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Analysis of Learning Achievement Level Towards Implementation of Outcome-Based Education (OBE) in Geography Education Department

Darwin Parlaungan Lubis[1], M Taufik Rahmadi[1], Alvin Pratama[1], Nina Novira[1], Mahara Sintong[2], Sendi Permana[2] Ayu Suciani[3]
[1]Geographic Information Science Study Program, Faculty of Social Sciences, Universitas Negeri Medan, Indonesia
[2]Department of Geography Education, Faculty of Social Sciences, Universitas Negeri Medan, Indonesia
[3]Department of Geography Education, Faculty of Teacher Training and Education, Universitas Samudra, Indonesia

e-mail: taufikrahmadi@unimed.ac.id

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Abstract
Rapid changes in the world of work due to globalization and the information technology revolution require an evaluation of the competencies needed considering the gap between educational outcomes and job market demands. Outcome-Based Education (OBE) is considered to be able to bridge this gap by focusing on learning outcomes that are relevant and in accordance with the needs of the world of work, replacing the teacher-centered teaching method that is still dominant. This study aims to analyze the implementation of OBE in the Department of Geography Education and evaluate the level of student learning achievement to meet professional demands in the field of geography. This research uses a quantitative descriptive method to describe the level of student learning achievement related to implementing Outcome-Based Education (OBE) in the Department of Geography Education, with a population of all students and samples taken using purposive sampling from the 2023 and 2024 classes. Data were collected through a closed questionnaire distributed via Google Forms, using a Likert scale from 1 to 5, and analyzed using descriptive statistics to calculate the percentage of respondents' answers and the average answer per item. The study's results showed that implementing Outcome Based Education (OBE) had a positive impact with an average student learning achievement reaching 73.8%. However, there are still shortcomings in mastery of technology and application of theory to real practice, which emphasizes the need to develop a more applicable curriculum. To improve these skills, it is recommended that universities integrate experiential learning methods such as internships and case studies and focus on curriculum evaluation that is integrated with practical experience.

Keywords: Learning, Outcome Based Education, Geography, Academic, Students.

INTRODUCTION

Rapid changes in the world of work triggered by globalization and the revolution in information technology and science require special attention to the competencies needed in the labor market (García-Pérez et al., 2021). This evaluation is also important so that the world of education is not disconnected or separated from the reality of the needs of the world of work in society. There is a gap between educational outcomes and competency demands in the world of work, so the relationship between education and the world of work needs to be continuously reviewed. Olo et al. (2022), several crucial changes have occurred, including the increasing number of educated unemployed, both open and hidden unemployment, as a result of higher education that is not fully in sync with the labour market. In addition, changes in the global socio-economic and political structure have also influenced the labour market, coupled with the rapid development of science and technology (Lauder & Mayhew, 2020).

Tight competition in the job market drives the need for quality and competent

human resources in their fields. To achieve this, education must start early by implementing effective learning methods such as Outcome-Based Education (OBE). In Indonesia, the dominant learning method is still teacher-centred, whereas teaching is more teacher-centred and focuses on input (Nisa et al., 2024). According to Pertiwi et al. (2022), this method emphasizes the teaching process with the assumption that if the material has been delivered well, then that is enough. Learning outcomes are highly dependent on the role of the teacher, and this approach is called teacher-centered. The use of appropriate learning methods can support the expected outcomes of students.

Therefore, an appropriate assessment system is also needed to assess the effectiveness of the learning method. According to Fiandi (2023), Outcome-Based Education (OBE) is a learning method that focuses on what students should do. In OBE, learning outcomes are identified first, then teaching and assessment methods are adjusted to the desired outcomes. This is different from the traditional approach, where the topics taught are determined by the lecturer first, and then learning outcomes are identified from the topic.

Outcome-Based Education (OBE) emphasizes the continuity of an innovative, interactive, and effective learning process (Muzakir & Susanto, 2023). OBE affects the entire educational process, from curriculum design, formulation of learning objectives and achievements, teaching strategies, design of learning methods, evaluation procedures, to the educational environment or ecosystem. OBE is designed to ensure that all of these elements support the achievement of the desired learning outcomes. The main focus of OBE is on the future, requiring educators to imagine the real conditions that students will face in the future, and how they can change after completing their studies (Badriah & Robandi, 2023). By identifying OBE first, the learning process can be directed according to the specifications needed to achieve these results.

The Geography Education Undergraduate Program at Medan State University studies various sciences in the field of geography. One of its main objectives is to produce competent graduates as educators and professionals (Riani et al., 2020). Students in this department study various materials, ranging from basic geography, spatial planning, disaster mitigation, to environmental geography. In addition, some courses support the development of skills in geospatial technology. In order for graduates to be able to work directly according to the needs of the world of work and society, a curriculum is needed that is able to bridge the gap between education in higher education and the real needs of the world of work and the development of innovation in the field of geography.

One relevant approach is Outcome-Based Education (OBE). This approach encourages learning outcomes to include knowledge, skills, and attitudes that are in accordance with social, economic conditions, and community needs (Kusstianti et al., 2022). The current curriculum in the Geography Education Department aims to develop student competencies in accordance with Kerangka Kualifikasi Nasional Indonesia (KKNI) dan Standar Nasional Pendidikan Tinggi (Lubis, 2020). However, this curriculum is considered not fully oriented towards outputs that are in accordance with the needs of the world of work. Therefore, the implementation of an OBE-based curriculum is vital to improve students' readiness and skills in entering the world of work.

This research focuses on the implementation of Outcome-Based Education (OBE) in the learning system at the Department of Geography Education. OBE, as an innovative learning approach, has been widely applied in various educational institutions to bridge the gap between educational outcomes and the

demands of the ever-growing world of work. However, analysis of the level of achievement of OBE-based learning in the Department of Geography Education is still limited. This study aims to analyze the extent to which OBE has been implemented in the department and evaluate the level of learning achievement produced by students in meeting professional demands in the field of geography.

RESEARCH METHODS

Type of Research

This type of research is quantitative descriptive. This study aims to describe the phenomena related to the level of learning achievement towards the implementation of Outcome-Based Education (OBE) in the Department of Geography Education. This method is used to provide an overview of student learning achievement in the implementation of OBE.

Population and Sample

The population in this research was all students of the Department of Geography Education at the State University of Medan. Meanwhile, the sampling technique used in this study was the purposive sampling technique, which is suitable for use in quantitative research or research that does not generalize. The sample of this study focused on Geography Education students of the 2023 and 2024 intakes.

Data Collection Technique

The data collection technique was carried out through a questionnaire distributed with the help of Google Forms. The questionnaire is a closed questionnaire that has been arranged and structured in such a way as to make it easier for respondents to choose or answer each statement according to their respective views and experiences. The analysis guide applied to the questionnaire uses a Likert scale. This study consists of 10 statements using a Likert scale for each statement. The Likert scale has a range from 1 to 5 points. The criteria can be seen in the Table 1.

Table 2. Assessment Scoring Guidelines

Score	Description
5	Strongly Agree
4	Agree
3	Neutral
2	Disagree
1	Strongly Disagree

(Source : Efendi et al., 2021)

Data Analysis Techniques

The data analysis technique used in this study is descriptive statistical analysis. The data obtained were analyzed using descriptive methods. Questionnaire data analysis can be done by calculating the percentage of respondents' answers. After that, each question/statement item in the questionnaire was analyzed descriptively or converted into a Likert scale. The data was then analyzed quantitatively with the following formula:

$$P = \frac{F}{n} \times 100\%$$

Information:
P = Percentage
F = Total responses for all items
n = Total ideal score per item

In addition, the average percentage of respondents' answers per statement item and overall can be calculated using the formula in Table 2.

Table 2. Average Statement Answer Formula

Average Per Item Statement	Overall Average Answer
$\overline{P_i} = \frac{\sum f_i P_i}{n} \times 100\%$	$\overline{P_T} = \frac{\sum \overline{P_i}}{k} \times 100\%$

(Source : Arofah & Hidayati, 2021)

Description :
$\overline{P_i}$ = average percentage of students' answers for item statement i
f_i = frequency of student answer choices for statement item i
P_i = percentage of student answer choices for statement item i
n = number of students
$\overline{P_T}$ = average percentage of students' answers overall (total)
$\overline{P_i}$ = average percentage of students' answers for item statement i
k = number of statement items

The average percentage of answers per item will be interpreted based on the criteria listed in Table 3.

Table 3. Interpretation of Percentage of Statement Answers

Criteria	Interpretation
P = 0%	Nobody
0% < P < 25%	A Little Part
25% < P < 50%	Almost Half
P = 50%	Half
50% < P < 75%	Most
75% < P < 100%	Almost All
P = 100%	All

(Source : Pratiwi & Imami, 2022)

In addition, after the percentage is calculated, the value is then entered into the student learning achievement classification table, as shown in Table 4.

Table 4. Classification of Student Learning Achievement

Criteria	Interpretation
Good	76% - 100%
Good Enough	56% - 75%
Less Good	40% - 55%
Not Good	<40%

(Source : Ghassani et al., 2023)

RESULTS AND DISCUSSION

OBE Implementation Data Analysis Results

The data, collected through a questionnaire containing statements measured using a Likert scale, were analyzed using descriptive statistical methods to provide an overview of the respondents' responses. The results of the descriptive analysis related to student learning achievement obtained from the data are presented in Table 5.

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Table 5. Results of Student Learning Achievement Analysis

No.	Indicator	Statement					Average	Interpretation	Description
		1	2	3	4	5			
1.	Students are able to understand and explain the core concepts of learning materials in accordance with the learning outcomes that have been set.	0,68%	8,16%	36,73%	42,18%	12,25%	71,43%	Good Enough	Most
2.	Students are able to analyze information, evaluate evidence, and produce appropriate solutions based on relevant data and theories.	0%	4,08%	42,18%	34,69%	19,05%	73,74%	Good Enough	Most
3.	Students are able to apply the theories and concepts they have learned in real-world situations or case studies.	0%	9,52%	41,50%	34,01%	14,97%	70,88%	Good Enough	Most
4.	Students are able to work in teams, demonstrating effective collaboration and communication skills in achieving group goals.	1,36%	2,04%	25,85%	45,58%	25,17%	78,23%	Good	Almost All
5.	Students are able to develop creative and innovative solutions to complex problems by utilizing existing resources.	0%	4,08%	39,46%	37,41%	19,05%	74,29%	Good Enough	Most
6.	Students are able to communicate ideas, information,	0%	5,44%	34,69%	38,10%	21,77%	75,24%	Good Enough	Almost All

	and learning outcomes clearly and effectively.								
7.	Students are able to operate tools, technologies, or methodologies relevant to the field of study.	1,36%	10,88%	42,86%	26,53%	18,37%	69,93%	Good Enough	Most
8.	Students are able to make rational, data-based decisions in certain situations, taking into account various relevant factors and potential consequences.	0%	4,08%	46,26%	31,29%	18,37%	72,79%	Good Enough	Most
9.	Students demonstrate the ability to learn independently, set personal learning goals, and design learning strategies to achieve those goals.	0,68%	4,76%	36,73%	35,37%	22,46%	74,83%	Good Enough	Most
10.	Students are able to demonstrate ethical attitudes and behavior that are consistent with professional standards and socially responsible, in accordance with the expected learning outcomes.	1,36%	5,44%	27,21%	40,82%	25,17%	76,6%	Good	Almost All
	Overall average						73,8%	Good Enough	Most

Based on the results of data processing in Table 5, the overall average achievement is at 73.8%, which is included in the "Good Enough" category. This shows that most students have been able to meet expectations in various aspects of learning, although there is still room for improvement in certain indicators. The results of the analysis of student learning achievement are described as follows.

1) Understanding and Explanation of Core Concepts

   Students showed quite good ability in understanding and explaining the core concepts of the learning material, with an average score of 71.43%. This indicates that most students are able to master the basic concepts that have been taught, although there are still some that need reinforcement.

2) Analysis and Evaluation of Information

   Students' ability to analyze information, evaluate evidence, and produce solutions based on relevant data and theories has an average of 73.74%. This score is included in the fairly good category, which means that most students can conduct critical analysis, although there is room for improvement in the depth of evaluation.

3) Application of Theory in Real World Situations

   Students' ability to apply theories and concepts in real-world situations or case studies scored 70.88%. Although in the fairly good category, this indicates the need for more real practice to improve students' application skills.

4) Collaboration and Communication in Teams

   With a score of 78.23%, students' collaboration and communication skills in teams are already in the good category. Almost all students demonstrated the ability to work together effectively, which is an important asset in a collaborative work environment.

5) Development of Creative and Innovative Solutions

   Students have quite good abilities in developing creative and innovative solutions, with a score of 74.29%. This shows that most students have begun to be able to think out of the box, although creativity and innovation still need to be encouraged further.

6) Communication of Ideas and Information

   Students demonstrated quite good abilities in communicating ideas, information, and learning outcomes, with an average of 75.24%. Good communication skills are essential for conveying ideas clearly, and this score indicates that almost all students have achieved this skill.

7) Operation of Tools and Technology

   Students have quite good abilities in operating tools, technology, or methodologies relevant to their field of study, with a score of 69.93%. Although it is on the fairly good border, this shows that there is room for improvement in students' technical skills.

8) Rational Decision Making

   In terms of making rational and data-based decisions, students achieved a score of 72.79%, indicating that most students can consider various relevant factors in decision-making. However, further improvement is needed to strengthen the consideration and accuracy of decisions.

9) Independent Learning and Personal Goal Setting

   Students showed quite good ability in independent learning and setting strategies to achieve learning goals, with a score of 74.83%. Most students have their learning initiatives, but motivation

for independent learning can still be improved.

10) Ethical Attitudes and Behaviors

Students showed good ethical attitudes and behaviors, with a score of 76.6%. Almost all students have demonstrated behavior that is by professional standards and social responsibility, which is one of the important indicators in Outcome-Based Education (OBE).

Implementation of Outcome-Based Education (OBE) in Learning Achievement

From the results of the descriptive analysis, it can be seen that most students have been able to achieve the core skills expected in Outcome-Based Education (OBE)-based learning. Skills such as understanding core concepts, analytical skills, collaboration in teams, and ethical attitudes show satisfactory achievements. This shows that the OBE approach has been able to provide a framework that supports the achievement of learning outcomes that are oriented towards results or outputs. However, several aspects, such as the application of theory in real situations and the operation of technology, still require more attention so that students can be more skilled in dealing with real-world situations.

Core concept understanding skills, for example, show that students have been able to master the basic learning materials that have been taught. This achievement is an important foundation for students to move on to more complex learning stages, including the development of critical and creative skills needed in OBE. Students' analytical skills also obtained satisfactory results, where most students have been able to evaluate information, analyze evidence, and produce relevant solutions based on data. These skills are very important in geography education, where environmental and social data analysis is a major part of the learning process. With a fairly good level of achievement in this aspect, students are expected to be able to hone the critical thinking skills needed to face dynamic and complex real-world challenges.

Collaboration in teams and effective communication are also included in the skills that students have mastered well. The results of the analysis show that students have been able to work efficiently in groups, demonstrate good communication skills and strong collaboration to achieve common goals. This is in line with the findings of the study Amato et al. (2020), that collaboration skills are crucial in a world of work that increasingly demands interaction and cross-disciplinary teamwork. Mastery of these skills indicates that students are ready to enter the world of work that requires collaboration in solving problems.

Outcome-Based Education (OBE) has succeeded in encouraging students to master the core skills needed, including understanding core concepts, analytical skills, and team collaboration. Understanding core concepts is a strong foundation for students to move on to more complex stages. This shows that they are able to absorb and understand the basic material taught, which is very important for building critical and creative skills in the future. According to Koris & Palmer (2021), good analytical skills are also seen in students' skills to evaluate information, analyze data, and produce relevant solutions, which are very important in fields such as geography, where environmental and social data analysis is often at the heart of learning. A satisfactory level of achievement in both of these aspects indicates students' readiness to face a dynamic professional world.

Challenges of Mastering Technology and Applying Theory in OBE Implementation

The results of the analysis show that students still face challenges in mastering relevant tools, technologies, and methodologies, with an average achievement of 69.93%, and in applying the

theories and concepts learned to real-world situations, with a score of 70.88%. Although both are included in the "Quite Good" category, these two areas need improvement so that graduates are better prepared to face professional demands. In the implementation of Outcome-Based Education (OBE), mastery of technology and application skills is vital to ensure that students can apply the skills they have acquired in real practice. This is in line with the findings Wood et al. (2020) that limited access to technology facilities and minimal experience-based learning, such as fieldwork, case studies, and digital simulations, contribute to this gap.

Mastery of relevant tools, technologies, and methodologies by students is still a challenge with an average achievement of 69.93%. This figure indicates that most students are not yet fully proficient in operating the tools and technologies needed in their fields of study. This is in line with the research findings of Rahmawati & Wahyuni (2024) that mastery of technology is needed in the world of education that focuses on Outcome-Based Education (OBE), where students are expected to be able to apply practical and technical skills to face the demands of future professions. These skills are not only relevant for those who enter the academic world, but also for those entering the industry where mastery of technology is often a basic competency.

In the implementation of OBE, mastery of technology is not only about knowing the tools, but also about the ability to use technology optimally to solve problems or conduct critical analysis. If students are not trained in using technology effectively, they may have difficulty responding to professional needs that are increasingly focused on technical skills. Therefore, universities must ensure that students have sufficient access to technological facilities and practice-based learning. Adequate laboratories, the latest technological equipment, and digital simulations can provide opportunities for students to practice what they learn in contexts that are close to real-world situations.

The ability to apply theory in real-world situations is also another area that needs improvement, with an average score of 70.88%. This figure shows that students often have difficulty connecting the theories they learn in class with their applications in real conditions. In the professional world, the ability to apply theoretical concepts in facing everyday challenges is very much needed. According to Ramli et al. (2022), if students cannot translate theory into practice, they are potentially less prepared to face the challenges of the real world of work, where the context and variables often do not match what is learned in textbooks.

One way to address the gap between theory and practice is to increase experiential learning. Agus et al. (2022) define this method as a method of involving students in direct situations where they can test the theories they have learned in real contexts, such as through case studies, internships, fieldwork, or simulations. This experiential learning allows students to develop essential application skills in the world of work. That means students will be better prepared to face unexpected situations that they encounter in their professional careers.

CONCLUSION

The implementation of Outcome-Based Education (OBE) has had a positive impact on student learning achievement. The average achievement was at 73.8%, indicating that most students were able to master the expected core skills, such as conceptual understanding, analytical skills, and effective collaboration and communication in teams. However, several aspects still need to be improved, especially in mastering technology and applying theory to real-world situations. This shows the importance of developing a more applicable and experience-based curriculum so that students can be better prepared to face challenges in the

professional world. To improve students' skills in aspects that are still weak, such as operating tools and technology and applying theory to practice, it is recommended that universities integrate more experiential learning methods, such as case studies, internships, and fieldwork. Future research can focus on developing and evaluating a curriculum that is more integrated with practical experiences, such as internships, and exploring the role of technology in supporting OBE implementation to obtain more optimal results.

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