

Optimization of Lecturers' Understanding of OBE Curriculum and 4 Literacies (Human, Language, Data, Digital) at State University of Medan

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ABSTRACT

In the modern era of education, the implementation of the Outcome-Based Education (OBE) Curriculum and the mastery of four key literacies, human, language, data, and digital literacy are urgent needs for educators in higher education institutions. At the State University of Medan, lecturers' understanding of the OBE curriculum and these literacies is crucial for improving the quality of the learning process and student outcomes. This study aims to optimize the understanding of lecturers at the State University of Medan regarding the OBE curriculum and the required literacies to effectively integrate 21st-century skills into teaching and learning activities. The research employs a qualitative descriptive approach, using data collection techniques such as surveys, interviews, and focus group discussions (FGDs) involving 100 lecturers from various faculties at the State University of Medan. Data analysis was conducted using the triangulation method to obtain a comprehensive understanding of the lecturers' levels of understanding and the challenges they face in implementing the OBE curriculum and the four literacies. The findings indicate that lecturers' understanding of the OBE curriculum is varied, with some lecturers demonstrating a good grasp, while others require improvement in their knowledge and skills. Human and language literacies are relatively well-mastered by most lecturers; however, data and digital literacy remain challenges that need to be addressed. In conclusion, continuous professional development strategies, such as training and workshops, are required to enhance lecturers' understanding of the OBE curriculum and the four literacies. The implications of this study highlight the importance of institutional support in providing adequate resources and facilities, as well as encouraging collaboration among lecturers to strengthen pedagogical capabilities relevant to the demands of modern education.

Keywords: Data Literacy, Digital Literacy, Human Literacy, Language Literacy OBE Curriculum.

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INTRODUCTION

Higher education in Indonesia is undergoing a significant transformation to meet the demands of globalization and rapid technological advancement. One approach that is increasingly being adopted by universities worldwide (Chugh et al., 2023), including in Indonesia, is Outcome-Based Education (OBE). OBE focuses on specific and measurable learning outcomes as the central aspect of the entire educational process, from curriculum design and teaching methods to assessment systems. This approach requires educators, especially lecturers in higher education institutions, to have a deep understanding of how to integrate desired learning outcomes into the teaching process. In addition to implementing OBE, mastery of four key literacies, human literacy (Saputra, Arianto, and Saputra, 2023), language, data, and digital literacy has become crucial in equipping lecturers with the relevant skills for 21st-century learning (Lin and Nuha, 2023). Human literacy involves the ability to interact effectively and empathetically with others, while language literacy refers to communication abilities in various contexts. Data literacy refers to the ability to critically interpret, analyze, and use data (Bukido et al., 2023), and digital literacy encompasses the skills to utilize digital technologies effectively and ethically.

Understanding the Concepts and Practices of OBE was first proposed by Spady (1994), who formulated the theoretical foundations of OBE, emphasizing the importance of specific and measurable learning outcomes (McKivett and Paul, 2024). This study provides a strong theoretical foundation for understanding how OBE can be effectively implemented in the context of higher education (Brinkmann and

Giese, 2023) in Indonesia (Hansen et al., 2023). Additionally, several local studies, such as those conducted by Kurniawan and Rahmawati (2021), show how the OBE concept can be adapted to the specific needs and challenges (Ndupu et al., 2023) of higher education in Indonesia, including at Universitas Negeri Medan. Identifying Challenges in OBE Implementation has previously highlighted limitations (Bazán-Ramírez et al., 2022) in lecturers' understanding, lack of professional training (Alsharif et al., 2023), and the gap between institutional policies and classroom teaching practices (Mahmud, 2019; Sudrajat, 2020). This research contributes by providing empirical data on these barriers and informing the design of this study to further explore the specific challenges (Ganguly, D'Souza, and Nunes, 2023) faced by lecturers at Universitas Negeri Medan. The Impact of the Four Literacies on Teaching Effectiveness has previously underscored the importance of human, language, data, and digital literacy (Kabakus, Bahcekapili, and Ayaz, 2023) in enhancing teaching and learning effectiveness in the modern era (Wulandari, 2020; Setiawan, 2019). These studies show that these literacies (Hervais-Adelman et al., 2022) are crucial for lecturers to adapt to the demands of 21st-century education, including the use of digital technologies and data analysis in the learning process (Michos, Schmitz, and Petko, 2023). The contribution of this research is in deepening understanding (Roy and Al-Absy, 2022) of how these literacies are mastered by lecturers at Universitas Negeri Medan and how this affects the implementation of the OBE curriculum (Sarva et al., 2023).

Identifying key gaps in the implementation of the Outcome-Based

Education (OBE) curriculum and the mastery of the four main literacies (human, language, data, and digital) at Universitas Negeri Medan. First, most previous studies on OBE and the four literacies have focused on international contexts or universities in major cities (Navarro-Martínez, Igual-García, and Traver-Salcedo, 2023), thus failing to reflect the specific challenges and needs of universities outside metropolitan areas like Universitas Negeri Medan. Prior research has also tended to overlook data and digital literacies, even though both are critical skills in the modern era. This creates a gap in understanding (Ali et al., 2023) of the extent to which lecturers master and are able to implement these skills in teaching and learning activities. Another identified gap is the lack of in-depth studies on the specific challenges faced by lecturers in implementing OBE, as well as the scarcity of sustainable professional development strategies (Zhou et al., 2023) to support their understanding. Many previous studies recommend training or workshops but do not explore in detail how these programs can be implemented effectively and sustainably at the local level. Additionally, prior research has rarely evaluated the direct impact (Cagliesi, Hawkes, and Smith, 2023) of OBE and the four literacies on the quality of teaching and student learning outcomes, making it difficult to assess their effectiveness and success in institutions like Universitas Negeri Medan.

Addressing the uneven understanding among lecturers at Universitas Negeri Medan regarding the Outcome-Based Education (OBE) curriculum and mastery of the four main literacies (human, language, data, and digital). Many lecturers still experience limitations in understanding

the concept and effective application (Clay et al., 2023) of OBE, as well as challenges in integrating data and digital literacy (Salleh et al., 2023a) into their teaching. The lack of relevant training and institutional support also poses obstacles to improving lecturers' competence in this regard. Through this study, Universitas Negeri Medan aims to address the lack of empirical data on the impact of OBE implementation and the four literacies (Tang and Bao, 2023a) on the quality of teaching and student learning outcomes. By addressing these issues, this research seeks to provide practical recommendations that can enhance lecturers' understanding, strengthen literacy skills, and encourage better institutional support (Coleman et al., 2024a) to foster effective teaching and learning.

The importance of lecturers' understanding of the OBE curriculum and the mastery of the four literacies (van den Hende and Riezebos, 2023) is increasingly recognized as key to improving the quality of the learning process and student outcomes (Rubisch et al., 2023). Lecturers' understanding and application of the OBE curriculum and literacy mastery remain uneven, with many still facing challenges in integrating these skills into their teaching processes. This study aims to optimize lecturers' understanding (Ghasemi et al., 2023) of the OBE curriculum and the four literacies, as well as to identify the challenges they face in implementing them. This research is crucial as a better understanding of the OBE curriculum and the four literacies will support the development of lecturers' competencies (Almusharaf, Bailey, and Rodrigue, 2023a), ultimately improving the quality of teaching and student success. Through a qualitative descriptive

approach, this study explores the level of lecturers' understanding at Universitas Negeri Medan regarding the OBE curriculum and the four literacies and proposes relevant professional development strategies to enhance teaching effectiveness.

METHOD

This study employs a qualitative descriptive approach to gain an in-depth understanding of the lecturers' comprehension of the Outcome-Based Education (OBE) curriculum and the four core literacies (human, language, data, and digital) at Universitas Negeri Medan. The research subjects consist of 100 lecturers from various faculties at Universitas Negeri Medan. Data collection techniques used in this study include surveys, interviews, and focus group discussions (FGDs). The data collection procedure involved distributing an online survey to all participants. The survey results were analyzed descriptively using statistics, while data from interviews and FGDs were analyzed using the triangulation method. Triangulation was conducted by comparing data from various sources (surveys, interviews, and FGDs).

RESULTS AND DISCUSSION

1. Variations in Lecturers' Understanding of the OBE Curriculum

The survey results indicate significant variation in lecturers' understanding of the OBE curriculum. Lecturers with a better understanding generally came from faculties that had received specific training on OBE, whereas those with lower levels of comprehension often lacked access to such training and were less familiar with the principles of OBE.

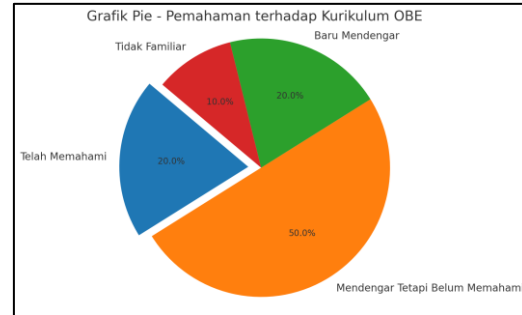


Fig 1. (a) Understanding of the OBE Curriculum

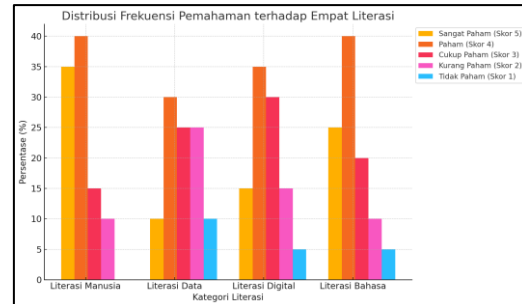


Fig 2. (b) Frequency Distribution of Four Literacies Comprehension

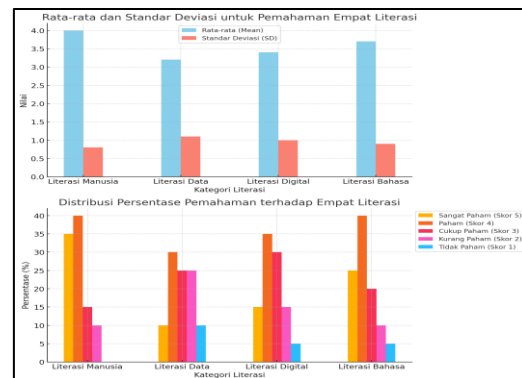


Fig 3. (c) Percentage Distribution of Four Literacies Understanding

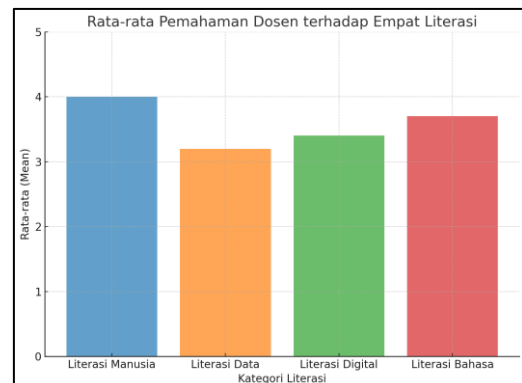


Fig 4. (d) Average Understanding of Four Literacies.

(a) Pie Chart - Understanding of the OBE Curriculum shows the level of lecturers' comprehension of the OBE

curriculum. The chart reveals that the majority (50.6%) of lecturers are in the "Aware but Not Yet Understanding" category, indicating that while they are aware of the curriculum, they do not fully grasp its concepts. About 26.0% have "Understood" OBE, while 23.0% have merely "Heard" of it. A small percentage (3.0%) is "Not Familiar" with OBE at all. These findings highlight the need for deeper efforts to improve lecturers' comprehension of the OBE curriculum, particularly by increasing awareness and providing more in-depth knowledge.

(b) The Frequency Distribution Chart depicts lecturers' comprehension of the four literacies (human, language, data, and digital). Human and language literacies have a higher percentage in the "Very Competent" and "Competent" categories. In contrast, data and digital literacies show higher percentages in the "Moderately Competent" and "Less Competent" categories, indicating that many lecturers need to improve their skills in these two literacies.

(c) The Mean and Standard Deviation Chart for the Four Literacies presents the average and standard deviation of lecturers' comprehension of the four literacies. Human literacy has the highest average, nearing a value of 4.0, indicating better understanding among lecturers. Meanwhile, data literacy has the lowest average, around 3.2, reflecting a less adequate level of understanding. The highest standard deviation is observed in data literacy (1.1), demonstrating significant variation in comprehension among lecturers, whereas human literacy has the lowest standard deviation (0.8), indicating more consistent understanding among lecturers.

(d) The Average Understanding of

Lecturers regarding the four literacies shows that human literacy has the highest average comprehension, followed by language literacy. Digital and data literacies have lower average levels of understanding, with data literacy being the lowest. This confirms the need for more focused training to improve lecturers' comprehension in digital and data literacies.

Overall, the data shows that although there is high awareness among lecturers about the OBE curriculum, there are significant gaps in deeper understanding and practical application, especially related to data and digital literacy. To address these challenges, more focused training, clear implementation guidelines, and additional resource support are required to strengthen lecturers' capacity to effectively implement OBE.

2. Mastery of Human and Language Literacies

Lecturers at Universitas Negeri Medan demonstrate adequate mastery of human and language literacies, reflecting good interpersonal and communication skills. However, lecturers also expressed a need for improvement in language literacy, particularly in the use of academic language and delivering more engaging material. This indicates that further development of communication skills, including the use of innovative and technology-based communication techniques, is still necessary.

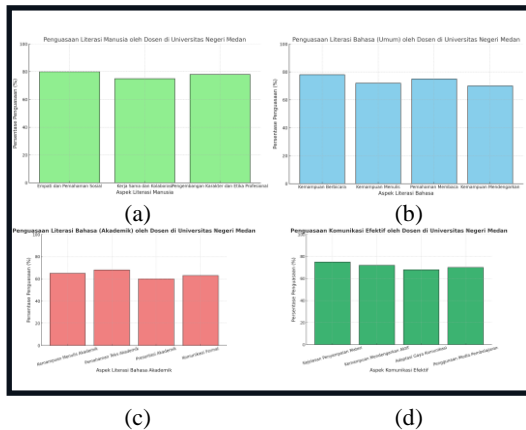


Fig 5. (a) Mastery of Human Literacy, (b) Mastery of General Language Literacy, (c) Mastery of Academic Language Literacy, (d) Effective Communication.

(a) The Mastery of Human Literacy Chart by Lecturers at Universitas Negeri Medan shows the percentage of mastery in three aspects of human literacy: "Empathy and Social Understanding," "Collaboration and Teamwork," and "Character and Professional Ethics Development." These three aspects have nearly similar mastery levels, ranging between 75% and 80%. This indicates that lecturers generally have a good understanding of human literacy, particularly in terms of understanding and empathizing with others, working in teams, and building character and professional ethics.

(b) The Mastery of General Language Literacy Chart by Lecturers at Universitas Negeri Medan shows lecturers' proficiency in four aspects of general language literacy: "Speaking Skills," "Writing Skills," "Reading Comprehension," and "Listening Skills." Generally, "Speaking Skills" have the highest proficiency percentage, followed by "Reading Comprehension" and "Writing Skills." "Listening Skills" are slightly lower but remain above 70%. This indicates that lecturers have a relatively good grasp of language literacy, with a slight need for improvement in listening skills.

(c) The Mastery of Academic Language Literacy Chart by Lecturers at Universitas Negeri Medan illustrates their proficiency in academic language literacy, including "Academic Writing Skills," "Understanding of Academic Texts," "Academic Presentations," and "Formal Communication." Proficiency percentages range from 60% to 75%, with "Understanding of Academic Texts" being the highest. "Formal Communication" and "Academic Presentations" have lower percentages, showing that while lecturers are relatively competent in understanding and writing academic texts, there is a need to strengthen formal communication and presentation skills.

(d) The Effective Communication Mastery Chart of Lecturers at Universitas Negeri Medan shows the lecturers' mastery in four aspects of effective communication: "Clarity of Material Delivery," "Active Listening Skills," "Adaptation of Communication Style," and "Use of Learning Media." These aspects have relatively even mastery levels, ranging from 65% to 75%. "Clarity of Material Delivery" has the highest mastery percentage, while "Adaptation of Communication Style" is slightly lower. This indicates that lecturers are generally competent in delivering material clearly, but may need improvement in adapting to different communication styles and using learning media effectively.

Overall, this indicates that lecturers at Universitas Negeri Medan have a good level of mastery in human literacy, general and academic language literacy, and effective communication. However, listening skills, formal communication, academic presentations, and adaptation of communication styles still need improvement. Efforts to enhance these

skills can focus on further training and adequate resource support to strengthen lecturers' competencies.

3. Limitations in Data and Digital Literacy Mastery

Data and digital literacy were found to be the most challenging areas for lecturers at Universitas Negeri Medan. Only 30% of lecturers demonstrated adequate mastery of data literacy, including the ability to critically collect, interpret, and analyze data. Additionally, 25% of lecturers felt comfortable using digital technology in teaching, while most admitted struggling to integrate technology and data analysis into the curriculum, mainly due to limited technological infrastructure, lack of training, and low confidence in using digital tools.

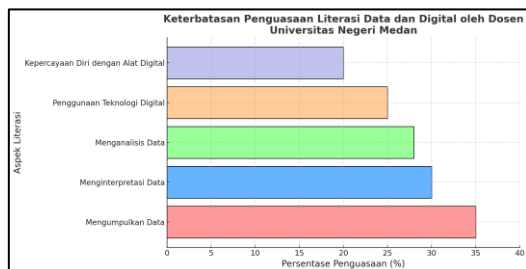


Fig 6. Limitations in Data and Digital Literacy Mastery

Figure 3 shows that lecturers at Universitas Negeri Medan face significant limitations in data and digital literacy, particularly in collecting, interpreting, and analyzing data. These limitations suggest that many lecturers need to improve their skills in effective data collection techniques, analysis using statistical tools, and data interpretation to support evidence-based teaching and research. The lack of confidence in using digital tools and the limited use of digital technology further highlight the need for more training and institutional support to help lecturers better integrate technology into

academic activities.

4. Identifying Challenges in the Implementation of OBE and the Four Literacies

In-depth interviews and FGDs revealed various challenges faced by lecturers in implementing OBE and the four literacies. These include a lack of relevant professional training, limited time to prepare OBE-based teaching materials, and insufficient support from university management in implementing teaching innovations.

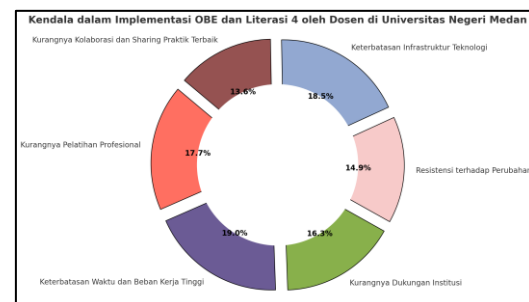


Fig 7. Challenges in the Implementation of OBE and the Four Literacies

This figure highlights some of the key challenges faced by lecturers at Universitas Negeri Medan in implementing the OBE Curriculum and the four literacies. Time constraints and heavy workloads (19.0%) and limited technological infrastructure (18.5%) are the most significant barriers, hindering lecturers' ability to focus on implementing OBE concepts. A lack of professional training (17.7%) and institutional support (16.3%) were also mentioned as critical challenges, indicating the need for more frequent and higher-quality training, as well as stronger institutional commitment to provide adequate support. Resistance to change (14.9%) and limited collaboration and sharing of best practices (13.6%) also contribute to the difficulties in adopting the OBE approach and literacies. Overall, the

main challenges in implementing the OBE Curriculum and the four literacies at Universitas Negeri Medan include time constraints, technological infrastructure limitations, and a lack of professional training. Institutional support, resistance to change, and limited collaboration are also significant hurdles. Addressing these challenges requires a more structured and comprehensive approach, including the provision of training, improved infrastructure, institutional policy support, and the promotion of a collaborative culture among lecturers.

5. The Need for Sustainable Professional Development Strategies

Lecturers expressed in FGDs the need for sustainable professional development programs, such as training, workshops, and collaboration between lecturers, to enhance their understanding of OBE and the four literacies. They also emphasized the importance of institutional support in providing adequate technological infrastructure, access to digital resources, and policies that encourage innovation in teaching.

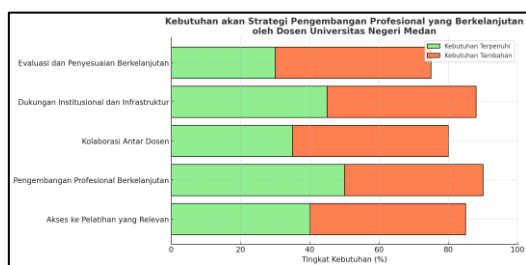


Fig 8. The Need for Professional Development Strategies

This figure shows that most lecturers at Universitas Negeri Medan still require improvements in various aspects of professional development. The need for institutional and infrastructure support, continuous evaluation and adjustment, and over 50% of lecturers feel that additional

support is essential for their competence development. A high need for access to relevant training is evident, with 70% of lecturers stating that opportunities for attending training aligned with their learning needs are critical, underscoring the importance of providing more targeted and sustainable development programs by the university. These efforts will help lecturers improve their teaching skills and other academic responsibilities.

Lecturers' understanding of the OBE Curriculum at Universitas Negeri Medan varies. The majority of lecturers (50%) are only "aware but not yet understanding" the concept of OBE, while 26% have a deeper understanding (Çakıroğlu et al., 2023a). Understanding of human and language literacies is relatively strong, but data and digital literacies remain significant challenges (Salleh et al., 2023b), with most lecturers showing limitations in effectively utilizing them (Sulaiman et al., 2023). These limitations in data and digital literacy mastery are primarily due to a lack of relevant training (Ossai et al., 2023), inadequate technological infrastructure (Tang and Bao, 2023b), and lecturers' low confidence in using digital tools (Mojkowska et al., 2023). Other challenges include limited time, resistance to change, and suboptimal institutional support (Mojkowska et al., 2023), which hinder lecturers' ability to implement OBE and the four literacies effectively in their teaching. Addressing these issues requires sustainable professional development strategies, such as increased access to relevant training, better technological support (Michos, Schmitz, and Petko, 2023; van den Hende and Riezebos, 2023), and policies that encourage innovation and collaboration among lecturers. With adequate support, lecturers are expected to improve their understanding and

application of OBE and enhance their proficiency in the four literacies to improve the quality of learning at Universitas Negeri Medan (Saputra, Arianto, and Saputra, 2023).

CONCLUSION

The level of understanding of the Outcome-Based Education (OBE) Curriculum and the four literacies (human, language, data, and digital) among lecturers at Universitas Negeri Medan remains varied (Beatty et al., 2023). The majority of lecturers are aware of the OBE concept (Çakıroğlu et al., 2023); however, most have only heard of it and do not yet have a deep understanding (Saltos-Rivas, Novoa-Hernández, and Rodríguez, 2023). Mastery of human and language literacies is relatively good (Coleman et al., 2024b), but data and digital literacies remain the main challenges (Salleh et al., 2023c), with only a small portion of lecturers feeling comfortable using digital technology and analyzing data (Chinedu, Saleem, and Wan Muda, 2023). These limitations in understanding and mastery are primarily due to a lack of relevant training (Hertling et al., 2023), minimal institutional support, and inadequate technological infrastructure. Sustainable professional development strategies (Almusharaf, Bailey, and Rodrigue, 2023b), including increased access to relevant training, enhanced support and technological resources, as well as promoting collaboration and innovation among lecturers, are necessary. By addressing these challenges, it is expected that lecturers will be more effective (Moorhouse and Wan, 2023) in implementing the OBE curriculum and improving the quality of education at State University of Medan in line with global education standards.

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