievement. This understanding includes basic knowledge of how OBE emphasizes the expected outcomes of the learning process, rather than merely delivering content.

However, despite having a theoretically adequate understanding of the basic concepts of OBE, many lecturers still face significant challenges in its technical implementation in the classroom. One of the main difficulties reported is in designing assessments that align with the expected

learning outcomes. Many lecturers feel that they have not fully mastered assessment methods capable of accurately measuring students' achievement of learning outcomes in accordance with OBE principles. They often struggle to translate learning outcomes into specific, measurable assessment criteria.

This gap between theoretical understanding and practical skills indicates an urgent need to enhance lecturers' capacity in the practical application of OBE. Although they understand the importance of OBE and its key concepts, implementation in the field, especially in terms of assessment and the design of appropriate learning activities, still requires improvement. More intensive training and workshops, focusing on assessment techniques and outcome-oriented learning methods, are essential to bridge this gap.

This finding is consistent with educational literature, which states that the success of OBE implementation largely depends on lecturers' ability to effectively apply OBE principles in their daily teaching practices. Without sufficient understanding and skills in developing and executing OBE-based assessments, the primary goal of this approach producing competent and job-ready graduates may not be optimally achieved. Therefore, improving lecturers' capacity in this area should be a priority for higher education institutions that aim to effectively implement OBE.

3.2 Lecturers' Understanding of the Four Literacies

The level of lecturers' understanding of the Four Literacies has been obtained through the research data analysis stages. The results can be seen in the following table..

Table 1. Table of Percentage of Faculty Understanding of Literacy.

Literacy Aspect	Understanding	Not Understanding
Data Literacy	66%	34%
Digital Literacy	45%	55%
Human Literacy	60%	40%
Tekchnological Literacy	50%	50%

The understanding of lecturers regarding the four literacies (data literacy, digital literacy, human literacy, and technological literacy) is still at a moderate level. Among these literacies, technological and digital literacy are the least understood by lecturers. This is quite concerning, considering that digital and technological literacy are key components of 21st-century education, especially in the context of the Industrial Revolution 4.0, which demands mastery of information and communication technology. This gap between policies implemented at the university level and the lecturers' ability to integrate these literacies into the learning process indicates a significant challenge in efforts to strengthen lecturers' competence in technology and digital areas.

Many lecturers may still feel unfamiliar with the latest technology or lack confidence in effectively applying digital technology in teaching activities. A lack of deep understanding of modern technology can hinder efforts to prepare students with the relevant skills needed in an increasingly digital workforce.

Additionally, human literacy, which includes the ability to interact and collaborate effectively with others, also shows less-than-satisfactory results. This can affect the quality of interactions between lecturers and students, as well as collaboration among lecturers, all of which are important aspects of creating a dynamic and productive educational environment.

This issue needs to be addressed by providing continuous training programs that are relevant to technological developments and digital-based teaching methods. These programs should be designed to equip lecturers with the necessary skills in information and communication technology, allowing them to be more confident and effective in integrating digital and technological literacy into their teaching. Furthermore, the development of human literacy also needs to be strengthened through programs that enhance interpersonal and collaboration skills, both among lecturers and in lecturer-student relationships
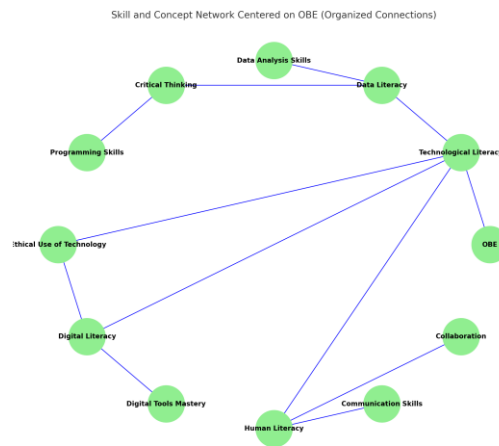

Fig. 2. Needs Analysis

The understanding of lecturers regarding the Outcome-Based Education (OBE) curriculum generally shows that they have a good grasp of the basic concepts of OBE. Lecturers demonstrate a fairly deep understanding of the core principles of OBE, such as the focus on learning outcomes and the importance of designing a curriculum aimed at developing student competencies. These principles align, who emphasized that OBE is an educational approach centered on specific final outcomes of the learning process, where all learning activities, including teaching and assessment, are designed to ensure the achievement of predetermined outcomes (Frisnoiry, 2020). Khairuddin et al. (2022) also support this view, stating that the success of OBE lies in the clarity of learning outcomes and the consistency between curriculum design(Abrey et al., 2022), teaching, and assessment. They add that a deep understanding of OBE by lecturers will ensure that students can achieve targeted competencies more effectively(Heitmann et al., 2023).

However, although most lecturers understand the basic concepts of OBE, only a few have successfully implemented them effectively in their daily teaching practices. This data indicates a gap between theoretical knowledge and practical skills in applying OBE. This finding is consistent who found that one of the biggest challenges in implementing OBE is the lack of lecturer skills in transforming theoretical concepts into effective teaching practices (Mufanti et

al., 2024). The study also noted that lecturers need more training in using outcome-based teaching methods (Ag Damit et al., 2021).

The successful implementation of OBE depends not only on conceptual understanding but also on the practical ability of lecturers to design learning experiences that facilitate optimal achievement of learning outcomes (Hoang Yen et al., 2024). The importance of project-based learning and case studies in the OBE context, where these methods provide opportunities for students to develop practical skills aligned with learning outcomes (Katawazai, 2021).

Recent research by (Robbani et al., 2020)also highlights the importance of ongoing formative assessment to ensure that students meet the expected outcomes (Ibarra-Sáiz et al., 2020). They stress that lecturers should be trained to design assessment instruments that not only measure final results but also the processes students go through. Theoretical understanding and practical skills in applying OBE, particularly in the aspect of assessment, indicate that advanced training needs to be implemented. This training should focus on techniques for developing competency-based assessment instruments that align with the OBE approach and are designed to measure learning outcomes objectively and accurately. (Stenberg et al., 2021)emphasized that training in authentic assessment is crucial in the OBE context, where students are evaluated based on their abilities in real-life situations, reflecting workplace competencies (McMullen et al., 2023).

The inability of lecturers to effectively implement OBE can also be linked to limited resources and access to relevant training. In their study, (Ahmed Saidu, 2023)found that institutional support, both in terms of resources and continuous professional development opportunities, plays a significant role in enhancing lecturers' abilities to implement OBE effectively. Fry, (Mojkowska et al., 2023)mentioned that the quality of OBE implementation is largely determined by the level of institutional support, both in the form of policies, resources, and professional development opportunities available to lecturers (Sun & Lee, 2020).

Although most lecturers have a good understanding of OBE's basic concepts, significant challenges remain in practical implementation, particularly in designing and conducting competency-based assessments (Shaheen, 2019). To address this, capacity-building for lecturers through training focused on the application of OBE and the development of assessment instruments is crucial to ensure the achievement of OBE's primary goal, which is to produce competent, adaptive graduates who are ready to compete in the global job market. In this context, four key literacies are critical, especially in the era of the Industrial Revolution 4.0, which demands mastery of information and communication technology as a basic competency for educators. The Technological Pedagogical Content Knowledge (TPACK) model introduced by (Hasson et al., 2023)serves as an important guide for developing lecturers' ability to integrate technology into teaching. Recent research by (Cook et al., 2023)confirms that TPACK plays a significant role in supporting OBE-based learning, particularly during the pandemic, which accelerated the adoption of educational technology (Fe et al., 2017). Therefore, developing lecturers' four literacies is a crucial step in ensuring the effective and relevant implementation of OBE to meet the educational needs of today(Brianza et al., 2024).

However, with only 45% of lecturers understanding digital literacy and 50% understanding technological literacy, this shows a serious challenge in implementing a technology-based OBE curriculum. According to (Diningrat et al., 2020)low technological literacy among lecturers hinders efforts to implement technology-focused education, including OBE. The study also emphasizes that digital technology not only facilitates learning but also enables more adaptive,

data-driven evaluations to assess learning outcomes.(Machleid et al., 2020) also mentioned that mastery of technology is essential for increasing student engagement in OBE-based learning, as technology allows wider access to learning resources, facilitates collaboration, and provides quick and relevant feedback (Handayani & Wibowo, 2021).

In addition to digital(Siregar et al., 2020) and technological literacy, human literacy, which includes the ability to interact, collaborate, and understand others, also shows unsatisfactory results, with only 60% of lecturers demonstrating a good understanding. The importance of human literacy in OBE-based education, where good interpersonal relationships support a collaborative and effective learning environment (Wu et al., 2023). This human literacy is important because lecturers are not only expected to deliver content but also to create a learning environment that fosters the development of students' social and emotional competencies. (Karrenbauer et al., 2023)highlighted that strong interpersonal skills play a role in increasing student motivation and engagement in learning. In the context of OBE, where students need to be actively involved in achieving learning outcomes, good human literacy among lecturers can enhance interactions that support this achievement.

The findings of this study indicate that more serious efforts are needed to improve lecturers' competencies in data, digital, technological, and human literacy to make OBE implementation more effective (Gopal, 2020). (Veza et al., 2022) recommend enhancing training focused on digital and technological literacy through continuous professional development programs designed to boost lecturers' confidence in effectively utilizing technology in outcome-based learning. Overall, strengthening lecturers' competencies in data, digital, technological, and human literacy is a crucial step in supporting more effective OBE implementation (Brundiers & Wiek, 2017). Without improvement in these areas, OBE's goal of producing competent, adaptive graduates ready to face the challenges of the 21st century may not be optimally achieved.

4 Conclusion

The analysis results show that the majority of lecturers have a good understanding of the basic principles of OBE, especially in terms of learning outcomes orientation and competency-based curriculum design. However, challenges still exist in practical implementation, particularly in the development of accurate and effective OBE-based assessments. This aligns with the finding that only a portion of lecturers possess adequate digital and technological literacy, which are two important aspects in supporting the application of OBE in the era of the Industrial Revolution 4.0. The Technological Pedagogical Content Knowledge (TPACK) model offers an approach that can help lecturers integrate technology into teaching, but the low level of technological literacy indicates a significant need for capacity building. Adopting TPACK is essential to address this gap, particularly in the context of the pandemic, which has accelerated the use of educational technology. Therefore, enhancing digital and technological literacy through continuous training for lecturers is crucial to support the more effective implementation of OBE at Universitas Negeri Medan. This improved literacy will enable lecturers to overcome challenges in outcome-based assessment and leverage technology to create adaptive learning environments that meet the demands of 21st-century education, thus supporting OBE's primary goal of producing graduates who are ready to compete in the global job market.

Acknowledgments

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