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# Enhancing creative thinking and cultural literacy: project-based learning with field trip support

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**ABSTRACT**

One of the main challenges in learning cultural geography is to develop a deep understanding of cultural diversity and creative ability in analyzing and describing the relationship between humans and their environment. This study investigates the effect of the field trip-based project-based learning (PjBL) learning model on students' creative thinking ability and cultural literacy in a Cultural Geography course. The research design used is a comparative experimental design in three different groups. The subjects in this study were students majoring in Geography at Universitas Negeri Makassar (UNM) in the 3rd (odd) semester of the 2023/2024 academic year. The research sample was selected purposively (purpose sampling) based on the same academic ability characteristics of the population. The collected data will be analyzed using the ANACOVA test statistical method. The results showed that the 2-tailed significance level (Sig.) was 0.000, far below the generally accepted alpha level ($\alpha$=0.05) which indicated a significant difference in the use of the PjBL model, the PjBL-field trip (PjBL-FT) model, and the conventional learning model in improving creativity and cultural literacy skills. The considerable difference in the mean post-test scores underscores the effectiveness of field trip-based project-based learning (PjBL-FT) in improving creative skills. The results imply that this model can be used to create innovative learning so that it can make a good contribution to learning.

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## 1. INTRODUCTION

Cultural geography is a branch of geography that studies the interactions between humans and their environment, and their impact on local culture and identity. Cultural geography includes the examination of cultural objects, social and cultural geography, and the exploration of human-environment interactions [1], [2]. Cultural geography explores how different cultural practices, beliefs, and traditions are shaped by and shape the physical and social environments in which they occur [3]. Cultural geography has been recognized as an important field in human geography, with a focus on understanding cultural shifts and their implications [4]. This branch of geography recognizes the dynamic relationship between people and their environment, emphasizing the importance of understanding the cultural dimensions of a place [5], [6]. By examining the interactions between people and their environment, cultural geography provides insights into how cultural diversity is influenced by geographical factors and how this, in turn, shapes different landscapes and regional identities [3]. Through the study of cultural geography, researchers gain a deeper understanding of the complex and diverse nature of human-environment interactions, which contributes to broader discussions on topics such

as climate change, resource management, and sustainable development [7]. Overall, cultural geography offers a multidimensional approach to understanding the complex relationships between people, their environments, and the cultural landscapes they inhabit.

One of the main challenges in learning cultural geography is how to develop a deep understanding of cultural diversity, as well as creative abilities in analyzing and describing the relationship between humans and their environment. Based on the results of preliminary observations, it was found that the low level of creative thinking skills and cultural literacy of most students majoring Geography at Universitas Negeri Makassar in the 3rd (odd) semester in the Cultural Geography course. In addition, it was found that one of the main causes is the learning process which is still mostly done conventionally. Lecturers only provide explanations and assignments to write scientific reports. One of the requirements for learning development is authenticity which means that learning must be adapted to the characteristics of learning itself [8], [9]. For example, students are asked to interact with their surrounding environment about the material cultural identity and practice, but they do not do it, which causes their creative thinking ability and cultural literacy to be low.

Creative skills include interpreting, interpreting, and communicating cultural data in a way that inspires curiosity and appreciation of different cultures. Creative skills are essential in fostering cultural understanding and encouraging intercultural dialog [10]. By interpreting cultural data, individuals can discover the rich meanings and nuances embedded in different cultural practices, beliefs, and traditions. This interpretation process not only deepens one's understanding but also enables effective communication of cultural information to others, inspiring curiosity and appreciation [11]. It is through this creative lens that individuals can bridge cultural gaps, challenge stereotypes, and foster a more inclusive and interconnected world [12]. In addition, research shows that curiosity plays an important role in fostering creative thinking and innovation [13]. By arousing curiosity about different cultures, individuals are motivated to explore, learn, and engage with diverse perspectives, leading to a greater appreciation and respect for cultural diversity [14]. Overall, these creative abilities are instrumental in promoting cultural exchange, fostering empathy, and building bridges between different cultures and communities.

Cultural literacy is an essential skill for understanding cultural diversity, which includes social norms, beliefs, traditions, and how they influence interactions between individuals and communities. Cultural literacy is an essential skill for understanding and navigating cultural diversity [15]. Cultural literacy is more than just awareness or appreciation of different cultures but also involves the ability to interpret and communicate cultural information in ways that can foster curiosity and deeper understanding [16]. Cultural literacy enables individuals to engage in diverse cultural contexts, encouraging empathy, respect, and effective communication across cultural boundaries. Cultural literacy also includes the capacity to recognize and challenge inequalities in access and opportunity across multiple dimensions such as race, class, gender identity, and language [15]. By developing cultural literacy, individuals can actively participate in and contribute to a more inclusive and interconnected society [17].

In addition, cultural literacy plays an important role in building character and promoting social cohesion, as exemplified through the use of traditional games to develop cultural literacy among elementary school students [16]. Overall, cultural literacy is a multifaceted skill that empowers individuals to navigate the complexities of cultural diversity, fostering understanding, appreciation, and inclusiveness in diverse social and cultural contexts. In recent developments, learning approaches that emphasize direct experience and active participation of students have become very relevant. Field trips are one of the effective ways to provide direct experience to students to understand the concept of cultural geography. Field trips allow students to see, feel, and interact with various cultural environments. This can enhance their understanding and appreciation of cultural diversity. Filed trips are widely recognized as an effective way to provide students with hands-on experience that can enhance their understanding of a variety of subjects, including cultural geography. By engaging students in real-world situations, field trips offer opportunities for direct observation, exploration, and engagement with different cultural contexts [18].

These experiences allow students to apply theoretical knowledge to practical situations, encouraging a deeper understanding of cultural geography concepts [19]. Field trips also stimulate students' curiosity and interest in different cultures, as they have the opportunity to interact with local people, landmarks, and cultural artifacts [20]. In addition, field trips can evoke emotional responses and create lasting memories, which contribute to students' overall learning experience [21]. Although traditional field trips have become commonplace, recent technological advances, such as virtual reality platforms, have expanded the possibilities for immersive and interactive field trip experiences [22]. These technological innovations can provide students with virtual access to distant cultural sites, enhancing their understanding of cultural geography even when physical travel is not possible [23]. Overall, field trip offers a valuable experiential learning approach that allows students to engage with cultural geography in a real way.

The project-based learning (PjBL) learning model prioritizes field exploration and active learning to incorporate field experiences in cultural geography. By engaging students in projects that require them to

collaborate, problem-solve, and communicate in different cultural contexts, PjBL can be a powerful learning method to enhance students' cultural literacy and creativity. This learning model combines hands-on experience through field trips with project-based activities, allowing students to actively engage with the subject matter and apply their knowledge in a real-world context [24]. Field trip-based PjBL models have been recognized as an effective approach to enhance students' creativity and cultural literacy skills in cultural geography courses. These models provide students with immersive experiences that go beyond the traditional classroom setting, allowing them to actively engage with cultural landscapes and phenomena [25]. By incorporating a project-based learning approach, students are encouraged to explore and analyze cultural data, thus fostering their creativity and critical thinking skills [26].

Field trips offer opportunities for students to directly observe and interact with different cultures, encouraging a deeper understanding and appreciation of cultural diversity [27]. In addition, field trips can enhance students' sense of place and cultural identity, as they experience firsthand the geographical context of different cultures. The combination of field trips and project-based learning creates a dynamic learning environment that encourages students to apply their knowledge and skills in real-world situations, which ultimately enhances their cultural literacy and ability to navigate diverse cultural landscapes [28]. This innovative approach to teaching and learning contributes to the development of students' key competencies, such as creativity and cultural competence [29], [30]. In addition, the integration of PjBL practices in teacher preparation programs can equip educators with the necessary skills to effectively implement field trip-based project-based learning in cultural geography courses [31]. Overall, the field trip-based project-based learning model offers a strong educational framework to enhance students' creativity and cultural literacy, thus enabling them to become more culturally competent and globally aware individuals.

Several studies have shown that the application of project-based learning models such as PjBL can have a positive impact on students' creative thinking skills. For example, Sumarni and Kadarwati [24] found that an ethno-STEM project-based learning approach significantly improved students' critical and creative thinking skills. Similarly, Illahi *et al.* [32] reported that the project-based learning model had a positive effect on the creative thinking skills of secondary school students [32]. The study by Beier *et al*. [33] explored the influence of authentic project-based learning on attitudes and career aspirations in STEM fields. Although this study did not directly mention creative thinking skills, it supports the idea that PjBL can enhance students' creative thinking abilities. These findings suggest that the PjBL learning model can effectively enhance students' creativity in cultural geography subjects.

The application of the PjBL model can have a positive impact on students' cultural literacy skills [34]–[40]. These studies highlight the effectiveness of project-based learning in enhancing students' understanding and appreciation of different cultures. For example, a study by Hujjatusnaini *et al.* [34] explored the effect of project-based learning combined with 21st-century skills on the higher-order thinking skills of pre-service biology teachers, indicating the potential of project-based learning to develop critical and creative thinking skills. In addition, a study conducted by Sari and Prasetyo [35] focused on the impact of project-based learning on critical reading courses and the improvement of critical thinking skills. Furthermore, Setiawan [39] discussed the development of cultural literacy-based social studies learning material design as a systemic program to develop social skills competencies. These studies collectively support the idea that project-based learning models, such as PjBL, can effectively contribute to the improvement of students' cultural literacy skills, fostering their understanding and engagement with diverse cultures.

Previous research consistently shows that PjBL approaches have great potential to enhance students' cultural competencies. A study by Kim [41] and Hussein [42] found that PjBL allows students to participate in projects that encompass different cultural aspects, thus providing a deeper cultural understanding. They indicate that through PjBL, students can not only learn about their own culture but also other cultures, thereby enhancing their engagement and empathy toward cultural diversity around them. Additionally, Yamada [43] and Akharraz [44] assert that PjBL enables students to develop reading comprehension skills related to various cultural contexts, such as analyzing cultural texts, interpreting cultural symbols, and cultural critique. These findings consistently support the view that PjBL is effective in improving students' cultural competencies and enhancing their understanding and engagement with diverse cultures [43]–[46].

The importance of researching the effect of the PjBL learning model in cultural geography courses lies in its potential to enhance student's skills and knowledge in a meaningful and engaging way. By integrating field trips and project-based activities, students can develop a deeper understanding of cultural geography and apply their knowledge in a real-world context. This research can contribute to the wider field of education by providing insight into effective teaching and learning strategies that encourage creativity and cultural literacy skills. This study aims to investigate the effect of the field trip-based PjBL model on students' creative thinking ability and cultural literacy in the cultural geography course. By examining the outcomes of implementing the PjBL learning model, this study seeks to contribute to the existing literature on project-based learning and provide evidence-based recommendations for educators and curriculum developers.

## 2. METHOD

### 2.1. Research type

This research is comparative experimental research. The aim is to compare the effectiveness of three different learning models in improving students' creative thinking skills and cultural literacy in cultural geography courses. The learning models used include the PjBL model, the field trip (FT) based PjBL model, and the conventional learning model in each different class [47], [48], as summarized in Table 1.

### 2.2. Research design

The research design used is a comparative experimental design in three different groups. The first group will use the PjBL model, the second group will use the field trip-based PjBL model, and the third group will be the control group using the conventional learning model. Each group will have an initial measurement before treatment, as well as a measurement after treatment to compare changes in creative thinking ability and cultural literacy. The research design is shown in Table 2.

Table 1. The fundamental differences between the three types of learning models

| Aspect | PjBL | FT-based PjBL | Conventional learning model |
|---|---|---|---|
| Learning objectives | Development of learning skills, problem-solving, collaboration, and application of knowledge in real-world contexts. | Integrates PjBL elements with field experiences to deepen students' understanding. | Knowledge transfer through direct teaching and exercises. |
| Student experience | Engaged in substantial projects, work independently or in groups, and have control over their learning process. | Experience concepts directly in the field, connecting theory with practice. | Listen to teacher explanations, and work on assignments in the classroom. |
| Teacher's role | Facilitator, providing guidance and support, giving students the freedom to take responsibility for their learning. | Planning and organizing field trips, connecting experiences with the curriculum. | The primary source of knowledge, providing direct instruction. |
| Learning evaluation | Focuses more on students' ability to apply knowledge and skills in projects, as well as their progress in problem-solving and achieving project goals. | Includes students' understanding of the topics learned through field experiences, as well as their contributions to field-based projects. | Based on tests and assignments assessing conceptual understanding directly. |

Table 2. Research design

| Class | Pretest | Model | Posttest |
|---|---|---|---|
| Class A | $Q_1$ | $X_1$ | $Q_4$ |
| Class B | $Q_2$ | $X_2$ | $Q_5$ |
| Class C | $Q_3$ | $X_3$ | $Q_6$ |

Note= $Q_1$: Class A pretest; $Q_2$: Class B pretest; $Q_3$: Class C pretest; $X_1$: Project based learning model; $X_2$: Project based learning-field trip model; $X_3$: Conventional method; $Q_4$: Class A posttest; $Q_5$: Class B posttest; $Q_6$: Class C posttest

### 2.3. Research subjects

The subjects in this study were students majoring in Geography at the Faculty of Mathematics and Natural Sciences (FMIPA), Universitas Negeri Makassar (UNM) in the 3rd (odd) semester of the 2023/2024 academic year. The research population was 143 students who were taking Cultural Geography courses. The research sample was selected purposively (purpose sampling) based on the characteristics of the same academic ability of the population. The sample will be divided into three groups, namely Group A (PjBL) as many as 35 people, Group B (PjBL based on field trip) as many as 34 people, and Group C (conventional) as many as 32 people.

The objectives of PjBL based on field trips involve active student engagement through direct experiences and observations, linking concepts to real-world contexts. This entails collaboration among students, teachers, and external resources such as experts or professionals, expanding understanding through diverse perspectives. Through field trips, students are encouraged to develop independence, problem-solving skills, and deep reflection on their learning. With a focus on relevance and motivation, field projects create a learning environment that strengthens students' understanding of academic concepts in everyday life, fostering deep, student-centered learning [49].

### 2.4. Research instruments/tools

This research instrument uses essay tests and questionnaires. Essay tests were used to measure students' creative thinking skills in generating creative ideas related to cultural geography. In this research, two data collection instruments were utilized: 45 essay questions to assess students' creative thinking abilities, and one questionnaire comprising 20 questions per respondent, aimed at gathering data on students' cultural literacy, including their understanding of culture, cultural habits, experiences, and related aspects. Meanwhile,

to measure cultural literacy, the study used questionnaires or tests that assessed students' understanding of cultural concepts and their ability to interpret cultural data. In the field of educational studies, in addition to using test instruments, and non-test instruments such as questionnaires, are also often used [50]. Table 3 shows the indicators used in creative thinking and cultural literacy.

Table 3. Creative thinking indicators and cultural literacy indicators

| No | Indicators of creative thinking | Indicators of cultural literacy |
|---|---|---|
| 1. | Student's ability to formulate new ideas or innovative solutions to given problems | Students' understanding of various aspects of culture, including cultural values, norms, and traditions. |
| 2. | Students' ability to think divergently, i.e. being able to produce various possibilities or alternative answers. | Students' ability to recognize and appreciate cultural diversity and understand its implications in daily life. |
| 3. | Students' ability to link different concepts and make unconventional connections between information. | Students' experience in interacting with different cultures and their ability to adapt to diverse cultural contexts. |
| 4. | The ability of students to apply learned knowledge or concepts in new contexts or unusual situations. | Involvement of students in cultural activities or practices that can enhance their understanding and appreciation of various cultures. |

### 2.5. Data capture technique

The data will be collected through several stages: i) Pretest to assess students' initial ability in creative thinking and cultural literacy; ii) Implementation of three different learning models in three different groups; and iii) Posttest measurement after students have completed learning with each learning model.

### 2.6. Data analysis technique

The data collected will be analyzed using statistical methods, specifically through the analysis of covariance (ANACOVA) test, which is designed to compare one or more variables across different groups while controlling for other variables. This will be conducted using SPSS 26 for Windows software, a powerful tool for statistical analysis that allows researchers to handle complex data sets and perform a wide range of statistical tests. The aim is to compare the differences in results among the three groups (PjBL, field trip-based PjBL, and conventional) in terms of creative thinking skills and cultural literacy. This analysis will help identify which educational approach is more effective in enhancing students' abilities and understanding in these areas, providing valuable insights for educators and curriculum developers.

## 3. RESULTS AND DISCUSSION

### 3.1. Field trip-based PjBL model on creative thinking ability

Creative thinking skills in Geography Education Study Program students in semester 3 (odd) academic year 2023/2024 who study Cultural Geography in this study were measured using essay test instruments. Based on pretests and posttests that have been carried out in classes that use the PjBL model, the field trip-based PjBL model (PjBL-FT), and the conventional learning model, the following data are obtained as seen in Figure 1. The number of samples in the PjBL group was 35, the PjBL-FT group was 34, and the conventional was 32. Based on Figure 1, it can be seen the pretest value before action and the posttest value after action. The average posttest value for classes using the PjBL model was 83.09, PjBL-FT was 84.88, and the conventional model was 78.72. There is a considerable difference in the value of the class using the PjBL-FT model getting a higher value than the other groups.


Figure 1. Diagram of pretest and posttest score of creative thinking ability

### 3.1.1. Homogeneity test

The homogeneity test aims to determine whether the variance (diversity) of data from two or more groups is homogeneous (equal) or heterogeneous (unequal). This is outlined in Table 4. Based on the table, it is known that the significance (Sig.) is 0.839>0.05 it can be concluded that the variance of post-test data on the creative thinking ability of PjBL, PjBL-FT, and conventional groups is the same or homogeneous. Thus, one of the requirements (not absolute) of the ANACOVA test has been fulfilled.

### 3.1.2. Normality test

The normality test is carried out to determine whether the research data is normally distributed or not [51], [52]. Normal data is an absolute requirement before we do parametric statistical analysis, this is outlined in Table 5. Based on the table, it is known that the significance value (Sig.) for all data in the Kolmogorov-Smirnov test has a value greater than 0.05, so it is concluded that the research data is normally distributed. ($sig.> a$), so it can be concluded that the research data is normally distributed. Because the research data is normally distributed, we can use ANACOVA statistics to analyze the research data.

### 3.1.3. ANACOVA test

The ANACOVA test is used to determine whether there are differences in the means of three unpaired samples. The main requirements in the ANACOVA test are normally distributed and homogeneous, not absolute, data. From the test results in points 2 and 4, the conclusion obtained is that the data is normally distributed and homogeneous.

The ANACOVA test in this study was used to answer the problem formulation "Are there differences in students' creative thinking skills in cultural geography courses using the PjBL model, PjBL-FT, and conventional learning models in the experimental class?". To answer the problem formulation, the ANACOVA test was conducted on post-test data of classes using the PjBL model, PjBL-FT model, and conventional learning model, this is outlined in Table 6.

Table 4. Test of homogeneity of variances

| | | Levene statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Creative thinking posttest | Based on mean | 0.167 | 2 | 98 | 0.847 |
| | Based on median | 0.218 | 2 | 98 | 0.805 |
| | Based on the median and with adjusted df | 0.218 | 2 | 97.747 | 0.805 |
| | Based on trimmed mean | 0.176 | 2 | 98 | 0.839 |

Table 5. One-sample Kolmogorov-Smirnov test

| Residuals for posttest creative | | |
|---|---|---|
| N | | 101 |
| Normal parameters[a,b] | Mean | 0.0000 |
| | Std. Deviation | 2.20856 |
| Most extremedifferences | Absolute | 0.071 |
| | Positive | 0.071 |
| | Negative | -0.070 |
| Test statistic | | 0.071 |
| Asymp. Sig. (2-tailed) | | .200[c,d] |

Note: [a]= test distribution is normal; [b]= calculated from data; [c]= Lilliefors significance correction; [d]= this is a lower bound of the true significance.

Table 6. Tests of between-subjects effects

| Source | Type III sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Corrected model | 1182.508[a] | 3 | 394.169 | 188.368 | 0.000 |
| Intercept | 56.322 | 1 | 56.322 | 26.915 | 0.000 |
| Pretest BK | 523.764 | 1 | 523.764 | 250.299 | 0.000 |
| Model | 217.874 | 2 | 108.937 | 52.059 | 0.000 |
| Error | 202.977 | 97 | 2.093 | | |
| Total | 685603.000 | 101 | | | |
| Corrected total | 1385.485 | 100 | | | |

Note: [a]. R squared=.853 (adjusted R squared=.849)

Based on Table 6, the Sig. (2-tailed) value is 0.000<0.05, indicating a significant difference in learning outcomes among the PjBL, PjBL-FT, and conventional models. The mean post-test scores for PjBL are 83.09, PjBL-FT are 84.88, and conventional are 78.72. It can be concluded that PjBL-FT provides better learning

outcomes in creative thinking ability compared to PjBL without FT and the conventional model. The application of the field trip-based PjBL learning model to students' creative thinking ability in this study has provided important findings regarding the impact of the learning model compared to other different learning models on students' creative thinking abilities. The analysis carried out includes a comparison of three learning models, namely PjBL, PjBL-FT, and conventional learning models.

The ANACOVA test results show a significance value (Sig) of 0.000 (2-tailed) which is far below the generally accepted alpha level (α=0.05). This result indicates that there is a statistically significant difference in the average learning outcomes of students using the PjBL model, PjBL-field trip model, and conventional learning model. The post-test scores provide additional insight into the differences in learning outcomes for these models. This statistical significance also underscores the importance of learning model selection in influencing students' creative thinking skills.

Further examination of the mean post-test scores for each group showed different results. The average post-test score for the class that received instruction through the PjBL learning model was 83.09, the PjBL-FT class was 84.88, and for the conventional model class was 78.72. These results indicate that the class using the FT based PjBL model showed better learningoutcomes in terms of creative thinking skills compared to the class using PjBL without the field trip component and the class using the conventional learning model. There are several possible reasons why the results of PjBL and PjBL accompanied by a PjBL-FT do not show significant differences, despite differences in the average post-test scores. Firstly, a major factor that could influence this is the variability in the quality of implementation of both learning models. This may include variations in how teachers design and execute projects, the level of student participation, or the use of resources affecting learning outcomes [53], [54]. Additionally, external factors such as differences in the difficulty level of the tests, student characteristics, or classroom environmental factors may also contribute to overall test results [55], [56]. Furthermore, it's possible that although the combination of PjBL with field trip provides additional benefits in certain aspects of learning, it does not create significant differences in the measured test results. Therefore, further research is needed to understand the factors contributing to these outcomes and how they may affect the effectiveness of both learning models [57]–[59].

The findings of this study underscore the added value of integrating field trips into PjBL. Field trips provide students with real-world experience and practical application of their learning, which can stimulate creative thinking and problem-solving skills. The higher average post-test score for the PjBL-FT class supports the idea that such experiential learning enhances creative thinking, making it a valuable pedagogical approach for educators looking to foster creativity in their students. Field trips have been widely recognized as valuable educational experiences that provide students with real-world experience and practical application of their learning, which can stimulate creative thinking [60], [61]. These studies highlight the positive impact of field trips on students' cognitive development and creative thinking skills. For example, a study by Whitesell explored the impact of field trips on middle school science achievement and showed that field trips can contribute positively to student achievement [20]. In addition, a study conducted by Campbell and Gedat [60] focused on the effects of field trips on educational, social, and personal development among college students majoring in linguistics, emphasizing the unique learning opportunities and hands-on knowledge provided by field trips. Furthermore, Rugaiyah [61] highlighted the benefits of experiential learning through field trips, as reported by respondents who felt that field trips helped explore their learning experiences. These findings collectively support the idea that field trips play an important role in enhancing students' creative thinking skills by providing them with hands-on experience and exposure to real-world contexts.

Further research could investigate the specific mechanisms and elements of the PjBL-FT model that contribute to this improvement in creative thinking, providing more insights for educational practitioners. The phenomenon of increased creative thinking abilities among students through project-based learning (PjBL) models incorporating field trips (PjBL-FT) can be explained by key characteristics such as diverse and current contexts stimulating imagination, open-ended problem-solving prompting flexible thinking, collaboration, and discussions integrating various perspectives, and profound emotional experiences. Integrating field trips into the curriculum facilitates comprehensive learning experiences, connecting academic concepts with practical applications, and teaching relevant critical skills, thereby enhancing students' understanding and significantly strengthening their creative thinking.

### 3.2. Field trip-based PjBL model on the ability of cultural literacy

Cultural literacy skills in geography education study program students in semester 3 (odd) academic year 2023/2024 who study cultural geography in this study were measured using a questionnaire instrument. Cultural competence is measured through characteristics such as cultural understanding, interpretive skills, critical analysis, cultural sensitivity, active participation, and self-reflection, enabling individuals to deeply understand, appreciate, and engage in culture as a whole. Indicators of these abilities include the ability to recognize cultural messages, analyze cultural symbols, participate in cultural discussions, and reflect on personal experiences as well as awareness of cultural diversity, all of which are important for addressing global

challenges and strengthening intercultural relationships. Based on pretests and posttests that have been carried out in classes that use the PjBL model, field trip-based PjBL-FT model, and conventional learning models, the following data are obtained, as seen in Figure 2.

Based on Figure 2, it can be seen the pretest value before action and the posttest value after action. The average posttest value for classes using the PjBL model was 84.97, PjBL-FT was 85.53, and the conventional model was 79.84. There is a considerable difference in the value of the class using the PjBL-FT model getting a higher value than the other groups.

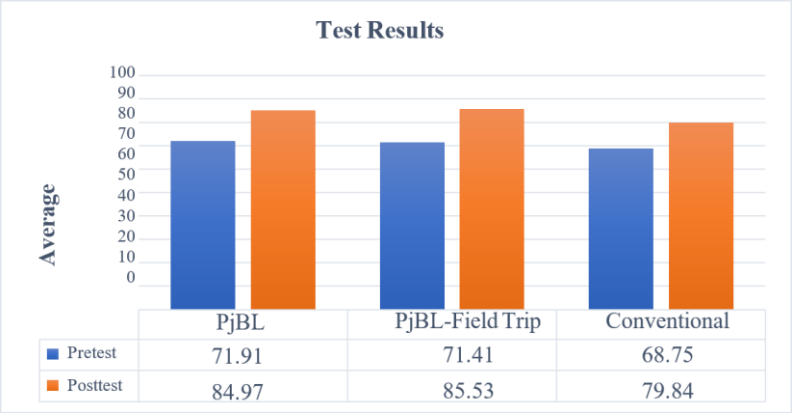


Figure 2. Diagram of pretest and posttest scores of cultural literacy skills

### 3.2.1. Homogeneity test

Before proceeding with further analysis, it is crucial to verify whether the variances across groups are homogeneous. The test of homogeneity of variances ensures that this assumption is met, which is a prerequisite for conducting analysis of variance (ANOVA). The results of the test of homogeneity of variances are presented in Table 7. It is known that the significance (Sig.) based on the mean is 0.140>0.05. Thus, it can be concluded that the variance of the post-test data on the cultural liberation ability of the PjBL, PjBL-FT, and conventional groups is the same or homogeneous. Thus, one of the requirements (not absolute) of the ANACOVA test has been fulfilled.

### 3.2.2. Normality test

Normal data is an absolute requirement before we do parametric statistical analysis, this is outlined in the Table 8. According to the output, the significance value (Sig.) for all data in the Kolmogorov-Smirnov test is greater than 0.05. This indicates that the research data is normally distributed ($sig. > \alpha$). Consequently, since the data meets the normality assumption, ANACOVA statistics can be applied for further analysis.

Table 7. Test of homogeneity of variances

| | | Levene statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Cultural literacy posttest | Based on mean | 2.041 | 2 | 98 | 0.135 |
| | Based on median | 1.811 | 2 | 98 | 0.169 |
| | Based on the median and with adjusted df | 1.811 | 2 | 91.902 | 0.169 |
| | Based on trimmed mean | 2.004 | 2 | 98 | 0.140 |

Table 8. One-sample Kolmogorov-Smirnov test residuals for post-test culture

| | | Unstandardized residual |
|---|---|---|
| N | | 101 |
| Normal parameters[a,b] | Mean | 0.0000 |
| | Std. Deviation | 2.34022 |
| Most extremedifferences | Absolute | 0.090 |
| | Positive | 0.090 |
| | Negative | -0.084 |
| Test statistic | | 0.090 |
| Asymp. Sig. (2-tailed) | | 0.053[c] |

### 3.2.3. ANACOVA test

The ANACOVA test is utilized to assess if there are differences in the means among three independent samples. The primary conditions for conducting an ANACOVA test include data that is normally distributed and approximately homogeneous. From the test results in points 2 and 4, the conclusion obtained is that the data is normally distributed and homogeneous. The ANACOVA test in this study was used to answer the problem formulation, "Are there differences in students' cultural literacy skills in cultural geography courses using the PjBL model, PjBL-FT, and conventional learning models in the experimental class?". To answer the problem formulation, the ANACOVA test was conducted on post-test data of classes using the PjBLmodel, PjBL-FT model, and conventional learning model, this is outlined in Table 9.

Table 9. Tests of between-subjects effects dependent variable: cultural literacy posttest

| Source | Type III sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Corrected model | 1054.532[a] | 3 | 351.511 | 249.614 | 0.000 |
| Intercept | 101.352 | 1 | 101.352 | 71.972 | 0.000 |
| Pretest LB | 411.064 | 1 | 411.064 | 291.904 | 0.000 |
| Model | 183.929 | 2 | 91.964 | 65.306 | 0.000 |
| Error | 136.597 | 97 | 1.408 | | |
| Total | 705973.000 | 101 | | | |
| Corrected total | 1191.129 | 100 | | | |

Note: [a]. R Squared=.885 (adjusted R squared=.882)

Based on the output, the Sig. (2-tailed) of 0.000 <0.05, it can be concluded that there is a difference in the average learning outcomes of students who use the PjBL model, the PjBL-FT model, andthe conventional learning model. By looking at the difference in the average value of the post-test for the PjBL group of 84.97, the PjBL-FT group of 85.53, and conventional as much as 79.84. It can be said that the results of the cultural literacy ability test for classes using the PjBL model based on FT provide better learning outcomes than classes using PjBL without FT and classes using conventional models.

The application of the PjBL-FT learning model to students' cultural literacy skills in this study has provided important findings regarding the impact of the learning model compared to other different learning models on students' cultural literacy skills. This study used the ANACOVA test which gave statistically significant results. The ANACOVA test results show a significance value (Sig) of 0.000 (2-tailed) which is far below the generally accepted alpha level ($\alpha$=0.05). These results indicate that there is a statistically significant difference in the average cultural literacy skills between students using the PjBL model, the PBL-FT model, and the conventional learning model. These statistical results provide strong evidence that there are significant differences in students' cultural literacy skills when faced with different learning models, namely the PjBL model, PjBL-FT, and conventional learning models.

Further examination of the mean post-test scores for each group showed different results. These results indicate that the class that applied the PjBL model based on FT showed superior learning outcomes in terms of cultural literacy skills compared to the class that used PjBL without the field trip component and the class that followed the conventional learning model. The three observed learning models, namely PjBL with a field trip basis, PjBL without a field trip, and the conventional learning model, exhibited relatively similar post-test scores concerning the improvement of cultural literacy skills. Despite numerical differences in the average scores among these groups, the variations were not statistically significant. Factors that may have contributed to the consistency in outcomes among these learning models include the possibility of similarity in the learning context, the alignment of the models with the emphasized learning objectives, and variations in the measurement and assessment tools used. It should be noted that other factors, such as student motivation and the quality of implementing the learning models, could also influence the overall outcomes. Therefore, although there are differences in the learning approaches, it is important to acknowledge that the closely matched scores may indicate that all three models have comparable potential in enhancing students' cultural literacy skills, and further research may be necessary to explore deeper distinctions among them [62], [63].

To enhance creative thinking skills and cultural literacy through project-based learning supported by field trips, it is crucial to focus on the most influential indicators. In this context, the indicators with significant impact are students' ability to formulate new ideas and think divergently, as well as their understanding of culture and cultural diversity. This study highlights the added value of integrating field trips into PjBL to improve students' cultural literacy. The PjBL-FT model provides a framework that involves direct student experiences through both field trips and PjBL. The increase in average post-test scores among classes using the PjBL-FT model demonstrates its positive effect on students' cultural literacy. One of the most influential aspects is their understanding of cultural nuances. By integrating these aspects into the learning design, students can develop both creative thinking skills and a deep understanding of culture through hands-on experiences

and project-based tasks. Thus, the PjBL-FT model not only provides knowledge about culture but also develops students' abilities to engage with culture more deeply, strengthening their cultural literacy skills [64]–[66].

Field trip offers students the opportunity to engage in real-world culturalexperiences, interact with diverse communities, and immerse themselves in a rich tapestry of cultures, customs, and traditions [67]–[69]. These experiences provide students with direct encounters that transcend the boundaries of the classroom, allowing them to witness and participate in cultural practices and traditions [67]. Lyons *et al.* [69] highlights the value of critical geographic walking tours as a form of urban praxis, allowing students to explore and understand the complexity of urban spaces and their cultural significance. In addition, field trips can contribute to the reconciliation of cultural heritage conservation with rural development [68]. These experiences foster cultural literacy by exposing students to diverse perspectives, encouraging empathy, and expanding their understanding of different cultures [67], [68]. By engaging in real-world cultural experiences, students develop a deeper appreciation of cultural diversity and gain insight into the complexities of cultural identity [68], [70]. Overall, field trips serve as transformative educational experiences that enhance students' cultural literacy by providing them with immersive and interactive encounters with diverse cultures and communities.

The higher mean post-test score for the PjBL-field trip class reinforces the idea that project-based learning and field trips provide students with a deeper understanding of cultural nuances, which fosters their cultural literacy skills. These skills are crucial in promoting tolerance, empathy, and cross-cultural understanding, which are indispensable in today's globalized society. Field trips and project-based learning have been shown to provide students with a deeper understanding of cultural nuances, thus fostering their cultural literacy skills [71]–[73]. This educational approach offers students the opportunity to engage in real-world experiences and apply their learning in a practical context. The study by Kokotsaki *et al.* [71] emphasized that project-based learning should culminate in a final product, encouraging active engagement and critical thinking. In addition, Farcis *et al.* [72] explored the effect of project-based learning on critical thinking skills and highlighted its positive impact. In addition, a study by Apriyani *et al.* [73] showed that project-based learning, particularly STEM project-based learning, improved students' science literacy and problem-solving skills. These findings collectively support the idea that field trips and project-based learning can effectively contribute to the development of students' cultural literacy skills by providing them with immersive experiences and opportunities for creative thinking and problem-solving [74], [75].

In conclusion, the results unequivocally show that the field trip-based PjBL model is a highly effective pedagogical approach to improving students' cultural literacy skills when compared to the traditional PjBL model and the conventional model. Educators and institutions should consider integrating field trips into the project-based learning curriculum to provide students with a deeper cultural understanding and improve cultural literacy skills. In addition, further research could explore the specific components and mechanisms in the PjBL-Ft model that contribute to these superior learning outcomes, offering valuable insights for educators and researchers. Although this research demonstrates the effectiveness of the PjBL model based on field trips in enhancing students' cultural literacy, there are several limitations to consider for future researchers wishing to replicate this study. These include limited generalization due to specific contextual factors, methodological constraints, sample size limitations, potentially narrow measurement approaches, short study durations, and the possibility of researcher bias. Future studies should address these shortcomings to provide a more comprehensive understanding of the effectiveness of the PjBL model in enhancing cultural literacy.

## 4. CONCLUSION

The application of the PjBL-FT learning model to students' creative thinking ability and cultural literacy in this study has provided important findings regarding the impact of the learning model compared to other different learning models on students' creative thinking ability in cultural geography courses. The results of statistical analysis showed a significant difference in the average post-test between students who used the PjBL model, the PjBL-FT model, and the conventional learning model. This considerable difference in the mean post-test score underscores the effectiveness of PjBL-FT in improving students' creative thinking skills and cultural literacy when compared to traditional PjBL or without field trip and conventional models. The students taught using the PjBL-FT model outperformed their peers taught with other methods. This study found the added value of integrating FT into PjBL in improving students' creative thinking skills and cultural literacy, especially in the cultural geography course. For further research, it is recommended to investigate the long-term effects of implementing the PjBL-FT model on students' creative thinking abilities and cultural literacy. This study should consider the interaction among factors such as project task types and duration of field trips. A broader comparative study with other learning models, as well as an analysis of the influence of cultural contexts on student learning, is also needed. Research on the development of customized PjBL-FT models tailored to specific educational contexts and evaluating the role of instructors in its implementation is also necessary. The findings could provide valuable insights for the future development of project-based education.

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