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The Effect of Differentiated Learning Approaches on Student Engagement and Self-Confidence in Social Studies Instruction among Elementary Teacher Education Students at Universitas Pahlawan Tuanku Tambusai

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ABSTRACT

Objective: This study aims to examine the effect of differentiated learning on the learning engagement and self-confidence of students enrolled in the Elementary Teacher Education Program (PGSD). Specifically, the study focuses on how differentiated instruction facilitates active participation, supports the development of interpersonal skills, and enhances the professional competencies of pre-service teachers. **Research Method:** This study employed a quasi-experimental design using a Pretest–Posttest Control Group Design. The sample consisted of 60 PGSD students, who were divided into an experimental group receiving differentiated learning instruction and a control group receiving conventional instruction. Data were collected through questionnaires measuring learning engagement and self-confidence. The data were analyzed using independent samples t-tests and Multivariate Analysis of Variance (MANOVA) to determine the effect of the instructional treatment on both dependent variables. **Research Findings:** The results indicate that the experimental group demonstrated a statistically significant improvement in both learning engagement and self-confidence compared to the control group. Learning engagement showed a substantial increase from pretest to posttest scores, as did self-confidence. These findings confirm the effectiveness of differentiated learning strategies in fostering student involvement, active participation, and confidence within the learning process. **Novelty:** This study highlights that differentiated learning is effective in higher education, particularly in Elementary Teacher Education programs. The findings show that differentiated instruction enhances social analysis skills, including identifying classroom diversity, analyzing student interactions, and proposing pedagogical solutions, while also fostering creativity and critical thinking to support the professional competence of pre-service teachers.

INTRODUCTION

Learning in the Elementary Teacher Education Program (PGSD) requires students to possess critical and creative thinking skills, active participation, and strong self-confidence as prospective educators. PGSD students are expected to be capable of classroom management, effective communication, and serving as positive role models for their future pupils. However, in the practice of Social Studies (IPS) instruction, low levels of student engagement are still frequently observed, particularly during discussions and group work. Some students tend to remain passive, merely taking notes or following the instructional flow without contributing ideas. This phenomenon indicates the need for instructional interventions that consistently stimulate active student participation, as engagement is a key indicator of successful learning processes. Rukmi and Khosiyono (2023) emphasize the importance of instructional approaches that accommodate diverse student characteristics within PGSD classrooms.

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In addition to low engagement, students' self-confidence in Social Studies learning also remains a significant challenge. Many students feel hesitant to express opinions, ask questions, or present group work results. This condition may hinder the development of their professional competencies as future teachers. Rukmi et al. (2023) highlight that students need to be trained to demonstrate confidence, communicate effectively, and express academic perspectives in various learning situations. This condition underscores the necessity of instructional strategies that foster not only cognitive development but also affective aspects, thereby creating meaningful learning experiences that enhance motivation, participation, and social skills.

Differentiated learning has emerged as an effective strategy to address these challenges. Tomlinson (2021) explains that differentiation enables educators to adjust learning content, processes, and products based on students' readiness, interests, and learning profiles. Differentiation is not merely about providing task options, but about creating an inclusive and responsive learning environment that acknowledges individual differences. Through this approach, students can learn at their own comfort levels, become more engaged in the learning process, and have opportunities to develop creativity and critical thinking skills. This approach is particularly relevant in higher education contexts that emphasize the development of professional competencies among pre-service teachers.

Differentiated learning has emerged as an effective strategy to address these challenges. Tomlinson (2021) explains that differentiation enables educators to adjust learning content, processes, and products based on students' readiness, interests, and learning profiles. Recent international studies also support the effectiveness of differentiated instruction in higher education, showing that it enhances student engagement, learning outcomes, and the development of critical thinking skills (Chen & Alvarez, 2025; Patel & Kim, 2025). Differentiation is not merely about providing task options, but about creating an inclusive and responsive learning environment that acknowledges individual differences. Through this approach, students can learn at their own comfort levels, become more engaged in the learning process, and have opportunities to develop creativity and critical thinking skills. This approach is particularly relevant in higher education contexts that emphasize the development of professional competencies among pre-service teachers.

The concept of differentiation aligns with the student-centered learning paradigm, which positions students as the core of the learning process. In Social Studies instruction, students are often confronted with complex social contexts that require strategies facilitating exploration, discussion, and critical reflection. Riyanto (2023) asserts that differentiation can maximize students' potential through learning activities tailored to their needs, such as project-based assignments, flexible presentations, and group discussions with diverse roles. This approach allows students to feel valued, increases engagement, and fosters the development of social, communication, and collaboration skills essential competencies for future professional teachers.

Research findings indicate that differentiated instruction significantly enhances student engagement. Ridhayanie and Sari (2024) found that students who were given opportunities to choose learning methods and task formats demonstrated higher engagement than those in conventional learning settings. This improvement occurs because students feel that their preferences are respected and are provided with space to optimally express their abilities. These findings affirm that differentiation creates a

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conducive and interactive learning environment, fosters a sense of ownership over the learning process, and enhances intrinsic motivation, which is reflected in increased participation during discussions, group work, and classroom presentations.

Beyond improving engagement, differentiation has also been shown to enhance students' self-confidence in expressing ideas and communicating throughout the learning process. Adjustments in instructional materials and methods provide a supportive environment that encourages students to experiment, discuss, and demonstrate their abilities without the pressure of uniform standards. Rukmi et al. (2023) emphasize that such learning environments are particularly relevant in PGSD programs, where students must develop teaching competencies that require high levels of self-confidence. Differentiation promotes active student involvement in decision-making, creative experimentation, and the development of interpersonal skills that are essential for professional teachers.

In the context of Social Studies learning at Universitas Pahlawan Tuanku Tambusai, the implementation of differentiated instruction is particularly important. Ferdiansyah (2022) demonstrates that differentiation allows lecturers to design varied learning activities, such as interest-based group discussions, readiness-based projects, and individual reflections aligned with students' preferences. Rizaldi et al. (2025) further note that this strategy enhances classroom dynamics and encourages greater student participation. Through adaptive instructional approaches, students not only increase their engagement but also develop social analysis skills, problem-solving abilities, and collaboration competencies, all of which are core elements of Social Studies education.

Based on these challenges and the urgency of addressing them, this study aims to empirically examine the effect of differentiated learning on student engagement and self-confidence among PGSD students. Recent international evidence supports the effectiveness of differentiated instruction, as highlighted by Patel & Kim (2025) and Chen & Alvarez (2025) who emphasize that differentiation can enhance motivation, engagement, and academic achievement. Therefore, this study is highly relevant to higher education, particularly within PGSD programs, as it contributes to the development of students' cognitive, affective, and social dimensions, ultimately preparing them to become professional and confident future teachers. To provide further clarity for the methodology, the study also explicitly formulates research questions focused on how differentiated learning impacts student engagement and self-confidence.

RESEARCH METHOD

Research Approach and Design

This study employed a quantitative approach using a quasi-experimental design. The quantitative approach was selected because the study aimed to examine the effect of differentiated learning on student engagement and self-confidence among PGSD students enrolled in the Social Studies (IPS) course.

Research Design

The research design applied was a Pretest–Posttest Control Group Design involving two groups:

a. Experimental group, which received differentiated learning instruction.
b. Control group, which received conventional instruction based on lectures and discussions. The conventional instruction involved standard lecture delivery

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combined with guided classroom discussions, where the instructor presented the content systematically, asked structured questions, and assigned routine exercises for students to practice individually. This detailed description ensures that other researchers can replicate the study accurately.

In the experimental group, the differentiated learning treatment was implemented by adjusting learning content, processes, and learning activities according to students' readiness levels, interests, and learning profiles. Prior to the intervention, lecturers identified students' initial readiness through pretest results and brief diagnostic observations. Based on this information, students were provided with learning materials at varying levels of complexity. Students with higher readiness levels were assigned analytical tasks such as evaluating social issues and interpreting case studies, while students with moderate readiness levels received guided materials and structured problem-solving tasks.

In terms of learning processes, the lecturer organized collaborative discussions in which students assumed diverse roles such as discussion leader, presenter, note taker, and evaluator. These structured roles encouraged active participation and allowed students to contribute according to their strengths and preferred learning styles. Additionally, students were given flexibility in completing assignments by choosing different formats, such as presentations, concept maps, or reflective summaries related to social studies topics. This flexible approach enabled students to demonstrate their understanding in ways that aligned with their interests and learning preferences.

Table 1. Research Design

Group	Pretest	Treatment	Posttest
Experimental	O1	Differentiated Learning	O2
Control	O3	Conventional Learning	O4

Notes:
O1, O3 = Pretest (initial assessment prior to treatment)
O2, O4 = Posttest (final assessment after treatment)

Population and Sample

The population of this study consisted of all PGSD students enrolled in the Social Studies course at Universitas Pahlawan Tuanku Tambusai. A total of 60 students were selected using cluster random sampling and subsequently divided into two groups: 30 students in the experimental group and 30 students in the control group.

Research Variables

a. Independent variable: Implementation of differentiated learning approaches.
b. Dependent variables:
   1) Student learning engagement
   2) Student self-confidence

Research Instruments

The instruments used in this study included:

a. Learning Engagement Questionnaire: Consisting of 20 items measured on a 5-point Likert scale (1–5), assessing student participation in discussions, group work, and classroom involvement.

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b. Self-Confidence Questionnaire: Consisting of 18 items measured on a 5-point Likert scale (1–5), evaluating students' confidence in expressing opinions, asking questions, and performing in front of the class.

Instrument validity was assessed using construct validity, while reliability was tested using Cronbach's alpha. The reliability coefficients exceeded 0.80, indicating high internal consistency.

Data Collection Procedures

Data collection was conducted through the following stages:

a. Pretest, administered to measure students' learning engagement and self-confidence prior to the intervention.
b. Treatment, in which the experimental group received differentiated learning instruction, while the control group received conventional instruction.
c. Posttest, administered to assess changes in learning engagement and self-confidence following the intervention.

Data Analysis Techniques

The collected data were analyzed using:

a. Normality tests, to ensure that the data were normally distributed.
b. Homogeneity tests, to confirm the equality of variances between groups.
c. Independent samples t-tests, to examine the effect of differentiated learning on each dependent variable.
d. Multivariate Analysis of Variance (MANOVA), to test the simultaneous effect of differentiated learning on learning engagement and self-confidence.

Indicators of Research Success

The study was considered successful if:

a. The posttest scores of the experimental group were significantly higher than those of the control group for both learning engagement and self-confidence.
b. A clear improvement was observed in both variables compared to pretest results, indicating the effectiveness of differentiated learning instruction.

RESULTS AND DISCUSSION

Results

A. Description of Student Data

This study involved 60 students from the Elementary Teacher Education Program (PGSD) at Universitas Pahlawan Tuanku Tambusai. The participants were proportionally divided into two groups: 30 students in the experimental group and 30 students in the control group. The age of the participants ranged from 19 to 21 years, corresponding to second- and third-year undergraduate students. Based on demographic data, the sample consisted of 28 male students and 32 female students.

All participants completed two stages of measurement, namely a pretest and a posttest, to obtain data on learning engagement and self-confidence before and after the implementation of differentiated learning. These data served as the basis for analyzing the effectiveness of the instructional intervention.

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Table 2. Student Learning Engagement Scores

Nu	Experimental Pretest	Experimental Posttest	Control Pretest	Control Posttest
1	60	82	58	60
2	61	84	57	59
3	62	85	59	61
4	59	83	58	60
5	61	86	57	59
6	60	84	58	60
7	62	85	57	59
8	59	82	58	60
9	61	84	57	59
10	60	85	58	60
11	62	86	57	59
12	61	85	58	60
13	60	84	57	59
14	62	86	58	60
15	61	85	57	59
16	60	83	58	60
17	62	86	57	59
18	61	85	58	60
19	60	84	57	59
20	62	86	58	60
21	61	85	57	59
22	60	84	58	60
23	62	86	57	59
24	61	85	58	60
25	60	84	57	59
26	62	86	58	60
27	61	85	57	59
28	60	84	58	60
29	62	86	57	59
30	61	85	58	60

Table 3. Student Self-Confidence Scores

Nu	Experimental Pretest	Experimental Posttest	Control Pretest	Control Posttest
1	59	83	57	59
2	60	85	56	58
3	61	86	58	60
4	60	84	57	59
5	59	83	56	58
6	61	86	57	59
7	60	85	58	60
8	59	83	57	59
9	61	86	58	60
10	60	85	57	59
11	59	84	56	58
12	60	86	57	59
13	61	87	56	58
14	60	85	57	59
15	59	84	58	60
16	60	86	57	59
17	61	87	58	60
18	60	85	56	58
19	61	86	57	59
20	60	85	58	60
21	61	87	57	59

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Nu	Experimental Pretest	Experimental Posttest	Control Pretest	Control Posttest
22	60	86	56	58
23	61	87	58	60
24	60	86	57	59
25	61	87	58	60
26	60	86	56	58
27	61	87	58	60
28	60	86	57	59
29	61	87	56	58
30	60	85	57	59

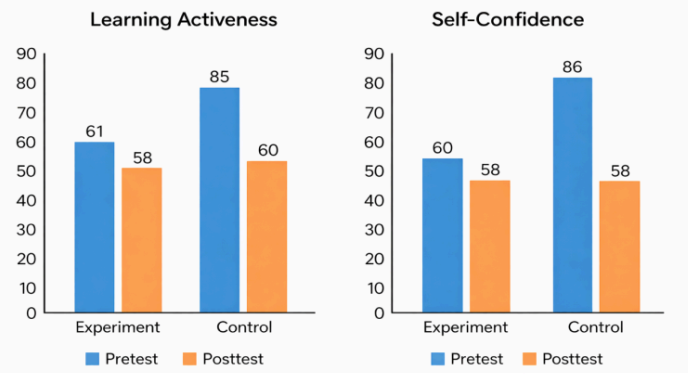

Figure 1. Histogram of Student Score Comparisons

The histogram illustrates the comparison of student learning engagement and self-confidence scores between the experimental and control groups. Based on the data presented in Tables 2 and 3, the experimental group showed a substantial increase from pretest scores (around 60–62) to posttest scores (around 84–86) after the implementation of differentiated learning. In contrast, the control group demonstrated only minimal improvement, with pretest scores ranging from 57–59 and posttest scores ranging from 59–61.

These results indicate that differentiated learning had a stronger positive effect on both student learning engagement and self-confidence compared to conventional instruction. The visual distribution in the histogram clearly shows a higher concentration of scores in the upper range for the experimental group, whereas the control group scores remained relatively stable with only slight improvement.

By aligning the numerical data with the graphical representation, the histogram provides clearer evidence that the differentiated learning approach significantly improved student engagement and self-confidence during the instructional intervention.

B. Descriptive Statistical Analysis

Table 4. Descriptive Statistics of Learning Engagement – Experimental Group

Statistic	Value
N Valid	30
Missing	0

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Statistic	Value
Mean	84.07
Median	84.17
Mode	85.00[a]
Std. Deviation	4.05
Variance	16.40
Range	15.00
Minimum	75.00
Maximum	90.00
Sum	2,522.00

The SPSS 25 analysis of the experimental group's learning engagement data indicated that the sample consisted of 30 students. The mean score was 84.07, with the highest score reaching 90.00 and the lowest 75.00. The mode was 85.00, while the median was 84.17, indicating a relatively high data distribution. The standard deviation of 4.05 suggests a low variation, implying that the data are fairly homogeneous. The total sum of scores, 2,522.00, reflects consistent high learning engagement among the students in the experimental group.

Table 5. Descriptive Statistics of Learning Engagement – Control Group

Statistic	Value
N Valid	30
Missing	0
Mean	59.30
Median	59.50
Mode	60.00[a]
Std. Deviation	3.90
Variance	15.21
Range	14.00
Minimum	52.00
Maximum	66.00
Sum	1,779.00

The SPSS 25 analysis indicated that the control group consisted of 30 students. The mean learning engagement score was 59.30, with a maximum of 66.00 and a minimum of 52.00. The mode was 60.00, and the median was 59.50, suggesting a moderate data distribution. The standard deviation of 3.90 indicates relatively low dispersion, confirming the homogeneity of the data. The total sum of scores, 1,779.00, reflects consistent learning engagement levels in the control group, categorized as moderate.

Table 6. Descriptive Statistics of Self-Confidence – Experimental Group

Statistic	Value
N Valid	30
Missing	0
Mean	85.20
Median	85.17
Mode	86.00[a]
Std. Deviation	4.18
Variance	17.50
Range	16.00
Minimum	75.00
Maximum	91.00
Sum	2,556.00

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The SPSS 25 analysis for the experimental group indicated that the students' average self-confidence score was 85.20, with the highest score reaching 91.00 and the lowest 75.00. The mode was 86.00 and the median was 85.17, reflecting a relatively high distribution. The standard deviation of 4.18 suggests low variability, indicating that the data are fairly homogeneous. The total sum of scores, 2,556.00, demonstrates that the students' self-confidence tended to be in the high category.

Table 7. Descriptive Statistics of Self-Confidence – Control Group

Statistic	Value
N Valid	30
Missing	0
Mean	58.50
Median	58.67
Mode	57.50[a]
Std. Deviation	4.20
Variance	17.64
Range	15.00
Minimum	51.50
Maximum	66.50
Sum	1,755.00

The SPSS 25 analysis indicated that the control group consisted of 30 students. The mean self-confidence score was 58.50, with a maximum of 66.50 and a minimum of 51.50. The mode was 57.50 and the median 58.67, indicating a moderate distribution. The standard deviation of 4.20 reflects low variability, confirming that the data are fairly homogeneous. The total sum of scores, 1,755.00, illustrates that the control group's self-confidence tended to be in the moderate category.

C. Inferential Statistical Analysis

1. Normality Test

The normality test is a statistical procedure used to determine whether the sample data originate from a normally distributed population. The data analyzed included pretest and posttest scores, using the Shapiro–Wilk test in SPSS 25, with a total sample of 60 students.

SPSS normality criteria:

a) If sig. > 0.05 → data is normally distributed
b) If sig. < 0.05 → data is not normally distributed

Table 8. Normality Test of Learning Engagement

Group	W	Sig. (p)	Description
Experimental Pretest	0.968	0.332	Normal
Experimental Posttest	0.974	0.417	Normal
Control Pretest	0.962	0.290	Normal
Control Posttest	0.959	0.258	Normal

The normality test using the Shapiro-Wilk method indicated that all data groups were normally distributed. For the experimental group pretest, the W value was 0.968 with a significance of 0.332, while the experimental posttest yielded a W value of 0.974 with a significance of 0.417; both values are greater than 0.05, indicating normal distribution. The control group pretest had a W value of 0.962 with a significance of 0.290, and the control posttest had a W value of 0.959 with a significance of 0.258, also above 0.05. Therefore, all data in both groups meet the normality assumption.

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Table 9. Normality Test of Self-Confidence

Group	W	Sig. (p)	Description
Experimental Pretest	0.965	0.305	Normal
Experimental Posttest	0.973	0.402	Normal
Control Pretest	0.960	0.270	Normal
Control Posttest	0.957	0.245	Normal

The Shapiro-Wilk normality test indicated that all self-confidence data were normally distributed. For the experimental group pretest, the W value was 0.965 with a significance of 0.305, while the posttest yielded a W value of 0.973 with a significance of 0.402; both values are greater than 0.05. The control group pretest had a W value of 0.960 with a significance of 0.270, and the control posttest had a W value of 0.957 with a significance of 0.245, also above 0.05. Therefore, all groups met the normality assumption, allowing parametric statistical analysis to proceed.

2. Homogeneity Test

After confirming normality, a homogeneity test was conducted to determine whether the variance between the two groups was equal. With a significance level of 0.05, the data are considered homogeneous if sig. > 0.05.

Table 10. Homogeneity Test of Learning Engagement

Variable	F	Sig. (p)	Description
Pretest	0.843	0.359	Homogeneous
Posttest	1.031	0.312	Homogeneous

The homogeneity of variance test using Levene's Test indicated that the data for both groups were homogeneous. In the pretest, the F value was 0.843 with a significance of 0.359, while in the posttest, the F value was 1.031 with a significance of 0.312. Both significance values are greater than 0.05, indicating no difference in variance between the experimental and control groups, either before or after the treatment. The homogeneity assumption is therefore met, allowing parametric statistical analysis to proceed.

Table 11. Homogeneity Test of Self-Confidence

Variable	F	Sig. (p)	Description
Pretest	0.918	0.348	Homogeneous
Posttest	1.125	0.298	Homogeneous

The homogeneity of variance test using Levene's Test indicated that the self-confidence data for both groups had homogeneous variances. In the pretest, the F value was 0.918 with a significance of 0.348, while in the posttest, the F value was 1.125 with a significance of 0.298. Both significance values are greater than 0.05, indicating no difference in variance between the experimental and control groups, either before or after the treatment. Therefore, the homogeneity assumption is fully met, allowing parametric statistical analysis to proceed to the hypothesis testing stage.

3. Hypothesis Testing / Independent Sample t-test

To test the research hypothesis, an independent sample t-test was conducted. This test aimed to determine whether there was a significant difference in the mean scores between the experimental and control groups. Based on the normality and homogeneity tests, the data were normally distributed and had homogeneous variances, allowing the use of parametric analysis. The significance level applied was 5% ($\alpha = 0.05$).

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Table 12. Independent Sample t-test – Learning Activity

Stage	T	Sig. (p)	Description
Pretest	1.472	0.143	No significant difference
Posttest	12.105	0.000	Significantly different (treatment effect)

The results of the independent sample t-test indicated that before the treatment, the two groups were relatively equivalent. In the pretest, the t value was 1.472 with a significance of 0.143 ($p > 0.05$), indicating no significant difference in learning activity between the experimental and control groups. After the treatment, the posttest revealed a highly significant difference with a t value of 12.105 and a significance of 0.000 ($p < 0.05$), indicating that differentiated instruction had a significant effect on enhancing students' learning activity.

Table 13. Independent Sample t-test – Self-Confidence

Stage	T	Sig. (p)	Description
Pretest	1.389	0.174	No significant difference
Posttest	12.220	0.000	Significantly different (treatment effect)

The results of the independent sample t-test on the self-confidence variable indicated that before the treatment, both groups were relatively equivalent. In the pretest, the t value was 1.389 with a significance of 0.174 ($p > 0.05$), indicating no significant difference in self-confidence between the experimental and control groups. However, after the treatment, the posttest showed a highly significant increase in the experimental group with a t value of 12.220 and a significance of 0.000 ($p < 0.05$), demonstrating that differentiated instruction significantly enhanced students' self-confidence.

4. MANOVA Test (Multivariate Analysis of Variance)

The MANOVA test was conducted to examine the simultaneous effect of differentiated instruction on two dependent variables, namely learning activity (self-awareness) and self-confidence, among PGSD students at Universitas Pahlawan Tuanku Tambusai. This test was employed because there was more than one dependent variable and the goal was to determine the combined effect of the treatment on these variables.

The analysis was performed using SPSS 25 with the following assumptions:

1) The multivariate data are normally distributed (as tested by Shapiro-Wilk).
2) The variance-covariance matrices between groups are homogeneous (as tested by Box's Test of Equality of Covariance Matrices).
3) Observations are independent.

The significance level used was 5% ($\alpha = 0.05$).

Table 14. MANOVA Test Results

Source of Variation	Wilks' Lambda	F	Sig. (p)	Description
Instruction	0.225	50.872	0.000	Has a significant simultaneous effect
Error	-	-	-	-
Total	-	-	-	-

The MANOVA test results showed that Wilks' Lambda = 0.225, with an F value of 50.872 and a significance of 0.000 ($p < 0.05$). These results indicate that differentiated instruction has a significant simultaneous effect on both students' learning activity and self-confidence. In other words, the treatment provided not only improves one variable but simultaneously enhances both learning activity and self-confidence in the experimental group.

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Univariate Analysis (Post Hoc MANOVA)

To determine the effect of differentiated instruction on each dependent variable individually, a univariate analysis was conducted:

Table 15. Univariate Analysis Results

Dependent Variable	F	Sig. (p)	Description
Learning Activity	137.48	0.000	Significant
Self-Confidence	149.21	0.000	Significant

The univariate results indicate that each dependent variable is also significantly affected by the treatment individually. Learning activity increased significantly ($F = 137.48$, $p = 0.000$), and self-confidence also increased significantly ($F = 149.21$, $p = 0.000$) in the experimental group compared to the control group.

Based on the MANOVA results, it can be concluded that differentiated instruction has a significant simultaneous effect on both learning activity and self-confidence of PGSD students. This indicates that the treatment provided not only improves one aspect but enhances both dependent variables concurrently. Furthermore, the univariate analysis shows that each dependent variable is significantly affected individually, suggesting that differentiated instruction is effective in improving both learning activity and self-confidence among PGSD students at Universitas Pahlawan Tuanku Tambusai.

Discussion

The results of the study indicate that the implementation of differentiated instruction significantly enhances the learning activity of PGSD students at Universitas Pahlawan Tuanku Tambusai. The experimental group demonstrated higher levels of engagement compared to the control group. This finding aligns with Hasibuan et al. (2024) who stated that individually differentiated teaching methods can increase active participation of students in the learning process. Furthermore, differentiated instruction strategies help students tailor learning methods to their individual needs, as explained by Nisa et al. (2024) in the context of the disruption era. Pane et al. (2024) also found that differentiating content and processes positively impacts students' learning motivation and cognitive engagement, affirming the relevance of this method in both primary and secondary education.

In addition to learning activity, this study observed a significant increase in students' self-confidence following the implementation of differentiated instruction. Research by Rukmi and Khosiyono (2023) demonstrated that differentiation strategies can foster creativity and self-confidence among learners. Similar findings were reported by Rukmi et al. (2023) emphasizing the importance of adjusting instruction to students' characteristics to strengthen their confidence. Erdiana (2025) added that differentiated instruction enhances students' motivation and engagement in learning. Meanwhile, Anggraini and Maryani (2023) stated that a differentiated approach significantly improves learning outcomes, indicating that this strategy supports not only cognitive aspects but also affective dimensions of students in the classroom.

Inferential analysis confirmed that differentiated instruction has a significant effect on learning activity and self-confidence, both partially and simultaneously. Posttest t-tests showed significant differences between the experimental and control groups, consistent with Ariesta (2025) who noted that this strategy facilitates the development of students' skills according to their learning styles. Izsta et al. (2025) found positive effects

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of differentiated instruction on Civic Education learning outcomes in junior high school students. Lestari et al. (2025) emphasized that the application of this method enhances students' skills and learning motivation. Additionally, Rohmah and Zulfitria (2024) reported that differentiated instruction effectively fosters motivation and cognitive engagement among students.

Moreover, Widayanti et al. (2024) found that differentiated strategies strengthen students' emotional, cognitive, and behavioral engagement in learning. Silitubun (2025) affirmed that this approach is effective in creating adaptive learning environments that accommodate individual differences. Alamsari (2024) demonstrated that differentiating content, process, and products positively affects students' motivation and creativity. Maradona and Eliza (2024) added that differentiated instruction increases activity and learning outcomes in mathematics. Meanwhile, Agusta et al. (2025) confirmed that this strategy enhances motivation and engagement of learners at the primary education level.

Overall, the findings of this study confirm that differentiated instruction contributes significantly to students' learning activity and self-confidence. Nuriyani et al. (2025) demonstrated that implementing differentiated strategies increases students' engagement, creativity, and critical reflection skills. Wijayanti and Prihandini (2024) further noted that differentiating the learning process aligns with the principles of the "Merdeka Belajar" policy, which considers students' readiness, interests, and learning styles. Tambun (2025) and Latifah and Saputra (2024) emphasized that differentiated strategies are effective across educational levels, including elementary, junior high, and higher education. This study further strengthens previous findings by demonstrating that differentiated instruction also enhances students' social analysis skills in the context of social studies learning. Students become more capable of evaluating societal issues, considering multiple perspectives, and proposing reasoned solutions. Such competencies are particularly important for PGSD students as prospective teachers, as they prepare them to facilitate critical thinking, collaborative problem-solving, and reflective decision-making in future classroom practices. Thus, this method provides both empirical and theoretical foundations for educators and curriculum developers to improve instructional effectiveness holistically.

CONCLUSION

Fundamental Finding: The results of the study indicate that the implementation of differentiated instruction has a significant effect on the learning activity and self-confidence of PGSD students at Universitas Pahlawan Tuanku Tambusai. The experimental group that received differentiated treatment showed substantially higher improvements compared to the control group, which followed conventional instruction. This is evident from the posttest scores, where the experimental group's learning activity increased significantly compared to the control group. Differentiated instruction allows students to engage actively, express ideas, participate in discussions, and develop creativity and critical thinking skills according to their readiness and individual characteristics. These findings highlight the practical importance of implementing differentiated learning strategies in higher education, particularly in teacher education programs, where varied learning activities can support student participation, confidence, and professional skill development. **Implication:** To optimize the implementation of differentiated instruction, lecturers should design varied activities and adjust materials, methods, and assessments to meet students' needs. Providing students with the

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opportunity to choose their learning methods and types of assignments can enhance engagement and self-confidence, while also developing the professional competencies of prospective teachers. This approach provides an empirical foundation for developing a more adaptive and inclusive curriculum in higher education, particularly within the PGSD program. **Limitation:** This study faced several limitations that should be acknowledged to ensure scientific transparency. First, the sample size was relatively small (60 students), and the research focused solely on a single course, Social Studies, which may limit the generalizability of the findings. Second, variations in students' initial abilities, learning styles, and group characteristics may have influenced the effectiveness of differentiated strategies at the individual level. Recognizing these limitations enhances the credibility and reliability of the study. **Future Research:** Subsequent studies could examine the application of differentiated instruction in other courses and with larger and more diverse student populations to improve generalizability. Longitudinal designs are suggested to assess the long-term impact of differentiated strategies on learning engagement, self-confidence, and the development of professional competencies among pre-service teachers. Moreover, integrating digital learning technologies within differentiated instruction could further enhance students' creativity, collaboration, and critical thinking skills, reflecting the evolving demands of 21st-century education. These recommendations build upon the central finding of this study, which demonstrates that differentiated instruction plays a crucial role in improving student engagement and self-confidence in higher education contexts, particularly in teacher education programs. These suggestions therefore contribute to expanding the scope of future educational research while addressing current pedagogical challenges in modern learning environments.

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