



ANALYSIS OF COLLEGE STUDENT LEARNING OUTCOMES IN THE INTERNATIONAL CLASS PROGRAM ON FLUIDS FOR SCHOOL MATERIAL

Syamsul Wahid

Universitas Negeri Makassar

E-mail: syamsul.wahid@unm.ac.id

ARTICLE INFORMATION

Keywords:

International Class Program;
Learning Outcomes;
Quantitative Research

Article history:

Received:

January 8, 2026

Revised:

March 10, 2026

Accepted:

September 3, 2026

ABSTRACT

This research aims to determine the learning outcomes on fluid for school material for the English Subject Matter (ESM) program in the International Class Program of the Physics Department at Universitas Negeri Makassar. The urgency of this research is that if this research is not carried out, it will have an impact on students' learning outcomes. In this case, there is no information related to the analysis of the learning outcomes of physics students. This study employs a quantitative approach utilizing a descriptive survey design to gather data. The research participants consisted of students from of the International Class Program (ICP) class in the Physics Department at Universitas Negeri Makassar, class of 2025/2026, consisting of 1 class with a total of 22 students who programmed English Subject Matter (ESM) on the fluids for school material. The primary variable investigated in this study is student learning outcomes. The collected data indicate that the learning outcome scores on fluid for school material for the English Subject Matter (ESM) program in the International Class Program are the results show that most student learning outcomes fall into the very high category, with the percentage reaching 50%. This prominent achievement is primarily driven by the deep conceptual understanding students acquire during lectures, which successfully fosters their critical thinking skills. Furthermore, students demonstrate enhanced accountability for their own learning journey. The implementation of the case method by the lecturer evidently plays a pivotal role in driving these superior learning outcomes.

This is an open access article under the [CC BY-NC-SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.



Corresponding Author:

Syamsul Wahid

syamsul.wahid@unm.ac.id

INTRODUCTION

International Class Program (ICP) in Physics, FMIPA, Universitas Negeri Makassar is a leading study program that uses English as the medium of instruction to produce prospective science/mathematics educators with global competitiveness. Education represents a deliberate and structured endeavor designed to cultivate an engaging learning environment that inspires students to maximize their inherent potential. Ultimately, education aims to develop students' knowledge, skills, morals, and social contributions. Education is not only about transferring knowledge, but also about character formation, skill development, and improving the quality of life. Education not only teaches knowledge but also instills good values, ethics, and morals, thus shaping responsible individuals with integrity.

The urgency of this research is that if this research is not carried out, it will have an impact on student learning outcomes. Currently, there is a distinct lack of empirical evidence regarding the analysis of learning outcomes among physics majors, specifically when reviewed from the perspective of. application of case study learning in the Professional Education course, so that educators will find it difficult to further map out the causes of these less-than-optimal learning outcomes.

Assessment of learning outcomes is crucial because it can provide information on students' level of understanding, help improve the learning process, and prepare progress reports. Evaluation of learning outcomes also serves to measure student competency achievement, provide feedback to lecturers to improve teaching quality, and motivate students to learn better. Evaluation in education is a component that is no less crucial than the learning process (Magdalena, 2020).

In learning the implementation of the case study method significantly shapes student learning outcomes across both cognitive and affective domains. Within this instructional framework, students are required to move beyond rote memorization; instead, they must grasp the interconnectedness between academic concepts and practical, real-world contexts. In higher education, the case-based learning approach centers on the critical analysis of empirical cases or simulated scenarios, which effectively facilitates conceptual understanding, refines problem-solving capabilities, and sharpens critical thinking skills. This method involves active interaction between students and lecturers in discussing, analyzing, and finding solutions to problems relevant to the learning topic.

Analysis of student learning outcomes is important because it provides an overview of student progress, serves as a basis for improving learning, motivates students, and helps educators, particularly lecturers, and educational institutions make more effective decisions to achieve learning objectives. This analysis allows lecturers to personalize instruction, students to understand their strengths and

weaknesses, and the educational system to develop better programs. One learning outcome that requires analysis in the focus of this research centers on the learning outcomes of the International Class Program (ICP) students in the Physics Department, Faculty of Mathematics and Natural Sciences, Universitas Negeri Makassar, particularly within the English Subject Matter (ESM) module for school fluids

Learning outcome analysis involves examining instructional content, teaching methods, and their alignment with learning needs to ensure relevant materials, such as needs analysis and the development of effective teaching materials for academic (EAP) or professional (ESP) purposes, to improve students' English language proficiency to meet standards.

Several learning outcome analyses have been conducted, such as research by [Sihotang \(2022\)](#), which examined student learning outcomes using the two-way ANOVA framework. It was concluded that the interaction between [Variable A] and [Variable B] was statistically significant improvements in classroom learning methods and learning outcomes, with a significant value of 0.002. In other words, to achieve better learning outcomes in the learning process, a model is needed that can facilitate students' learning initiatives and foster a shared desire during the learning process. Another research by [Mendrova, KMS & Pardomuan \(2023\)](#) was found that the relationship between learning outcomes and learning styles was very strong. Therefore, it can be concluded that learning styles influence students' learning outcomes in number theory courses.

The objective of this study is to evaluate the learning outcomes of International Class Program (ICP) students regarding school fluid dynamics within the Physics Department, Faculty of Mathematics and Natural Sciences, Universitas Negeri Makassar. The findings are expected to serve as a valuable reference for selecting optimal instructional methods to enhance student achievement in the English Subject Matter (ESM) program, particularly within the ICP framework

METHODS

This research adopts a descriptive quantitative approach utilizing a survey design for data collection. Given that the researcher implemented no experimental treatment or intervention upon the respondents, this investigation strictly delineates student learning outcomes in the Fluids for School course within the International Class Program (ICP), independent of any correlations with other variables

This research was carried out during the odd semester of the 2025/2026 academic year. The research participants comprised students enrolled in the International Class

Program (ICP) within the Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Makassar, Academic year 2025/2026. This class consisted of 22 students enrolled in the English Subject Matter (ESM) program for Fluids for School. The sampling approach utilized in this research was saturated sampling. Consequently, the sample size is equal to the total population, as this method dictates that all accessible population members are actively engaged as participants used as research samples (Sugiyono, 2008).

The variable in this research is learning outcomes. Learning outcomes are students' ability to achieve cognitive aspects in Bloom's revised taxonomy of material after within the learning framework over a specific duration. These parameters include the cognitive levels from remembering (C1) through creating (C6), mapped directly to the designated Course Learning Outcomes (CPMK). The specific learning achievements under investigation pertain to in question are the learning outcomes of the Fluid for School material.

The primary data collection method utilized in this investigation was a learning outcome test distributed to a predetermined research sample. The instrument consisted of open-ended essay questions designed to assess various cognitive levels, spanning from remembering (C1) to creating (C6). The specific learning test data was categorized according to the scores obtained by the students.

Based on the Gregory test requirements when $VC > 0.75$. After conducting the Gregory test analysis after conducting the content validity test, VC was obtained as 1 out of 10 questions so it can be concluded that all questions are declared valid and reliable. Case studies in student learning outcomes are an active learning method that centers on examining empirical cases or realistic situations to foster conceptual understanding, sharpen problem-solving skills, and elevate educational performance. Consequently, this methodology has proven effective in stimulating student motivation, fostering classroom engagement, and maximizing academic success by bridging theory and practice.

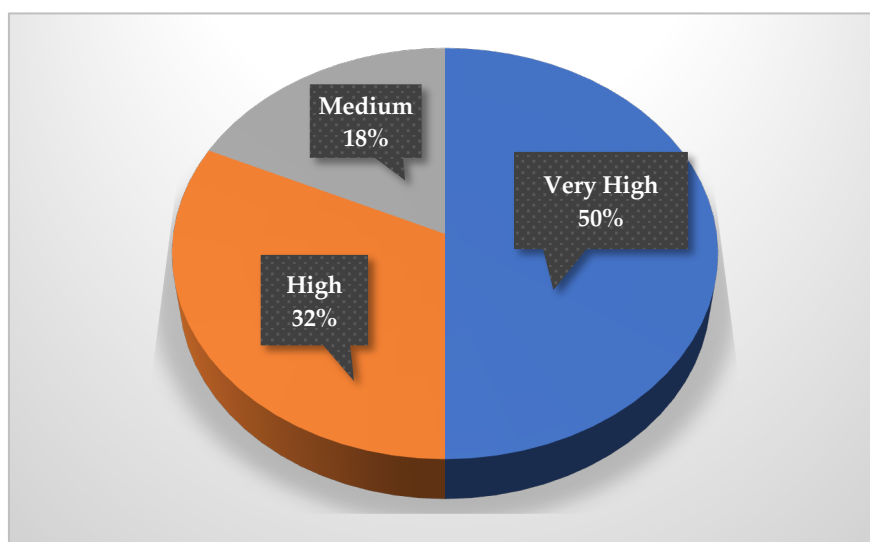
FINDINGS AND DISCUSSION

This research shows descriptive statistical data on students' learning outcomes about fluid for school for the English Subject Matter (ESM) program in the International Class Program (ICP) class. Descriptive statistical processing is used to state the value of learning outcomes obtained by students. The description of the value of students' learning outcomes on the fluid for school material for the English Subject Matter (ESM) program in the International Class Program (ICP) class in general is as follows.

Table 1. Frequency Distribution of Learning Outcome Scores.

Score Interval	Frequency	Percentage	Category
81 - 100	11	50%	Very high
61 - 80	7	32%	High
41 - 60	4	18%	Medium
21 - 40	0	0	Low
0 - 20	0	0	Very low

According to Table 1, the student learning outcomes for the fluids for school material in the English Subject Matter (ESM) program belonging to the International Class Program (ICP) track under the Department of Physics, FMIPA UNM fall into the very high category, reaching a percentage of 50%. This is clearly seen in Figure 1 below:

**Figure 1. Pie Chart of Learning Outcome Values Percentage**

According to the gathered data, which reveal that the results of student learning outcomes on the fluid for school material for the English Subject Matter (ESM) within the Physics Department's International Class Program (ICP) at FMIPA UNM is in the very high category with a value range of 80-100. This can be seen in the results of the analysis where the overall average value of learning outcomes is in the very high category. Most student scores in the very high category are in the range of 85-95. It can occur because students achieve a deep understanding when the fluid for school material for the English Subject Matter program in the International Class Program class is implemented, students are able to sharpen their critical thinking skills while developing personal accountability for their academic progress.

The learning method used by lecturers in the fluid for school material for the English Subject Matter (ESM) in the Physics Department, FMIPA UNM is the case study method, this method makes students more active, think critically, and connect with real contexts, hone problem-solving, collaboration, and communication skills through real case analysis, so that understanding becomes deeper and more applicable than conventional methods.

The empirical evidence obtained in this investigation is consistent with the findings reported by [Maman \(2023\)](#) who concluded that utilizing case studies yields significant positive effects on student performance of Class XI MIPA 1 students in SMAN 1 Kadugede. Furthermore, research conducted by [Suehartono \(2022\)](#) concluded that utilizing the case method contributes significantly to the improvement of student performance in the Guidance and Counseling Major, Faculty of Education, Universitas Negeri Manado. There is also research conducted by [Khairani, Ade & Momon \(2024\)](#) which concluded that there is an interaction between the Case Study learning strategy and interest in learning as well as geography learning outcomes with F count of 6321.014 and sig $0.00 < 0.050$. The main practical implication is the need to focus on mastering physics terminology (technical terms) rather than the language of instruction in International Class Program (ICP) classes to reduce students' cognitive load. Learning should employ a translanguaging approach (language flexibility) to improve students' physics learning outcomes.

CONCLUSION

In conclusion, the investigation demonstrates that the academic performance of ICP students taking the school fluids topic under the ESM framework at the Faculty of Mathematics and Natural Sciences, UNM, is highly exceptional, with half of the participants (50%) scoring in the very high tier. This performance reflects mastery across the full spectrum of Bloom's Taxonomy, specifically meeting the benchmarks for C1 through C6 competencies.

According to the research conducted, the researcher has several recommendations, including the following: (1) It is hoped that the learning outcomes for the fluid for school material for the English Subject Matter (ESM) program in the Physics Department's International Class Program (ICP), Faculty of Mathematics and Natural Sciences, Universitas Negeri Makassar will be maintained. (2) It is hoped that these learning outcomes will also occur in other courses in the Physics Department, FMIPA, Universitas Negeri Makassar. (3). Researchers also suggest that lecturers use the case study method in other physics lessons because it has been empirically shown to be effective in elevating undergraduate student academic performance.

SUGGESTION

Future studies are recommended to employ experimental or quasi-experimental designs to examine the effectiveness of the case study method more rigorously. Further research may also investigate the relationship between students' English proficiency and physics learning outcomes, include additional variables such as critical thinking and problem-solving skills, and involve larger and more diverse samples to improve the generalizability of the findings.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

REFERENCES

- Fajrinur. (2023). Analisis penerapan metode case based learning pada jurusan ekonomi dan bisnis universitas islam kebangsaan indonesia. *Jurnal Ilmiah Sains, Teknologi, Ekonomi, Sosial dan Budaya*, 7(4), 91-94.
- Gresianti, Pariabti, P. & Momang, Y. (2025). Pengaruh model problem based learning terhadap kemampuan pemecahan masalah materi usaha dan energi di sma negeri 1 toraja utara. *Jurnal Sains dan Pendidikan Fisika (JSPF)*. 21(3), 230-242. <https://doi.org/10.35580/jspf.v21i3.9329>
- Khairani, P., Ade, I., S. & Momon, D., T. (2024). Pengaruh strategi pembelajaran case study dan minat terhadap hasil belajar geografi siswa kelas xi sma n 2 solok selatan. *Journal on Education*, 7(1), 2316-2327. <https://doi.org/10.31004/joe.v7i1.6584>
- Magdalena, I., Hadana, N., F. & Raafiza, P. (2020). Pentingnya evaluasi dalam pembelajaran dan akibat memanipulasinya. *Jurnal Pendidikan dan Sains: Bintang*. 2(2), 244-257. <https://doi.org/10.36088/bintang.v2i2.986>
- Maman. (2023). Metode studi kasus meningkatkan hasil belajar siswa pada fungsi aljabar di kelas xi mipa1 sman 1 kadugede. *Sibatik Journal*, 2(8), 2317-2328. <https://doi.org/10.54443/sibatik.v2i8.1216>
- Mendrova, N., K., KMS, M., A., F. & Pardomuan, S. (2023). Analisis hasil belajar mahasiswa pada mata kuliah teori bilangan ditinjau dari gaya belajar. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 7(3), 2188-2197. <https://doi.org/10.31004/cendekia.v7i3.2553>
- Sihotang, S., F. (2022). Analisis hasil belajar mahasiswa universitas potensi utama menggunakan two way anova. *Journal of Mathematics Education and Science (MES)*. 8(1). 173-179. <https://doi.org/10.30743/mes.v8i1.6115>
- Suehartono, S. (2022). Penerapan case method dalam meningkatkan hasil belajar mahasiswa. *Jurnal Ilmiah Mandala Education (JIME)*, 8(2), 1397-1401.

<http://dx.doi.org/10.58258/jime.v8i2.3127>

Sugiyono. (2008). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung : Alfabeta

Wahid, S. (2025). Analisis hasil belajar mahasiswa pada mata kuliah praktikum fisika dasar. *Jurnal Ilmiah Ecosystem*. 25(2), 499-510.

<https://doi.org/10.35965/eco.v25i2.7030>

Wahid, S. & Nurul, M., H. (2025). Pengembangan bahan ajar berbasis case study untuk meningkatkan hasil belajar mahasiswa. *JPF (Jurnal Pendidikan Fisika) FKIP UM Metro*, 13(2), 160-174.

<http://dx.doi.org/10.24127/jpf.v13i2.13378>