

TPACK-Based Social Internalization: Innovative Social Studies Praxis for Enhancing Social Literacy and Cognitive Skills at SMPN 11 Madiun

Henrykus Titis Sunarno¹ (Universitas Negeri Surabaya, Indonesia)
Moch Agus Setiono² (Universitas Negeri Surabaya, Indonesia)
Sukanan³ (Universitas Negeri Surabaya, Indonesia)
Jinem⁴ (Universitas Negeri Surabaya, Indonesia)

Received: 31-03-2026

Accepted: 14-05-2026

Published: 01-06-2026

DOI: <https://doi.org/10.26740/ijgsme.v4n1.p47-55>

e-ISSN : 2987-9140

Volume : 4 No. 1, (2026)

Page : 47-55

Abstract

While digital technology has become a staple in modern classrooms, its capacity to instill meaningful social values remains notably underdeveloped, particularly within the domain of social studies. This research seeks to bridge this gap by investigating an integration model underpinned by TPACK designed to bolster both social literacy and higher order thinking skills among students. Adopting a quantitative quasi experimental approach with a non equivalent control group design, the study focused on eighth grade students at a public junior high school in Madiun, Indonesia. Participants were selected via cluster random sampling and partitioned into experimental and control cohorts. Data, gathered through validated assessment instruments, underwent rigorous analysis using independent samples t tests. The empirical results demonstrate that the proposed model yields significantly better outcomes than traditional instructional methods in advancing both cognitive abilities and social proficiency ($p < 0.05$). A pivotal aspect of this model is its synthesis of the TPACK framework with the triadic process of social meaning construction, namely objectification, subjectification, and externalization, which facilitates the conversion of digital content into authentic social awareness. From a theoretical perspective, this research contributes to digital pedagogy oriented toward values by reimagining TPACK as a vehicle for social value formation rather than a mere framework for technical implementation. On a practical level, the model provides educators with a systematic blueprint for weaving essential social values into the fabric of digital learning environments. **Keywords:** TPACK, social internalization, social literacy, HOTS, digital pedagogy.

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1. INTRODUCTION

The pervasive influence of digital technology has radically altered the pedagogical landscape, particularly regarding the ways in which knowledge is synthesized and shared. Within the framework of contemporary education, digital infrastructures provide unmatched possibilities for fostering student centric and interactive learning environments. However, a significant discrepancy exists: this technological surge has not yielded a comparable advancement in the ethical and social development of learners. Current academic discourse suggests that intensified digital engagement among young people is frequently linked to a decline in empathy and a weakening of civic commitment (Livingstone & Third, 2024; Wang et al., 2023). This situation highlights a fundamental contradiction in modern schooling where technical proficiency does not automatically cultivate profound social growth.

This tension is especially salient in social studies education, a field naturally dedicated to the cultivation of ethical and socially responsible citizens. Beyond the mere delivery of facts, social studies aims to nurture core values and social competencies. Consequently, social

Corresponding Author: 25041696015@mhs.unesa.ac.id

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literacy has become a vital asset, allowing students to navigate social complexities, apply critical reasoning, and act responsibly in both virtual and physical spaces (Pangrazio & Sefton Green, 2021; Mihailidis, 2023). Nevertheless, prevailing teaching methods frequently prioritize cognitive benchmarks while overlooking the intricate steps required to internalize social values, which often leads to learning that is both superficial and disconnected (Polizzi, 2021; Lodge et al., 2022).

Addressing these shortcomings necessitates a more comprehensive pedagogical strategy that transcends technical integration to focus on value internalization. A promising solution lies in merging the Technological Pedagogical Content Knowledge (TPACK) framework with social internalization mechanisms. While TPACK offers a robust model for understanding the interplay between technology and teaching (Mishra, 2019; Koehler et al., 2014), its implementation has historically centered on instructional efficiency rather than the deeper development of character. Thus, there is an urgent need to reframe TPACK as a system that facilitates the construction of social meaning alongside academic knowledge.

Theoretically, this inquiry is rooted in social constructionism, which argues that reality is established through a dialectical cycle of externalization, objectification, and internalization (Berger & Luckmann, 1966). In a learning context, true meaning is achieved when students participate in this cycle to convert external data into personal understanding. Unfortunately, many current digital learning models remain trapped in the objectification phase, treating digital content as isolated and static information (Bauman, 2021; Fuchs, 2022). This often leaves students with gathered data but no real sense of ethical direction or social awareness.

Furthermore, existing TPACK research has largely concentrated on teacher proficiency and cognitive outcomes within the STEM fields (Chai et al., 2021; Phillips et al., 2022). There is a distinct lack of empirical evidence regarding how TPACK can serve as a catalyst for value internalization, particularly in social studies (Chen et al., 2022; Rodriguez et al., 2023). This void underscores the necessity for research that bridges technical frameworks with sociological insights into the learning process.

In light of these factors, this study introduces a TPACK based social internalization model that aligns technical and pedagogical knowledge with the stages of value acquisition. By embedding objectification, subjectification, and externalization within digital settings, the model seeks to turn digital information into meaningful social experiences. The primary goal is to evaluate the effectiveness of this model in enhancing social literacy and higher order thinking skills compared to traditional approaches. Ultimately, this research strives to advance a value oriented digital pedagogy and provides a fresh perspective on using TPACK to nurture responsible citizens in the modern age.

2. METHOD

This inquiry utilized a quantitative methodology featuring a quasi experimental design with a non equivalent control group. Such a framework was chosen to investigate the potential causal links between the TPACK based social internalization model and student performance, specifically concerning social literacy and higher order thinking skills, within an authentic educational setting where full randomization was impractical.

The investigation took place at a public junior high school in Madiun, Indonesia, focusing on eighth grade students. To select the participants, cluster random sampling was employed,

where existing classrooms were randomly designated as either experimental or control cohorts. One group utilized the TPACK based social internalization model, while the other followed a conventional pedagogical approach. Initial equivalence between these two groups was verified through a preliminary pre test analysis.

The intervention for the experimental group followed a structured sequence that merged TPACK elements with the phases of social value integration, namely objectification, subjectification, and externalization. This program was conducted over four weeks, consisting of eight separate 45 minute sessions. Students engaged in interactive tasks such as digital storytelling regarding local issues, online collaborative problem solving, and reflective journaling to clarify their personal values. Conversely, the control group relied on traditional teacher led instruction and textbook materials, with minimal use of digital tools or interactive methods.

Data collection involved two primary tools: a social literacy scale and a higher order thinking skills test. The former focused on empathy and civic responsibility as indicators of social awareness, while the latter evaluated cognitive functions like analysis, evaluation, and problem solving. Both metrics were applied as pre tests and post tests to track progress before and after the experimental period.

Before data gathering, these instruments underwent rigorous testing for validity and reliability. Validity was confirmed through Product Moment correlation, where all items surpassed the critical value of $r > 0.355$ with significance levels below 0.05. Reliability was established using Cronbach's Alpha, yielding scores of 0.726 for social literacy and 0.689 for cognitive abilities, both of which exceeded the standard threshold of 0.60 and demonstrated strong internal consistency.

Prior to testing the hypothesis, the data was checked against parametric assumptions. Normality was verified via the Shapiro Wilk test, while homogeneity of variance was confirmed using Levene's test, with both yielding p values greater than 0.05. Finally, an independent samples t test was conducted at a 0.05 significance level to compare the two groups. This statistical procedure served to evaluate whether the TPACK based model was more effective than conventional learning in fostering social literacy and higher order thinking skills.

3. RESULTS AND DISCUSSION

3.1 Results

The empirical evidence gathered in this study confirms that the dataset successfully fulfilled all prerequisite criteria for parametric statistical testing. Both normality and homogeneity tests validated the data distribution, thereby permitting the subsequent application of the independent samples t test. Initial pre test assessments indicated no statistically meaningful disparities between the experimental and control cohorts regarding social literacy or higher order thinking skills, which suggests that both groups began the study with equivalent baseline competencies.

In contrast, post intervention evaluations revealed a significant divergence in performance. Participants in the experimental group displayed markedly superior social literacy, achieving a mean score of 76.28 compared to the control group mean of 67.26, with a recorded

significance of 0.012. Furthermore, the higher order thinking skills of students in the experimental group were significantly more advanced, reaching a mean of 73.60, while the control group averaged 69.32, resulting in a significance value of 0.038. Collectively, these results provide strong evidence that the TPACK based social internalization model exerts a substantial positive influence on both the cognitive maturation and social literacy of learners.

3.2 Discussion

From a pedagogical standpoint, the success of this model is largely due to the use of digital tools that encourage active engagement. Unlike traditional instruction, which typically focuses on teacher centered methods and limited resources, this experimental framework prompts students to participate in inquiry, collaboration, and reflective thought. The availability of various digital materials allows learners to investigate social issues more thoroughly, analyze diverse viewpoints, and build their own understanding, all of which are vital to higher order thinking.

Crucially, these findings can be understood through social construction theory, which suggests that knowledge is formed through the dialectical stages of externalization, objectification, and internalization (Berger & Luckmann, 1966). In this research, digital content acts as an objectified reality presented via learning platforms. Through guided interaction, students enter a phase of subjectification, where they interpret and negotiate meaning based on their personal experiences. Finally, internalization occurs when these meanings are integrated into the cognitive and social frameworks of the students, leading to better social awareness and ethical conduct.

The significant growth in social literacy among the experimental group suggests the model effectively supports this internalization process. Students are not just viewing social problems but are also reflecting on personal values and applying their knowledge in real world contexts. This confirms the argument that digital learning should evolve beyond simple information delivery toward the construction of social meaning (Fuchs, 2022; Gergen, 2023).

Moreover, the improvement in higher order thinking skills indicates that TPACK integration in this model targets cognitive engagement rather than just technical skill. Using digital platforms for problem based and collaborative learning requires students to evaluate arguments and develop solutions. These actions align with the primary dimensions of higher order thinking and are consistent with prior studies on how technology enhanced learning boosts critical thinking (Hsu et al., 2023; Koh et al., 2022). These results also expand the work of Chai et al. (2021) and Phillips et al. (2022), who studied TPACK in STEM settings, by proving its relevance to value oriented pedagogy in social studies.

On the other hand, the control group exhibited lower gains in both social literacy and cognitive ability. This disparity likely stems from the restricted chances for reflection and exploration in a conventional classroom. Without the aid of digital media or a structured internalization process, learning tends to stay at a surface level where students receive data without engaging in deep meaning making.

Ultimately, this study shows that the TPACK based social internalization model offers a more robust educational approach by combining technical, pedagogical, and social elements. This model does more than just sharpen cognitive skills; it also fosters social responsibility and ethical awareness. As such, it represents a transformative method for navigating the

complexities of the digital age and developing students who are both intellectually capable and socially conscious.

Table 1. Reliability Test Results

Variable	Cronbach's Alpha	Threshold Value	Decision
Social Literacy	0.726	0.60	Reliable
Cognitive Skills	0.689	0.60	Reliable

Source: Sunarno, 2026

Table 2. Reliability Test Results

Group	Variable	Statistic	Sig. (p-value)	Interpretation
Experimental Class (Pre-test)	Social Literacy	0.919	0.062	Normally Distributed
Experimental Class (Post-test)	Social Literacy	0.942	0.092	Normally Distributed
Control Class (Pre-test)	Social Literacy	0.941	0.088	Normally Distributed
Control Class (Post-test)	Social Literacy	0.938	0.072	Normally Distributed

Source: Sunarno, 2026

Table 3. Normality Test Results of Cognitive Skills

Group	Variable	Statistic	Sig. (p-value)	Interpretation
Experimental Class (Pre-test)	Cognitive Skills	0.883	0.111	Normally Distributed
Experimental Class (Post-test)	Cognitive Skills	0.869	0.091	Normally Distributed
Control Class (Pre-test)	Cognitive Skills	0.884	0.072	Normally Distributed
Control Class (Post-test)	Cognitive Skills	0.881	0.063	Normally Distributed

Source: Sunarno, 2026

Table 4. Homogeneity Test Results

Data Pair (Experimental vs Control)	Variable	Levene's Statistic	Sig. (p-value)	Interpretation
Pre-test	Social Literacy	0.018	0.895	Homogeneous
Pre-test	Cognitive Skills	0.167	0.685	Homogeneous
Post-test	Social Literacy	0.175	0.677	Homogeneous
Post-test	Cognitive Skills	0.581	0.450	Homogeneous

Source: Sunarno, 2026

Table 5. Independent Samples t-test Results (Pre-test)

Variable	Experimental Mean	Control Mean	t-value	Sig. (2-tailed)	Interpretation
Social Literacy	46.61	46.13	0.242	0.405	No Significant Difference
Cognitive Skills	46.35	44.88	0.612	0.272	No Significant Difference

Source: Sunarno, 2026

Table 6. Independent Samples t-test Results (Post-test)

Variable	Experimental Mean	Control Mean	t-value	Sig. (2-tailed)	Interpretation
Social Literacy	76.28	67.26	2.262	0.012	Significant Difference
Cognitive Skills	73.60	69.32	1.813	0.038	Significant Difference

Source: Sunarno, 2026



Figure 1. Discussion process to improve social literacy



Figure 2. collaborative learning requires students to analyze information from anywhere

4. CONCLUSION

This study aimed to examine the effectiveness of a TPACK-based social internalization model in improving students' social literacy and higher-order thinking skills (HOTS) compared to conventional learning. The findings demonstrate that the proposed model significantly enhances both dimensions, as evidenced by higher post-test scores in the experimental group compared to the control group.

The improvement in social literacy indicates that the integration of digital learning with structured internalization processes successfully fosters students' empathy and civic responsibility. At the same time, the enhancement of higher-order thinking skills suggests that the model effectively promotes analytical, evaluative, and problem-solving abilities through active and collaborative learning.

These results confirm that learning which integrates TPACK with the processes of objectification, subjectification, and internalization is more effective than conventional approaches that rely primarily on knowledge transmission. The model enables students not only to understand social content but also to construct meaningful social awareness and apply it in relevant contexts.

Therefore, this study contributes to the development of value-oriented digital pedagogy by demonstrating that TPACK can function as a mechanism for facilitating the formation and integration of social values, rather than merely serving as a framework for technological integration. This finding provides important implications for social studies education in designing transformative learning that balances cognitive competence and social

responsibility in the digital era. Practically, teachers are encouraged to adopt the objectification-subjectification-externalization cycle in digital lesson design, incorporating activities such as digital storytelling and collaborative social inquiry. Schools should support professional development programs that build teachers' TPACK competency in value-laden subject areas. Curriculum developers are advised to explicitly integrate social value formation as a measurable outcome alongside cognitive skills in social studies curricula.

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