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The Effect of the Talking Stick Model Assisted by Mystery Box Media on Fifth-Grade Students' Motivation and IPAS Learning Outcomes

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Abstract: This study aims to determine the effect of the Talking Stick model assisted by Mystery Box learning media on learning motivation and learning outcomes in IPAS of fifth-grade students at SD Inpres Borongunti, Bajeng District, Gowa Regency. This study employed a quantitative approach with a pre-experimental design. The research subjects consisted of 31 students. Data were collected using a learning motivation questionnaire and learning outcomes tests, while data analysis was conducted through normality testing and hypothesis testing using the t-test. The results showed that prior to the implementation of the Talking Stick model assisted by Mystery Box media, students' learning motivation was predominantly in the low and moderate motivation categories. After the treatment was applied, students' learning motivation increased significantly, with all students categorized as motivated and highly motivated. The t-test results for learning motivation indicated a significance value of 0.002 < 0.05, thus H_1 was accepted. In addition, students' IPAS learning outcomes also showed a significant improvement, as indicated by an increase in the mean score from 66 in the pretest to 86 in the posttest, with learning mastery increasing from 42% to 100%. The t-test results for learning outcomes showed a significance value of 0.000 < 0.05, thus H_1 was accepted. Based on these findings, it can be concluded that the Talking Stick model assisted by Mystery Box learning media has a significant effect on improving learning motivation and learning outcomes in IPAS of fifth-grade students at SD Inpres Borongunti, Bajeng District, Gowa Regency.

Keywords: IPAS; Learning Motivation; Learning Outcomes; Mystery Box; Talking Stick.

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1. Introduction

Education is widely understood as a lifelong learning process that occurs across family, community, and school environments, aiming not only to transmit knowledge but also to foster character development, thinking skills, creativity, and active participation as future citizens. In an era marked by increasingly complex global challenges, students' readiness to face future demands is closely related to the extent to which learning experiences are meaningful, engaging, and student-centered. Effective learning is therefore expected to move beyond passive knowledge acquisition and instead promote motivation, interaction, and higher-order thinking skills (MY, 2024; Yusniar et al., 2025).

This global orientation toward quality learning is reinforced within the Indonesian educational system through national regulations that emphasize active and meaningful instruction. Learning at the primary education level is required to be systematically designed to encourage student engagement and meaningful learning experiences, as stipulated in national process standards (Permendikbudristek, 2022). In addition, assessment practices are expected

to support competency achievement rather than merely measure memorization, aligning instructional processes with learning objectives that prioritize understanding and application (Permendikbudristek, 2022). These policy directions underline the importance of instructional strategies that foster motivation and active participation among elementary school students.

At the elementary school level, particularly in Integrated Science and Social Studies (IPAS), learning is expected to develop students' logical, critical, rational, and scientific thinking while simultaneously shaping their character. However, empirical conditions in many elementary classrooms indicate that these expectations are not always achieved. Learning processes often remain teacher-centered, resulting in low student participation, limited interaction, and declining motivation. Low learning motivation in social studies-related subjects has been linked to monotonous teaching methods, weak relevance between learning materials and students' daily experiences, and insufficient teacher–student interaction, which collectively reduce students' engagement in learning activities (Azzahra & Ninawati, 2024).

Similar conditions were observed in the local context of SD Inpres Borongunti, Bajeng District, Gowa Regency. Initial observations conducted on June 6, 2025, involving 31 fifth-grade students revealed that only 48% of students achieved mastery learning in IPAS based on the Minimum Achievement Criteria (KKTP) of 75, while 52% did not meet this standard. In terms of learning motivation, 42% of students were categorized as having low motivation, characterized by lack of focus, passive classroom behavior, reluctance to ask questions, and low self-confidence during learning activities. These findings indicate a substantial gap between the intended goals of IPAS instruction, which emphasize active and meaningful learning, and the actual classroom practices that continue to limit student engagement.

Previous empirical studies suggest that low motivation and learning outcomes are influenced by both internal and external factors. Internal factors include limited self-motivation, low self-confidence, and weak interest in learning materials, which can reduce students' willingness to participate actively in classroom activities. Students with low self-confidence, for instance, tend to avoid completing assignments and engaging in discussions, thereby hindering their learning progress (Sari et al., 2023). External factors also play a critical role, particularly the continued dominance of teacher-centered instructional approaches, limited use of engaging learning media, and restricted opportunities for student interaction. Learning environments that lack innovation and meaningful engagement have been shown to exacerbate motivational problems, especially when instructional strategies fail to stimulate students' curiosity and participation (Oktaviani et al., 2021).

Innovative learning models and instructional media are therefore essential to address these challenges. Interactive instructional approaches, such as the Talking Stick learning model, have been shown to encourage student participation by providing structured opportunities for students to speak, express ideas, and build confidence through active classroom interaction. The effectiveness of the Talking Stick model in improving learning outcomes has been demonstrated in elementary-level mathematics instruction, where significant improvements were observed following its implementation (Marnola et al., 2022). In addition, positive effects of the Talking Stick model on students' learning motivation have also been reported, indicating its potential to enhance both affective and cognitive learning dimensions (Malau et al., 2024).

Alongside instructional models, the use of engaging learning media plays a crucial role in fostering students' curiosity and motivation. Mystery Box media, which involve presenting learning materials, questions, or challenges in an element of surprise, have been found to increase student engagement and learning outcomes. Improvements in elementary students' learning achievement have been observed through the use of Mystery Box media in thematic learning contexts (Lisdayanti et al., 2023). Furthermore, the integration of Mystery Box media within project-based learning has been shown to enhance student involvement and creativity in IPAS instruction (Akyun et al., 2024). These findings suggest that combining interactive learning models with curiosity-driven media may provide a more comprehensive approach to improving learning motivation and outcomes.

Despite these findings, empirical research examining the integrated application of the Talking Stick learning model and Mystery Box media in IPAS instruction remains limited, particularly in elementary school contexts within Gowa Regency. Most existing studies have examined these approaches separately, leaving an empirical gap regarding their combined effect on both learning motivation and learning outcomes. Addressing this gap is important not only to extend existing literature but also to provide practical guidance for teachers seeking

instructional strategies aligned with national education standards that emphasize active learning and meaningful assessment. Therefore, this study aims to examine the effect of the Talking Stick learning model assisted by Mystery Box media on learning motivation and IPAS learning outcomes among fifth-grade students at SD Inpres Borongunti, Gowa Regency.

2. Literature review

2.1. Talking Stick Learning Model

Contemporary learning paradigms emphasize student-centered instruction, where instructional design is conceived as an iterative and continuous cycle rather than a linear sequence. In this "new paradigm" framework, learning development integrates competency standards mapping, the Merdeka Belajar orientation, and minimum competency assessment to provide educators with broader flexibility in designing instruction and assessment aligned with students' characteristics and needs (Malau et al., 2024). Within this framework, a learning model functions as a conceptual and procedural guide for organizing learning experiences in a systematic manner to achieve instructional goals. It is also understood as an approach that shapes classroom learning activities (Darmawan & Wahyudin, 2023; Octavia, 2022). Learning itself encompasses the full sequence of instructional delivery, including all stages before, during, and after instruction, as well as the facilities and resources used directly or indirectly in teaching. Accordingly, a learning model does not merely define what is taught; it also structures how instruction is orchestrated to support students' cognitive and affective engagement and to promote active participation.

The Talking Stick strategy originates from the cultural practice of Indigenous communities in America, where a "speaking stick" was used to ensure that all participants had an opportunity to speak and express their views. In classroom settings, this practice has been adapted into a learning model that uses a stick to regulate turn-taking (Hasibuan et al., 2022). As a cooperative learning approach, Talking Stick is described as one of several cooperative models that emphasizes interaction and encourages students to speak up; its procedures are relatively simple and practical for learners at the elementary through secondary levels (Togatorop, 2023). Pedagogically, using a stick as a turn-taking cue can function as a classroom regulation mechanism that pushes students to prepare, remain attentive, and practice oral communication when their turn arrives. This is particularly relevant in classrooms where students tend to be passive, because Talking Stick shifts the locus of activity toward students while maintaining the teacher's role as a facilitator of learning.

The Talking Stick procedure typically includes clarifying instructional goals, forming small groups, preparing the stick, providing learning materials for reading and discussion, and conducting question–answer exchanges through turn-taking indicated by the movement of the stick (Nilayanti et al., 2024). Its procedural strength lies in the gradual transition from information intake to response production, as students first read and discuss content and then answer questions in a setting that requires readiness to participate. This structure can increase students' preparedness and individual accountability within group work, while also broadening participation because most students are given a chance to respond (Nilayanti et al., 2024). From a methodological standpoint, clearly articulated steps also support replicability in experimental studies, enabling researchers to evaluate outcomes based on the fidelity of implementation.

Talking Stick is often considered effective because it can assess students' readiness and mastery of content, train students to read and comprehend material more quickly, and encourage consistent study habits because students do not know when the stick will reach them (Nilayanti et al., 2024:33). At the same time, the model can create affective risks for students who do not understand the material, as the expectation to answer when holding the stick may trigger anxiety or worry (Nilayanti et al., 2024:33). Critically, this implies that the effectiveness of Talking Stick depends strongly on the teacher's scaffolding, the clarity of content delivery, and a psychologically safe classroom climate. In other words, gains in motivation and learning outcomes are shaped not only by the model itself, but also by how the model is enacted to minimize anxiety and optimize student engagement.

2.2. Mystery Box Learning Media

Instructional media occupy a central role in learning processes because they function as vehicles for conveying messages that facilitate communication between teachers and students, improve objectivity in instruction, and potentially stimulate students' interest in learning (Harefa et al., 2023). Media can also be viewed as a learning subsystem that delivers information to support the attainment of instructional objectives and targeted competencies, making media an integral component of instructional design rather than a mere add-on (Anggraini et al., 2022). In practice, the selection of instructional media should be aligned with clear purposes, the characteristics of the media (including how it is produced, how it is used, and what it can do), and the availability of alternative options so teachers can compare media effectiveness relative to time and place constraints (Kisworo, 2024:83). This perspective is especially important in elementary education, where students generally respond positively to concrete learning aids and visually engaging resources that trigger curiosity and active exploration.

Instructional media can clarify messages and reduce overly verbal instruction by making abstract concepts more concrete, while also addressing limitations related to space, time, energy, and sensory access (Ekayani, 2024). Media can increase students' enthusiasm for learning and reduce boredom, creating a more enjoyable and active classroom climate that supports students' ability to absorb information and participate with greater motivation (Ekayani, 2024). Media also make it possible for children to learn more independently in ways that match their visual, auditory, and kinesthetic preferences, and they can help standardize perceptions so students share similar learning experiences regarding the objects or events being studied (Ekayani, 2024). In terms of instructional functions, media may serve attention, affective, cognitive, and compensatory roles by directing students' focus, increasing enjoyment, supporting comprehension and memory, and accommodating learners who struggle with text-based or verbal instruction (Wijaya, 2023). In elementary schools, instructional media are often categorized into auditory, visual, and audiovisual media, each of which offers distinct affordances for supporting learning (Burhanudin & Firmadani, 2022).

Mystery Box is an instructional medium typically designed as an opaque box or cube that contains surprise elements such as questions, materials, or learning challenges, thereby stimulating students' curiosity because the content remains unknown until the box is opened. In conventional practice, a box can be used as a simple medium to facilitate teaching because it is easy to open and close; however, Mystery Box represents an innovative adaptation when combined with cards containing images, concepts, questions, or symbols that guide students toward the lesson content. Theoretically, the "mystery" mechanism functions as a stimulus that heightens attention and activates engagement, which aligns well with elementary students' developmental tendency to respond to visual prompts and exploratory activities.

Mystery Box offers several advantages: it can be customized to the instructional material, provides layered surprises that attract students' attention, supports more innovative learning processes, and has potential to develop creativity among educators and students while also fostering imagination (Febriandika et al., 2022). Nevertheless, it also presents constraints, including the time and cost required for development, the dependence of durability on the quality of materials, and challenges in sourcing high-quality materials at reasonable prices. Importantly, innovation in media does not automatically translate into improved learning outcomes unless it is supported by sound pedagogical planning; without alignment to learning objectives, motivation indicators, and assessment strategies, media may function more as entertainment than as an instructional tool.

2.3. Learning Motivation

Motivation derives from the concept of "motive" as an internal driving force that pushes individuals to act in order to achieve specific goals, becoming most active when the need to reach a goal feels urgent (Mardewi et al., 2024; Syarifuddin & Irmawati, 2023). In educational contexts, motivation is often defined as the energy that energizes, directs, and sustains behavior; in students, it is visible in personal investment and cognitive, emotional, and behavioral engagement across school activities (MY et al., 2025). Motivation and learning are mutually reinforcing, as learning is understood as relatively permanent behavioral change that potentially results from reinforced practice and is guided by goal attainment, while learning motivation refers to internal and external drives that encourage such change (Kurniawati, 2021). More specifically, learning motivation can be framed as a driving force that builds students' willingness to learn actively, creatively, effectively, innovatively, and enjoyably, ultimately supporting change across cognitive, affective, and psychomotor domains (Andriani & Rasto,

2024:78). This suggests that motivation is not a fleeting preference but a psychological condition that shapes persistence, engagement, and resilience in the face of learning challenges.

Learning motivation is influenced by students' aspirations, abilities, physical and psychological conditions, and the physical and social learning environment that shapes students' day-to-day experiences (Weni, 2023). Dynamic elements within instruction—such as the availability of learning materials and tools, the quality of the classroom climate, and the teacher's efforts to teach effectively—also play a major role in strengthening or weakening motivation (Weni, 2023). Pedagogically, these factors indicate that motivation should not be treated merely as an individual trait; instead, it emerges through interaction between learner characteristics and instructional quality. Consequently, interventions designed to increase motivation should combine strategies that support students' sense of competence, psychological safety, and meaningful learning experiences.

Motivation functions to encourage students to engage in learning activities, direct effort toward goal attainment, act as a driving force behind students' actions, determine the direction of behavior toward desired outcomes, and help select behaviors that are most relevant for reaching learning goals (Febyanti et al., 2022:23). These functions can also be summarized into three core roles: motivating individuals to act, directing action toward goals, and selecting actions that are most aligned with the intended objectives (Emda, 2023:96). This framework reinforces the idea that motivation is a regulatory mechanism linking learning goals to students' observable classroom behaviors, so improvements in motivation can generate downstream effects on engagement and achievement. Indicators of learning motivation include the desire to succeed, learning needs and drives, future hopes and aspirations, recognition in learning, engaging learning activities, and a supportive learning environment that enables effective learning (Olivia & Sanoto, 2023:56). Behavioral characteristics of motivation include persistence in completing tasks, resilience in facing difficulties, interest in various problems, preference for independent work, and enjoyment of problem solving, as well as the ability to defend one's views and remain committed to what one believes (Ariani, 2023:76). These indicators suggest that motivation has observable behavioral dimensions, meaning instructional strategies that stimulate participation, curiosity, and success experiences can be linked to measurable changes in motivation.

A range of motivation theories—behaviorism, cognitive psychology, and humanism—have been advanced to explain why individuals act. Behaviorist perspectives emphasize motivation as beginning with situations, conditions, and objects that attract interest and, when continuously satisfying, produce readiness to act. Cognitive perspectives highlight that behavior is influenced by thinking processes, focusing on how individuals process information and interpret specific situations. Humanistic perspectives emphasize individuals' choices and development of potential while attending to obstacles that inhibit growth. A prominent needs-based approach is Maslow's hierarchy of needs, which proposes five levels of needs, from physiological needs to more complex psychological motives that become salient once basic needs are met (Ningsih, 2022; Novia Sandra D, 2024). Achievement motivation perspectives further suggest that motivation increases when individuals are motivated, understand motivational elements, and actively engage in efforts to achieve goals (Ridha, 2022). Herzberg's two-factor model distinguishes between intrinsic motivational factors related to achievement and extrinsic "hygiene" factors that maintain behavior. Synthesizing these perspectives implies that instructional strategies should provide engaging stimuli, strengthen students' perceived meaning and purpose in learning, and establish supportive external conditions that sustain engagement.

2.4. Learning Ootcomes

Learning outcomes are commonly defined as the abilities students acquire after learning activities, including competencies across cognitive, affective, and psychomotor dimensions achieved through instructional processes (Sri Susanti Oli et al., 2020; Setyorini & Wulandari, 2021). Learning outcomes have also been conceptualized as holistic behavioral change, involving shifts in knowledge, understanding, attitudes, and behavior attributable to instruction, distinguishing them from changes arising solely from maturation or growth (Ni Made et al., 2024). From a curriculum standpoint, learning outcomes refer to what students achieve according to specific assessment criteria established by educational institutions, serving as formal indicators of instructional success and as a basis for evaluating the quality of teaching and learning processes (Oli, 2020). Thus, learning outcomes should be treated as multidimensional products influenced by the interplay of instructional design, learning media, student motivation, and assessment strategies.

Learning outcome indicators can be mapped using taxonomies that classify outcomes into cognitive, affective, and psychomotor domains, highlighting that assessment should not be restricted to knowledge recall alone (Haryanto, 2021). Within the cognitive domain, thinking progresses from remembering to creating, conceptually distinguishing lower-order thinking skills (LOTS) from higher-order thinking skills (HOTS) (Haryanto, 2021). The affective domain involves values, interests, attitudes, appreciation, and adjustment related to behavior, while the psychomotor domain emphasizes motor skills progressing from imitation to naturalization (Haryanto, 2021). This indicator framework is important because it supports a more comprehensive assessment of whether instructional interventions influence not only knowledge scores but also students' attitudes, interests, and relevant skills aligned with IPAS learning objectives.

Learning theories provide a basis for understanding how outcomes develop through mental processes and experience. Gestalt theory emphasizes the importance of achieving appropriate responses to solve problems through meaningful pattern recognition, while Brunner's perspective focuses on structuring curriculum and learning experiences so students can learn more effectively and build new knowledge and skills (Daryanto, 2022; Daryanto, 2023). Developmental perspectives argue that children possess mental structures distinct from adults and therefore require learning services aligned with their developmental stages (Ibda, 2024). Gagné's view conceptualizes learning as a process of acquiring motivation, knowledge, skills, habits, and behaviors through instruction (Sastrawan & Suardipa, 2021). Together, these perspectives suggest that improved learning outcomes require meaningful learning experiences, developmentally appropriate instruction, and strategies that sustain motivation throughout learning.

2.5. IPAS

IPAS integrates natural and social sciences to examine living and nonliving phenomena in the universe and their interactions, as well as human life as both individual and social beings in relation to the environment. Curriculum development in Indonesia reflects a shift from separate science and social studies subjects toward integrated instruction, given that both subjects address students' surrounding environments even though they differ in focus—science emphasizes empirical investigation of natural phenomena, while social studies emphasizes social contexts (Samatowa, 2023: 53). Under the Merdeka Curriculum, science and social studies are integrated into IPAS to strengthen students' capacity and awareness of the environment from both natural and social perspectives as a unified whole, while also increasing the connection between learning materials and real-world contexts, which is expected to support the development of 21st-century critical thinking (Samatowa, 2023: 53). IPAS is designed to nurture students' curiosity about surrounding phenomena, helping them understand how the universe works and interacts with human life. Through foundational scientific methodology in IPAS instruction, students are trained in scientific attitudes—high curiosity, critical and analytical thinking, and the ability to draw accurate conclusions—thereby fostering wisdom. Given Indonesia's rich cultural diversity and local wisdom, IPAS also encourages students to explore local knowledge related to IPAS content and apply it to problem solving (Samatowa, 2023: 54).

3. Proposed Method

This study employed a quantitative pre-experimental design to examine the effect of the Talking Stick learning model assisted by Mystery Box media on students' learning motivation and IPAS learning outcomes. A one-group pretest–posttest design (O1–X–O2) was used, where students' baseline performance was measured before the intervention and compared with outcomes after the treatment (Sugiyono, 2020: 110–111). The study was conducted at SD Inpres Borongunti, Bajeng District, Gowa Regency, during the 2025/2026 academic year, with data collection carried out from August to September 2025. The population consisted of all fifth-grade students at the school, totaling 31 learners, and a saturated sampling technique was applied so that all population members were included as research participants (Suriani et al., 2023). The independent variable was the Talking Stick model assisted by Mystery Box media, while the dependent variables were learning motivation and learning outcomes.

Data were collected through classroom observation, questionnaires, achievement tests, and documentation. Learning motivation was measured using a 27-item questionnaire covering four dimensions—attention, relevance, confidence, and satisfaction—adapted from Dila et al. (2024), with motivation levels categorized from very low to very high. Learning outcomes were assessed using pretest and posttest scores and classified into five achievement

levels, with a minimum mastery criterion (KKTP) of 75 (SD Inpres Borongunti, 2025). Data analysis involved descriptive statistics to summarize motivation and learning outcomes, followed by inferential statistical testing. Prior to hypothesis testing, data normality was examined using the Shapiro–Wilk test at a significance level of 0.05. Hypotheses were tested using a parametric t-test with SPSS version 27, applying a two-tailed significance threshold of 0.05 to determine the effect of the instructional intervention. Research procedures included institutional permission prior to data collection.

4. Results and Discussion

4.1. Results

4.1.1. Normality Test

A normality test was conducted to examine the distribution of students' learning motivation questionnaire scores and IPAS learning outcomes prior to hypothesis testing. Data normality was assessed using the One-Sample Shapiro–Wilk test, with the criterion that data are considered normally distributed when the significance value exceeds 0.05.

Table 1. Summary of the Shapiro–Wilk Normality Test

Variable	Measurement	Significance	Interpretation
Learning Motivation	Pretest	0.075	Normal
Learning Motivation	Posttest	0.082	Normal
IPAS Learning Outcomes	Pretest	0.069	Normal
IPAS Learning Outcomes	Posttest	0.075	Normal

Source: Researcher's Data Analysis (2025)

As summarized in Table 1, all pretest and posttest data for both learning motivation and IPAS learning outcomes showed significance values greater than 0.05, indicating that the data were normally distributed and met the assumption for parametric analysis.

4.1.2. Hypothesis Testing (Independent-Samples t-Test)

Since the normality assumption was satisfied, hypothesis testing was performed using parametric statistical analysis. The hypotheses were tested using the independent-samples t-test with IBM SPSS for Windows version 27 to examine the effect of the Talking Stick learning model assisted by Mystery Box media on students' learning motivation and IPAS learning outcomes. The results of the hypothesis testing are presented in Table 2.

Table 2. Independent-Samples t-Test Results

Variable	F	Sig.	t	df	Sig. (2-tailed)
Learning Motivation	1.081	0.304	3.338	29	0.002
IPAS Learning Outcomes	1.085	0.306	3.341	29	0.000

Source: Researcher's Data Analysis (2025)

The analysis showed that the calculated *t* values for both variables exceeded the critical *t* value of 2.045 at a significance level of $\alpha = 0.05$ (two-tailed) with 29 degrees of freedom. In addition, the two-tailed significance values were below 0.05, indicating statistically significant differences. Therefore, the null hypotheses (H_0) were rejected and the alternative hypotheses (H_1) were accepted. These findings demonstrate that the Talking Stick learning model assisted by Mystery Box media has a significant effect on both students' learning motivation and IPAS learning outcomes.

4.2. Discussion

4.2.1. Effect of the Talking Stick Model Assisted by Mystery Box Media on Students' Learning Motivation

The findings of this study indicate that the Talking Stick learning model assisted by Mystery Box media has a significant positive effect on fifth-grade students' learning motivation in IPAS. The improvement in motivation can be attributed to the participatory nature of the Talking Stick model, which provides every student with an equal opportunity to actively engage in learning through a structured turn-taking mechanism. This approach reduces student passivity and encourages attentiveness, as learners are aware that they may be required to respond or express ideas at any time. In addition, the use of Mystery Box media stimulates students' curiosity through elements of surprise and challenge, thereby increasing enthusiasm and focus during the learning process. Empirically, this effect is evidenced by the significant difference between pretest and posttest motivation scores and is further supported by the t-test results, which showed significance values below 0.05.

Prior to the intervention, students' learning motivation was not optimal, as reflected in the pretest data showing that most students were categorized as less motivated or moderately motivated, with no students reaching the highly motivated category. This condition suggests that the conventional instructional practices previously implemented were insufficient to fully stimulate students' interest, attention, and active involvement in IPAS learning. From a theoretical perspective, learning motivation is a critical internal factor that determines students' learning success because it functions as a driving force, a directional guide, and a reinforcement of learning behavior (Uno & Nina Lamatenggo, 2022). Without adequate motivation, students are less likely to engage cognitively and behaviorally in the learning process.

Following the implementation of the Talking Stick model assisted by Mystery Box media, students' learning motivation increased markedly. All students were classified as motivated or highly motivated, with proportions of 52% and 48%, respectively. The absence of students in the low-motivation category indicates that an active, interactive, and enjoyable learning environment can foster a conducive classroom climate that supports sustained student engagement in IPAS learning. Theoretically, the Talking Stick model is a cooperative learning strategy that emphasizes active student participation through speaking, answering questions, and expressing ideas in turn. This model promotes students' confidence, courage, and attentiveness to learning content, as each student has an equal opportunity to participate directly in the learning process (Shoimin, 2014). When combined with Mystery Box media, the learning experience becomes more engaging due to the incorporation of curiosity, novelty, and challenge, which are key drivers of intrinsic motivation.

Conceptually, Mystery Box media belong to visual and manipulative instructional media that effectively stimulate students' curiosity. Contemporary motivation theories emphasize that curiosity and interest in learning activities play a central role in building intrinsic motivation (Sardiman, 2018). Therefore, the integration of the Talking Stick model and Mystery Box media simultaneously creates an active, enjoyable, and meaningful learning experience that strengthens students' motivation. These findings are consistent with previous studies showing that interactive cooperative learning models significantly enhance elementary students' learning motivation (Rahmawati, 2022) and that learning environments encouraging active speaking and interaction increase students' confidence and motivation (Putri & Darwan, 2023). Moreover, recent research has demonstrated that creative, game-based instructional media can improve students' motivation by fostering a fun and challenging learning atmosphere. Collectively, these results confirm that the Talking Stick cooperative learning model assisted by Mystery Box media positively influences students' learning motivation by promoting interaction, confidence, and an engaging classroom environment.

4.2.2. Effect of the Talking Stick Model Assisted by Mystery Box Media on Students' IPAS Learning Outcomes

In addition to its impact on learning motivation, the Talking Stick learning model assisted by Mystery Box media was found to have a significant positive effect on students' IPAS learning outcomes. This effect is evidenced by the substantial improvement in students' achievement scores from pretest to posttest and is statistically supported by the t-test results, which yielded significance values below 0.05. Before the intervention, students' IPAS learning outcomes were relatively low, with an average score of 66 and a mastery level of only 42%, indicating that most students had not yet met the expected competency standards. The distribution of pretest scores was dominated by low and very low categories, suggesting that

students' initial understanding of IPAS concepts was limited. This condition aligns with learning outcome theory, which posits that low student engagement and motivation directly contribute to poor academic achievement (Susanto, 2016).

After the instructional intervention, students' IPAS learning outcomes improved significantly. The average posttest score increased to 86, and the mastery level reached 100%, with all students falling into the moderate to very high achievement categories. No students remained in the low or very low categories. This substantial improvement demonstrates that active and meaningful learning processes are effective in enhancing students' conceptual understanding of IPAS. Theoretically, learning outcomes are strongly influenced by the quality of the instructional process experienced by students. Learning models that actively involve students, encourage interaction, and provide direct learning experiences enable learners to construct deeper and more durable understanding of subject matter(Trianto, 2021). Through the Talking Stick model, students are encouraged to recall, comprehend, and verbally communicate learned material, thereby optimizing their cognitive processing.

The Mystery Box media further contribute to improved learning outcomes by helping to concretize abstract IPAS concepts through exploration and discovery-based activities. From a constructivist learning perspective, students are more likely to understand and retain concepts when they are actively involved in constructing knowledge through meaningful experiences (Suprijono, 2023). By engaging students in hands-on exploration and problem-solving, Mystery Box media support this constructivist process and enhance conceptual comprehension. The findings of this study are consistent with prior research demonstrating that active learning models supported by creative instructional media significantly improve elementary students' learning outcomes (Nurhaliza, 2021). Similarly, Syakur et al. (2024) reported that cooperative learning models combined with innovative media enhance IPAS learning outcomes by increasing student focus, motivation, and ease of understanding.

Overall, the discussion reveals that improvements in students' learning outcomes are closely aligned with increases in learning motivation, as evidenced by greater student participation, responsiveness in answering questions, and active engagement throughout the learning process. These results underscore the interconnected relationship between motivation and achievement, suggesting that instructional strategies designed to enhance motivation can simultaneously foster meaningful learning gains in IPAS.

5. Conclusions

This study concludes that the Talking Stick learning model assisted by Mystery Box media has a significant positive effect on both students' learning motivation and IPAS learning outcomes at the elementary school level. The implementation of an active and interactive learning design successfully increased students' motivation from lower categories to motivated and highly motivated levels, which was accompanied by a substantial improvement in learning outcomes, with all students achieving mastery after the intervention. These findings confirm that integrating cooperative learning models with innovative instructional media enhances the effectiveness of IPAS learning.

From a theoretical perspective, this study reinforces the view that learning motivation and learning outcomes are closely interconnected and can be strengthened through student-centered instructional strategies that promote active participation and meaningful learning experiences. The Talking Stick model assisted by Mystery Box media extends cooperative learning practices by incorporating curiosity-driven media that stimulate intrinsic motivation. Practically, the findings provide important implications for teachers and schools, suggesting that the adoption of interactive models and creative learning media can improve student engagement and academic achievement, particularly in IPAS instruction at the elementary level.

Despite its contributions, this study has several limitations. The research was conducted in a single school with a relatively small sample size and employed a pre-experimental design without a control group, which limits the generalizability of the findings. In addition, the duration of the intervention was relatively short, preventing an examination of long-term effects. Future research is therefore recommended to apply more robust experimental designs with control groups, involve larger and more diverse samples, and investigate the sustained impact of the Talking Stick model assisted by Mystery Box media on students' motivation and learning outcomes over time.

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