

Development of Design Thinking-Based Challenge Cards to Improve Discipline and Critical Thinking of Junior High School Grade 7h Students in Social Studies Learning

Ahmad Ahsan ^{1*}, Bayu Kurniawan ², Linda Zulfikar Hayu ³

¹⁻³ Universitas Negeri Malang, Indonesia

Alamat : Jl. Semarang 5 Malang 65145 Jawa Timur

Korespondensi penulis : ahmad.ahsan.2431747@students.um.ac.id ^{1*}, bayu.kurniawan.fis@um.ac.id ², lindafadlullah@gmail.com ³

Abstract. *The lack of discipline among junior high school students in social studies learning affects the effectiveness of the educational process. Initial observations in Class 7H at SMP Lab Lab, State University of Malang, revealed that students often ignored class rules, failed to follow teacher instructions, submitted assignments late, and were inactive in group work. To address these issues, Challenge Cards were developed as a learning medium based on Design Thinking to foster discipline through structured and engaging learning tasks. This study used a Research and Development (R&D) strategy with a qualitative descriptive method. The development process followed five stages of Design Thinking. In the Empathize stage, observations and interviews were conducted to identify the causes of low discipline, such as procrastination and lack of responsibility. The Define stage formulated the core problem as the absence of a learning strategy that includes time limits and clear task structures. During the Ideate stage, Challenge Cards were designed with social case studies to be completed sequentially within a time frame. A prototype consisting of five challenge levels and group task scenarios was tested in the Test stage. The results showed improved discipline, including punctual submissions, teamwork, and rule compliance. The media proved effective, engaging, contextual, and encouraged active student responsibility.*

Keywords: *Challenge Card, Design Thinking, Discipline, Learning Media, Social Studies*

1. BACKGROUND

Student discipline serves as a crucial pillar in the effectiveness of the teaching and learning experience. Students who are disciplined typically adhere to guidelines, finish their work punctually, and engage actively in their education. Nevertheless, the findings from observations in the 7H class of the Junior High School Lab at Malang State University indicated that a majority of students displayed undisciplined behavior, including frequently submitting assignments late, ignoring the teacher's instructions, and showing unwillingness to participate in group activities. This situation obstructs the establishment of a supportive learning environment and contradicts the tenets of the Independent Curriculum, which highlights character development, including students' sense of responsibility and discipline (Ministry of Education and Culture, 2022).

In addressing these issues, creative learning media is required that not only delivers content but is also capable of nurturing disciplined character in a contextual manner. A method utilized is Design Thinking, which centers the design process on the actual needs of students

via five phases: Empathize, Define, Ideate, Prototype, and Test (Tim Brown, 2009). The created media is Challenge Cards, which offer a staged and time-constrained task situation. This media is utilized in collaborative learning activities that motivate students to adhere to the educational framework in an organized, punctual, and accountable way.

Numerous studies have highlighted the significance of discipline in enhancing learning results. As stated by Sudrajat (2011), discipline in education shows students' accountability and understanding of the learning process. Hasibuan (2019) demonstrates that utilizing the active learning model can enhance student discipline by engaging them directly in group activities. At the same time, contextual media like challenge cards have proven effective in enhancing student engagement and behavioral consistency (Sari & Wahyudi, 2020). Amanah (2023) conducted another study that emphasizes the effectiveness of Problem Based Learning in enhancing engagement and learning results in social studies, yet it has not specifically investigated shifts in students' discipline attitudes regarding character development.

Card media has been extensively utilized in education to boost student participation. Nurhalimah et al. (2013) – The Impact of Picture Card Media on Students' Rational Thinking Skills, yet this research indicates that picture card media does not significantly affect students' rational thinking abilities. This results from media design that is easier and fails to inspire students to think critically. Moreover, this media typically focuses solely on visual perception, lacking deeper interaction or dialogue among students. Zubaidillah & Hasan (2018) – The Impact of Picture Card Media (Flash Card) on Mastery of Arabic Vocabulary, findings indicate that the application of picture card media (flash card) has a minimal effect on enhancing Arabic vocabulary mastery. This is due to the media's inability to capture sufficient student interest and lack of interactivity, which prevents it from effectively boosting students' learning motivation. Salsabila et al. (2024) – The Influence of Three-Dimensional Picture Card Media on Reading Skills of Elementary School Students. While the use of three-dimensional picture card media enhanced children's reading skills, this research noted that the media was not as effective in larger groups due to size constraints and challenges in dissemination. Moreover, these media necessitate more time for preparation and execution, potentially diminishing learning efficiency.

To tackle the noted weaknesses, creating Challenge Card media utilizing the Design Thinking method may serve as an effective remedy. This method consists of five steps: Empathize, Define, Ideate, Prototype, and Test, enabling the creation of media that is more interactive, engaging, and customized to student needs. The Challenge Card Media aims to promote active student participation by presenting challenges that demand collaboration,

problem-solving, and decision-making. Therefore, this medium not only enhances cognitive skills but also influences students' character traits, including discipline, responsibility, and teamwork.

2. THEORETICAL STUDY

Student Discipline in Education

Discipline is one of the essential elements in supporting the effectiveness of the teaching and learning process. According to Santrock (2011), discipline refers to students' ability to regulate behavior, follow rules, and take responsibility for their actions within the learning environment. In the classroom context, discipline is reflected in punctuality, compliance with instructions, task completion, and respectful participation. A lack of discipline often leads to disorganized learning conditions and decreased academic performance. Therefore, educational interventions that help cultivate discipline as a habit are crucial in shaping students' character and learning behavior.

Media-Based Learning and Student Behavior

Learning media plays a significant role in influencing student behavior and engagement. Arsyad (2011) emphasized that instructional media not only serves as a tool to convey content but also shapes students' learning experiences and attitudes. Well-designed media can help develop positive behavior such as self-regulation, collaboration, and discipline. Challenge-based media, such as learning cards, provide structured learning steps that require students to follow rules, manage time, and work responsibly in groups. These activities indirectly strengthen students' commitment to discipline through task completion and peer accountability.

Challenge Cards as a Structured Learning Media

Challenge Cards are a type of learning media designed to present tasks in a structured, sequential, and interactive way. Each card usually contains a contextual problem, instructions, and a time limit, requiring students to complete challenges in an orderly and timely manner. This format is aligned with active and problem-based learning principles, encouraging student participation and behavioral development. The use of challenge media has been shown to increase student focus, responsibility, and classroom discipline (Yuliana & Hermanto, 2020).

Design Thinking in Media Development

Design Thinking is a human-centered approach to problem-solving that involves five stages: Empathize, Define, Ideate, Prototype, and Test (Brown, 2009). In educational settings, this model encourages educators to design learning tools based on students' real needs and

classroom dynamics. By applying Design Thinking in developing Challenge Cards, teachers can ensure the media is both relevant and responsive to the behavioral goals of the students, including discipline. This approach also enables iterative improvement through user feedback, making the media more effective and adaptable to classroom conditions.

Integration in Social Studies Learning

Social Studies (IPS) is a subject that not only focuses on conceptual understanding but also aims to foster civic values, character, and social responsibility. Therefore, integrating structured and student-centered media into Social Studies is highly relevant. Challenge Cards provide contextual problems related to social issues, allowing students to engage meaningfully while also learning to manage their learning behavior with discipline. When designed appropriately, such media can simultaneously support cognitive and character development in Social Studies classrooms.

3. RESEARCH METHODS

This study employs a Research and Development (R&D) methodology with the goal of creating challenge card learning media based on Design Thinking to enhance students' discipline in social studies education. The Design Thinking model was selected as it highlights the empathetic and collaborative approach in creating educational solutions that address the genuine needs of students. The study was carried out in a qualitative descriptive approach to illustrate the media development process and its influence on student disciplinary behavior.

The participants in this research consisted of 32 students from the 7H grade at Laboratory Junior High School, Malang State University. This class was selected following initial observations that indicated discipline issues, including frequent late submissions of assignments, inattentiveness to teachers' directions, and inconsistencies in group work.

The creation of Challenge Card media undergoes five stages of Design Thinking, specifically: (1) Empathize, by observing student behavior in the classroom and administering open-ended questionnaires to understand their experiences in social studies learning; (2) Define, which involves identifying the primary issue as low student discipline and the necessity for media that organizes learning activities; (3) Ideate, by developing the preliminary concept of the Challenge Card media, featuring problem scenarios, time regulations, and task level sequences that promote discipline; (4) Prototype, where media is created and organized in the form of 5x8 cm cards utilized in group work; (5) Test, which entails applying media during various social studies sessions to assess its effect on student behavior.

Data gathering is conducted using two primary methods, specifically observation and surveys. Observations are utilized to document variations in students' disciplined conduct throughout the learning experience, including timeliness, participation in groups, and compliance with the progression of tasks. In the interim, surveys were distributed prior to and following the use of media to assess students' views on learning activities and how significantly media contributed to their development of orderliness and responsibility.

The collected data were qualitatively examined using the interactive analysis model by Miles and Huberman (1994), which included data reduction, data display, and conclusion formulation. Data reduction involves filtering out essential information that pertains to the central theme of the discipline. The information gathered from observations and questionnaires was subsequently displayed as a narrative description to identify patterns of change in student behavior. The credibility of the data was enhanced by using triangulation of methods across sources (observation and questionnaire) and by conducting peer reviews. By employing this method, the study aims to generate learning materials that are relevant, stimulating, and efficient in significantly enhancing student discipline in social studies education.

4. RESULTS AND DISCUSSION

Empathize (Empati)

The *Empathize* stage in the *Design Thinking approach* is the first step that emphasizes the importance of understanding in depth the experience and needs of the end user, in this case 7H junior high school students. The main focus at this stage is to identify the root of the problem related to the low discipline of students in participating in social studies learning.

The results of observations conducted during several meetings showed that most of the students showed undisciplined behavior, such as being late to class, delaying assignment collection, and not complying with the teacher's instructions. This attitude has an impact on the effectiveness of learning and creates a less conducive classroom atmosphere. Based on the results of the questionnaire given to students with open-ended questions about the social studies learning atmosphere, most students described the class as "crowded", "lacking focus", and "sometimes boring". For example, absent student 2 writes "Crowded", and absent student 29 says "Sometimes it feels lively, sometimes the class is crowded and difficult to manage". This indicates that lack of discipline is also closely related to the lack of student involvement and motivation to learn.

This discipline problem is exacerbated by learning methods that tend to be one-way, minimal group activities, and lack of use of challenging media. In fact, according to Ramli

(2003), discipline is the result of a consistent habituation process and must be instilled in a supportive learning environment. In line with that, Suryabrata (2006) stated that students' active involvement in learning activities will be easier to form if students feel emotionally involved and have responsibility for their learning process. In addition, Suyadi (2013) which emphasizes the importance of innovative learning media to create meaningful interaction and enhance students' motivation and sense of responsibility in learning.

Through the *Empathize* stage, it can be concluded that there is an urgent need to implement a learning strategy that addresses the low level of student discipline and engagement. The strategy is expected to create a more engaging and interactive learning environment that actively stimulates students' involvement, both emotionally and intellectually.

Define

The Define phase seeks to establish the primary issue grounded in the insights gathered during the Empathize phase. The findings from observations and open questionnaires in the 7H class of Laboratory Junior High School, State University of Malang indicate that students frequently submit assignments late, show limited attention to the teacher's guidance, and are hesitant to adhere to group work regulations. Students also expressed that their learning seemed dull and that they lacked motivation to take ownership of the assigned tasks.

The primary issue recognized is the absence of educational resources that can promote student discipline via engaging, organized, and rule-following tasks. The strategies employed for learning remain traditional and have not enabled the development of a clear disciplinary mindset.

Research by Arumingtyas (2021) indicates that utilizing interactive and engaging learning media can enhance student learning autonomy, which encompasses arriving punctually, paying attention to teachers' explanations, and taking responsibility for finishing assignments on time.

Therefore, intervention is required through learning media that not only presents the material but also actively helps students become familiar with time management, work order, and shared accountability. The creation of Challenge Card media aims to fulfill this demand by facilitating social studies education that promotes discipline via an engaging, enjoyable, and structured learning process.

Ideate (Creative Thinking)

Once the issue is explicitly outlined, the Ideate phase emphasizes generating a range of innovative solution concepts that can address the challenge of inadequate student discipline in

social studies education. According to Define's findings, educational media is required that not only presents content but also systematically arranges the framework of students' activities, helping them become accustomed to following rules, schedules, and the order of tasks.

At this phase, the researcher creates the concept of learning media through Challenge Cards that feature social problem situations aligned with social studies content. This material is intended for group learning and features a level (1–5) system that should be tackled in stages and in order. Every card includes challenges with specific deadlines and task directions, necessitating students to be organized, compliant, and accountable.

This concept rests on the perspective of Sadiman et al. (2008) that an effective learning medium can not only deliver information but also assist in developing attitudes and values via tangible learning experiences. Furthermore, this concept is reinforced by findings from Yuliana and Hermanto (2020), indicating that challenge-based learning tools promote improved student involvement and self-regulation, particularly concerning discipline related to learning processes and durations.

To promote discipline, the media framework is also constructed with rigid game regulations, including the ban on advancing levels, time restrictions for discussions, and a system for reporting group activities. Through this framework, students subtly acquire the ability to follow a sequence, adhere to a timetable, and finish tasks thoroughly. Challenges organized contextually are crafted to relate to students' everyday experiences, which in turn enhances their sense of responsibility in finishing tasks.

Prototype

The *Prototype* stage is the process of concretizing a pre-formulated idea into an initial product that can be tested. In the context of this research, *Prototype* focuses on creating Challenge Cards media designed to foster student discipline through structured challenge-based learning. The prototyping process is carried out through the following systematic steps:

1. Card Contents Design









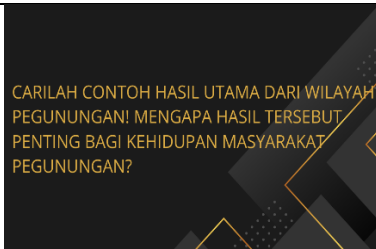
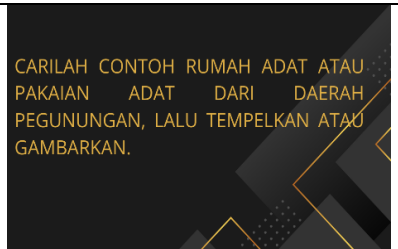

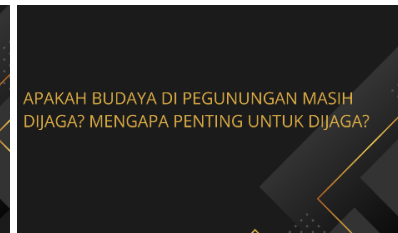
Each card is designed to contain one contextual challenge relevant to the 7th grade social studies material. In the initial stage, the material chosen was the influence of geographical factors on the social diversity of Indonesian society. Challenges are organized into five levels (Levels 1–5), in order from simplest to complex.

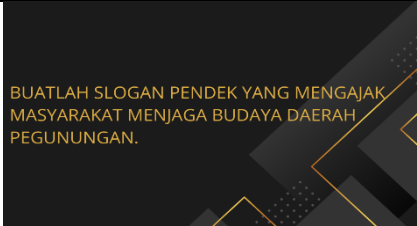
Each card includes the following components:

- Challenge title
- Task instructions
- Maximum processing time of 5 minutes

2. Visual Design of the Card

The cards are printed in 8 x 5 cm sizes, using black with elegant gold decorations. The design is made simple yet attractive, with clear fonts and symmetrical layouts to make it easy for middle school students to read and use.

<p>At the beginning of the design of the media card, the researcher chose a template in canava.</p>		
<p>On the back of the card is a region title and each group gets a different region and challenge card level.</p>		
<p>The front (inside) contains questions that are open, challenging, and encourage students to investigate the problems of the questions. The questions are divided into 5 levels.</p>		
		
		
		

			
--	--	--	--

3. Structure of Use in the Classroom

- Students are divided into 6 groups.
- Each group receives a set of challenge cards (containing 5 different cards).
- Groups must complete the challenge in order, and must not proceed to the next level before completing the previous level.
- Each challenge has a time limit to follow. If it exceeds the time, the group is encouraged to reflect on its time management.
- After completing all the cards, the group made a presentation of the results of the discussion and received feedback from the teacher and other groups.

4. Supporting Rules (Rule-Based Learning)

To strengthen the discipline aspect, the following implementation rules are applied:

- Delays in completing cards will have symbolic consequences (group values will be reduced).
- The non-involvement of group members will be recorded in the teacher's observation sheet.
- Evaluate not only on the answers, but also on the attitude of the students during the process (punctuality, division of roles, focus, and adherence to rules).

5. Documentation and Initial Feedback

The initial prototype was tested on a limited basis in one learning session. The researcher recorded the students' qualitative responses to the card design, the clarity of the instructions, and the effectiveness of the task structure in fostering discipline. Feedback from students and teachers is used as the basis for the revision of the prototype before the further testing stage. With a prototype structure involving a level system, time rules, and orderly group work, this Challenge Card medium not only delivers social studies material contextually, but also trains discipline skills directly through real-world practice in the classroom.

Prototype Trials

Once the prototype of the challenge card is developed, a test is conducted to see how the card performs in real learning situations. The researcher conducted a trial on community empowerment materials in class 7H.

Test Results

Sure! Please provide the text you would like me to paraphrase. Following the trial, the researcher discovered several significant insights regarding the implementation of Challenge Card media in social studies education:

It seems that you haven't provided the text to paraphrase. Please share the text you'd like me to work on, and I'll be happy to help! Enhanced Involvement: Learners seem to show greater interest and excitement during group discussions. For instance, Aidan, who previously enjoyed teasing his group members before using the challenge card media, now demonstrates a greater sense of responsibility in assisting with the case studies on the challenge cards. Similarly, Aqela, who typically remains quiet during learning, engages more frequently in asking questions to teachers and conversing with her group friends when using Aqela's challenge card media.

It seems that there isn't a text provided for paraphrasing in your request. Please provide the specific content you would like to have paraphrased, and I'd be happy to help! The findings from these observations were supported by a survey given to students, asking, "What is your opinion on using challenge cards in classroom learning?" Most of them provided positive feedback. Muhammad Fathan asshiddiqi responded, stating, "it's beneficial to make the lesson more engaging."

It seems that there is no text provided for paraphrasing. Could you please share the content you'd like me to rephrase? Enhanced Discipline: The implementation of challenge cards subtly motivates students to develop better discipline since they must finish the challenge within the given timeframe. By utilizing challenge cards, students experience a rush of adrenaline while tackling problems. This is reinforced by the feedback provided in the questionnaire from Kaisya Maulidya Syifa to the question "Does the presence of this challenge card instill a sense of responsibility in you to engage in learning activities orderly?" and Kaisya Maulidya Syifa replied, "yes, because completing this challenge card promptly is necessary to proceed to the next card."

Test (Trial)

After developing the prototype, the researcher carried out a trial using the Challenge Card media in social studies learning in the classroom. The results obtained from this trial showed a significant change in discipline.

Qualitative Questionnaire Results: Questionnaires given to students after the implementation of the Challenge Card showed that 80% of students felt more engaged and interested during the lesson, while 75% of students reported improved discipline, such as arriving on time and attending lessons with more focus. As Abdulah Al Ghifari stated: "I feel more excited to take lessons because there are challenges that I have to solve with my friends."

Apa pendapatmu tentang penggunaan kartu tantangan dalam pembelajaran di kelas?

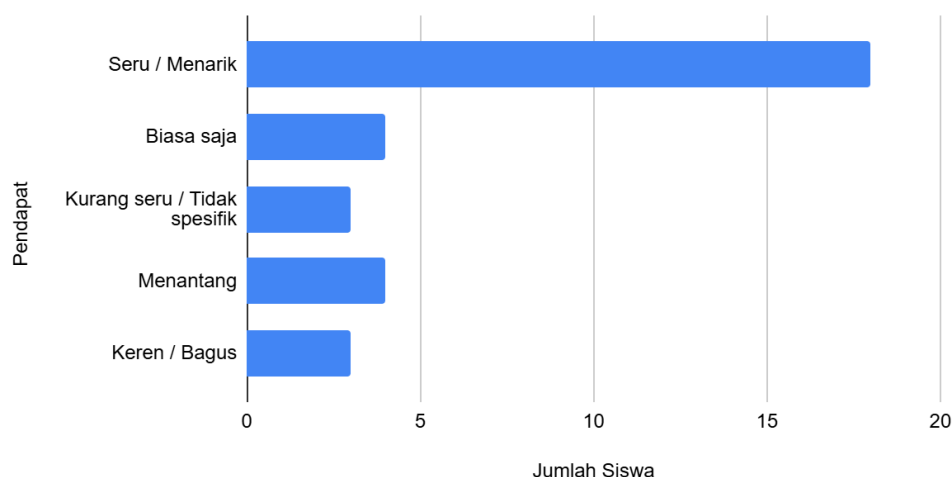


Figure 2. Questionnaire Result Diagram

Apart from the questionnaire, observation data during learning also strengthened the findings. Some students who were previously passive showed changes in attitudes, ranging from involvement in group discussions to adherence to deadlines for working on challenges. The teacher noted that the classroom atmosphere became more orderly and students were easier to direct. The gradient, time-limited completion mechanism of the cards triggers students to complete tasks in a more structured and disciplined manner, without the need for direct pressure from the teacher.

Thus, the results of this trial show that the use of Challenge Card media not only increases students' interest and participation in social studies learning, but also has a real influence on the formation of disciplined behavior. The challenge structure and rules inherent in the media have proven to be able to train students to follow the learning process in a responsible and orderly manner.

Discussion

The use of Challenge Card media in social studies education has been shown to significantly enhance student discipline. Prior to the utilization of media, observations indicated that the majority of students exhibited a disorganized approach when engaging in learning activities. They usually disregard instructions, frequently submit tasks late, and are less engaged in collaborative work. This suggests that discipline has yet to become a habit in the educational process.

Following the application of the Challenge Card media, a notable change in behavior occurred. By implementing a tiered challenge system along with time constraints linked to each card, students are motivated to adhere to a structured learning approach. They must not only grasp social studies content, but also practice following tasks in sequence, collaborating in groups, and finishing challenges within a set time frame. These activities immerse students in a learning experience that requires both personal and shared accountability, which is fundamental to a disciplined mindset.

This conclusion aligns with the view of Arumingtyas (2021), who asserts that learning materials crafted with definite structures and challenges can motivate students to cultivate discipline by engaging actively and taking responsibility in their educational journey. Furthermore, the Challenge Card framework featuring a tiered system motivates students to follow the guidelines, not bypass levels, and finish tasks consecutively. Therefore, this medium serves not just as instructional, but also as educational in terms of character development.

Reactions from students to this media tend to be favorable. According to surveys and observations, a majority of students report feeling more motivated and challenged to engage in learning systematically. They are increasingly conscious of the significance of time sharing, teamwork, and adherence to the game rules relevant to group activities. This indicates that a fun and non-authoritarian method can achieve discipline formation through a creative and challenge-oriented approach.

In summary, this conversation demonstrates that the Challenge Card media serves not only as a method for presenting content but also as a powerful tool for influencing students' discipline practices via an engaging, relevant, and organized learning approach. Therefore, utilizing this media can serve as a tangible approach to enhance student discipline in social studies education and is applicable in comparable classroom situations.

5. CONCLUSION

This research was carried out to answer the problem of low student discipline in social studies learning by developing learning media in the form of *Challenge Cards* designed using *the Design Thinking* approach. Through five stages of development—*Empathize*, *Define*, *Ideate*, *Prototype*, and *Test*—this media is developed systematically and based on the needs and real conditions of students in the classroom.

The results of the implementation show that the Challenge Card media is able to create a more structured and challenging learning atmosphere. Students are trained to complete tasks gradually, adhere to deadlines, and follow group work rules. Through these activities, students become more aware of the importance of discipline in the learning process, both in terms of punctuality, individual responsibility in groups, and regularity in following the teacher's instructions.

In addition to serving as a tool for delivering material, this media also provides a learning experience that touches on character aspects, especially discipline. Learning becomes not only cognitively meaningful, but also educating attitudeally. This media has been proven to facilitate the strengthening of disciplinary values in contextual and collaborative learning.

Thus, the development of Challenge Cards through *the Design Thinking* approach has proven to be an innovative and applicable solution to encourage changes in student discipline behavior in the classroom. This study shows that the development of learning media designed with the needs of students and classroom dynamics in mind can have a positive impact, not only on the learning process, but also on the formation of students' character. In the future, this media can be developed more widely and tested on various subjects and different levels of education.

BIBLIOGRAPHY

- Trust. (2023). *Application of the Problem Based Learning Model to Improve Social Studies Learning Outcomes in Class VIII SMPN 1 Piyungan*. Journal of Innovation Strategies and Learning Models, 3(1).
- Brown, T. (2009). *Change by Design: How Design Thinking Creates New Alternatives for Business and Society*. Harvard Business Press.
- Hasibuan, S. (2019). *Improving Student Discipline in Learning through Active Learning Model*. Journal of Education and Learning, 21(2), 56-63.
- Ministry of Education and Culture. (2022). *Guidelines for the Implementation of the Independent Curriculum*.

- Sari, M. L., & Wahyudi, A. (2020). *Application of Challenge Card-Based Learning Media in Improving the Quality of Social Studies Learning*. *Journal of Learning Innovation*, 8(3), 123-135.
- Sudrajat, A. (2011). *Developing Positive Discipline in the Teaching and Learning Process*. *Journal of Character Education*, 1(2), 112-120.
- Nurhalimah, S., Pramudiyanti, P., & Marpaung, R. R. T. (2013). The Effect of the Use of Picture Card Media on Students' Rational Thinking Skills. *Journal of Biotereducated: Scientific Expression Vehicle*, 1(2), 45-52.
- Zubaidillah, M. H., & Hasan, H. (2018). The Influence of Picture Card Media (Flash Card) on Arabic Vocabulary Mastery. *Al Mi'yar: Scientific Journal of Arabic Language Learning and Arabic Language*, 1(1), 23-30.
- Salsabila, A. N., Juniawan, H., & Putra, F. (2024). The Effect of the Use of Three-Dimensional Picture Card Media on the Reading Ability of Elementary School Children in Grades I-V at SDN 2 Sungai Dua, Simpang Empat Tanah Bumbu District. *Journal of Health Students*, 6(1), 15-22.
- Ramli, M. (2003). *Psychology of Child Development*. Jakarta: Kencana.
- Suryabrata, S. (2006). *Educational Psychology*. Jakarta: Rajawali Press.
- Suyadi. (2013). *Character Education Learning Strategies*. Bandung: Remaja Rosdakarya.
- Arumingtyas, D. (2021). *Improving students' learning discipline through Google Sites media*. ResearchGate.
- Arsyad, A. (2011). *Media Pembelajaran*. Jakarta: RajaGrafindo Persada.
- Santrock, J. W. (2011). *Educational Psychology* (5th ed.). McGraw-Hill Education.
- Yuliana, D., & Hermanto, D. (2020). The Effect of Problem-Based Learning on Students' Motivation and Engagement. *Jurnal Ilmu Pendidikan*, 14(1), 33-41.