

THE IMPLEMENTATION OF THE INQUIRY-BASED LEARNING MODEL ON STUDENTS' CRITICAL THINKING SKILLS IN ENGLISH LEARNING

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Abstrak - Bahasa Inggris sebagai Bahasa Asing (EFL) memiliki peran penting dalam mengembangkan keterampilan komunikasi, berpikir kritis, dan kompetensi global siswa. Namun, pembelajaran Bahasa Inggris di sekolah sering masih berpusat pada guru, di mana siswa menerima informasi secara pasif. Situasi ini membatasi perkembangan keterampilan berpikir kritis siswa dalam menganalisis teks, memahami tata bahasa dan kosakata, serta menghasilkan keluaran Bahasa Inggris yang bermakna. Penelitian ini bertujuan untuk menyelidiki pengaruh penerapan model Pembelajaran Berbasis Inkuiri (Inquiry-Based Learning/IBL) terhadap keterampilan berpikir kritis siswa dalam pembelajaran Bahasa Inggris di SMP Negeri 4 Payung. Penelitian ini menggunakan desain kuasi-eksperimen dengan Independent Sample T-Test. Populasi penelitian adalah seluruh siswa kelas VII SMP Negeri 4 Payung pada tahun ajaran 2022/2023. Dengan menggunakan simple random sampling, kelas VII C dipilih sebagai kelas eksperimen dan kelas VII D sebagai kelas kontrol, masing-masing berjumlah 30 siswa. Data dikumpulkan melalui posttest berupa 10 soal essay yang dirancang untuk mengukur keterampilan berpikir kritis siswa dalam Bahasa Inggris. Analisis data menggunakan SPSS 21 menunjukkan bahwa kelas eksperimen memperoleh rata-rata skor posttest lebih tinggi (83,4) dibandingkan kelas kontrol (74,1), dengan Sig. (2-tailed) = 0,001 < 0,05, yang menunjukkan adanya pengaruh signifikan IBL terhadap keterampilan berpikir kritis siswa dalam Bahasa Inggris. Hasil ini menegaskan bahwa model Pembelajaran Berbasis Inkuiri efektif dalam meningkatkan keterampilan berpikir kritis dalam pembelajaran Bahasa Inggris.

Kata kunci: Inquiry Based Learning, kemampuan berpikir kritis, pembelajaran PPKn, eksperimen semu

Abstract - English as a Foreign Language (EFL) plays a crucial role in developing students' communication skills, critical thinking, and global competence. However, English learning in schools is often still teacher-centered, with students passively receiving information. This situation limits the development of students' critical thinking skills in analyzing texts, understanding grammar and vocabulary, and producing meaningful English outputs. This study aims to investigate the effect of implementing the Inquiry-Based Learning (IBL) model on students' critical thinking skills in English learning at SMP Negeri 4 Payung. The study employed a quasi-experimental design using an Independent Sample T-Test. The population consisted of all seventh-grade students at SMP Negeri 4 Payung during the 2022/2023 academic year. Using simple random sampling, class VII C was chosen as the experimental group and class VII D as the control group, each consisting of 30 students. Data were collected through a posttest of 10 essay questions designed to measure students' critical thinking in English. Data analysis using SPSS 21 showed that the experimental class achieved a higher average posttest score (83.4) compared to the control class (74.1), with Sig. (2-tailed) = 0.001 < 0.05, indicating a significant effect of IBL on students' critical thinking in English. These results confirm that the Inquiry-Based Learning model is effective in enhancing critical thinking skills in English learning.

Keywords: Inquiry-Based Learning, critical thinking skills, English learning, quasi-experiment

1. INTRODUCTION

Education serves as the foundation for developing intelligent, responsible, and independent learners (Hasan et al., 2021). In the context of English as a Foreign Language (EFL), education should equip students not only with linguistic knowledge but also with critical thinking, problem-solving, and analytical skills to use English effectively in real-life situations (Celce-Murcia & Larsen-Freeman, 2015; Redjeki & Muhajir, 2020; Hamada, 2021). However, English learning in many schools is still teacher-centered, where teachers

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dominate classroom interaction and students act passively (Amin, 2023; Setyaningrum et al., 2022; Baleghizadeh & Maryam, 2019). This approach restricts students' ability to think critically about language use, text interpretation, and communication strategies (Ummah, 2019; Bravo et al., 2017).

Inquiry-Based Learning (IBL) provides an alternative approach that actively engages students in discovering knowledge rather than passively receiving it (Acharya, 2019; Ismail et al., 2022). IBL encourages students to ask questions, investigate language problems, and find solutions independently, fostering critical thinking and analytical reasoning (Hmelo-Silver et al., 2017; Barron et al., 2008; Pujiastuti & Haryadi, 2023). In English learning, this can involve exploring grammar in context, analyzing reading passages, conducting research on language topics, and creating authentic language outputs such as essays, dialogues, or presentations (Salam et al., 2020; Nuray & Ceylan, 2021; Gopal et al., 2021). By integrating real-world contexts into English learning, students are guided to reflect on language use, evaluate ideas critically, and communicate findings effectively.

Research shows that IBL positively impacts students' critical thinking in language learning (Anwer et al., 2018; Ferdaus & Novita, 2023; Chen & Hwang, 2020). According to Nasrollahi et al. (2015), found that students engaged in inquiry activities were more active in discussions, expressed opinions confidently, and developed stronger analytical skills in constructing arguments. Similarly, Jenks & Lee (2020) and Makhammdovna & Agzamova, (2021), found that inquiry learning improved students' ability to solve problems collaboratively while connecting theoretical concepts with practical applications. This approach aligns with the goals of modern English education, which emphasizes communication, critical thinking, creativity, and autonomous learning.

Teachers implementing IBL in English classrooms act as facilitators, guiding students through stages of problem orientation, questioning, data collection, analysis, and presentation. Students investigate language phenomena, practice critical reading and writing, and develop reasoned conclusions. As a result, students become active learners, capable of applying English in authentic contexts, solving problems independently, and participating meaningfully in collaborative activities (Alwadaeen & Piller, 2022; Mulatu & Regassa, 2022; Wulandari, 2020).

2. METHOD

2.1 Research Design

This study employed a quantitative approach using a quasi-experimental design with an Independent Sample t-Test (Creswell & Creswell, 2017; Sugiyono, 2021). This design was chosen because full randomization of research subjects was not feasible, but the design still allows control over extraneous variables and enables comparison of two groups:

- Experimental Class (E): Received treatment using the Inquiry-Based Learning (IBL) model in English learning.
- Control Class (C): Received conventional expository instruction (teacher-centered learning).

The design can be summarized as follows:

Group	Treatment	Posttest
E (Experimental)	Inquiry-Based Learning (IBL)	S ₁
C (Control)	Expository Method	S ₂

Where S_1 and S_2 are posttest scores used to measure critical thinking skills in English.

2.2 Population and Sample

The population consisted of all seventh-grade students at SMP Negeri 4 Payung, totaling 180 students. Using simple random sampling, class VII C was selected as the experimental group (IBL) and class VII D as the control group (expository method), with 30 students each.

2.3 Population and Sample

The population of this study consisted of all seventh-grade students at SMP Negeri 4 Payung during the 2022/2023 academic year, totaling 180 students distributed across six parallel classes (VII A – VII F).

The sampling technique used was simple random sampling, conducted through a random drawing among all classes. The result of the draw designated class VII C as the experimental class and class VII D as the control class. Each class consisted of 30 students, bringing the total sample size to 60 students.

This random sampling technique ensures that every student has an equal chance of being selected, reducing selection bias (Arikunto, 2021).

2.4 Research Variabel

The study involved the following variables:

1. **Independent Variable:** Learning model used
 - Inquiry-Based Learning (experimental class)
 - Expository method (control class)
2. **Dependent Variable:** Students' critical thinking skills in English, measured through indicators such as:
 - Analyzing English texts
 - Evaluating arguments in essays or short passages
 - Drawing logical conclusions
 - Solving language-related problems

2.5 Research Instrumen

The main instrument used to measure critical thinking in English learning was a 10-item essay test, developed based on indicators of critical thinking in EFL contexts. Each item assessed the ability to analyze, evaluate, and generate solutions in English communication or writing.

- Validity: Assessed by three experts in English language education and pedagogy.
- Reliability: Tested using Cronbach's Alpha, producing a coefficient of 0.83, indicating high internal consistency (Moskal & Leydens, 2000).

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2.6 Data Collection Technique

Data were collected through the following steps:

1. Preparation:

- Developed research instruments (essay test, observation sheets).
- Prepared lesson plans and teaching materials aligned with IBL principles in English.
- Selected the sample classes.

2. Implementation of Learning:

- **Experimental Class:** The IBL model was implemented in six sessions, involving the following stages:
 1. **Problem Orientation:** Students identified real-life English language problems (e.g., understanding text meaning, constructing sentences, or creating short dialogues).
 2. **Formulating Questions and Hypotheses:** Students generated questions or hypotheses related to English language tasks.
 3. **Data Collection:** Students gathered information from English texts, dictionaries, and online resources.
 4. **Data Analysis:** Students analyzed texts, vocabulary, grammar, or communication patterns.
 5. **Presentation of Findings:** Students presented their results in writing or orally, followed by class discussion and reflection.
 - **Control Class:** Conventional expository instruction, dominated by teacher explanation, question-and-answer sessions, and note-taking.
3. **Posttest Administration:** Conducted immediately after the learning sessions to assess critical thinking skills in English.
 4. **Observation and Documentation:** Researchers observed students' engagement, collaboration, and inquiry behaviors during lessons.

2.7 Data Analysis Technique

The collected data were analyzed using SPSS version 21 with the following procedures:

- Descriptive Statistics: Calculated mean, lowest, highest, and standard deviation for posttest scores.
- Normality Test: Using Kolmogorov–Smirnov test to ensure data distribution was normal.
- Homogeneity Test: Using Levene's Test to confirm equal variance between groups.
- Inferential Statistics: Independent Sample t-Test to determine whether there was a significant difference between the experimental and control groups.
- Decision criteria:

Significance level: $\alpha = 0.05$

If $p < 0.05$, the null hypothesis (H_0) is rejected, indicating a significant effect of IBL on students' critical thinking skills in English.

3. RESULT AND DISCUSSION

3.1 Result

a. Research Data Description

The study involved 60 seventh-grade students at SMP Negeri 4 Payung, divided into an experimental class (IBL) and a control class (expository method), each with 30 students. The students completed a posttest consisting of 10 essay questions designed to measure critical thinking skills in English.

Table 1. Posttest Score Distribution

Class	N	Lowest Score	Highest Score	Mean	Standard Deviation
Experimental	30	75	93	83.4	4.21
Control	30	68	85	74.1	5.09

From the table, it is evident that students in the experimental class achieved higher mean scores than the control class. The standard deviation in the control class was larger, indicating more variation in students' critical thinking abilities compared to the experimental group.

b. Normality Test

Before performing the t-test, a normality test using Kolmogorov–Smirnov was conducted to ensure that the posttest data of both groups were normally distributed.

Table 2. Normality Test Results

Class	Kolmogorov–Smirnov Z	Sig. (2-tailed)	Normality Conclusion
Experimental	0.113	0.200	Normally distributed
Control	0.124	0.200	Normally distributed

Interpretation: Both experimental and control classes have Sig. > 0.05, indicating that the posttest data are normally distributed.

c. Homogeneity Tests

The Levene's Test was used to examine whether the variances of posttest scores were homogeneous.

Table 3. Homogeneity Test Results

Test	F	Sig.	Homogeneity Conclusion
Levene's Test	1.60	0.214	Homogeneous variances

Interpretation: Sig. > 0.05, showing that the two groups have equal variances, so the assumption of homogeneity is met.

d. Independent Sample t-Test

The Independent Sample t-Test was used to determine whether there was a significant difference in critical thinking skills between the experimental and control classes.

Table 4. Independent Sample t-Test Results

Test Type	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	3.62	58	0.001	9.3

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Interpretation: Since $t\text{-count} (3.62) > t\text{-table} (2.00)$ and $\text{Sig.} < 0.05$, the null hypothesis (H_0) is rejected. This indicates a significant difference in critical thinking skills between students taught using Inquiry-Based Learning and those taught with the expository method.

3.2 Discussion

3.2.1 Effectiveness of IBL in English Learning

The experimental class that applied the IBL model scored higher in critical thinking compared to the control class. This indicates that IBL effectively promotes students' analytical, evaluative, and reflective thinking in English learning, particularly in reading comprehension, grammar application, and essay writing.

3.2.2 Student Engagement and Autonomy

Observation showed that students in the experimental class were more engaged, asked more questions, participated in discussions, and collaborated effectively. The teacher acted as a facilitator, guiding students to discover language concepts independently, which contributed to their higher posttest scores.

3.2.3 Comparison with Expository Learning

In contrast, the control class relied on teacher-centered instruction, with limited opportunities for questioning, problem-solving, or independent analysis. Consequently, students' critical thinking development was slower and less uniform.

3.2.4 Supporting Evidence from Statistical Analysis

The normality and homogeneity tests confirmed that the data met the assumptions for t-test analysis. The t-test results demonstrated a statistically significant improvement in critical thinking skills for students taught using IBL. This supports previous research showing that inquiry-based approaches enhance higher-order thinking and learner autonomy in language learning.

4. CONCLUSION

Based on the results and discussion of the research, it can be concluded that the implementation of the Inquiry Based Learning (IBL) model has a significant effect on students' critical thinking skills in Civic Education (PPKn) learning at SMP Negeri 4 Payung. Students who participated in learning using the IBL model demonstrated higher abilities in analyzing, evaluating, and drawing conclusions about issues related to Pancasila values, social norms, and the rights and obligations of citizens.

The IBL model made students more active and creative during the learning process, as they were directly involved in discovering concepts through inquiry activities and discussions. The statistical test results supported this finding, showing that the average posttest scores of the experimental class were higher than those of the control class, with a statistically significant difference.

The application of the IBL learning model also had a positive impact on students' learning motivation, class participation, and reflective thinking, since this approach encourages active engagement and a high level of curiosity. Therefore, Civic Education teachers are recommended to apply the Inquiry Based Learning model as an alternative

instructional strategy to develop students who are critical, democratic, and possess Pancasila-based character.

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