Lembaran Ilmu Kependidikan
Vol. 54 No. 1 (2025): 78-88

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

Designing a PjBL-Based Textbook on Lamp Civilization for Children's Self-Regulation Character Development

Gregorius Ari Nugrahanta[1], Hilary Relita Vertikasari Sekarningrum[2], Eusebius Aditya[3]

[1,3] Primary Teacher Education, Sanata Dharma University, Indonesia

[2] Sedaya Bintang Primary School, Bandung, Indonesia

Corresponding author, email: gregoriusari@gmail.com

Article info:
Submitted: February 19, 2025. Revised: March 10, 2025. Accepted: March 27, 2025

Abstract

Background - Limited self-regulation skills among elementary students pose a significant educational challenge, necessitating structured interventions. Current efforts are often sporadic and minimally integrated into learning. Self-regulation involves managing cognition, emotions, and behavior to achieve goals.
Purpose - This study develops a Project-Based Learning (PjBL)-based textbook on lamp civilization to enhance self-regulation
Method - Using the ADDIE model within a Research and Development (R&D) framework, the study followed five stages: analysis, design, development, implementation, and evaluation. Implementation involved 23 elementary students selected via convenient sampling.
Findings - Findings indicate that: 1) The textbook was successfully developed within the ADDIE model, ensuring structured learning. 2) Expert evaluations rated the textbook as excellent (3.84/4), confirming high quality. 3) Implementation significantly improved self-regulation ($p < 0.05$), with a large effect size ($r = 0.9796$, 95.96%) and a high N-Gain Score (96.19%).
Conclusion - These results underscore the effectiveness of structured pedagogical materials in fostering self-regulation. The genetic approach within a PjBL framework provides an innovative model for integrating historical and technological literacy. Future research should examine its long-term impact, broader applicability, and employ randomized trials for enhanced generalizability.
Novelty/Originality/Value - Novelty employing a genetic approach as its novelty that traces lamp development from its origins to modern advancements. This method fosters inquiry, problem-solving, historical reasoning, technological literacy, and character development.

Keywords: self-regulation, PjBL, lamp civilization

Designing a PjBL-Based Textbook on Lamp Civilization for Children's Self-Regulation Character Development. (2025). *Lembaran Ilmu Kependidikan*, *54*(1), 78-88. https://doi.org/10.15294/lik.v54i1.22530

INTRODUCTION

The 21st century is characterized by globalization and rapid technological advancements, transforming communication, work, and daily life. Amid these changes, intellectual intelligence alone is insufficient; individuals must also develop strong character (Pare & Sihotang, 2023). The World Economic Forum's Future of Jobs Report emphasizes the importance of analytical thinking, creativity, resilience, and flexibility in the modern workforce. Similarly, the Global Risks Report 2025 highlights geopolitical instability, environmental crises, misinformation, and technological disruptions as key global threats. To navigate these uncertainties, individuals require character education, particularly self-regulation, enabling them to manage emotions, thoughts, and behaviors in complex environments.

Character education instills moral values that uphold human dignity (Kulsum & Muhid, 2022). Lickona (1991) defines good character as the integration of moral knowledge, moral feeling, and moral action (Mainuddin et al., 2023). Among key character traits, self-regulation plays a fundamental role in personal and academic success. According to Albert Bandura's social learning theory, self-regulation is developed through observation, reflection, and evaluation (Ansani & Samsir, 2022). It enables individuals to set goals, monitor progress, and adjust actions in response to challenges. Key components of self-regulation include impulse control, emotional regulation, patience, goal-setting, frustration management, and self-soothing (Borba, 2008). Additionally, self-regulation strengthens self-efficacy, or confidence in one's ability to succeed (Saepulloh, 2024).

The Indonesian Child Protection Commission (KPAI) reports that elementary school students are increasingly vulnerable to bullying, intolerance, radicalism, sexual violence, and drug abuse, exacerbated by digital media exposure. Approximately 5.9 million Indonesian children are involved in drug abuse, with 24% being students (KPAI, 2023). These issues underscore the need for structured interventions that foster self-regulation and create safe learning environments.

Integrating character education into real-life learning is essential for developing knowledge, skills, and attitudes. Project-Based Learning (PjBL) is an effective pedagogical approach that actively engages students in learning (Rudiana et al., 2022). In PjBL, students take center stage, while teachers act as facilitators (Chusna et al., 2024). This model enhances collaboration, communication, critical thinking, and creativity (Norhikmah et al., 2022). The seven steps of PjBL include formulating essential questions, designing the project, conducting trials, monitoring progress, presenting results, reflecting, and evaluating (Larmer et al., 2015).

This study employs PjBL to explore the civilization of lamps, tracing their development from basic light sources to symbols of technological progress (Rahmawati, 2022). By investigating historical, economic, and environmental aspects of lamp innovations, students engage in problem-solving, independent learning, and reflection. This approach strengthens self-regulation, as students must plan, execute, and evaluate their projects.

Zimmerman's self-regulation theory (2002) identifies three phases, namely planning, monitoring, and reflection. The lamp civilization project aligns with this framework by requiring students to set learning objectives, manage their time, and assess their progress. Furthermore, Self-Determination Theory (Deci & Ryan, 1985) highlights the role of autonomy in intrinsic motivation. Allowing students to explore lamp technology fosters independence and adaptability. Additionally, metacognitive skills, which Flavell (1979) deems crucial for self-directed learning, are cultivated through structured inquiry.

Previous studies confirm the effectiveness of PjBL in enhancing creativity, social skills, and character development (Pawestri & Nugrahanta, 2024; Rudiana et al., 2022; Afriani et al., 2023; Santoso & Wulandari, 2020; Triningsih, 2021). A meta-analysis of 47 studies in Turkey (2006–2014) found that self-regulation strategies significantly improve learning outcomes, with an effect size of Cohen's d = 0.859 (Ergen et al., 2017). However, research integrating PjBL with lamp civilization to foster self-regulation remains limited.

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

This study introduces a novelty by developing a lamp civilization textbook using PjBL through a genetic approach, which examines technological progression from rudimentary to advanced stages. The primary objectives are to develop a high-quality textbook that enhances self-regulation and evaluate the textbook's effectiveness in improving self-regulatory skills among elementary students. By bridging historical inquiry, technology, and character education, this study contributes to innovative curriculum development and offers a structured intervention for fostering self-regulation in elementary education.

METHOD

This study employs the Research and Development (R&D) method using the ADDIE model, consisting of analyze, design, develop, implement, and evaluate stages. The research progressed to a limited trial using a pre-experimental design. The population comprised upper elementary school students, with a sample of 23 fifth-grade students from a Yogyakarta elementary school, selected through convenient sampling. The independent variable was the PjBL-based lamp civilization textbook, while self-regulation served as the dependent variable. Research instruments were structured across three stages as follows. 1) Analyze – Needs analysis was conducted using a closed-ended questionnaire (1–4 scale) and an open-ended questionnaire. 2) Develop – Product validation involved expert assessments using a closed-ended questionnaire to evaluate face and content validity, ensuring product quality. 3) Evaluate – Formative evaluation with 50 questions assessed project performance and summative evaluation which consist of a pretest-posttest with 10 questions measuring the textbook's impact on self-regulation, analyzing percentage improvement, significance, and effectiveness. All instruments were based on ten self-regulation indicators, including emotional control, goal setting, and overcoming frustration, rated on a 1–4 scale. Following Lickona's theory (2013), moral action scored 4, moral feeling 3, cognitive element 2, and none 1. The summative instrument was tested on 40 additional students, meeting validity ($p < 0.05$), reliability (*Cronbach's Alpha* > 0.60), and moderate difficulty criteria. Additional closed-ended and open-ended questionnaires were administered to children and parents to assess character development. Data analysis used IBM SPSS Statistics 26 with a 95% confidence level.

RESULTS AND DISCUSSION

Development of The Civilization of Lamp Textbook

This study followed the ADDIE stages, beginning with the analyze phase to identify the gap between the ideal learning model for developing self regulation character and the learning practices implemented by teachers. A needs analysis was conducted involving 10 teachers from various elementary schools in Yogyakarta, Jakarta, Lampung, and Kalimantan, with the mean results for each indicator (1-4 scale) presented in the Table 1.

Table 1 indicates that communication received the lowest score (1.10), while critical thinking achieved the highest (2.50). Other indicators, including project-based learning, concrete operations, creativity, collaboration, character education, and problem-solving, scored between 1.90 and 2.30. The overall mean for self-regulation learning practices was 2.05, categorized as poor (Widoyoko, 2013). These findings highlight the suboptimal implementation of learning models due to the lack of innovative instructional materials. The absence of a dedicated textbook further exacerbates the gap between expected and actual learning outcomes. To address this, the study proposes a PjBL-based civilization of lamps textbook.

Table 1. Findings on Needs Analysis

No	Indicator	Mean
1	Project Based Learning	2.13
2	Concrete Operation	2.10
3	Creativity	2.15
4	Problem Solving	1.90
5	Collaboration	2.30
6	Communication	1.10
7	Critical Thinking	2.50
8	Character Education	2.23
	Mean	2.05

The textbook structure includes a cover, preface, table of contents, educational theories, the history of lamp civilization, and child-centered learning methods. It features five project assignments—nightlight, torchlight, candlelight, lantern, and incandescent lamp—aligned with lamp history. Each project follows the PjBL framework, namely 1) formulating essential questions, 2) designing projects, 3) conducting trials, 4) monitoring progress, 5) presenting results, 6) reflection, and 7) evaluation. The textbook concludes with a glossary, summary, references, and author biography.

The textbook was refined with learning objectives, benefits, and step-by-step instructions for each project. It specifies required tools and materials and incorporates reflection and character evaluation questions based on 10 self-regulation indicators. The evaluation system follows Lickona's (2013) model, using a 1–4 scale, namely 4 = moral action, 3 = moral feeling, 2 = moral knowledge, 1 = non-compliance.

The textbook underwent validation by ten experts—five university lecturers and five school teachers—using face and content validity. Face validity assessed readability, completeness, and book characteristics, while content validity verified the accuracy and relevance of the material. The following table presents the face validity assessment results.

Table 2. Findings from the Readability and Content Completeness Assessment of the Book

Indicators	Validators (Scale 1-4)										Mean
	1	2	3	4	5	6	7	8	9	10	
Structure	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Language	4.00	4.00	4.00	4.00	4.00	4.00	3.67	4.00	3.67	3.67	3.80
Cover	4.00	4.00	4.00	4.00	4.00	4.00	3.80	4.00	3.80	3.80	3.94
Preliminary section of the book	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Main content of the book	3.86	4.00	3.71	4.00	4.00	4.00	3.86	4.00	3.71	3.86	3.90
Final section of the book	3.67	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.33	3.90
Mean	3.84	4.00	3.93	4.00	4.00	4.00	3.91	4.00	3.88	3.66	3.92

Table 2 shows that the indicators for structure and the preliminary section received the highest score of 4.00, while the indicators for content and the final section scored 3.90, and the language indicator received the lowest score of 3.80. The overall mean score for the readability and completeness validation of the book is 3.92 (1-4 scale), which falls into the "excellent" category, indicating no revisions are needed. The following table presents the results of the book's characteristic validation.

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

Table 3. Findings on the Validation of Book Characteristics

Indicators	Validators (1-4 Scale)										Mean
	1	2	3	4	5	6	7	8	9	10	
Self-instructional	4.00	3.75	4.00	4.00	4.00	3.75	4.00	4.00	4.00	3.75	3.90
Self-contained	2.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.67	3.50	3.75
Stand alone	3.00	4.00	3.00	3.00	4.00	4.00	3.80	4.00	4.00	2.00	3.50
Adaptive	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
User friendly	3.00	4.00	3.00	4.00	3.00	3.00	4.00	4.00	3.00	4.00	3.50
Mean	3.55	3.60	3.60	3.75	3.80	3.75	4.00	4.00	3.80	3.45	3.73

Based on Table 3, the highest mean score was obtained for the adaptive indicator, with a value of 4.00, followed by the self-instructional indicator with 3.90, and the self-contained indicator with 3.75. Meanwhile, the stand-alone and user-friendly indicators showed the lowest mean scores, both at 3.50. Overall, the validation of the textbook characteristics achieved a mean score of 3.73. According to the data conversion table, this score falls into the "Excellent" category with the recommendation of "No revision needed." The results of the content validity assessment are presented in the following table.

Table 4. Findings on Content Validity

Indicators	Validators (Scale 1-4)										Mean
	1	2	3	4	5	6	7	8	9	10	
Project Based Learning	4.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.90
Concrete operations	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Critical thinking	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	4.00	3.90
Problem solving	4.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	4.00	3.90
Creativity	3.00	4.00	4.00	3.00	4.00	3.00	3.00	4.00	4.00	4.00	3.60
Communication skills	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.90
Collaboration skills	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Character education	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	3.90
Mean	3.78	4.00	3.89	3.89	4.00	3.67	3.89	4.00	4.00	3.78	3.89

Based on Table 4, the indicators for concrete operations and collaboration skills achieved the highest mean score of 4.00. Indicators scoring 3.90 included Project-Based Learning, critical thinking, problem-solving, communication, and character education, while the creativity indicator received a score of 3.60. Overall, the mean content validity score reached 3.89. When converted using the data conversion table, this score falls into the "Excellent" category with the recommendation of "No revision needed." The following is a summary of the book validity test results.

Table 5. Summary of The Validation Results

No	Validation	Score	Qualification	Recommendation
1	Face Validity			
	a. Readability and completeness of the book	3.92	Excellent	No revision needed
	b. Book characteristics	3.73	Excellent	No revision needed
2	Content Validity	3.89	Excellent	No revision needed
	Mean	3.84	Excellent	No revision needed

Table 5 presents the results of face validity, showing that the readability and completeness indicators achieved a mean score of 3.92, while the book characteristics indicator obtained 3.73. Meanwhile, the content indicator received 3.89. The overall validation test means 3.84 (1-4 scale), which

is classified as excellent and does not require revision (cf. Widoyoko, 2014).

Impact of Textbook Implementation on Self-Regulation Character

In the implementation phase, the textbook was tested on 23 fifth grade students. Over the course of one week, students worked on five projects, namely nightlight, torchlight, candlelight, lantern, and simple incandescent lamp. The trial results indicated an improvement in mean scores from pretest to posttest, as illustrated in the following bar chart.

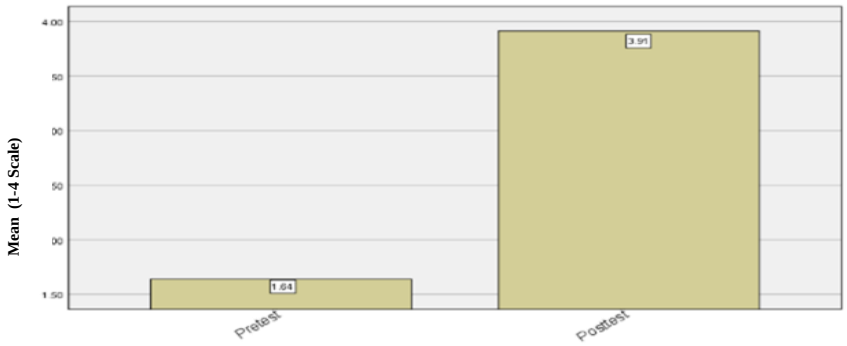

Figure 1. Pretest-Posttest Score Improvement Diagram

Figure 1 shows that the pretest score was 1.64, while the posttest score increased to 3.91 (1-4 scale), reflecting a 138.41% improvement. The *Shapiro-Wilk test* confirmed a normal distribution for the score differences ($p > 0.05$). A *paired samples t-test* revealed a significant increase, $t(22) = 22.865$, $p < 0.05$, rejecting the null hypothesis (H_0) and demonstrating the textbook's impact on self-regulation. The effect size ($r = 0.9796$, 95.96%) indicated a strong influence (Cohen, 1988), and the *N-Gain score* (96.19%) classified effectiveness as very high (Hake, 1999).

This textbook adopts a genetic approach to explain civilization development, particularly the history of lamps, helping children understand technological evolution and the relationship between human needs and innovation. This method fosters critical thinking by connecting historical facts to present-day conditions, making learning more meaningful (Dewey, 1944).

The study applied PjBL, engaging students in five projects: night lamps, torches, candle lamps, lanterns, and incandescent lamps. The seven-step PjBL framework (Larmer et al., 2015) was followed: 1) identifying essential questions, 2) designing projects, 3) testing project authenticity, 4) monitoring progress, 5) presenting results, 6) reflection, 7) evaluation and improvement. Teachers guided the process by posing questions, facilitating planning, ensuring authenticity, monitoring progress, discussing results, leading reflections, and evaluating performance.

The PjBL approach supported variation, stimulation, enjoyment, concrete operationalization, collaboration, critical thinking, creativity, and communication (Jensen, 2011) as follows. 1) Variation: diverse methods such as questioning, discussions, and hands-on projects. 2) Stimulation: sensory engagement through listening, discussing, and project creation. 3) Enjoyment: students displayed sustained enthusiasm, engaging for over an hour without interruption. 4) Concrete Operationalization: hands-on projects mirrored historical lamp evolution, aiding understanding (Nugrahanta et al., 2024). 5) Critical Thinking: students analyzed peer projects and responded to lamp civilization questions. 6) Collaboration: group-based project completion. 7) Communication: discussions, presentations, and peer feedback (Manurung et al., 2023; Pransiska et al., 2023).

Rising bullying rates in Indonesia reflect low self-regulation. Reports from the Ministry of Education and Culture (2023) indicate a 20% increase in bullying, with 60% of perpetrators exhibiting low empathy (KPAI, 2023). A lack of character education is a key factor, highlighting the need for self-regulation-focused learning programs.

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

The PjBL-based civilization textbook fosters self-regulation, assessed through Borba's (2008) ten indicators: 1) rarely interrupts, 2) queues, 3) inhibits impulses, 4) emotionally stable, 5) avoids physical aggression, 6) patient, 7) behaves well, 8) sets goals, 9) overcomes frustration, and 10) self-soothes. These indicators reflect behavioral and emotional self-regulation. For instance, children practiced patience and emotional control while taking turns with tools, managed frustration when restarting failed candle mixtures, and displayed kindness by helping peers. Non-aggressive behavior was evident in group harmony and cooperation (Wahyuningratna et al., 2022). However, while Borba's indicators cover behavioral and emotional self-regulation, they lack cognitive/metacognitive dimensions such as self-monitoring and reflection, as well as motivational aspects beyond basic goal setting. Future research should refine these indicators to enhance validity and reliability.

This study assessed inter-rater reliability of 10 self-regulation indicators using *Cohen's Kappa* (Cohen, 1960), ensuring consistency across researchers. Data were derived from observations, anecdotal notes, and interviews with children and parents, as detailed in the following table.

Table 6. Summary of the Cohen's Kappa Analysis

No	Indicators	*k*	Qualification
1	Rarely interrupts	0.740	High
2	Queues	0.701	High
3	Inhibits impulses	0.732	High
4	Emotionally stable	0.740	High
5	Avoids physical aggression	0.725	High
6	Patient	0.743	High
7	Behaves well	0.796	High
8	Sets goals	0.710	High
9	Overcomes frustration	0.700	High
10	Self soothes	0.727	High

Table 6 presents the results of the inter-rater reliability analysis using Cohen's Kappa (k) values for various indicators related to self-regulation. All indicators have k values above 0.70, indicating a high level of agreement between researchers, with an overall mean of 0.731 and a high qualification (Mabmud, 2010). The indicator with the highest value is 'Behaves well' (k = 0.796), while the indicator with the lowest value is 'Overcomes frustration' (k = 0.700). Overall, these results indicate that the assessment of self-regulation aspects has good reliability and can serve as a foundation for further research on emotional and behavioral regulation.

After an inter-rater reliability test was conducted, it can be concluded that the interpretation of language was carried out consistently and objectively. Subsequently, through semantic analysis, words were grouped based on their similarities in meaning and interconnections, allowing each indicator to be categorized into central themes, namely rationality, affection, and praxis, which together form the character of self-regulation. The following diagram illustrates the results of this semantic analysis. The results of this semantic analysis can be illustrated in the Figure 2.

Self-regulation is the ability to control thoughts, emotions, and actions through three interrelated components: rationality, affection, and praxis (Lickona, 2013). Rationality (moral knowing) involves understanding moral values and rules, such as impulse control and respecting others. Affection (moral feeling) pertains to emotional awareness, including patience and empathy. Praxis (moral action) translates values into behavior, such as goal setting and frustration management. These components collectively shape character, ensuring moral understanding is internalized and expressed through actions.

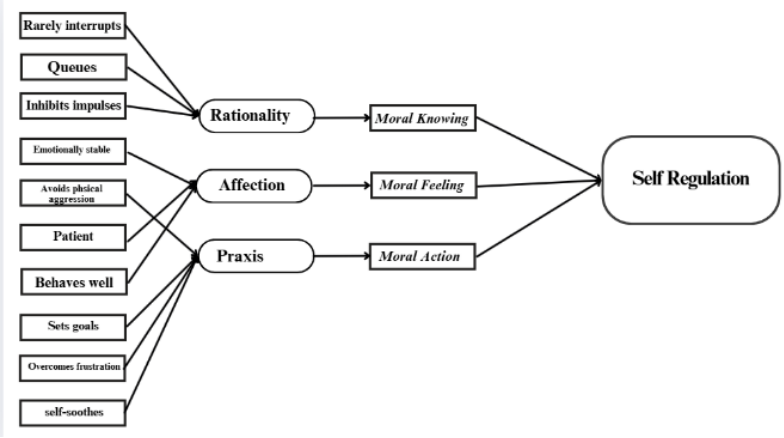

Figure 2. Semantic Network of Self-Regulation

This study builds on existing research demonstrating the effectiveness of various methods in fostering self-regulation. Traditional games (Murdaningrum & Nugrahanta, 2021; Wardani & Nugrahanta, 2021), social interactions, and parenting styles (Sumia et al., 2020; Putri et al., 2020) contribute to self-regulation development. Additionally, effective teaching requires reflection and analysis of pedagogical beliefs and practices to promote metacognitive awareness, strategic thinking, and intrinsic motivation. Research on 12 principles of self-regulated learning highlights essential skills such as monitoring comprehension, setting mastery goals, managing resources, and using failure constructively (Paris et al., 2003). Successful university-community-teacher collaborations have demonstrated these principles in real-world teaching.

A study of 713 online university students found that learning goal orientation positively correlates with academic performance. While self-efficacy and engagement mediate its effect on learning satisfaction, they do not directly mediate academic outcomes (Rienties et al., 2023). Additionally, project-based learning (PjBL) has been shown to enhance creativity, critical thinking, and academic achievement (Rudiana et al., 2022; Kamaruddin et al., 2023; Ramadhan & Hindun, 2023; Fransiska & Rahmi, 2024).

This study introduces a PjBL-based civilization textbook using a genetic approach to deepen self-regulation. The textbook contextualizes civilization's evolution, guiding children to reflect on human progress, technological advancements, and societal challenges (Dewey, 1944). It fosters historical thinking by connecting past, present, and future, helping students recognize cause-and-effect relationships and the consequences of human actions.

Beyond academic content, the textbook serves as an instrument for character formation, demonstrating how self-regulation influences individual and societal progress. By systematically analyzing civilization, children develop responsibility, critical reflection, and long-term thinking, reinforcing self-regulation as a foundation for personal and collective advancement.

CONCLUSION

This study developed a Project-Based Learning (PjBL)-based textbook on lamp civilization to enhance children's self-regulation. Using the ADDIE model, the textbook was systematically designed, developed, implemented, and evaluated. Implementation with 23 elementary students confirmed its effectiveness, while expert evaluations rated it excellent (3.84/4), requiring no revision. Statistical analysis showed a significant improvement in self-regulation ($p < 0.05$), with a large effect size (r = 0.9796 or 95.96%) and a high *N-Gain Score* (96.19%). The study's key novelty is the integration of a

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

genetic approach, tracing the evolution of lamp civilization from its origins to modern advancements. This method progressively builds knowledge, linking historical innovations to contemporary applications. By embedding this perspective within a structured PjBL framework, the textbook fosters both self-regulation skills and historical-technological understanding. This study expands research on self-regulation by demonstrating the impact of structured, historically grounded pedagogical materials in elementary education. Future studies should assess long-term effects, explore adaptability in diverse educational contexts, and expand the sample size. Additionally, randomized controlled trials could further validate its effectiveness and enhance generalizability. These refinements will strengthen the integration of genetic and project-based learning in character education and curriculum development.

REFERENCES

Afriani, M. A., Harjono, H. S., & Rustam, R. (2023). Penerapan model pembelajaran berbasis proyek pada materi menulis teks deskripsi. *Jurnal Basicedu*, *7*(1), 52–61. https://doi.org/https://doi.org/10.31004/basicedu.v7i1.4235

Ansani, & H. M. S. (2022). Teori pemodelan Bandura. *Jurnal Multidisiplin Madani*, *2*(7), 3067–3080. https://doi.org/10.55927/mudima.v2i7.692

Chusna, C., Yoto, Y., Heru, W. H. (2024). The fffectiveness of the STEAM-based PBL model in understanding basic electrical concepts among vocational high school students. *Lembaran Ilmu Kependidikan*, *53*(2), 186–193.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37–46. https://doi.org/10.1177/001316446002000104

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20(1), 37–46*. https://doi.org/10.1177/001316446002000104

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York, NY. *Plenum*. https://doi.org/10.1007/978-1-4899-2271-7

Dewey, J. (1944). *Democracy and education: An introduction to the philosophy of education*. The Free Press.

Dey, P. L. A., Yetti, E., & Hartati, S. (2020). Pengaruh keterlibatan orangtua dan regulasi diri terhadap perilaku bullying anak usia dini. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *4*(2), 715. https://doi.org/10.31004/obsesi.v4i2.438

Emira, H. R., & Hindun Hindun. (2023). Penerapan model pembelajaran berbasis proyek untuk membantu siswa berpikir kreatif. *Protasis: Jurnal Bahasa, Sastra, Budaya, Dan Pengajarannya*, *2*(2), 43–54. https://doi.org/10.55606/protasis.v2i2.98

Ergen, B. & Karnadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study. *Eurasian Journal of Educational Research,* 69, 55-74. http://dx.doi.org/10.14689/ejer.2017.69.4

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, *34*, 906–911. doi:10.1037//0003-066X.34.10.906

Fleiss, J. L., Levin, B., & Paik, M. C. (2013). *Statistical methods for rates and proportions*: J. W. & Sons.

Fransiska, D. C., & Rahmi, L. (2024). The influence of the contextual teaching and learning model on learning outcomes of class iv style material. *Lembaran Ilmu Kependidikan*, *53*(2), 254–264. https://doi.org/10.15294/lik.v53i2

Hake, R. R. (1999). *Analyzing change/gain score. California*. Indiana University.

Jensen, E. (2011). *Brain based learning: Bagaimana otak belajar*. Pustaka Pelajar.

Kamaruddin, I., Suarni, E., Rambe, S. (2023). Penerapan model pembelajaranberbasisproyek dalam pendidikan: Tinjauan literatur. *Jurnal Review Pendidikan Dan Pengajaran*, *6*(4), 2742–2747. https://journal.universitaspahlawan.ac.id/index.php/jrpp/article/view/22138

KPAI. (2023). *Data pengaduan kasus pemenuhan hak dan perlindungan khusus anak Januari 2023-September 2023.* Https://Bankdata.Kpai.Go.Id/.

Kulsum, U., & Muhid, A. (2022). Pendidikan karakter melalui pendidikan agama islam di era revolusi digital. *Jurnal Intelektual: Jurnal Pendidikan Dan Studi Keislaman*, *12*(2), 157–170. https://doi.org/10.33367/ji.v12i2.2287

Larmer, J., Mergendoller, J., & Boss, S. (2015). *Project based learning a proven approach to rigorous classroom instruction: Setting the Standard for Project Based Learning*. ascd. www.ascd.org/memberbooks

Lickona, T. (1991). *Eduation of character: How our school can teach respect and responsibility*. Bantam Books.

Lickona, T. (2013). *Pendidikan karakter: Panduan lengkap mendidik siswa menjadi pintar dan baik.* Nusa Media

Mabmud, S. (2010). Cohen's kappa. In encyclopedia of research design. *SAGE Publications*, *0*, 188–189. https://doi.org/10.4135/9781412961288

Mainuddin, M., Tobroni, T., & Nurhakim, M. (2023). Pemikiran pendidikan karakter Al-Ghazali, Lawrence Kohlberg dan Thomas Lickona. *Attadrib: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, *2*(6), 283–290. https://doi.org/10.54069/attadrib.v6i2.563

Manurung, A. S., Fahrurrozi, F., Utomo, E., & Gumelar, G. (2023). Implementasi berpikir kritis dalam upaya mengembangkan kemampuan berpikir kreatif mahasiswa. *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar*, *2*(5), 120–132. https://doi.org/10.36232/jurnalpendidikandasar.v5i2.3965

Murdaningrum, N., & Nugrahanta, G. A. (2021). Peranan permainan tradisional dalam meningkatkan kontrol diri anak usia 6-8 tahun. *JGPD: Jurnal Gentala Pendidikan Dasar*, *1*(1), 6–8.

Norhikmah, N., Rizky, N. F., Puspita, D., & Saudah, S. (2022). Inovasi Pembelajaran dimasa Pendemi: Implementasi Pembelajaran berbasis Proyek Pendekatan Destinasi Imajinasi. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *6*(5), 3901–3910. https://doi.org/10.31004/obsesi.v6i5.1886

Nugrahanta, G. A., Sekarningrum, H. R. V., Putri. B.S.E. (2024). The development of a reading book on house construction civilization based on project-based learning to improve children ' s social intelligence character. *Jurnal Pendidikan Dan Pengajaran*, *8*(11), 637–648.

Pare, A., & Sihotang, H. (2023). Pendidikan holistik untuk mengembangkan keterampilan Abad 21 dalam menghadapi tantangan era digital. *Jurnal Pendidikan Tambusai*, *7*(3), 27778–27787.

Paris, S. G., & Winograd, P. (2003). The role of self-regulated learning in contextual teaching: *A commissioned paper for the U.S. department of education project preparing teachers to use contextual teaching and learning strategies to improve student success in and beyond school*, 1–24.

Pawestri, H. N., & Nugrahanta, G. A. (2024). pengembangan buku tentang perkembangan peradaban jembatan berbasis pjbl untuk menumbuhkan karakter senang belajar. *Jurnal Studi Guru Dan Pembelajaran*, *7*(3), 1091–1101.

Pransiska, L., Santoso, G., Firmansyah, A. A., & Kartini, A. A. (2023). mengukuhkan kebersamaan sikap bergotong royong dan kolaborasi di kelas 3. *Jurnal Pendidikan Transformatif (JPT)*, *02*(04), 102–126.

Rahmawati, R. D. (2022). Nilai kearifan lokal festival lampu colok ditinjau dari aspek psikologis. *TSAQIFA NUSANTARA: Jurnal Pembelajaran Dan Isu-Isu Sosial*, *1*(2), 178. https://doi.org/10.24014/tsaqifa.v1i2.18502

Ramadhan, E. H., & Hindun, H. (2023). Penerapan model pembelajaran berbasis proyek untuk membantu siswa berpikir kreatif. *Protasis: Jurnal Bahasa, Sastra, Budaya, dan Pengajarannya*, *2*(2), 43–54.

Rienties. B. (2024). Self-regulated learning and academic success in online college learning. *Asia-Pacific Edu.* 519–533, https://doi.org/10.1007/s40299-023-00748-8

Rudiana, Y., Ruhimat, M., & Sundawa, D. (2022). Pengaruh sikap ekoliterasi dan pembelajaran berbasis proyek terhadap kemampuan berpikir kreatif. *JIPSINDO (Jurnal Pendidikan Ilmu Pengetahuan*

e-ISSN 0216-0847
https://journal.unnes.ac.id/journals/LIK

Sosial Indonesia), *09*(02), 177–191.

Saepulloh. (2024). Penerapan teori behaviorisme dalam membentuk karakter disiplin anak usia dini. *JSIM: Jurnal Ilmu Sosial Dan Pendidikan*, *4*(6), 861–869. http://doi.org/10.36418/syntax-imperatif.v4i6.329

Santoso, B. P., & Wulandari, F. E. (2020). Pengaruh pembelajaran berbasis proyek dipadu dengan metode pemecahan masalah pada keterampilan berpikir kreatif siswa dalam pembelajaran ipa. *Journal of Banua Science Education*, *1*(1), 1–6. https://doi.org/10.20527/jbse.v1i1.3

Sumia, D., Sandayanti, V., Detty, A. U. (2020). Pengaruh teman sebaya dan regulasi diri dalam belajar pada mahasiswa. *Psikologi Malahayati*, *2*(2), 10–17.

Triningsih, K. D. E. (2021). Penerapan aplikasi canva untuk meningkatkan kemampuan menyajikan teks. *cendekia*, *15*(1), 128–144. https://doi.org/10.30957/cendekia.v15i1.667.

Wahyuningratna, R. N., Sevilla, V., & Juned, M. (2022). Edukasi pengembangan aktualisasi diri yang positif bagi remaja di sosial media. *Jurnal Pasopati*, *4*(2), 113–118.

Wardani, B. T. A. K., & Nugrahanta, G. A. (2021). The contribution of traditional games in establishing self-control children. *PEDAGOGIK: Jurnal Pendidikan*, *2*(8), 335–367. https://doi.org/10.33650/pjp.v8i2.2981

Widoyoko, S. E. (2013). *Teknik penyusunan instrumen penelitian*. Yogyakarta: Pustaka Pelajar

Widoyoko, S. E. (2014). *Teknik penyusunan instrumen penelitian*. Yogyakarta: Pustaka Pelajar

Zimmerman. (2002). Becoming a self-regulated learner: Beliefs, techniques, and illusions. *Routledge*, 315. https://doi.org/10.1207/s15430421tip4102