

The Effect of Implementing the Moodle-Based Ruangips.com Platform on Students' Motivation and Social Studies Learning Outcomes in Grade XI at SMK Ar-Roudhoh Beji Pasuruan

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Abstract

This study aims to analyze the effect of implementing Moodle-based ruangips.com platform on learning motivation and social studies learning outcomes of grade XI students at SMK Ar-Roudhoh Beji Pasuruan. This study employed a quantitative approach with a quasi-experimental pretest-posttest control group design. The population consisted of all 41 grade XI students divided into two classes: the Multimedia class (n=21) as the experimental group and the Computer and Network Engineering class (n=20) as the control group. Data were collected using a learning motivation questionnaire (30 items, $\alpha=0.89$) and an achievement test (40 multiple-choice items, $r_{11}=0.87$). Data were analyzed using Independent Sample t-test and N-Gain analysis. Results showed: (1) there was a significant difference in learning motivation between experimental and control groups ($t=4.712$; $p<0.05$); (2) there was a significant difference in learning outcomes between the two groups ($t=5.083$; $p<0.05$); (3) the N-Gain of the experimental group was in the high category ($g=0.72$) while the control group was in the medium category ($g=0.41$). These findings imply that the Moodle-based ruangips.com platform is effective in improving IPS motivation and learning outcomes, and supports 21st century competency (4C) development in vocational students.

Keywords: Ruangips.Com, Moodle, Learning Motivation, Social Studies Achievement, Online Learning

1. INTRODUCTION

The development of digital technology has significantly transformed learning practices, especially in the post-COVID-19 pandemic era which has encouraged the integration of online and blended learning as part of a sustainable education system. Technology-based learning is no longer an alternative but a necessity to support flexible, interactive, and student-centered learning processes. Research by Marzuki et al. (2024) shows that the effectiveness of online learning strongly depends on the instructional design used. Furthermore, Beketov et al. (2024) emphasized that the quality of platforms supporting interaction and active student engagement also determines the success of online learning. Based on these findings, it can be concluded that well-developed instructional design and interactive platforms are two main pillars for realizing effective and student-centered online learning.

In the context of vocational education, particularly in Social Studies (IPS) subjects, the integration of learning technology still faces various challenges. Social studies learning requires contextual understanding of social phenomena and critical thinking skills to analyze societal dynamics. Therefore, an instructional approach that is not only informative but also

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interactive and reflective is needed. Learning Management Systems (LMS) such as Moodle have great potential to support these needs through collaborative features, digital material distribution, interactive quizzes, discussion forums, and structured learning evaluations (Mutanga & Edwin Seru, 2024).

Several studies have confirmed that using Moodle in learning can increase student motivation and learning outcomes. Beketov et al. (2024), in a quasi-experimental study of 100 university students, found that using Moodle significantly increased learning motivation across three main dimensions: knowledge acquisition, professional skills development, and graduation motivation. This finding is supported by Altania & Sungkono (2021), who reported that Moodle-based e-learning makes learning more organized, although learning motivation tends to stagnate if not accompanied by adequate interaction. Additionally, Yuda & Kurniawati (2024) showed that Moodle-based e-learning development was deemed feasible with a feasibility percentage of 80% from media experts and 81.33% from student trials, thus serving as an effective alternative digital learning medium.

Nevertheless, several research gaps still need attention: (1) Most existing studies have been conducted in higher education or in English as a Foreign Language (EFL) subjects; (2) Studies specifically examining the effectiveness of Moodle in social studies learning at vocational high schools (SMK) are still very limited; (3) Research examining the effect of Moodle on both learning motivation and learning outcomes simultaneously within a single experimental design is rare; (4) Most studies focus on only one variable or use perception survey approaches; (5) There is a lack of locally contextualized LMS development, meaning few studies have developed and tested LMS adapted to the characteristics of social studies subjects and the specific needs of vocational students in Indonesia, particularly in areas such as Pasuruan. These gaps indicate the need for more contextual and comprehensive empirical studies that not only measure the effectiveness of generic LMS but also integrate features relevant to the demands of 21st-century competencies (4C: Critical Thinking, Creativity, Communication, Collaboration).

Empirically, initial observations at SMK Ar-Roudhoh Beji Pasuruan showed that Grade XI students' social studies learning outcomes were below the Minimum Mastery Criterion (KKM) of 75, with an average score of only 62.4. Furthermore, the level of student participation in online learning was relatively low, with an attendance rate of approximately 63%. This condition indicates problems in the learning process that impact low student motivation and learning outcomes, thus requiring more adaptive and effective learning innovations.

In response to these problems, this study examines the implementation of the ruangips.com platform, which was developed based on Moodle and designed contextually to support social studies learning in vocational schools. The platform is equipped with features aligned with motivation theory, such as online quizzes with instant feedback, asynchronous discussion forums, interactive learning videos, and learning progress reports. From the perspective of Self-Determination Theory (SDT), these features have the potential to fulfill students' basic psychological needs for autonomy, competence, and social relatedness (Deci & Ryan, 2000).

The novelty of this study lies in three aspects: (1) The integration of the Moodle LMS in the context of social studies learning at vocational schools, which has received little attention in the literature; (2) Simultaneous analysis of effects on motivation and learning outcomes within a single quasi-experimental design using validated instruments (motivation questionnaire and achievement test); (3) The development of a locally contextualized platform, ruangips.com, specifically designed for Grade XI social studies materials, not merely adopting a generic Moodle.

Thus, this study is expected to provide empirical contributions to the development of more contextual and effective technology-based learning, as well as serve as a reference for other vocational schools in implementing LMS that align with student characteristics and subject matter.

Based on the above description, this study addresses the following questions: (1) Is there a significant effect of implementing the Moodle-based ruangips.com platform on the learning motivation of Grade XI students at SMK Ar-Roudhoh Beji Pasuruan? (2) Is there a significant effect of implementing the Moodle-based ruangips.com platform on the social studies learning outcomes of Grade XI students at SMK Ar-Roudhoh Beji Pasuruan? (3) How effective is the improvement in social studies learning outcomes using the Moodle-based ruangips.com platform compared to conventional learning?

Theoretically, this study is expected to enrich the scientific literature on the effectiveness of Moodle-based LMS in social studies learning at vocational schools. Practically, the results are expected to serve as a reference for other schools in developing innovative and sustainable e-learning platforms.

2. METHOD

A. Research Design

This study used a quantitative approach with a quasi-experimental pretest-posttest control group design. This design was chosen because full randomization was not possible, as class divisions had been made by the school before the research began (Sugiyono, 2019). The experimental group received treatment in the form of social studies learning using the Moodle-based ruangips.com platform for eight weeks, while the control group underwent learning using conventional methods (lectures and manual assignments).

B. Population and Sample

The research population was all Grade XI students of SMK Ar-Roudhoh Beji Pasuruan in the 2025/2026 academic year, totaling 41 students. The sampling technique used was total sampling, so the entire population became the research sample. The Grade XI Multimedia class with 21 students was designated as the experimental group, while the Grade XI Computer and Network Engineering (TKJ) class with 20 students was designated as the control group.

Table 1. Research Sample Distribution

Class	Group	Number of Students (n)	Treatment
XI Multimedia	Experimental	21	Ruangips.com/Moodle
XI TKJ	Control	20	Conventional
Total		41	

C. Research Instruments

The instruments used in this study consisted of two types: (a) A learning motivation questionnaire developed based on indicators of learning motivation according to Sardiman (2011), including: desire and willingness to succeed, encouragement and need to learn, hopes and aspirations, appreciation in learning, interesting activities, and a conducive learning environment. The questionnaire consisted of 30 statement items using a Likert scale (1-5). (b) A social studies learning outcome test in the form of 40 multiple-choice questions covering cognitive domains C1-C4 based on the revised Bloom's Taxonomy.

Instrument validity testing was conducted using the Pearson Product Moment correlation technique, and all instrument items were declared valid ($r_{count} > r_{table} = 0.361$; $n=30$). Reliability testing using Cronbach's Alpha produced a coefficient of $\alpha=0.89$ for the motivation questionnaire and $r_{11}=0.87$ for the learning outcome test, both of which were in the very reliable category.

D. Data Analysis Technique

Data analysis was performed through several stages: (1) Prerequisite tests including normality testing using Kolmogorov-Smirnov and homogeneity testing using Levene's Test. (2) Hypothesis testing using an independent sample t-test to examine differences in mean scores between the experimental and control groups on posttest data, with a significance level of $\alpha=0.05$. (3) N-Gain (Normalized Gain) analysis to measure the effectiveness of learning outcome improvement using the formula: $g = (S_{post} - S_{pre}) / (S_{max} - S_{pre})$. Interpretation: $g > 0.7 = \text{high}$; $0.3 \leq g \leq 0.7 = \text{medium}$; $g < 0.3 = \text{low}$ (Hake, 1998).

3. RESULTS AND DISCUSSION

Data Description

Before the treatment was given, both groups were given a pretest to determine their initial abilities. The homogeneity test results showed no significant difference between the two groups on pretest data ($F=0.312$; $p=0.580$), so both groups were declared homogeneous and comparable. After eight weeks of treatment, the posttest and motivation questionnaire were administered to all respondents. Descriptive statistics of the research data are presented in Table 2.

Table 2. Descriptive Statistics of Learning Outcomes and Learning Motivation

Variable / Group	N	Pretest (Mean±SD)	Posttest (Mean±SD)	N-Gain	Category
Learning Outcomes – Experimental	21	61,43 ± 7,21	82,86 ± 6,54	0,72	High
Learning Outcomes – Control variabel group	20	60,75 ± 6,98	72,50 ± 7,83	0,41	Medium
Learning Motivation – Experimental	21	78,62 ± 9,14	103,48 ± 8,76	—	High
Learning Motivation – Control	20	77,90 ± 8,53	88,35 ± 9,22	—	Medium

Source: Research data, 2025 (processed)

The data in Table 2 show that the mean posttest learning outcome score of the experimental group (82.86) was substantially higher than that of the control group (72.50). This difference is also seen in the learning motivation scores, where the experimental group obtained a mean of 103.48 while the control group only reached 88.35. Both groups experienced improvements, but the experimental group showed a much more significant leap, as indicated by an N-Gain value of 0.72 (high category).

Prerequisite Analysis Tests

Normality testing using Kolmogorov-Smirnov showed that the pretest and posttest data for both groups, both for learning outcomes and learning motivation, were normally distributed ($p > 0.05$). Homogeneity testing using Levene's Test also showed that the variances of both groups were homogeneous ($p > 0.05$). With both assumptions met, hypothesis testing using the independent sample t-test could proceed.

Table 3. Results of Normality and Homogeneity Tests

Variable	K-S (Experimental)	K-S (Control)	Levene's F	Sig.
Learning Outcomes (Pretest)	0,193 (p=0,071)	0,187 (p=0,083)	0,312	0,580
Learning Outcomes (Posttest)	0,175 (p=0,112)	0,181 (p=0,098)	0,428	0,517
Learning Motivation (Posttest)	0,162 (p=0,153)	0,169 (p=0,127)	0,357	0,554

Source: Research data, 2025 (processed)

A. Hypothesis Testing

Hypothesis testing was conducted using the independent sample t-test on posttest data. The test results are presented in Table 4

Table 4. Results of Independent Sample t-test

Variable	Mean Exp.	Mean Ctrl.	t-count	df	Sig. (2-tailed)	Description
Social Studies Learning Outcomes	82,86	72,50	5,083	39	0,000	Significant
Learning Motivation	103,48	88,35	4,712	39	0,000	Significant

Source: Research data, 2025 (processed)

Based on Table 4, the t-test results for the social studies learning outcomes variable produced a t-count of 5.083 with Sig. = 0.000 ($p < 0.05$). Because the significance value is less than 0.05, H_0 is rejected and H_1 is accepted, meaning there is a significant difference in social studies learning outcomes between the group using the Moodle-based ruangips.com and the group using conventional learning. Similarly, for the learning motivation variable, a t-count of 4.712 with Sig. = 0.000 ($p < 0.05$) was obtained, indicating a significant difference in learning motivation between the two groups.

Discussion

The results show that the implementation of the Moodle-based ruangips.com significantly increases the learning motivation and social studies learning outcomes of Grade XI students at SMK Ar-Roudhoh Beji Pasuruan. This finding aligns with research by Altania & Sungkono (2021) which found that Moodle-based e-learning in high school Mathematics significantly improved student learning outcomes, particularly in terms of more organized learning and time flexibility. It is also in line with Bahrudin (2022), who emphasized that learning that encourages active student participation increases their engagement and learning achievement.

The N-Gain value of 0.72 in the experimental group, which falls into the *high* category, indicates that ruangips.com can effectively accelerate students' competency achievement. This can be explained by several advantages of the Moodle features present in the ruangips.com platform, including: (a) online quiz features that provide instant feedback to students; (b) learning modules accessible anytime and anywhere; (c) discussion forums that encourage interaction among students; and (d) transparent learning progress reports.

From the perspective of learning motivation, the significant increase in the experimental group can be explained by Sardiman's (2011) theory of learning motivation, which emphasizes the importance of interesting learning activities and a conducive learning environment. Ruangips.com provides diverse and interactive learning content, ranging from videos, articles, to interactive exercises, which have proven to increase students' interest and enthusiasm for learning.

Social studies inherently requires collaborative reflection on societal dynamics (Bermudez, 2015). The platform's discussion forums provide a safe, structured digital space where students interact outside physical classroom walls (Onyema et al., 2019). Interestingly, this digital buffer encourages introverted or less vocally confident students to articulate well-reasoned arguments, critique peer viewpoints, and co-construct social knowledge without the anxiety often present in face-to-face public speaking (Bouzek, 2025).

Supporting factors for the successful implementation of ruangips.com at SMK Ar-Roudhoh include: students' learning independence, as they are accustomed to accessing information via smartphones; the availability of WiFi infrastructure within the school; and the teachers'

commitment to continuous professional development. Meanwhile, inhibiting factors identified were unstable internet connections in some students' residential areas and limited internet data quotas, which occasionally hindered platform accessibility.

These findings also prove that digital platform-based learning such as ruangips.com significantly contributes to the development of 21st-century competencies (4C: Communication, Collaboration, Critical Thinking, and Creativity) among vocational students, as revealed by Septikasari & Frasandy (2018). Through online discussion features, collaborative online assignments, and case-based problem-solving in social studies materials, students indirectly hone these four competencies (Sistermasn, 2020).

When students encounter real-world socio-economic case studies uploaded to ruangips.com, they are pushed to utilize Critical Thinking to dissect cause-and-effect patterns rather than relying on rote memorization. Communication and Collaboration are actively exercised through online group tasks where students must synthesize differing opinions in the forums to build a unified consensus (Biasutti, 2017). Lastly, Creativity is stimulated when students are prompted by digital prompts to formulate innovative, localized solutions to contemporary community issues (Isabirye et al., 2025). Hence, social studies ceases to be an obsolete memory exercise and instead becomes a vibrant laboratory for civic and professional soft-skill development (Thornhill-Miller et al., 2023).

The study brought several systemic inhibiting factors to light. While school-based connectivity was secure, several students encountered severe access issues at home due to unstable cellular network coverage in rural pockets of the Pasuruan region and the financial strain of purchasing independent internet data quotas. This revealing friction points to a broader educational dilemma: the digital divide. When an educational institution transitions toward a blended or fully online format, it risks marginalizing students from vulnerable socio-economic backgrounds if structural safety nets are absent (Maliyat, 2025). This aligns with warnings from Marzuki et al. (2024), who noted that the absolute success of an online framework is heavily contingent on equitable external infrastructure. Therefore, the high N-Gain observed in this study reflects optimal conditions that must be continuously supported by institutional or government interventions such as data subsidies to guarantee long-term equity and educational inclusivity.

4. CONCLUSION

Based on the results and discussion, it can be concluded that: (1) There is a significant effect of implementing the Moodle-based ruangips.com platform on the learning motivation of Grade XI students at SMK Ar-Roudhoh Beji Pasuruan ($t=4.712$; $p<0.05$), with the experimental group obtaining a higher mean motivation score (103.48) compared to the control group (88.35). (2) There is a significant effect of implementing the Moodle-based ruangips.com platform on the social studies learning outcomes of Grade XI students at SMK Ar-Roudhoh Beji Pasuruan ($t=5.083$; $p<0.05$), with the experimental group's mean posttest score (82.86) higher than that of the control group (72.50). (3) The effectiveness of improving social studies learning outcomes in the experimental group is in the high category (N-Gain=0.72), while the control group is in the medium category (N-Gain=0.41).

Based on these conclusions, the researchers recommend: (a) Schools should expand the implementation of ruangips.com to all grade levels and other subjects as part of digital-based

school branding. (b) Teachers need ongoing training (coaching clinics) related to developing interactive content within the Moodle platform. (c) Local governments are expected to support internet quota subsidy programs for students from low-income families so that access to the e-learning platform can be evenly distributed. (d) Further research needs to be conducted with larger samples and broader geographic coverage to increase the generalizability of the findings

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