



## Enhancing Students' Social Intelligence through *Tudang Sipulung* Learning Model

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### Abstract

Social intelligence is essential for students to engage effectively in collaborative and culturally responsive learning. This study aims to examine the effectiveness of the *Tudang Sipulung* learning model enhancing the social intelligence of students in the Social Studies Education Program at IAIN Parepare. Using a quasi-experimental method with a one-group pretest–posttest design, the study involved a single group of students as participants. Data were collected through a social intelligence test covering three main dimensions: social information processing, social awareness, and social skills. The data was analyzed using a paired sample t-test. The findings revealed a significant increase in students' social intelligence after the implementation of the *Tudang Sipulung* learning model ( $p < 0.05$ ), with the most notable improvements observed in collaborative and empathetic abilities that reflect Bugis cultural values such as *siri'*, *pacce*, and *sipakatau*. Practically, the results indicate that the *Tudang Sipulung* learning model serves as an effective pedagogical strategy to foster social intelligence and strengthen collaborative interactions grounded in local wisdom. Theoretically, this study reinforces Vygotsky's social constructivist theory, emphasizing the role of social interaction in knowledge construction, while expanding the theoretical framework of local wisdom-based learning as a contextual approach in higher education.

**Keywords:** local wisdom, social intelligence, social studies learning, *tudang sipulung* learning model

### Abstrak

Kecerdasan sosial sangat penting bagi siswa untuk terlibat secara efektif dalam pembelajaran kolaboratif dan responsif terhadap budaya. Penelitian ini bertujuan untuk mengkaji efektivitas model pembelajaran *Tudang Sipulung* dalam meningkatkan kecerdasan sosial mahasiswa pada Program Studi Pendidikan IPS di IAIN Parepare. Menggunakan metode kuasi-eksperimen dengan desain one-group pretest–posttest, penelitian ini melibatkan satu kelompok mahasiswa sebagai partisipan. Data dikumpulkan melalui tes kecerdasan sosial yang mencakup tiga dimensi utama: pemrosesan informasi sosial, kesadaran sosial, dan keterampilan sosial. Data dianalisis menggunakan uji paired sample t-test. Hasil penelitian menunjukkan adanya peningkatan signifikan dalam kecerdasan sosial mahasiswa setelah penerapan model pembelajaran *Tudang Sipulung* ( $p < 0.05$ ), dengan peningkatan paling mencolok terlihat pada kemampuan kolaboratif dan empatik yang mencerminkan nilai-nilai budaya Bugis seperti *siri'*, *pacce*, dan *sipakatau*. Secara praktis, temuan ini menunjukkan bahwa model pembelajaran *Tudang Sipulung* merupakan strategi pedagogis yang efektif untuk menumbuhkan kecerdasan sosial dan memperkuat interaksi kolaboratif yang berlandaskan kearifan lokal. Secara teoretis, penelitian ini memperkuat teori konstruktivis sosial Vygotsky yang menekankan peran interaksi sosial dalam pembentukan pengetahuan, sekaligus memperluas kerangka teoretis pembelajaran berbasis kearifan lokal sebagai pendekatan kontekstual dalam pendidikan tinggi.

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**Kata Kunci:** kearifan lokal; kecerdasan sosial; pembelajaran IPS; model pembelajaran tudang sipulung

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## Introduction

Student social intelligence has become a crucial aspect of global higher education, as 21st-century learning no longer focuses solely on cognitive excellence but also emphasizes social and emotional competencies. At the international level, studies indicate that graduates with low social skills face significant challenges in collaboration, adaptability, and leadership within both professional and community settings (Faustino et al., 2025; Vázquez-Rodríguez et al., 2025; Yoel et al., 2023). In Indonesia, although access to higher education continues to expand, several studies reveal that university students still experience difficulties in social interaction, active community participation, and the ability to build networks and engage in cross-cultural communication (Hadi Sulistyanto et al., 2025a; Hidayah et al., 2022).

In the Social Studies Education Program at IAIN Parepare, preliminary observations and assessments in 2025 showed that the majority of students' social intelligence fell into the "Fair" category (Zahrawati B & Jumaisa, 2025). This indicates that most students demonstrated low initiative in discussions, limited social sensitivity, and minimal involvement in collaborative practices grounded in Bugis cultural values such as *sipakatau* (mutual respect) and *pacce* (solidarity). Similar patterns have also been identified in other higher education institutions in Indonesia, where students exhibit low participation in collective learning and community-based programs (Hadi Sulistyanto et al., 2025b; Hidayah et al., 2022). This evidence highlights that the challenge of fostering social intelligence and collaboration among university students is not unique to IAIN Parepare but represents a wider issue in Indonesian higher education, underscoring the urgency of integrating local cultural values into learning practices.

The *Tudang Sipulung* tradition in Bugis culture underscores deliberation and togetherness as essential means of developing social intelligence. It reflects several core cultural values deeply embedded in Bugis society, including *siri'* (self-respect and moral integrity), *pacce* (empathy and shared compassion), *sipakatau* (mutual respect and human dignity), *lempuk* (honesty), and *abbulosibatang* (unity and solidarity). These values continue to be preserved and practiced in community life, particularly through local governance meetings, neighborhood problem-solving, and traditional ceremonies where decisions are

made collectively. In contemporary Bugis society, *Tudang Sipulung* remains an active form of participatory dialogue that promotes openness, equality, and mutual understanding among community members. Therefore, integrating these cultural principles into formal learning not only revitalizes local wisdom but also aligns educational practices with authentic social interaction patterns that naturally foster students' social intelligence (Ferdiansyah et al., 2025a; Nuh, 2016; Nurseng et al., 2023; Ristiana et al., 2017; Rudi & Yusuf LN, 2019; Rusli et al., 2022a).

There are three categories of previous studies relevant to this research area. First, studies on students' or learners' social intelligence include quantitative investigations that measure various dimensions of social ability, with findings indicating that social intelligence significantly influences interpersonal competence (Kaur, 2022; Koç & Turan, 2018). The second category comprises studies on Social Studies education or culturally and character-based learning, which found that Social Studies instruction grounded in cultural and character contexts can enhance students' conceptual understanding, social attitudes, and awareness of local wisdom values (Adela et al., 2023). The third category includes studies on Bugis local traditions and deliberative values such as *Tudang Sipulung*, with findings indicating that the values of Bugis local wisdom can serve as a source of local history learning that fosters character development and strengthens the community's cultural identity (Khaeruddin et al., 2020).

Previous studies on the *Tudang Sipulung* tradition have generally employed qualitative approaches focusing on cultural interpretation and character formation. For instance, Rudi & Yusuf LN (2019) described how *Tudang Sipulung* fosters teachers' collaborative reflection and strengthens community-based learning practices. Similarly, Rusli et al. (2022c) highlighted its role in promoting participatory dialogue within mathematics education through ethnomathematics perspectives. However, these studies primarily explored the phenomenon descriptively and did not provide quantitative evidence of its effectiveness in enhancing students' social intelligence. Therefore, this research aims to fill that gap by quantitatively examining the effectiveness of the *Tudang Sipulung* learning model in improving students' social intelligence at the higher education level. Therefore, the novelty of this research lies in its empirical investigation of a Social Studies learning model that adopts the deliberative mechanism of *Tudang Sipulung*, specifically designed for students of the Social Studies Education Program at IAIN Parepare. This approach bridges local cultural education with the scientific development of students' social competence.

This study aims to examine the effectiveness of the *Tudang Sipulung* learning model in enhancing the social intelligence of students in the Social Studies Education Program at IAIN Parepare. Specifically, the research focuses on identifying the improvement in students' social intelligence following the implementation of the model, testing its effectiveness in changing social intelligence scores, and analyzing the enhancement across three dimensions of social intelligence: social information processing, social skills, and social awareness. Through an approach rooted in Bugis local wisdom, the *Tudang Sipulung* learning model is expected not only to strengthen students' social competence but also to foster cultural awareness and social interaction skills aligned with local values.

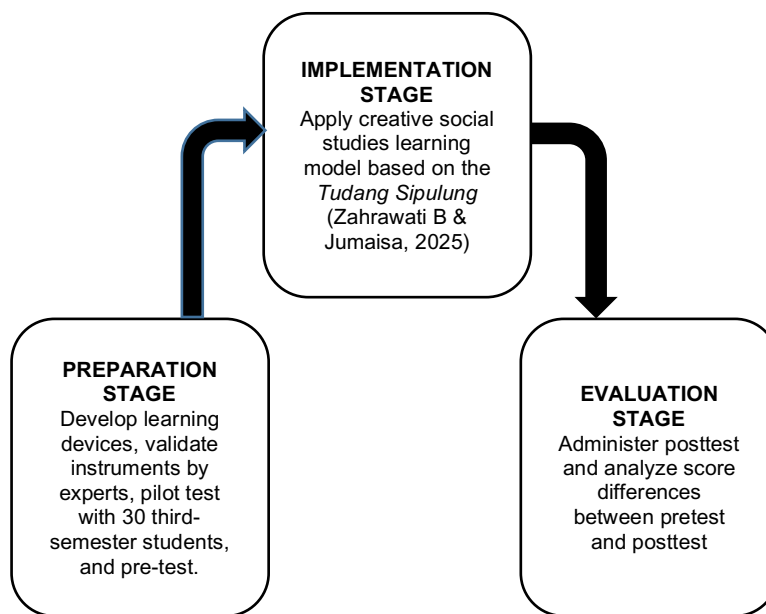
This study is based on the assumption that learning designed to be participatory, dialogic, and grounded in local values, such as those embodied in the *Tudang Sipulung* tradition, can strengthen students' social intelligence through mechanisms of social interaction, collective reflection, and shared decision-making. Accordingly, the study proposes the following hypotheses: the null hypothesis ( $H_0$ ) assumes that the *Tudang Sipulung* learning model has no significant effect on students' social intelligence, while the alternative hypothesis ( $H_1$ ) posits that the model exerts a significant positive effect on students' overall social intelligence.

Theoretically, this assumption is rooted in Vygotsky's social constructivist theory, which posits that knowledge and social competence are developed through interaction within a social environment (Vygotsky, 1978). In the context of Bugis society, the values of *siri'* (self-respect) and *pacce* (solidarity), as manifested in the *Tudang Sipulung* tradition, serve as effective media for fostering students' social awareness and engagement (Bakar et al., 2024; Prabowo et al., 2023; Sidin et al., 2020). Thus, the *Tudang Sipulung* learning model is assumed not merely to transfer Social Studies knowledge, but also to activate social practices that cultivate students' social intelligence more holistically.

## Method

This study employed a quantitative research approach using a pre-experimental method with a one-group pretest–posttest design to measure the effectiveness of the *Tudang Sipulung* learning model in enhancing students' social intelligence. Within this quantitative framework, the pre-experimental design was selected because it allows the researcher to examine changes in the dependent variable after the intervention is applied to a single group without a comparison group. The research design involved one class serving as the experimental group (Gu (顾慧) et al., 2021). Students were given a pretest to assess their

level of social intelligence before the treatment, followed by the implementation of the learning model as the treatment, and finally, a posttest to evaluate changes in their social competence after the intervention. The research subjects consisted of 36 first-semester students enrolled in the Social Studies Education Program at IAIN Parepare, who were taking the Basic Concepts of Social Studies course during the odd semester of the 2025/2026 academic year. The participants were selected through purposive sampling, based on the consideration that the students exhibited diverse communication abilities and demonstrated active engagement in classroom discussions.



**Picture 1. Research Implementation Stage**

The research was conducted in three main stages. The preparation stage involved the development of learning materials, validation of instruments by experts, and a pilot test of the instruments with 30 third-semester students. The experimental stage consisted of implementing the *Tudang Sipulung* Tradition over four class sessions. The evaluation stage included administering a posttest and analyzing the differences between pretest and posttest scores. During the implementation phase, the learning model was developed with reference to the findings of Zahrawati B & Jumaisa (2025), which emphasize the integration of Bugis cultural values *siri'* (self-respect), *pacce* (solidarity), *sipakatau* (mutual respect), *lempuk* (honesty), and *abbulosibatang* (unity), into the context of social learning. The *Tudang Sipulung* learning model consists of six interrelated stages, each designed to facilitate collaborative learning rooted in Bugis cultural values (Zahrawati B & Jumaisa, 2025).

**Table 1. Syntax of the *Tudang Sipulung* Learning Model**

No	Stage Name	Description of Activities
1	<i>Mappasitinaja</i>	The lecturer explains the learning objectives, fosters students' motivation, and connects the material with their prior knowledge.
2	<i>Mappaseng</i>	Students develop mutual agreements regarding discussion rules and collaboratively select a group leader.
3	<i>Mappasitinajaé</i>	The lecturer presents socio-academic problems to stimulate critical thinking and guide the learning focus.
4	<i>Sipulung</i>	Students engage in a collaborative discussion forum to exchange ideas, explore solutions, and build shared understanding.
5	<i>Massappa'</i>	Students formulate academic agreements based on honesty, responsibility, and integrity.
6	<i>Mappadeceng</i>	The learning process concludes with creative presentations and reflective activities, during which students receive feedback from both the lecturer and peers to deepen their social and academic understanding.

Before the research instrument was employed, validity and reliability tests were conducted on the Social Intelligence Questionnaire. The pilot test involved 30 third-semester students from the same study program. The instrument, which had undergone expert review, was tested for item validity using the Pearson correlation and for reliability using Cronbach's Alpha. The validity test results indicated that out of 15 statement items, 14 were valid ( $r_{\text{calculated}} > r_{\text{table}} = 0.361$ ), while one item (Item 1) was invalid with  $r_{\text{calculated}} = 0.192$ . However, based on expert judgment, this item was revised and retained due to its conceptual importance in assessing the ability to recognize social emotions. The reliability test produced a Cronbach's Alpha coefficient of 0.87, indicating high internal consistency and confirming that the instrument was suitable for research use. The Corrected Item-Total Correlation values ranged from 0.192 to 0.712, while the Cronbach's Alpha if Item Deleted values ranged from 0.85 to 0.88, showing that no item significantly reduced overall reliability. Therefore, the questionnaire instrument was declared valid and reliable for use in collecting data for this study.

The pretest and posttest data were analyzed using a paired sample t-test with the assistance of SPSS version 25. This analysis was employed to determine the significance of the improvement in social intelligence following the implementation of the *Tudang Sipulung* learning model.

## Result and Discussion

### Enhancing Students' Social Intelligence through the *Tudang Sipulung* Learning Model

The implementation of the *Tudang Sipulung* learning model followed the six-stage syntax summarized in Table 1. The process began with *Mappasitinaja*, in which the lecturer

introduced the learning objectives, encouraged student motivation, and connected the material to students' prior knowledge. This was followed by *Mappaseng*, where students collaboratively established discussion rules and selected a group leader to ensure that the learning forum was conducted respectfully and constructively. At the *Mappasitinajaé* stage, the lecturer presented socio-academic problems designed to stimulate critical thinking and focus students' attention on the main issues to be solved.

The core learning process occurred during the *Sipulung* stage, where students engaged in open and structured collaborative discussions, shared perspectives, and explored alternative solutions while upholding the Bugis values of *siri'*, *pacce*, and *sipakatau*. After reaching a shared understanding, students proceeded to the *Massappa'* stage, formulating academic agreements and consolidating their decisions based on honesty, responsibility, and integrity. Finally, the learning process concluded with *Mappadeceng*, where students delivered creative presentations, reflected on their experiences, and received feedback from both peers and the lecturer. Through these interrelated stages, the *Tudang Sipulung* model provided an interactive, participatory, and culturally grounded learning environment that supported the development of students' social intelligence

The enhancement of students' social intelligence is a crucial aspect of developing interpersonal competence that supports their ability to interact, collaborate, and understand others' emotions effectively. Previous studies have shown that participatory learning models based on deliberation, such as *Tudang Sipulung*, can improve social abilities through discussion and collective reflection (Ferdiansyah et al., 2025a; Muchtar et al., 2024; Rusli et al., 2022b). As a culturally rooted learning model, *Tudang Sipulung* emphasizes the values of togetherness, empathy, and open communication, thereby encouraging students to actively engage in solving social problems collaboratively. Thus, the implementation of this model focuses not only on knowledge transmission but also on the deep development of social competence. This study aims to examine the extent to which the *Tudang Sipulung* model can enhance students' social intelligence by comparing scores before and after the model's application (Ferdiansyah et al., 2025b; Martawijaya et al., 2025).

**Table 2. Descriptive Statistics of Students' Social Intelligence Scores**

Statistics	Before Score	After Score
Average	49.19	64.33
Minimum	40	56
Maximum	57	74
Standard Deviation	4.45	5.04

Source: Processed research data, 2025

Based on the research data, there was a noticeable increase in students' social intelligence scores after the implementation of the *Tudang Sipulung model*. Table 2 presents the pretest and posttest scores. Descriptively, the average score before the learning intervention was 49.19, which increased to 64.33 after the implementation (Table 1). The minimum score rose from 40 to 56, while the maximum score increased from 57 to 74, with a slight rise in the standard deviation from 4.45 to 5.04, indicating that most students experienced a significant improvement. Several students who initially scored low, such as 40 and 42, showed substantial gains, reaching 65 and 73 after the intervention. These findings are consistent with Lambert (2025), who demonstrates that well-designed deliberative settings, such as those incorporating persona-based discussions, can effectively foster social empathy, enhance participants' understanding of diverse perspectives, and strengthen the quality of their deliberative engagement.

The improvement of students' social intelligence through the *Tudang Sipulung model* can be explained from the perspective of social interaction and participatory learning. Throughout the activities, students engaged in group discussions, shared experiences, and collaboratively solved problems, facilitating the development of empathy, communication, and self-regulation (Rudi & LN, 2019). This model encourages students to listen to others' opinions, express their views effectively, and balance personal interests with group objectives. Such activities align with Vygotsky (1978) social theory, which emphasizes the importance of social interaction in the learning process and in developing both cognitive and social skills. Therefore, the increase in students' social intelligence scores is not merely the result of knowledge acquisition, but also of systematic and reflective social practice.

The results of this study hold significant theoretical and practical implications. Theoretically, the findings reinforce evidence that participatory, deliberation-based learning models can enhance students' social intelligence (Al-Ansi, 2022; Herman et al., 2025). This supports the notion that social competence develops through meaningful interaction and reflective practice. Practically, the implementation of the *Tudang Sipulung model* can serve as an alternative instructional strategy in higher education to improve students' interpersonal skills, particularly their communication, empathy, and teamwork abilities. Instructors can adapt learning modules and activities to ensure students actively engage in the processes of deliberation and reflection, making the development of social intelligence an integral part of their learning experience (O'Donnell et al., 2022). Thus, this model not only provides cognitive benefits but also fosters the formation of positive social character.



## Effectiveness Test of the *Tudang Sipulung* Learning Model on Changes in Social Intelligence Scores

Before analyzing the changes in students' social intelligence scores, a normality test was first conducted to ensure that the data met the assumptions required for parametric testing. The Shapiro–Wilk normality test was applied to both the pretest and posttest scores. The results of the normality test are presented in Table 3.

**Table 3 Normality Test Results**

Tests of Normality						
	Kolmogorov–Smirnov <sup>a</sup>			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Before treatment	.073	36	.200 <sup>*</sup>	.973	36	.528
After treatment	.142	36	.065	.952	36	.118

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Processed research data, 2025

Based on the results of the Shapiro–Wilk normality test, the data for Before Treatment had a significance value of 0.528, and the data for After Treatment had a significance value of 0.118. Since both significance values are greater than 0.05, it can be concluded that the data are normally distributed. Therefore, the assumption of normality is met, and the Paired Sample t-test is appropriate for analyzing the differences between pretest and posttest scores. Subsequently, to determine the change in scores before and after the implementation of the creative social studies learning model, a paired t-test was conducted. The results of the paired t-test are presented in Table 4.

**Table 4 Paired t-test results**

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before treatment – After treatment	-15.139	6.312	1.052	-17.274	-13.003	-14.391	35	.000

Source: Processed research data, 2025

The results of the Paired Samples t-test indicate a significant difference between students' social intelligence scores before and after the implementation of the *Tudang Sipulung* learning model. The mean difference of -15.139 shows that the post-treatment scores increased substantially compared to the pre-treatment scores (as the difference was

calculated as Before – After, a negative result indicates an improvement). The obtained t-value =  $-14.391$ , with  $df = 35$  and p-value (Sig. 2-tailed) =  $0.000 < 0.05$ , demonstrates that the difference is statistically highly significant. Therefore, it can be concluded that the implementation of the *Tudang Sipulung* learning model is effective in enhancing students' social intelligence.

The improvement in social intelligence can be explained through the mechanisms of collaboration, discussion, and reflection embedded in the *Tudang Sipulung* learning model. According to Van Ryzin & Roseth (2022), cooperative learning plays a significant role in strengthening students' social and emotional capacities by creating structured, interdependent group interactions. The findings of this study also reflect similar patterns in general terms. For example, the increase in students' Social Awareness scores suggests an improvement in empathy, as students became more attentive to peers' perspectives during the Sipulung discussions. The enhancement in Social Skills indicates stronger positive peer relations, characterized by more effective communication, willingness to listen, and collaborative problem-solving. Meanwhile, the growth in Social Information Processing demonstrates improved emotional and situational understanding, as students were better able to interpret social cues and respond appropriately during group activities. Although the study did not measure each of these aspects separately, the overall trends in the three dimensions provide indirect evidence that cooperative, culturally grounded learning interactions contribute to the development of empathy, positive peer engagement, and emotional regulation.

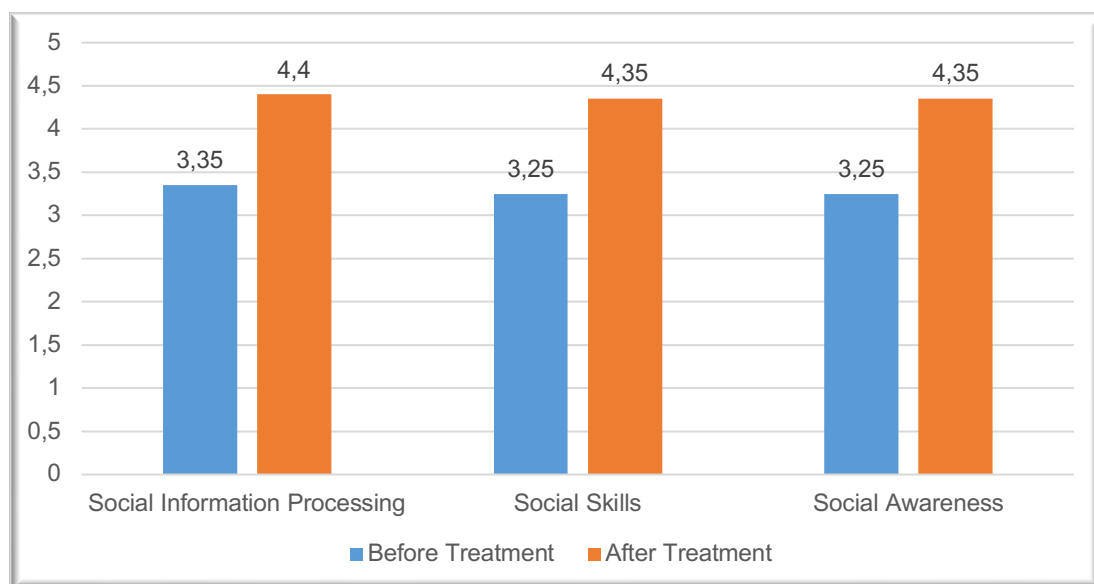
These findings align with Pollak et al. (2024), who found that learning environments designed with structured social interaction and collaborative tasks substantially strengthen students' social competence, including their empathy, emotional regulation, and ability to navigate interpersonal situations effectively. The n-gain value of 0.578 further substantiates that the increase in students' social intelligence scores was considerably significant.

Theoretically, the research findings reinforce the view that creative learning fosters not only cognitive growth but also the social–emotional dimensions of students' development (Goleman, 1998; Schuster & Glavas, 2017). Integrating the cultivation of social intelligence into the social studies curriculum is therefore essential to create a holistic learning experience. Practically, lecturers can implement creative strategies such as case discussions, role-playing, and collaborative projects to enhance students' social skills. The n-gain value of 0.578 serves as a strong indicator that this method is significantly effective and can serve as a reference for curriculum developers and educational practitioners in

designing learning models that emphasize both creativity and the reinforcement of social intelligence (Hargreaves & Fullan, 2012).

### Analysis of Improving the Dimensions of Student Social Intelligence

The data analysis results reveal an increase in the average scores across all dimensions of social intelligence following the implementation of the *Tudang Sipulung* learning model. This finding indicates that the learning intervention successfully enhanced students' abilities in understanding social information, developing social skills, and fostering social awareness. The improvement in the dimensions of students' social intelligence is illustrated in Picture 2.



**Figure 2. Enhancement of Social Intelligence Dimensions**

Before the intervention, the average scores for Social Information Processing, Social Skills, and Social Awareness were approximately 3.35, 3.25, and 3.25, respectively. After the intervention, the averages increased to 4.4 for Social Information Processing, 4.35 for Social Skills, and 4.35 for Social Awareness. The improvement in each dimension of students' social intelligence occurred through the stages of the *Tudang Sipulung* learning model, and several indirect indicators from the learning process support these findings. Evidence of increased social information processing emerged during the *Mappasitinaja* stage, where students demonstrated a clearer understanding of the social context presented in class and were able to identify key issues more accurately during discussions, reflected in the rise of the Social Information Processing score from 3.35 to 4.40.

The enhancement of social skills is supported by observable patterns during the *Mappaseng* and *Sipulung* stages. Students who initially contributed minimally began to

express opinions more confidently, negotiate turn-taking, and respond constructively to peers' arguments. These behavioral changes align with the increased average score of Social Skills (from 3.25 to 4.35) and indicate strengthened communication and cooperation skills rooted in *sipakatau* and *abbulosibatang* values.

Meanwhile, the improvement in social awareness is illustrated through students' increased empathy and reflective responses during the *Mappasitinajaé*, *Massappa'*, and *Mappadeceng* stages. Several students began acknowledging peers' feelings, offering support during presentations, and showing greater sensitivity to group dynamics. This behavioral shift corresponds with the increased Social Awareness score (from 3.25 to 4.35), indicating that these stages effectively cultivated mutual understanding, emotional reflection, and shared responsibility. This collaborative process aligns with Vygotsky's (1978) social learning theory and Goleman's (2006) concept of social intelligence, both of which emphasize the crucial role of interaction and social experience in developing interpersonal competence.

Theoretically, this finding reinforces the concept that social intelligence can be developed through structured and interactive learning experiences (Goleman, 2006; Riggio, 2010). However, the conclusions drawn from this study should be interpreted with caution, as the research was conducted on a single class with a relatively small number of participants and without a comparison group. These limitations restrict the generalizability of the findings to broader student populations. Practically, lecturers may consider implementing the *Tudang Sipulung* learning model by combining discussions, simulations, group projects, and reflective activities to enhance the three dimensions of social intelligence. Nevertheless, further studies involving larger samples, multiple classes, or experimental control groups are needed to validate the consistency and broader applicability of these results.

## Conclusion

This study confirms the effectiveness of the *Tudang Sipulung* learning model in enhancing the social intelligence of students in the Social Studies Education Program at IAIN Parepare. The analysis results indicate a significant increase in posttest scores compared to pretest scores, supported by the paired sample t-test findings showing a significance value of  $p < 0.05$ . The improvement covers three key dimensions of social intelligence: social information processing, social skills, and social awareness, with the greatest contribution observed in students' enhanced understanding of social contexts and

interpersonal empathy. These findings suggest that learning grounded in collective interaction, dialogic reflection, and local cultural values is effective in holistically stimulating students' social competence.

However, this study has several limitations that should be acknowledged and can serve as lessons for future research. First, the research was conducted using a one-group pretest–posttest design without a control group, which restricts the ability to attribute changes solely to the intervention. Second, the sample size was relatively small and limited to a single class in one study program, reducing the generalizability of the findings to broader populations. Third, the measurement relied on self-reported questionnaires, which may introduce response bias and may not fully capture students' actual social behavior in authentic settings. Additionally, the implementation occurred within a specific cultural and institutional context, meaning that the effectiveness of the *Tudang Sipulung* model may vary when applied in different regions or learning environments.

Future researchers are encouraged to address these shortcomings by employing experimental or quasi-experimental designs with comparison groups, involving larger and more diverse samples, and incorporating observational or performance-based assessments to capture behavioral indicators more accurately. Comparative studies across various cultural settings may also provide deeper insights into how local wisdom–based models function in different educational contexts. These improvements will help strengthen the empirical foundation of *Tudang Sipulung* as a culturally grounded pedagogical model and enhance its applicability in wider academic settings.

## **Suggestion**

Based on the research findings, it is recommended that the *Tudang Sipulung* learning model be implemented more broadly in higher education contexts, particularly within study programs that emphasize the development of social competencies and character values. This model has proven effective in fostering students' abilities to communicate, empathize, and collaborate within a learning environment that respects and upholds local cultural values. Therefore, educational institutions are encouraged to integrate this approach into their curricula and instructional activities as a strategic effort to cultivate social intelligence grounded in local wisdom.

Theoretically, this study opens opportunities for the development of culturally based pedagogical models that can reinforce social constructivist theory and contextual learning. Further research is recommended to explore the application of the *Tudang Sipulung* model

across various courses and educational levels to test its generalizability and effectiveness in broader contexts. In addition, longitudinal studies are needed to examine the long-term impact of this model on students' social character development and its contribution to strengthening a collaborative and inclusive academic culture.

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