

 **FUTURE SCIENCE**

**Basic and  
Applied  
Education  
Research Journal  
(BAERJ)**

[baerjournal.org](http://baerjournal.org)

————— e-ISSN : 2747-142X

## About Journal

Basic and Applied Education Research Journal (BAERJ) is a peer-reviewed journal, BAERJ published two time a year (June and December) that publishes full-length papers, open access journal that provides rapid publication of articles in all areas of educational research. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of educational research.

## Editorial Team

### Chief Editor:

Fahmi Arif Kurnianto. FKIP Universitas Jember, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57208473928>) [ORCID] (<https://orcid.org/0000-0002-3916-8930>)

### Editorial Board:

Karwanto. Universitas Negeri Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57211533290>) [GS Profile] (<https://scholar.google.com/citations?user=uaxbD1wAAAAJ&hl=en&oi=ao>)

Chan-Jong Kim. Seoul National University, Korea. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=56141601100>)

Nazaruddin Ali Basyah. Universitas Syiah Kuala, Banda Aceh, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57207917569>) [GS Profile] (<https://scholar.google.com/citations?user=sb-YEkMAAAAJ&hl=en&oi=ao>) [ORCID] (<https://orcid.org/0000-0002-1531-4446>)

Endang Noerhartati. Universitas Wijaya Kusuma Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57205027741>) [GS Profile] (<https://scholar.google.com/citations?user=xc8dfQoAAAAJ&hl=en&oi=ao>) [ORCID] (<https://orcid.org/0000-0003-0102-5747>)

Lusy Tunik Muharlisiani. Universitas Wijaya Kusuma Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57200990240>) [GS Profile] ([https://scholar.google.com/citations?user=GgV\\_IUQAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=GgV_IUQAAAAJ&hl=en&oi=ao)) [ORCID]

(<https://orcid.org/0000-0001-9147-4321>)

Achmad Yusuf. Universitas Yudharta Pasuruan, East Java. Indonesia. [Scopus]  
(<https://www.scopus.com/authid/detail.uri?authorId=57200993436>) [GS Profile]  
([https://scholar.google.com/citations?user=\\_0u9FSEAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=_0u9FSEAAAAJ&hl=en&oi=ao)) [ORCID]  
(<https://orcid.org/0000-0002-3895-5801>)

Riza Afita Surya, Universitas Jember, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57208467149>) [GS Profile] ([https://scholar.google.com/citations?user=XoP8\\_QkAAAAJ](https://scholar.google.com/citations?user=XoP8_QkAAAAJ))

Wardani Dwi Wihastyanang. STKIP PGRI Jombang, Indonesia. [Scopus]  
(<https://www.scopus.com/authid/detail.uri?authorId=57212147202>) [GS Profile]  
([https://scholar.google.com/citations?user=G\\_frMzIAAAAAJ&hl=en&oi=sra](https://scholar.google.com/citations?user=G_frMzIAAAAAJ&hl=en&oi=sra)) [ORCID]  
(<https://orcid.org/0000-0002-2732-5847>)

Ari Suningsih. Universitas Muhammadiyah Pringsewu, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=OCDUr4AAAAJ&hl=en&oi=sra>)

Arie Asnaldi. FIK Universitas Negeri Padang, West Sumatra, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=IAhAkj4AAAAJ&hl=id>) [ORCID] (<https://orcid.org/0000-0003-0472-8069>)

Ahmad Buchori Muslim. STIT Islamic Village Tangerang, Indonesia. [GS Profile]  
(<https://scholar.google.co.id/citations?user=UghM-FkAAAAJ&hl=id>) [ORCID] (<https://orcid.org/0000-0002-2725-9966>)

Marjuni. Institut Agama Islam Riyadlotul Mujahidin Ngabar Ponorogo, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=3MIPFekAAAAJ&hl=en&oi=ao>)

#### **Technical Editor:**

Yeni Rizki Prananda, Future Science, Indonesia.



(<https://baerjournal.org/index.php/baerj/about/submissions>)

## About Journal

Basic and Applied Education Research Journal (BAERJ) is a peer-reviewed journal, BAERJ published two time a year (June and December) that publishes full-length papers, open access journal that provides rapid publication of articles in all areas of educational research. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of educational research.


**DOI:** <https://doi.org/10.11594/baerj.02.02> (<https://doi.org/10.11594/baerj.02.02>)


**Published:** 2021-09-14

## Research Articles

Implementation of the Ummi Method in Recognition of the Hijaiyyah Letters on Students of TKIT Nur Hikmah (Kindergarten) Bekasi during the Covid-19 Pandemic (<https://baerjournal.org/index.php/baerj/article/view/42>)

10.11594/baerj.02.02.01 (<https://doi.org/10.11594/baerj.02.02.01>)

 55-65

 Fattah Firdaus (Author)



PDF

393

The Effectiveness of Flipped Classroom Learning Model for Increasing Students' Reading Comprehension in Covid-19 Pandemic (<https://baerjournal.org/index.php/baerj/article/view/24>)

10.11594/baerj.02.02.02 (<https://doi.org/10.11594/baerj.02.02.02>)

 66-77

 Miftahul Rachmat, Liliana Muliastuti, Ifan Iskandar (Author)




PDF

340

Implementation of School-Based Management in Improving the Quality of Learning in the City of Bekasi (<https://baerjournal.org/index.php/baerj/article/view/26>)

10.11594/baerj.02.02.03 (<https://doi.org/10.11594/baerj.02.02.03>)

 78-87

 Ade Mutiarawati (Author)




PDF

176

The Influence of Information Literacy Learning and Problem-based Learning on Students' Learning Outcome in Social Science Subject at Public Junior High School 2 of Kendit in Situbondo (<https://baerjournal.org/index.php/baerj/article/view/50>)

10.11594/baerj.02.02.04 (<https://doi.org/10.11594/baerj.02.02.04>)

88-97

 Mohamad Na'im, Boiman (Author)



PDF

157

Asynchronous-Synchronous Teaching Techniques to Reinforce Achievement in Grade 2 Mathematics (<https://baerjournal.org/index.php/baerj/article/view/44>)

10.11594/baerj.02.02.05 (<https://doi.org/10.11594/baerj.02.02.05>)

99-107

 Arnel S. Traverro, Nancy T. Rubin (Author)



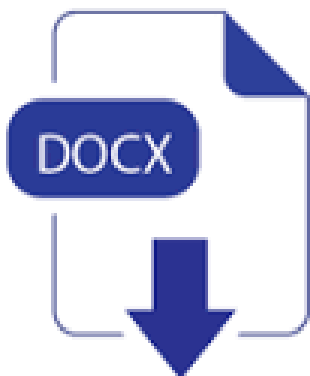
PDF

283



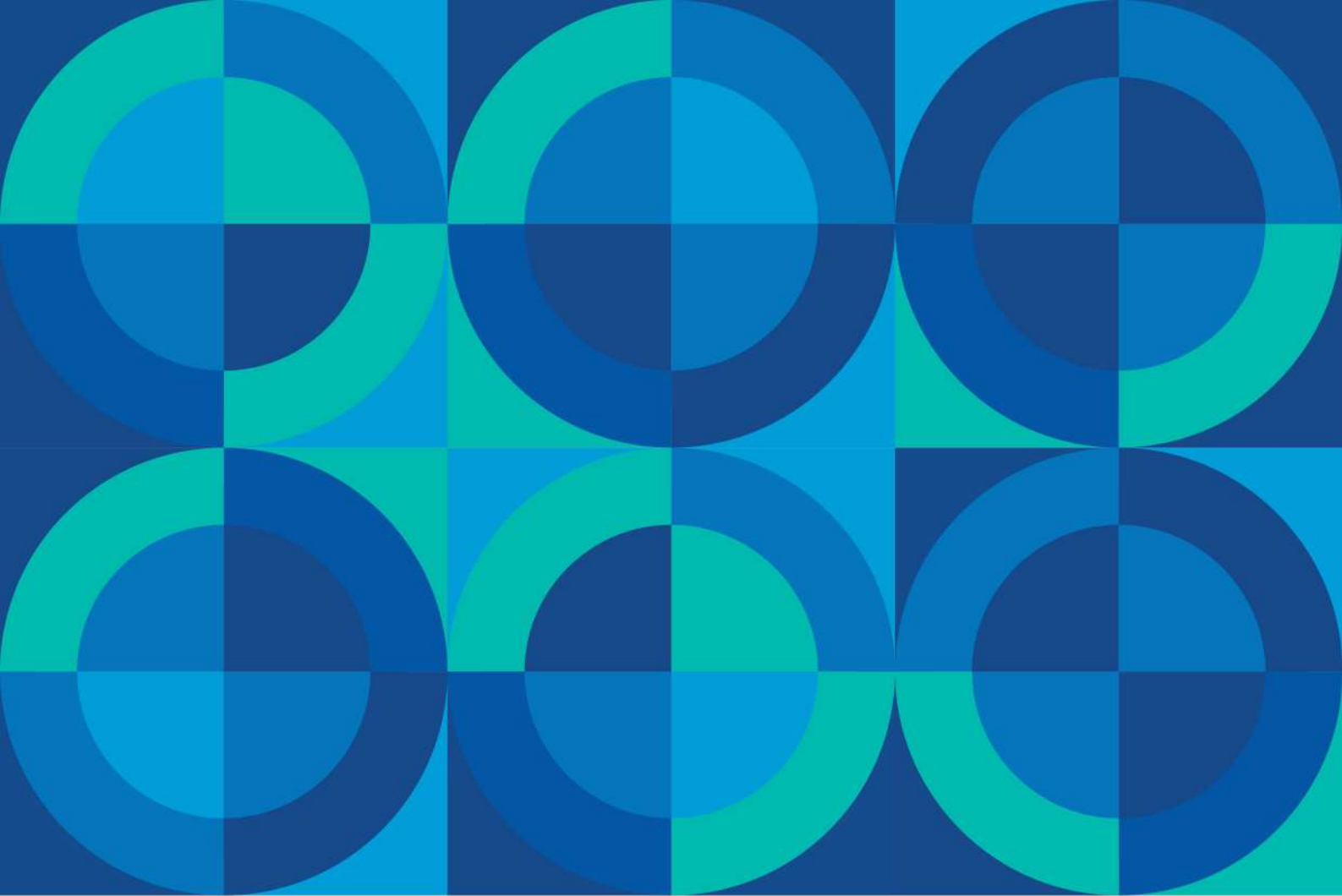
Make Submission

(<https://baerjournal.org/index.php/baerj/about/submissions>)



Article  
Template

(<https://docs.google.com/document/d/18ezKL2aiExJ5wHrLuPemje0nXGkhcekY/edit?usp=sharing&oid=110210157753479923153&rtpof=true&sd=true>)



 **FUTURE SCIENCE**

**Basic and  
Applied  
Education  
Research Journal  
(BAERJ)**

[baerjournal.org](http://baerjournal.org)

————— e-ISSN : 2747-142X

## About Journal

Basic and Applied Education Research Journal (BAERJ) is a peer-reviewed journal, BAERJ published two time a year (June and December) that publishes full-length papers, open access journal that provides rapid publication of articles in all areas of educational research. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of educational research.

## Editorial Team

### Chief Editor:

Fahmi Arif Kurnianto. FKIP Universitas Jember, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57208473928>) [ORCID] (<https://orcid.org/0000-0002-3916-8930>)

### Editorial Board:

Karwanto. Universitas Negeri Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57211533290>) [GS Profile] (<https://scholar.google.com/citations?user=uaxbD1wAAAAJ&hl=en&oi=ao>)

Chan-Jong Kim. Seoul National University, Korea. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=56141601100>)

Nazaruddin Ali Basyah. Universitas Syiah Kuala, Banda Aceh, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57207917569>) [GS Profile] (<https://scholar.google.com/citations?user=sb-YEkMAAAAJ&hl=en&oi=ao>) [ORCID] (<https://orcid.org/0000-0002-1531-4446>)

Endang Noerhartati. Universitas Wijaya Kusuma Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57205027741>) [GS Profile] (<https://scholar.google.com/citations?user=xc8dfQoAAAAJ&hl=en&oi=ao>) [ORCID] (<https://orcid.org/0000-0003-0102-5747>)

Lusy Tunik Muharlisiani. Universitas Wijaya Kusuma Surabaya, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57200990240>) [GS Profile] ([https://scholar.google.com/citations?user=GgV\\_IUQAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=GgV_IUQAAAAJ&hl=en&oi=ao)) [ORCID]

(<https://orcid.org/0000-0001-9147-4321>)

Achmad Yusuf. Universitas Yudharta Pasuruan, East Java. Indonesia. [Scopus]  
(<https://www.scopus.com/authid/detail.uri?authorId=57200993436>) [GS Profile]  
([https://scholar.google.com/citations?user=\\_0u9FSEAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=_0u9FSEAAAAJ&hl=en&oi=ao)) [ORCID]  
(<https://orcid.org/0000-0002-3895-5801>)

Riza Afita Surya, Universitas Jember, Indonesia. [Scopus] (<https://www.scopus.com/authid/detail.uri?authorId=57208467149>) [GS Profile] ([https://scholar.google.com/citations?user=XoP8\\_QkAAAAJ](https://scholar.google.com/citations?user=XoP8_QkAAAAJ))

Wardani Dwi Wihastyanang. STKIP PGRI Jombang, Indonesia. [Scopus]  
(<https://www.scopus.com/authid/detail.uri?authorId=57212147202>) [GS Profile]  
([https://scholar.google.com/citations?user=G\\_frMzIAAAAAJ&hl=en&oi=sra](https://scholar.google.com/citations?user=G_frMzIAAAAAJ&hl=en&oi=sra)) [ORCID]  
(<https://orcid.org/0000-0002-2732-5847>)

Ari Suningsih. Universitas Muhammadiyah Pringsewu, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=OCDUr4AAAAJ&hl=en&oi=sra>)

Arie Asnaldi. FIK Universitas Negeri Padang, West Sumatra, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=IAhAkj4AAAAJ&hl=id>) [ORCID] (<https://orcid.org/0000-0003-0472-8069>)

Ahmad Buchori Muslim. STIT Islamic Village Tangerang, Indonesia. [GS Profile]  
(<https://scholar.google.co.id/citations?user=UghM-FkAAAAJ&hl=id>) [ORCID] (<https://orcid.org/0000-0002-2725-9966>)

Marjuni. Institut Agama Islam Riyadlotul Mujahidin Ngabar Ponorogo, Indonesia. [GS Profile]  
(<https://scholar.google.com/citations?user=3MIPFekAAAAJ&hl=en&oi=ao>)

#### Technical Editor:

Yeni Rizki Prananda, Future Science, Indonesia.



(<https://baerjournal.org/index.php/baerj/about/submissions>)



## About Journal

Basic and Applied Education Research Journal (BAERJ) is a peer-reviewed journal, BAERJ published two time a year (June and December) that publishes full-length papers, open access journal that provides rapid publication of articles in all areas of educational research. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of educational research.


**DOI:** <https://doi.org/10.11594/baerj.02.02> (<https://doi.org/10.11594/baerj.02.02>)


**Published:** 2021-09-14

## Research Articles

Implementation of the Ummi Method in Recognition of the Hijaiyyah Letters on Students of TKIT Nur Hikmah (Kindergarten) Bekasi during the Covid-19 Pandemic (<https://baerjournal.org/index.php/baerj/article/view/42>)

10.11594/baerj.02.02.01 (<https://doi.org/10.11594/baerj.02.02.01>)

 55-65

 Fattah Firdaus (Author)



PDF

393

The Effectiveness of Flipped Classroom Learning Model for Increasing Students' Reading Comprehension in Covid-19 Pandemic (<https://baerjournal.org/index.php/baerj/article/view/24>)

10.11594/baerj.02.02.02 (<https://doi.org/10.11594/baerj.02.02.02>)

 66-77

 Miftahul Rachmat, Liliana Muliastuti, Ifan Iskandar (Author)




PDF

340

Implementation of School-Based Management in Improving the Quality of Learning in the City of Bekasi (<https://baerjournal.org/index.php/baerj/article/view/26>)

10.11594/baerj.02.02.03 (<https://doi.org/10.11594/baerj.02.02.03>)

 78-87

 Ade Mutiarawati (Author)




PDF

176

The Influence of Information Literacy Learning and Problem-based Learning on Students' Learning Outcome in Social Science Subject at Public Junior High School 2 of Kendit in Situbondo (<https://baerjournal.org/index.php/baerj/article/view/50>)

10.11594/baerj.02.02.04 (<https://doi.org/10.11594/baerj.02.02.04>)

88-97

 Mohamad Na'im, Boiman (Author)



PDF

157

Asynchronous-Synchronous Teaching Techniques to Reinforce Achievement in Grade 2 Mathematics (<https://baerjournal.org/index.php/baerj/article/view/44>)

10.11594/baerj.02.02.05 (<https://doi.org/10.11594/baerj.02.02.05>)

99-107

 Arnel S. Traverro, Nancy T. Rubin (Author)



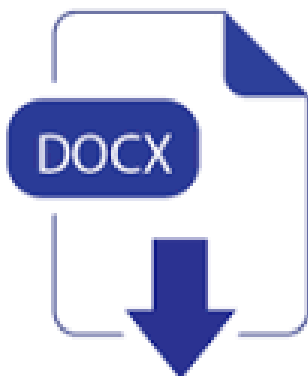
PDF

283



Make Submission

(<https://baerjournal.org/index.php/baerj/about/submissions>)



Article  
Template

(<https://docs.google.com/document/d/18ezKL2aiExJ5wHrLuPemje0nXGkhcekY/edit?usp=sharing&oid=110210157753479923153&rtpof=true&sd=true>)

---

## Research Article

### The Influence of Information Literacy Learning and Problem-based Learning on Students' Learning Outcome in Social Science Subject at Public Junior High School 2 of Kendit in Situbondo

Mohamad Na'im\*, Boiman

Graduate Program of Social Science Education, FKIP, Universitas Jember, Indonesia

---

#### Article history:

Submission October 2021

Revised November 2021

Accepted November 2021

#### \*Corresponding author:

E-mail:

[mohamadnaim@unej.ac.id](mailto:mohamadnaim@unej.ac.id)

#### ABSTRACT

The objectives of this study are aimed at: 1) analyzing the effect of Information Literacy Learning model on the learning outcome of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo in social science subject; 2) analyzing the effect of Problem-based Learning model on the learning outcome of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo in social science subject; 3) analyzing the differences in the learning outcome of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo between the application of the Information Literacy Learning model and Problem-based Learning. This research is a correlational study. Based on the results of data analysis, the study has drawn several conclusions. First, there is a very significant influence, marked at 53.7%, of the Information Literacy Learning on learning outcome. Second, there is a significant effect of the Problem-based Learning on learning outcome, as evinced by a correlation magnitude of 57.7%. Third, the analysis has identified no significant difference between Information Literacy Learning and Problem-based Learning on learning outcome shows. This shows that both learning models are equally well applied to improve learning outcome.

*Keywords: information literacy learning, learning outcome, problem-based learning*

---

#### Introduction

Facing the challenges in 21<sup>st</sup>-century learning has so much relation to globalization and various environmental issues, advances in technology and information, and the rise of creative and cultural industries. The government implements the 2013 curriculum to produce students who are productive, creative,

innovative, and effective through strengthening integrated attitudes, skills, and knowledge [1].

The main components of 21<sup>st</sup>-century learning are 1) materials needed in the 21<sup>st</sup> century, 2) learning and innovation skills, 3) information, media, and technology skills, and 4) life and career skills. Information skills include 1)

---

#### How to cite:

Na'im, M. & Boiman (2021). The Influence of Information Literacy Learning and Problem-based Learning on Students' Learning Outcome in Social Science Subject at Public Junior High School 2 of Kendit in Situbondo *Basic and Applied Education Research Journal* 2(2): 88 – 97. doi: 10.11594/baerj.02.02.04

skills related to obtaining or accessing information, namely reading skills, learning skills, information seeking skills, and skills in using technology tools; 2) skills in processing information, mainly from various sources; 3) skills in organizing or assembling information or synthesizing information; 4) skills to use/communicate information (intellectual skills and decision-making skills). This information skill is closely related to social skills, which include self-skills, collaboration skills, and participation in society [2].

The main objective of social studies learning is to prepare citizens who can make reflective decisions and participate in the success of people's lives, the nation, and the world. Four categories contribute to the main goals, comprising of knowledge, skills, attitudes, values, and actions of citizens [3].

Junior high school students are expected to have social skills in keeping up with global developments. This is in line with the objectives of social studies learning, which include having the basic ability to think logically and critically, curiosity, inquiry, problem solving, and skills in social life [4]. One of the social skills is the skill of obtaining information, namely: 1) observation skills, formulating problems/questions, seeking information, selecting information, and technological literacy; and 2) organizing and using information skills.

Learning to prepare human resources refers to learning experiences that strive to engage students in authentic learning. The learning concepts include learning to know and learning to do something. These objectives encourage students to be active in discovering and processing their learning acquisitions and to live together as a basis for participating and cooperating with other people.

Permendikbud number 65 of 2013 mandates that the learning process in educational units must be interactive, inspiring, fun, challenging, and motivating for students to participate actively. What is more, the learning activities need to provide sufficient space for learning regulation, creativity, and independence in congruence with students' talents, interests, developments, and physical and psychological properties.

Learning outcome will emerge only if the teacher as the spearhead in the field can translate the learning process into relevant class activities by choosing the right and effective learning model. The ideal concept of learning to be achieved includes, among other things, student-centered active learning, contextual learning, and assessments that emphasize affective, psychomotor, and cognitive aspects proportionally [5, 6]. In implementing the learning design grounded within the scientific method, Problem-based learning, Inquiry-based learning, and discovery learning can complement the whole instructional design [4, 7]. Currently, the government is also promoting literacy activities in schools through the School Literacy Movement.

Authentic assessment according to Hart [8] is an assessment carried out through student collaboration on certain tasks or activities that directly have educational values. Learning assessed using an assessment will be authentic when the learning has value beyond the classroom and is meant for students [9, 10].

The application of authentic assessment in the Information Literacy and Problem-based Learning is expected to encourage students to actively participate in the learning process and improve student learning outcome through performance assessments embracing written tests as well as various tasks tailored to authentic assessments. Furthermore, the integration of authentic assessments is expected to empower students' potential to actualize their knowledge and abilities in everyday life [11].

Learning outcome are essentially changes in behavior and constitute feedback to improve the teaching and learning process. Behavior resulting from learning experiences in a broad sense includes cognitive, affective, and psychomotor areas [12]. Djamarah [13] reveals that learning outcome is the results obtained in the form of impressions that result in changes in the individual after being engaged with learning activities. From these opinions, it can be concluded that learning outcome is an assessment of the results that have been achieved by each student as manifest in the cognitive, affective, and psychomotor domains obtained as a result of learning activities and assessed within a certain period.

Based on the observations carried out at Public Junior High School 2 of Kendit in Situbondo, the school was located in a suburban area and generally, the students struggled due to low learning motivation, low information literacy, and low learning outcomes. In the learning process on several occasions, the teacher conducted information literacy-based learning and problem-based learning, but the results obtained had yet to be satisfactory. The results of other observations also demonstrated that social studies learning did not stimulate challenges and motivation, as they only delivered material through an adaptive lesson plan. In addition, social studies learning did not make a significant attempt to train students to be skilled in information literacy by maximizing learning and problem-solving methods. By contrast, students were merely accustomed to working on student worksheets in the preparation of papers and presentations derived from textbooks. Thirdly, information literacy to aid problem-solving in social science subject is essential to the students as they were required to understand their actual experiences in everyday life. Finally, the observations showed that social studies teaching was oriented only to subject matter, with peripheral orientation to information literacy and student inquiry. Therefore, learning outcomes can be maximized by optimizing the learning model that has been integrated so far.

According to the cognitive development level of junior high school students, the learning models expected to accommodate the characteristics of social studies are Information Literacy Learning and Problem-based learning.

In addition to emphasizing learning outcomes, this model also fosters the students' ability to find, record, analyze, criticize, and create new perspectives on information [14].

Based on the background described above, the present study holds the view that it is necessary to research the effect of Information Literacy Learning and Problem-based Learning on student learning outcomes in social science subject.

## Research Problems

Based on the background abovementioned, the problems guiding this study are formulated as follows.

1. How does the application of Information Literacy Learning affect the learning outcomes in social science subject of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo?
2. How does the application of Problem-based Learning affect the learning outcomes in social science subject of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo?
3. What are the differences between Information Literacy Learning and Problem-based Learning concerning the learning outcomes of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo?

## Research Objectives

The present study signifies the emphases on the following objectives.

1. To analyze the effect of Information Literacy Learning on the learning outcomes in social science subject of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo.
2. To analyze the effect of Problem-based Learning on the learning outcomes in social science subject of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo.
3. To analyze the differences between Information Literacy Learning and Problem-based Learning concerning the learning outcomes of eighth-grade students of Public Junior High School 2 of Kendit in Situbondo

The research is expected to be useful for students, particularly to improve their information literacy skills and solve problems through the application of Information Literacy Learning and Problem-based Learning. For teachers, the research findings can shed light on appropriate alternative learning models in shaping information literacy and problem-solving skills in social science subject for junior high school students. The study also accords schools with insightful information about the

implementation of Information Literacy Learning and Problem-based Learning to improve student learning outcomes.

High School 2 of Kendit in Situbondo, East Java Province. Correlational design was put at play in conjunction with a quasi-experimental design. The research employed a non-equivalent control group design, namely a posttest-only control group design (POCGD). The research design is shown in the following table:

**Research Method**

This research applied a quantitative approach and was conducted at Public Junior

Table 1. Research Design

Class	Treatment	Output/posttest
Experimental Class (EC)	X <sub>1</sub>	Y <sub>1</sub>
Control Class (CC)	X <sub>2</sub>	Y <sub>2</sub>

[15]

Description:

- X1: Treatment to experimental class by involving Information Literacy Learning
- X2: Treatment to control class by engaging problem-based learning
- Y1 and Y2: Learning outcomes

Table 2. Research Treatments

Class	Treatment	Topic
VIII-A (Experimental class)	Information Literacy Learning (X1)	Theme 3: The advantage and limitation of space as well as its influence on economic, social, and cultural undertakings in Indonesia and ASEAN countries.

**Operational Definition of Research Variables**

- 1) The Information Literacy Learning model is investigated from the students' perspective and includes the following indicators:
  - the ability to observe learning objects and formulate as well as select problems for investigation
  - the ability to explore information from various sources
  - the ability to choose and determine sources of information that can be used in solving problems
  - the ability to process information to formulate problem-solving
  - the ability to create new knowledge from information collected to address the problem
  - the ability to present new knowledge that has been created
  - the ability to assess new knowledge
  - the ability to apply new knowledge
- 2) The problem-based learning studied from the students' perspective includes the following indicators:

- the ability to observe learning objects, describe, describe the findings, propose, and select problems according to the object of study
  - the ability to learn individually and in groups in solving problems
  - the ability to define and organize learning tasks related to problems
  - the ability to collect the required information
  - the ability to carry out experiments or process information to obtain explanations and problem solving
  - the ability to plan and prepare appropriate works, as well as share tasks with friends
  - the ability to reflect and evaluate their investigation process
- 3) Learning outcome is manifest in the ability to show skills achieved in the form of scores based on test and non-test results covering the cognitive, affective, and psychomotor domains

**Data Collection Techniques**

The research probed into quantitative data. Data collection was carried out from the beginning of research commencement, and the learning process was carried out until the end. Data collection techniques in this study covered the following:

- 1) Filling out the observation sheet on the implementation of Information Literacy Learning and Problem-based Learning at each stage. The observation sheet was filled out by three observers during the learning process. Each observer focused on one or two groups of four to five students.
- 2) Filling out the learning process observation sheet to investigate the implementation of learning models and their impacts on generating learning outcomes. This was carried out by three observers during the learning process.
- 3) Administering learning assessment as both pretest and posttest. The learning outcomes test was carried out twice using the same questions. Pretest was carried out before learning began. Posttest was given after the learning process concluded. This activity was carried out each for two hours of lessons outside the learning process.

**Data Analysis Techniques**

The data analysis technique used in this quantitative study dealt with processing test and non-test scores to determine the learning outcomes in cognitive, affective, and psychomotor domains. The test quality in the study pertained to 1) the validity and reliability of the test instrument; 2) linearity test; and 3) normality test.

In answering the research problems, there were two data analyses (hypothesis testing) operative in our study. For the first and second problems, data analysis was carried out using regression analysis to determine the level of correlation and the amount of regression between variables. Meanwhile, to find out the differences in student learning outcomes, One Way ANOVA was carried out [16].

**Findings and Discussion**

**The Results of Statistical Analysis**

*a. Inter-variables Correlation*

The calculation of the correlation between the implementation of Information Literacy Learning and its respective outcomes, as experimented in VIII-A class is shown in the following table:

*Table 3. Correlation between of Information Literacy Learning Process and Learning Outcomes*

		Learning Process	Learning Outcomes
Implementation of Information Literacy Learning	Pearson Correlation	1	.733**
	Sig. (2-tailed)		.000
	N	20	20

\*\* . Correlation is significant at the 0.01 level (2-tailed)

The relationship under investigation marks a correlation value of 0.733. The data demonstrates *p*-value of 0.000, which means that the Information Literacy Learning and its learning outcome are significantly correlated, at a significance level of 0.01 (2-tailed) or less than 0.01.

*b. Determinant Coefficient*

Determinant coefficient was operative to clarify the magnitude of X variable contribution to Y variable.

*Table 4. Determinant Coefficient of Information Literacy Learning and Learning Outcome*

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.733 <sup>a</sup>	.537	.511	5.67731	.537	20.861	1	18	.000	

a. Predictors: (Constant), the implementation of Information Literacy Learning

The effect of Information Literacy Learning on learning outcome can be seen in the *R* square column in the table above. The *R* square or the determinant coefficient of the influence

of *X* in this study is 0.537. This figure shows that 53.7% of learning outcome is influenced by Information Literacy Learning [17].

c. ANOVA

Table 5. ANOVA results on Information Literacy Learning and Learning Outcome

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	672.377	1	672.377	20.861	.000 <sup>b</sup>
Residual	580.173	18	32.232		
Total	1252.550	19			

a. Dependent Variable: Learning outcome

b. Predictors: (Constant), Information Literacy Learning

From the table, it can be seen that *F* is 20,861 with a significance level of 0.000 < 0.5. By implication, the regression model can be used to predict learning outcome, or there is an influence on the implementation of the Information Literacy Learning on learning outcome.

d. Regression Coefficient

This part reports on the regression equation to determine the constant and hypothesis test.

Table 6. Regression Coefficient of Information Literacy Learning on Learning Outcome

Model	Coefficients <sup>a</sup>						
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations	
	B	Std. Error	Beta			Zero-order	Partial
1 (Constant)	9.736	16.124		.604	.553		
Implementation of Information Literacy Learning	.883	.193	.733	4.567	.000	.733	.733

a. Dependent Variable: Learning outcome

The table above demonstrates that the regression coefficient of *X* is 0.883. This means that for every 1% increase in the implementation of Information Literacy Learning, there will be an increase in learning outcome by 0.883%. In addition, the value of the *t* count is

4.567, which means it is greater than the *t* table at 2.101. By implication, Information Literacy Learning affects learning outcome.

The correlation between Problem-based Learning and learning outcome is shown in the following table.

Table 7. Correlations in PBL VIII C

Implementation of Problem-based Learning	Learning outcome		
	Pearson Correlation	.760**	
	Sig. (2-tailed)	.000	
	N	20	

\*\* . Correlation is significant at the 0.01 level (2-tailed).



The relationship between Problem-based Learning (PBL) Quality and learning outcome is 0.760. The significance is marked at 0.000, which means that the relationship between Problem-based Learning and its respective learning outcome is significant at 0.01 (2-tailed).

Table 8. Determinant Coefficient of Problem-based Learning and Learning Outcome

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.760 <sup>a</sup>	.577	.554	5.11226	.577	24.569	1	18	.000

a. Predictors: (Constant), The implementation of Problem-based Learning

The determinant coefficient of the effect of Problem-based Learning on learning outcome is represented by the R Square column in the table above. The value of R Square or the determinant coefficient reporting the influence of X variable in this study is 0.577. This figure shows that 57.7% of learning outcome is accounted for by Problem-based Learning.

Table 9. ANOVA on Problem-based Learning toward Learning Outcome

ANOVA <sup>a</sup>					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	642.116	1	642.116	24.569	.000 <sup>b</sup>
1 Residual	470.434	18	26.135		
Total	1112.550	19			

a. Dependent Variable: Learning outcome

b. Predictors: (Constant), The implementation of Problem-based Learning

From the table, it can be seen that the calculated F is 24,569 with a significance level of 0.000 < 0.5. The regression model, therefore, can be used to predict learning outcome. Simply put, there is an effect of Problem-based Learning on learning outcome.

Table 10. The Coefficient of Problem-based Learning on Learning Outcome

Coefficients <sup>a</sup>									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-1.020	17.160		-.059	.953			
1	Implementation of Problem-based Learning	1.031	.208	.760	4.957	.000	.760	.760	.760

a. Dependent Variable: Learning outcome

From the table above, it is known that: 1) the X regression coefficient is 1.031 that for every 1% increment in Problem-based Learning, there is 1.031% increase in learning outcome; and 2) the value of t count is 4.957 which means it is greater than t table 2.101 so it can be concluded that the Implementation of Problem-based Learning affects learning outcome.

**Statistical Analysis on Learning Outcome**

To find out whether there is a difference in the effect between the Information Literacy

Learning and Problem-based Learning on learning outcome, One Way ANOVA test was administered.

Table 11. One Way ANOVA

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.437	3	3.146	.050	.985
Within Groups	4742.050	76	62.395		
Total	4751.487	79			

The test results show that the significance is 0.985 or greater than 0.05. *F* count, which is 0.050. The *F* table value is 2.72. It can be concluded that *H0* is accepted, and *H1* is rejected, meaning that there is no significant difference in learning outcome between Information Literacy Learning and Problem-based Learning.

**The Influence of Information Literacy Learning on Learning Outcome**

The result of statistical calculation of Information Literacy Learning shows that the correlation level is 0.733 or positive 0.733 with a significance of 0.000, which means the more intensive Information Literacy Learning is, the higher the learning outcome will be. The determinant coefficient or *R* Square is 0.537, which means that Information Literacy Learning influences learning outcome by 53.7%. The regression coefficient is 0.883, which means that for every 1% increase in Information Literacy Learning, there is 0.883% increase in the learning outcome. The calculated *t* value is 4.567, which is greater than the *t* table of 2.101. Thus, *H0* is rejected and *H1* is accepted, which means that Information Literacy Learning poses a significant influence on the students' learning outcome.

The data shows a positive correlation (*R*) 0.781 with a significance of 0.000, which means the more intensive Information Literacy Learning is, the higher the learning outcome will be. The determinant coefficient or *R* Square is 0.610 which means the influence of Information Literacy Learning on learning outcome is 61%. The regression coefficient is 1.097, which means that for every 1% increase

in Information Literacy Learning, there will be 1.097% increase in learning outcome. The value of *t* count is 5.304, which is greater than *t* table 2.101. *H0* is rejected, while *H1* is accepted, which implies that Information Literacy Learning has a significant influence on student learning outcome.

From the two classes in this study, the Information Literacy Learning has a significant influence on learning outcome.

**The Influence of Problem-based Learning on Learning Outcome**

The implementation of Problem-based Learning has been analyzed and the results report a correlation level of 0.760 or positive 0.760, with a significance of 0.000<0.05. The determinant coefficient or *R* Square of 0.577 means that the effect of Problem-based Learning on learning outcome is equal to 57.7%. The regression coefficient is 1.031, which means that for every 1% increase in Problem-based Learning, there will be an increase in learning outcome by 1.031%. The value of the *t* count is 4.957, which is greater than *t* table 2.101. Based on the statistics, *H0* is rejected and *H1* is accepted, which means that Problem-based Learning poses a significant effect on learning outcome.

**The Different Influence between Information Literacy Learning and Problem-based Learning on Students' Learning Outcome**

From the results of One Way ANOVA delving into the differences between Information Literacy Learning and Problem-based Learning on learning outcome, the significance value is

0.985 or greater than 0.05, and the  $F$  count value is 0.050, which is smaller than the  $F$  table value of 2.72. This has implied that there is no significant difference in learning outcome between the two learning models.

The results illustrate that Information Literacy Learning demonstrates a strong correlation and substantial significance. In line with the results of Mc. Nicol [18] and Johnston, B., & Webber, S. [19], Information Literacy model is suitable for the 21<sup>st</sup>-century learning because it is suitable for collaborative activities and students' knowledge creation.

The characteristics of Information Literacy Learning lies in fostering the ability to obtain information and effectively evaluate the information obtained to solve problems. In other words, students learn how to obtain, manage, evaluate, sort, select, and use information.

This model is very appropriate to be used in the class that is used as the object of research because the students' willingness to read is very low. With Information Literacy Learning, students must find, manage, evaluate, and use the information to solve problems, thus, inevitably, encouraging them to read more.

This study also illustrates that Problem-based Learning also has a significant influence on learning outcome. As stated by Lambros (2004:1), PBL is a teaching method based on the principle of using problems as a starting point to acquire new knowledge. By using Problem-based Learning, students are accustomed to getting new knowledge from the problems addressed in their learning activities.

Learning strategy is a series of learning activities. In addition, the learning activities are directed at solving problems. Finally, problem-solving is done by using a scientific approach. The characteristics of the learning model encourage students to learn how to solve problems.

The findings have concluded that each learning model has advantages and disadvantages. Each of them requires teachers to be very adept and thorough in choosing the most appropriate model to suit the characteristics of learning material designed for students. As a corollary, targeted learning objectives can be achieved optimally.

## Conclusion and Recommendation

Based on the research findings, the researchers have drawn the following conclusions.

1. There is a very significant influence of the Information Literacy Learning model on learning outcome. The determinant coefficient or the extent to which Information Literacy Learning (X) affects Learning outcome (Y) is found at 53.7%.
2. There is a significant effect of Problem-based Learning on learning outcome. The determinant coefficient is 57.7%.
3. Based on the statistical analysis concerning the differences in the effect of Information Literacy Learning and Problem-based Learning on learning outcome, both learning models are equally relevant to improving learning outcome.

Based on the conclusions, the authors propose suggestions to several parties to make efforts to improve the quality of education and learning by applying Information Literacy Learning or Problem-based Learning as both are equally applicable for improving learning outcome.

## References

1. Kemendikbud, 2013. *Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 65 Tahun 2006 tentang Standar Proses untuk Satuan Pendidikan Dasar dan Menengah*. Jakarta: Kemendikbud.
2. Usaid Prioritas. 2015. *Modul Pelatihan Praktik yang Baik di SMP dan MTs III*
3. Banks, J. A. 1990. *Teaching Strategies for the Sosial Studies*. New York and London: Longman
4. Kemdikbud. 2014. *Permendikbud 58 Tahun 2014 Tentang Kurikulum 2013 Sekolah Menengah Pertama/ Madrasah*. Jakarta: Kementrian Pendidikan Dan Kebudayaan.
5. Kemdikbud. 2012.
6. Joyce, B. 2009. *Models of Teaching: Advance Organizer*. New Jersey: Pearson Education Inc
7. Glazer, E. 2001. *Problem-based Instruction in M. Orey (Ed). Emerging perspective on learning, teaching, and technology*. (Online), (<http://www.coe.uga.edu/epltt/ProblemBasedInstruct.htm>) diakses 25 Maret 2016
8. Hart, D. 1994. *Authentic Assessment: A Handbook for Educators*. Menlo Park, CA: Addison-WesleyPub.Co.

- (Online), (<http://www.teachervision.fen.com/assessment/resource/5942.html>), diakses 25 Maret 2016.
9. Kerka, S. 1995. *Teaching for Authentic Assessment*. (Online), ([http://: www.file/A/PBS4. HTM](http://www.file/A/PBS4.HTM)), diakses 17 Februari 2016.
  10. Palm, Torulf. 2008. "Performance Assessment and Authentic Assessment: A Conceptual Analysis of the Literature", *Practical Assessment, Research and Evaluation*, Vol. 13 No. 04, April 2008. 07.
  11. Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., et al. 2001 *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
  12. Lambros, A. 2004. *Problem-Based Learning in Middle and High School Classrooms*. Thousand Oaks: Corwin Press
  13. Djamarah, S B. 2011. *Psikologi Belajar Edisi Revisi 2011*. Jakarta: PT Rineka. Cipta.
  14. Abidin, Y. 2014. *Desain Sistem Pembelajaran Dalam Konteks Kurikulum 2013*. Bandung: PT Refika Aditama
  15. Creswell, J.W. 2007. *Designing and Conducting Mixed Methods Research*. California: Thousand Oaks – Sage Publications.
  16. Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences 2<sup>nd</sup> ed*. Hillsdale, NJ: Erlbaum.
  17. Ghozali, H.I. 2016. *Aplikasi Analisis Multivariate dengan Program IBM SPSS*. Semarang: Badan Penerbit Universitas Diponegoro
  18. Nicol, S.Mc. 2015. Modelling information literacy for classrooms of the future. *Journal of Librarianship and Information Science*, Vol. 47(4) 303 –313
  19. Johnston, B., & Webber, S. 2003. Conceptions of information literacy: new perspectives and implication, *Journal of Information Science*, 26 (6) 2000, pp. 381–397