turnitin unesa1

Turnitin_42451

JITSE

Document Details

Submission ID
trn:oid:::3618:110326044

Submission Date
Aug 31, 2025, 9:46 PM GMT+7

Download Date
Aug 31, 2025, 9:48 PM GMT+7

File Name
Turnitin_42451.pdf

File Size
130.0 KB

1 Page

548 Words

3,422 Characters

17% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography
- Quoted Text
- Cited Text
- Small Matches (less than 8 words)

Match Groups

9 Not Cited or Quoted 17%
Matches with neither in-text citation nor quotation marks

0 Missing Quotations 0%
Matches that are still very similar to source material

0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation

0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

13% Internet sources
4% Publications
6% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

Match Groups

- 9 Not Cited or Quoted 17%
  Matches with neither in-text citation nor quotation marks
- 0 Missing Quotations 0%
  Matches that are still very similar to source material
- 0 Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- 0 Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

Top Sources

- 13% Internet sources
- 4% Publications
- 6% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Internet	www.wej.unwir.ac.id 3%
2	Internet	journal.iel-education.org 2%
3	Internet	www.frontiersin.org 2%
4	Publication	Achmad Buchori, Dina Prasetyowati, Wijayanto .. "Effect of the Use of Virtual Real... 2%
5	Publication	Asim Hafizovic, Nicolas Krajnc, Filippo Merli, Marian Staggl et al. "THE DEVELOPM... 2%
6	Student papers	Universiti Malaysia Sabah on 2024-10-28 2%
7	Internet	ejournal.aibpmjournals.com 2%
8	Internet	digilib.uinsgd.ac.id 1%
9	Internet	www.researchgate.net 1%

Journal of Digitalization in Physics Education
Homepage : https://journal.unesa.ac.id/index.php/dpe
Email : dpe@i-ros.org

e-ISSN 3090-5354
Vol.1, No.3, December 2025

Effectiveness of Learning With PBL Model Based on E-Modules To Improve Critical Thinking Skills

Aulia Betha Novianti[1*], Budi Jatmiko[1], Binar Kurnia Prahani[1], Riski Ramadani[1], Noer Risky Ramadhani[2]

[1]State University of Surabaya, Surabaya City, Indonesia
[2]Universität für Weiterbildung Krems, Krems an der Donau, Austria

DOI : https://doi.org/10.26740/jdpe.v1i3.42451

Sections Info

Article history:
Submitted: June 19, 2025
Final Revised: August 19, 2025
Accepted: August 19, 2025
Published: August 31, 2025

Keywords:
1st-Century Learning;
Critical Thinking Skills;
E-Module;
Physics Education Problem-Based Learning (PBL);
Static Fluids.

ABSTRACT

Objective: *This study aims to examine the effectiveness of physics e-modules based on the Problem-Based Learning (PBL) model in improving students' critical thinking skills on static fluid concepts. The focus is to evaluate the implementation of learning, measure the improvement of students' critical thinking ability, and analyze student responses after applying the PBL-based e-modules.* ***Method:*** *The research employed a proper experimental design with a pre-test and post-test control group, conducted at MA Ma'arif Bangil, Pasuruan, Indonesia. A total sampling technique was used, with class XA as the experimental group and class XB as the control group. Data were collected using observation sheets, pre-test and post-test instruments, and student response questionnaires. Data analysis included N-Gain scores, normality and homogeneity tests, t-tests, and descriptive analysis for student responses.* ***Results:*** *The findings showed that the implementation of PBL-based e-modules reached an average of 91.8% categorized as very good. Students in the experimental class demonstrated a significant improvement in critical thinking skills, with an average N-Gain of 0.512 (moderate), compared to 0.212 (low) in the control group. Furthermore, student responses were predominantly in the "good" and "very good" categories, indicating positive perceptions of the learning approach.* ***Novelty:*** *This study highlights the integration of PBL with interactive e-modules as an innovative learning strategy that not only enhances students' critical thinking skills but also addresses the limitations of conventional print modules. It provides empirical evidence that digital-based problem-oriented instruction is highly relevant to fostering 21st-century competencies in science learning.*

INTRODUCTION

Twenty first century education requires students not only to master knowledge but also to possess higher-order thinking skills, including critical thinking skills (Lombardi, 2023). These skills are considered essential in preparing young people to face global challenges, rapid technological developments, and increasingly complex societal needs (Kennedy, 2025). Critical thinking skills help students analyse information in depth, evaluate perspectives objectively, and make appropriate decisions in solving real-life problems (Calma & Davies, 2025). However, various international studies, such as the Programme for International Student Assessment (PISA), indicate that Indonesian students' science and problem-solving abilities remain below the OECD average, suggesting that their critical thinking skills have not developed optimally (OECD, 2019). This finding aligns with national research indicating that the average critical thinking ability of students is approximately 35.41%, which is classified as low (Marisda et al., 2024). To address this challenge, a learning strategy is needed that can increase student active engagement and hone their critical thinking skills. One model that has proven effective is Problem-Based