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Differences in Understanding Basic Social Studies Concepts among Students Reviewed from Learning Motivation and Learning Style Perspectives

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ABSTRACT

This study examines differences in students' understanding of basic social studies concepts in the Islamic Elementary Teacher Education Program (PGMI) according to learning motivation and learning styles. A 2×3 factorial quantitative design was employed, and data were analyzed using the Kruskal–Wallis nonparametric test followed by post hoc analysis. The results show that learning motivation does not significantly affect students' understanding of social studies concepts ($p = 0.921 > 0.05$). In contrast, learning style has a significant effect ($p = 0.037 < 0.05$). Further post hoc analysis with a Bonferroni correction reveals a significant difference between the auditory (A2) and kinesthetic (A3) learning styles ($p = 0.039 < 0.05$). Descriptive findings indicate that students with a kinesthetic learning style achieved higher average scores (95.86) compared to those with an auditory style (89.92). This suggests that kinesthetic learners demonstrate better conceptual understanding. Overall, the findings confirm that motivation level does not differentiate students' conceptual understanding, while learning styles—particularly kinesthetic—play a significant role. The study highlights the importance of considering diverse learning styles in instructional design to improve students' conceptual mastery in social studies.

Keywords
Basic Concept
Elementary Education
Learning Motivation
Learning Style
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Introduction

The Islamic Elementary Teacher Education Program, hereinafter abbreviated as PGMI, plays a crucial role in preparing qualified teachers for Islamic primary schools (Madrasah Ibtidaiyah) in Indonesia. In addition to practical skills, PGMI students are also required to master a variety of subjects as the main foundation for delivering lessons optimally. One of the subjects that must be mastered is Social Studies. Social Studies is often referred to as a complex subject because it is a combination of many branches of social sciences. Social Studies is defined as the integration of social science branches, such as geography, history, economics, politics, sociology, culture, and law [1]. The objectives of Social Studies are not limited to developing students' knowledge and skills, but also shaping their social attitudes. Social Studies is intended to provide opportunities for students to develop skills and knowledge that will equip them to become citizens who are critical of social and democratic issues [2]. Thus, it can be seen that IPS plays an important role in producing citizens with good social attitudes.

The strategic role of social studies in elementary schools requires teachers to be able to deliver social studies lessons effectively. Teachers and elementary school teacher education students are required to have a strong understanding of basic social studies concepts to teach social studies effectively and efficiently [3]. With a good understanding of basic social studies concepts, teachers can help shape students' social attitudes. Strengthening PGMI students' understanding of basic social studies concepts is done through a compulsory course, namely the elementary school social studies basic concepts course. This course is designed to equip PGMI students with a basic understanding of various branches of social sciences, which are then linked to real life. Benyamin Bloom revealed that the indicators of conceptual understanding are translation, interpretation, and extrapolation [4]. For PGMI students, understanding basic social studies concepts is not a simple matter. This is because students are faced with translating and processing abstract social studies ideas into concrete ones [5]. The difficulty of understanding basic social studies concepts has an impact on the low level of understanding of basic social studies concepts among PGMI students.

Reality shows that the level of understanding of basic social studies concepts among PGMI students is not as expected. The level of understanding of basic social studies concepts among PGMI students still shows a low tendency [6]–[8]. In addition, findings in the field, specifically in the PGMI study program at Sunan Kalijaga State Islamic University, found that the average score in basic social studies courses has not reached the expected level. After conducting observations during lectures, it was found that some students were passive. This was because the learning process was monotonous, focusing on slide presentations and lectures. As a result, students felt unmotivated to pay attention. Conversely, the design and

implementation of interactive and non-monotonous learning can increase learning motivation [9]. Based on the findings regarding the low level of understanding of basic social studies concepts among PGMI students, it is necessary to explore the factors that contribute to this condition.

Previous research conducted by Novitasari et al. [3] using qualitative methods found that two of the factors causing low understanding of basic social studies concepts among PGMI students were the lack of variety in teaching methods and low student motivation. Many previous studies have examined the application of learning models and methods to improve PGSD students' understanding of basic social studies concepts. One such study was conducted by Anggraini et al. [6] which found that there was an increase in PGSD students' understanding of basic social studies concepts through the application of the Cooperative Type Gi. This supports previous research, which states that less varied models and methods are factors causing low understanding of basic social studies concepts. Meanwhile, other factors, such as learning motivation, are relatively rarely studied quantitatively in relation to PGSD/PGMI students' understanding of basic social studies concepts.

Learning motivation is an individual's inner drive to make greater efforts. Learning motivation can be understood as the drive to exert greater mental effort in the learning process [10]. Learning motivation can trigger individuals to achieve certain goals that are reflected in various activities that support the learning process, such as paying attention and actively participating in the learning process, evaluating the extent of understanding that has been achieved, and the ability to regulate emotions. There are three components of learning motivation, namely the expectancy component, the value component, and the affective or emotional reaction component [10]. First, the expectancy component can be understood as an individual's beliefs and decisions regarding their ability to complete various tasks that they expect to do. This component includes control of learning, self-efficacy, and performance. Second, the value component can be understood as the reasons that motivate individuals to persevere and work on the tasks at hand. This component includes intrinsic and extrinsic goal orientation. Third, the affective component can be understood as an individual's emotions that reflect their feelings towards the task at hand and can be measured with an anxiety test. These components show that students are considered to have learning motivation if they fulfill all three components.

In addition to learning motivation, students' understanding of basic social studies concepts is also influenced by each individual's learning style. Learning style can be understood as an individual's consistent pattern of receiving and processing information and solving problems [11]. Learning style reflects an individual's tendency to choose certain strategies to solve the problems they face [12]. DePorter divides learning styles into three

groups, namely visual, auditory, and kinesthetic [13]. Visual learning styles focus on the sense of sight, while auditory learning styles rely more on the sense of hearing [14], and kinesthetic learning styles focus on the individual's body movements [15]. Each individual has a different learning style, and even when dealing with different materials, their learning style can change. In the context of this study, attention is focused on the learning styles of PGMI students in studying the subject of Basic Concepts of Elementary Social Studies.

Previous research findings indicate that there is a relationship and influence between learning styles and concept understanding. First, research conducted by Mulyarosa & Rahmawati in 2019 found that learning styles influence the understanding of chemistry concepts [16]. Second, research conducted by Restianim et al. in 2020 found that learning styles influence with a calculated F of 16.987 > F table 3.96 [17]. Third, research conducted by Rismayasa et al. [18] found that there was a positive and significant relationship between learning styles and social studies learning outcomes of students, with a correlation coefficient of Rx1y = 4.514 > F table = 3.06. From these findings, it was indicated that learning styles have an influence on the understanding of elementary school social studies concepts among PGMI students.

However, the majority of previous studies on learning styles still focus on elementary school students or fields other than social studies. Meanwhile, previous studies on the influence of learning motivation have focused on qualitative analysis and the application of learning models or experimental research. Thus, there is a gap in research that has not been widely studied, namely, testing specifically and quantitatively the differences in understanding basic social studies concepts among students based on their level of learning motivation and learning style. In this quantitative study, it will be formulated in a 2x3 factorial design. Thus, the objectives of this study are (1) to determine the differences in PGMI students' understanding of basic social studies concepts based on their level of learning motivation, (2) to determine the differences in PGMI students' understanding of basic social studies concepts based on their learning styles, and (3) to determine the differences in PGMI students' understanding of basic social studies concepts based on visual, auditory, and kinesthetic learning styles.

Material and Methods

The approach used in this study is quantitative, with a census survey design [19]. The population consists of 83 PGMI students of the Faculty of Tarbiyah and Teacher Training, Sunan Kalijaga State Islamic University, Yogyakarta. All students in the population had the opportunity to become respondents without the need for sampling techniques, given that the population was relatively small and homogeneous [20]. Therefore, this design was chosen to

obtain representative and accurate data from the entire population involved [21]. Through this approach, it was possible to conduct a comprehensive analysis of the relationship between learning motivation, learning styles, and understanding of basic social studies concepts among PGMI students.

Data were collected using structured questionnaires to measure learning motivation and learning style variables, and tests to measure students' understanding of basic elementary school social studies concepts. The components of learning motivation observed were the expectancy component (control of learning, self-efficacy for learning, and performance), value component (intrinsic goal orientation, extrinsic goal orientation, task value), and affective/emotional reaction component (test anxiety) using an instrument adapted from the MSLQ (Motivated Strategies for Learning Questionnaire) by Pintrich & Groot. There were 31 items in this instrument, consisting of 16 favorable items and 5 unfavorable items. Each item provided four alternative answers using a Likert scale.

Meanwhile, the learning styles focused on in this study are the three learning styles according to DePorter, namely visual, auditory, and kinesthetic (VAK). The questionnaire instrument used was an adaptation of the VAK questionnaire developed by Chislett & Chapman [22]. The instrument contained 30 questions with alternative answers a, b, and c. If students predominantly chose a, it could be interpreted that they had a visual learning style; if they predominantly chose b, they had an auditory learning style; and if they predominantly chose c, they had a kinesthetic learning style. In addition to determining the influence of learning styles on the understanding of basic social studies concepts, this study also analyzed dominant learning styles and which learning styles had a greater influence on students' understanding of basic social studies concepts in elementary school.

The test instruments used to measure understanding of social studies concepts were developed by researchers based on Bloom's theory of concept understanding, with indicators of translation, interpretation, and extrapolation detailed in Table 1.

Table 1. Bloom's concept comprehension indicators

Indicators	Sub-Indicatos	Item Number
Translation	Translate text/descriptions into other forms	1, 2
	Converting data into other forms (tables, graphs, diagrams)	3, 4
	Illustrating social phenomena through concrete examples	5, 6
	Providing definitions of basic social studies concepts	7, 8
	Explaining concepts in your own words	9, 10
Interpretation	Interpreting data in the form of graphs/tables/diagrams	11, 12
	Distinguishing concepts, systems, or social phenomena	13, 14
	Explaining the roles/functions of social institutions	15, 16
	Describing social conditions through visual data	17, 18
Extrapolation	Concluding the consequences or implications of social phenomena	19, 20
	Item total	20

The test instruments that had been developed were then tested for content validity and construct validity. Content validity was assessed by two lecturers who were experts in the field of social studies. After receiving the validators' assessments, validity was calculated using the V-Aiken formula. This test was conducted to assess the suitability of the items in the developed instrument [23]. Based on the V-Aiken calculation, the expert validation results obtained a validity coefficient of 1.0 with high validity criteria. After obtaining the final validity results from the experts, the validity test was continued with item validity. The results of the correlation calculation will produce a correlation coefficient, which is then used to measure the validity level of an item and determine whether the item is suitable for use or not. The item validity results showed that 2 items were invalid and unreliable and therefore had to be removed. The remaining 18 items are valid and reliable for measuring understanding of basic social studies concepts.

The data will be analyzed using two-way ANOVA, and prerequisite tests will be performed on the data, in the form of normality and homogeneity tests. ANOVA was chosen because this method is appropriate for comparing the means of more than two groups based on categorical independent variables. In this study, if the normality prerequisite test is not met, data analysis will be performed using the Kruskal-Wallis non-parametric test, followed by a Post Hoc Dunn test with Bonferroni correction. In this study, there were two independent variables, namely learning motivation with high and low categories, and learning styles with visual, auditory, and kinesthetic categories, which were then arranged into a 2x3 factorial design.

Table 2. 2x3 Factorial Design

Learning Motivation and Learning Style	Visual (A_1)	Auditory (A_2)	Kinesthetic (A_3)	Total
High (B_1)	B_1A_1	B_2A_1	B_3A_1	B_1
Low (B_2)	B_1A_2	B_2A_2	B_3A_2	B_2
Total	A_1	A_2	A_3	A x B

The learning motivation variable was initially a continuous score, then converted into two discrete categories using the median split method, namely High Motivation (B_1) and Low Motivation (B_2). The division is based on median scores and is commonly used in factorial designs [24]. Meanwhile, learning styles are categorized into three types, namely visual (A1), auditory (A2), and kinesthetic (A3). The combination of the two independent variables forms six factorial cells, namely B_1A_1, B_1A_2, B_2A_1, B_2A_2, B_3A_1, B_3A_2.

Results and Discussions

Ttable 3 presents descriptive statistics across groups, showing consistently high modes and medians (mostly 100). Mean scores vary slightly, with A3 highest. Variability differs

notably, as indicated by standard deviations and variances, with some groups (e.g., A2, B3A1) showing greater dispersion.

Table 3. Statistical Data Distribution

Statistical Distribution	B_1	B_2	A_1	A_2	A_3	B_1A_1	B_1A_2	B_2A_1	B_2A_2	B_3A_1	B_3A_2
Modus	100	100	100	94	100	100	94	100	100	94	100
Median	100	100	100	94	100	100	94	100	100	94	100
Mean	94.60	94.21	94.92	89.92	95.86	95.09	91.50	95.05	94.71	88.75	96.92
Std.	7.284	9.062	7.271	11.146	6.942	6.339	7.477	8.459	8.528	13.677	4.349
Varians	53.06	82.12	52.86	124.23	48.19	40.18	55.90	71.56	72.72	187.07	18.91

The results of the normality test using Shapiro-Wilk showed that all data groups had a p-value < 0.05, indicating that they were not normally distributed. Because the data did not meet the assumption of normality, the nonparametric Kruskal-Wallis test was used as an alternative to ANOVA to test the differences in conceptual understanding based on learning styles, consisting of four groups, in accordance with the characteristics of data that are not normally distributed [25].

Table 4. Kruskal-Wallis Test Analysis Results

Factor	Statistic	df	p
X_1 (Learning Motivation)	0.010	1	0.921
X_2 (Learning Style)	6.572	2	0.037

The Kruskal-Wallis test results for the learning motivation variable showed a p-value of 0.921, which is much greater than the significance threshold (0.05). This means that in this study, there was no significant difference in the understanding of basic social studies concepts between students with high learning motivation and students with low learning motivation. Descriptively, the difference in the average understanding of basic social studies concepts between students with high and low motivation is also very small, only about 0.39 points (94.60 compared to 94.21). This minimal difference shows that, practically speaking, the conceptual understanding abilities of the two groups are almost the same, so it is reasonable that no significant difference was found statistically. According to Piaget, conceptual understanding is determined not only by learning motivation but also by cognitive readiness [26].

Meanwhile, the significance value for learning styles was 0.037 ($p < 0.05$), which means that there was a significant difference in concept understanding between participants with different learning styles. These results align with the statement that learning styles influence how a person receives, processes, and understands information, so that differences in learning styles can result in variations in students' levels of conceptual understanding [27]. To find out more about which groups had significant differences in conceptual understanding based on learning styles, a post hoc test was conducted.

Table 5. Post Hoc Comparisons Analyze

Comparison	p	p_{bonf}	p_{holm}
A1 - A2	0.027	0.082	0.055
A1 - A3	0.629	1.000	0.629
A2 - A3	0.013	0.039	0.039

Based on the results of Dunn's post hoc test with Bonferroni correction, it was found that there was only a significant difference between groups A2 and A3 (Pbonf = 0.039; $p < 0.05$). Based on the descriptive results, the kinesthetic group (A3) had a higher average concept comprehension score of 95.86, compared to the auditory group (A2), which only obtained an average score of 89.92. These findings indicate a difference in conceptual understanding between students with kinesthetic and auditory learning styles in the context of this study's sample. The higher mean score in the kinesthetic group may indicate that active involvement and direct experience in the learning process have the potential to support conceptual understanding. Similarly, research conducted by Yildis et al. [28] revealed that movement-based learning resulted in a significant increase in the post-test. This shows that the application of kinesthetic learning styles in higher education has a positive impact on student understanding [29]. In the context of social studies learning that emphasizes the ability to understand concepts related to social phenomena, active involvement has the potential to support the process of conceptual understanding. Thus, the findings of this study indicate that differences in learning style characteristics are related to the achievement of basic social studies conceptual understanding.

Conclusion

The findings of this study show that there is no difference in conceptual understanding between students with high motivation and those with low motivation. Meanwhile, this study shows that there are differences in the understanding of basic social studies concepts based on learning styles. Specifically, these differences occur between the auditory and kinesthetic groups. These findings indicate that learning style characteristics may be related to the achievement of basic social studies concept understanding in this study. Therefore, the variation in students' learning style characteristics can be taken into consideration in designing learning activities.

Further research is expected to explore other factors that influence elementary school teacher education students' understanding of basic social studies concepts, including learning motivation, interactions between learning styles, and teaching strategies that emphasize learning styles. In addition, future research can use analytical methods that allow testing the interaction effects between motivation and learning style on concept understanding, thereby providing a more comprehensive understanding of student learning dynamics.

Limitation and Suggestions

This study has limitations because it cannot test the interaction effect between learning motivation and learning style inferentially. Interaction testing cannot be performed due to unmet normality assumptions, so the non-parametric Kruskal–Wallis analysis was used, which only allows for testing differences between groups separately. Therefore, the interpretation of group combinations such as B_1A_1, B_2A_2, and B_3A_2 is only based on descriptive trends. This condition opens up opportunities for further research to use designs and analyses that allow interaction testing, such as Two-Way ANOVA with larger sample sizes and data distributions that meet the assumptions.

Conflict of Interest

The authors declare no conflict of interest.

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