Nurturing Islamic Morality Through Stimulus-Response Learning: Evidence from a Quasi-Experiment in Indonesian Elementary Schools

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ABSTRACT

This study aims to determine the effectiveness of behaviouristic approach in learning Islamic Religious Education (PAI) on moral formation of elementary school students. The study used a quasi-experimental design with a pretest-posttest control group model. The subjects consisted of 50 fifth grade students of SDN 141 Palembang who were divided into two groups: experimental (n=25) and control (n=25). The experimental group received PAI learning with a behaviouristic approach based on positive reinforcement such as praise and symbolic rewards for 8 weeks, while the control group received conventional learning. The research instruments were Likert scale questionnaires and observation sheets. The results of the independent t-test analysis showed that the experimental group experienced a significant increase in the aspects of discipline, honesty, and politeness with an average score of 83.44 compared to the control group with an average score of 71.36. Observations also showed that the consistency of religious behaviour was higher in the experimental group. Thus, the behaviouristic approach has the potential to improve students' moral formation if supported by consistent reinforcement and a conducive learning environment.

1. Introduction

Education held a highly strategic role in shaping human resources who were not only intellectually capable but also spiritually and morally mature. Within the context of national education, one of the mandates outlined in Law Number 20 of 2003 on the National Education System was to develop students who had faith, were devoted to God Almighty, and possessed noble character.

Therefore, at the elementary school level, Islamic Education (PAI) played a vital role as a subject aimed at fostering students' morals and character from an early age [1].

Observation and evaluation results show a gap between students' knowledge of PAI materials and their implementation in daily behavior. Many students cognitively understand religious values but have not shown discipline, honesty, and politeness in line with Islamic teachings. This phenomenon shows that PAI learning has not been fully successful in the process of transformative value internalization [2].

The behavioristic approach, as proposed by B.F. Skinner, emphasizes that learning occurs through changes in behavior in response to an external stimulus that is reinforced by reward and punishment [3]. In PAI learning, this principle can be applied through positive reinforcement such as praise or incentives, as well as educational consequences for negative behavior. This model is in line with the concrete operational stage of development in primary school-age children (Piaget), who more easily understand concepts through direct experience and repetition. Slavin also states that this approach is effective in shaping specific desired responses. However, the behavioristic approach also has limitations [4]. Therefore, in the context of Islamic education, there needs to be an effort to balance external reinforcement with the internal cultivation of Islamic values.

This approach was both psychologically and pedagogically relevant, especially considering that elementary school students were still in the concrete operational cognitive stage, according to Piaget's theory at this stage, children better understood concepts through direct experience and repeated practice [5]. Therefore, learning processes emphasizing repetition and reinforcement were more easily accepted and stored in long-term memory. Slavin added that behaviorism was highly effective in shaping specific desired responses to consistently provided stimuli [6].

Kasinyo Harto and Ermis, in their work "Teori dan Pembelajaran", emphasized that the behavioristic approach could serve as a foundation for building a learning system that not only transmitted knowledge but also formed character through reinforcement patterns [7]. They stated that in the context of PAI learning, teachers should act as reinforcement agents capable of providing targeted stimuli and designing a learning system that emphasized the development of observable behaviour [8]. Teachers were no longer the sole source of information but served as facilitators who created a learning environment capable of strengthening students' religious behaviour.

Although studies have indicated that behavioristic approaches are effective in improving motivation and discipline, most research has focused on secondary education or in the form of literature reviews [9]. Empirical studies that directly test the effectiveness of this approach in PAI learning at the elementary school level are still very limited, even though this phase is a crucial period in the formation of children's religious character [10].

This study wants to find out how effective the behavioristic approach is in helping to improve the moral behavior of fifth-grade students, such as discipline, honesty, and politeness, when they learn Islamic Religious Education [11]. So, this study compares the behaviouristic approach to learning and the regular learning method to see which one has a more positive impact on students' attitudes and character.

This research was conducted at SDN 141 Palembang, which has a socially, economically, and culturally diverse student background. Initial observations showed that there were student behaviors that did not reflect Islamic values, such as lack of discipline and the use of impolite language. This became a strong basis to test the effectiveness of behaviouristic approach in shaping students' moral character more systematically and measurably.

2. Method

2.1. Participants or Subjects

This research uses a quantitative approach with a quasi-experimental design. This approach was chosen because the researcher cannot fully control the independent variable, yet still wants to observe

the causal relationship between the treatment and the dependent variable in a natural context. The design used is a pretest-posttest control group, which allows for the comparison of score changes before and after the intervention in two different groups: the experimental group and the control group [12].

The research was conducted at SDN 141 Palembang, an elementary school with students from diverse social and economic backgrounds. The research took place over two months, from February to March 2025. The population in this study consists of all fifth-grade students at SDN 141 Palembang for the 2024/2025 academic year. The sample was taken using purposive sampling technique, namely two parallel classes selected based on several inclusion criteria: (1) having similar average academic scores based on the previous semester's report cards; (2) a balanced level of participation in school religious activities (such as dhuha prayers and morning recitations); and (3) not having students with special needs that could affect perceptions or responses to the intervention [13]. One class was designated as the experimental group and another class as the control group, each consisting of 25 students. To reduce the possibility of bias in group assignment, an initial homogeneity test was conducted using a t-test on pretest scores to ensure that there were no significant differences in the initial moral character abilities between the two groups before the treatment was given [14].

2.2. Materials and Instruments

Data in this study were collected using two main instruments, namely the Likert scale questionnaire and the behavior observation sheet [15]. The questionnaire was developed based on character indicators from the Islamic Religious Education (PAI) curriculum, which includes four main aspects: discipline in religious practice, honesty, responsibility, and politeness [16]. This instrument consists of 20 statement items with a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree), and is administered during the pretest and posttest to measure changes in students' attitudes and moral behavior.

The observation sheet is used to record students' behavior during the learning process, both in class activities and religious practices at school. Each behavioral indicator is observed using a 4-point rubric scoring (1 = never, 4 = always), which reflects the frequency and consistency of positive student behaviors, such as greeting, performing the *dhuha* prayer, speaking honestly, and showing politeness towards teachers and peers.

In this study, observation data was analyzed quantitatively despite coming from qualitative data collection techniques (direct observation). This was done to ensure that the observed student behaviour could be measured systematically and objectively [17]. The analysis process was conducted in two main stages:

2.2.1. Rubric Scoring Interval 1-4

Each student's behaviour was observed and scored using a 1-4 scale observation rubric, with the following conditions [18]:

Table.1 Frequency Criteria

Score	Frequency/Consistency Criteria
1	Never / Very rarely
2	Sometimes
3	Often
4	Always / Highly consistent

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Table 2. Character indicators

Indicator	Score 1 (Very Rarely / Never)	Score 2 (Sometimes)	Score 3 (Often)	Score 4 (Always / Consistently)
Worship discipline (e.g., Dhuha prayer, praying before studying)	Never performs the assigned religious practices	Only participates when reminded by the teacher	Performs worship with occasional prompting	Always performs worship independently without being reminded
Honesty (in completing tasks, answering questions)	Frequently lies, cheats, or hides the truth	Sometimes dishonest, especially under pressure	Generally honest, though sometimes hesitant	Honest in all situations, even when facing consequences
Responsibility (in completing assignments, taking care of belongings, fulfilling roles)	Does not complete tasks and often neglects duties	Completes tasks only with help or coercion	Completes most tasks on time	Consistently responsible in all tasks and entrusted roles
Politeness (in speaking and behaving toward teachers/peers)	Frequently uses rude language or behaves disrespectfully	Occasionally shows impolite behavior	Generally polite, but not consistently	Always speaks and behaves politely in various situations

The values provided by the observers were then quantified into numerical scores, allowing for the calculation of averages, frequency distributions, and comparisons between groups (experimental vs. control).

2.2.2. Inter-Rater Reliability Test with Cohen's Kappa

Since the observations were conducted by two observers (the researcher and the class teacher), it was necessary to test the consistency of judgements between the two to ensure that the scores given were not subjective. For this purpose, Cohen's Kappa was used, which is a statistical technique that calculates the level of agreement between two observers, while taking into account the possibility of agreement that occurs by chance [19]. The formula used:

$$k = \frac{P_o - P_e}{1 - P_e}$$

P_o = proportion of actual agreement $\frac{9}{10} = 0{,}90$

P_e = proportion of agreement that occurs due to chance (calculated from the probability distribution of scores)

Consider $P_e = 0{,}45$ then:

$$k \frac{0.95 - 0.45}{1 + 0.45} = \frac{0.45}{0.55} = 0.82$$

Table. 3 Frequency of in Kappa

Kappa Value	Level of Agreement
< 0.00	None
0.00–0.20	Very low
0.21–0.40	Low
0.41–0.60	Moderate
0.61–0.80	High
0.81–1.00	Very high

In this study, a Cohen's Kappa value of 0.82 was obtained, which falls into the "very high" category, indicating that both observers had very good consistency in assessing student behavior based on the rubric used.

Observations were conducted by the researcher and the classroom teacher, who had been trained in technical observation procedures. Instrument validity was ensured through content validity, which was evaluated by experts in Islamic education and child developmental psychology [20]. Instrument reliability was tested using Cronbach's Alpha, with the criterion that the instrument was considered reliable if the alpha coefficient exceeded 0.70 [21]. Validity and reliability analyses were conducted using SPSS version 26 [22].

This research uses a quasi-experiment method with a non-equivalent control group design. The choice of quasi-experiment method is based on practical considerations in the field [23]. Full randomization was not possible due to limitations in the school environment, such as fixed class divisions and considerations to minimize disruption to the ongoing teaching-learning process. Therefore, the research subjects were divided into experimental and control groups based on the existing classes. The flow of the research implementation is shown in Figure 1, which illustrates the stages from the beginning to the end of the process. The research started with the selection of the sample, then continued with giving pretests to both groups. The experimental group received a certain treatment, while the control group did not receive the treatment. After the intervention was completed, both groups were given a posttest, then the data was analyzed to determine the effect of the treatment given.
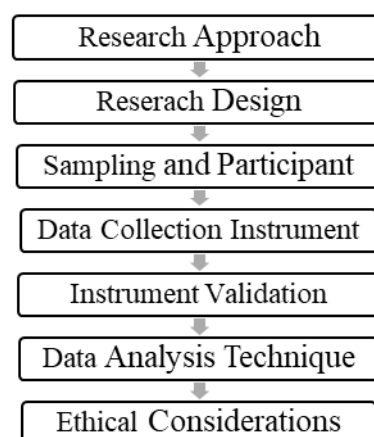

Fig.1. Research Methodology (Quasi Experiment) [24]

The research flow is shown in Fig. 1, starting from the planning stage to the evaluation of results. The method used in this research is a quasi-experiment, which includes several main stages, namely: determination of experimental and control groups, implementation of treatment in the experimental group, and measurement of outcomes in both groups for comparative analysis.

3. Results and Discussion

This study aimed to determine the effectiveness of implementing a behavioristic approach in Islamic Education (PAI) learning on the moral development of fifth-grade students at SDN 141 Palembang. Data were obtained through pretest and posttest administration as well as direct observation over a six-week instructional period.

3.1. Descriptive Statistics Pretest and Posttest

Prior to the intervention, the average pretest score for the experimental group was 67.20, while the control group recorded a similar score of 66.80. After the application of the behavioristic approach, the posttest score of the experimental group increased significantly to 83.44. In contrast, the control group, which received conventional instruction, experienced a moderate improvement with a posttest average of 71.36.

Table. 1. Mean and Score Difference of Pretest and Posttest

Group	Pretest (Mean)	Posttest (Mean)	Score Difference
Experimental	67.20	83.44	+16.24
Control	66.80	71.36	+4.56

The data showed that students' moral character abilities before treatment were nearly equivalent between the two groups. However, following the six-week treatment using the behavioristic approach, the experimental group demonstrated a significant increase in posttest scores compared to the control group.

3.2. Inferential Analysis Independent Samples t-Test

To determine whether the differences between the groups were statistically significant, an independent samples t-test was conducted on the posttest scores. The analysis yielded a significance value (Sig. 2-tailed) of 0.000, which is less than the threshold of 0.05. This result indicated a statistically significant difference between the experimental and control groups, confirming that the behavioristic approach had a greater impact on the development of students' moral behavior.

Table. 2. Independent t-Test Results of Posttest Scores

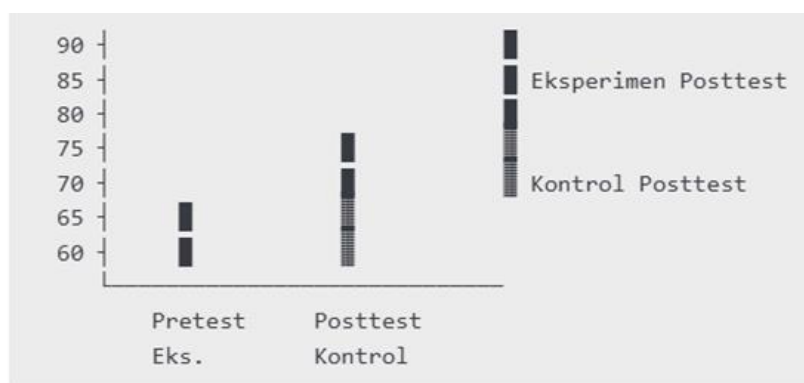| Group	N	Mean	Std. Deviation	Sig. (2-tailed)
Experimetal	25	83.44	6.21	0.000
Control	25	71.36	5.87	0.000

3.3. Data Visualization

Fig.2. Comparison Chart of Pretest and Posttest Averages

The chart illustrated a notably greater increase in the experimental group's scores compared to the control group, both numerically and visually, reinforcing the statistical findings.

3.4. Behavioral Observation Results

In addition to the questionnaire, supporting data were collected through direct observation of student behavior in the classroom. In the experimental group, a significant improvement was observed in religious behavior, including regular participation in salat *dhuha*, actively greeting others with salaam, showing politeness in interactions with teachers and peers, and increased honesty in completing assignments. Conversely, in the control group, improvements in religious behavior were present but less consistent and appeared sporadically.

Overall, the findings of this study demonstrated that behavioristic-based learning positively influenced the formation and enhancement of students' moral behavior. The approach effectively encouraged directed behavioral changes through consistent reinforcement mechanisms. Therefore, the behavioristic approach can be considered a viable alternative strategy for character education in PAI subjects at the elementary school level.

3.5. Discussion

This study empirically demonstrated that the behavioristic approach in Islamic Education (PAI) instruction made a significant contribution to shaping and improving the moral character of elementary school students. The results of the pretest and posttest revealed a significant improvement in the experimental group, confirming that moral behavior could be conditioned through reinforcement systems, as asserted by Skinner, who stated that learning is a result of behavioral change influenced by positive or negative reinforcement.

According to behaviorist theory, behavioral changes are shaped by the relationship between stimulus and response. Reinforcement processes such as praise, rewards, or social recognition—can strengthen desirable. In the context of PAI, rewards such as honesty stickers, worship points, or symbolic acknowledgments were proven to enhance students' engagement in religious and moral practices, including prayer discipline, honesty in assignments, and politeness towards teachers (Marlina, 2021; Fitriani & Hasanah, 2022).

This study aligned with findings by Suharti and Mulyani (2020), who observed that behaviorist techniques applied in elementary schools increased student discipline and order in religious classes. Similarly, Nuraeni et al. (2021) found that consistent use of verbal reinforcement improved student engagement in discussions and spiritual activities in PAI classes.

These findings were also supported by Piaget's cognitive development theory [25], which stated that elementary-age children are in the concrete operational stage. At this stage, children respond better to concrete experiences and repeated practice. Behaviorism, with its emphasis on repeated actions and stimulus-based learning, was highly suitable for this developmental stage.

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Although better known for his social-cognitive theory, [26] also acknowledged that observing the consequences of others' behavior can influence learning an idea consistent with core behaviorist principles. Therefore, when students observed their peers' receiving rewards for honest behavior, they were motivated to imitate that behavior. This study added to existing research offering a more practical contribution, as it was conducted directly in an elementary school setting:

Demonstrated that behavioristic approaches integrated with digital applications (e.g., worship point systems) successfully developed positive habits at school [27]. Syarifah & Gunawan developed a behaviorism-based PAI module and found a significant increase in students' understanding of religious values [28]. In the International Journal of Instruction, reported that reinforcement-based instruction using religious values positively impacted students' Islamic character development [29]. Maryam the Educational Psychology, emphasized that stimulus-response applications in religious education in Middle Eastern countries effectively reduced deviant behaviors and increased students' moral responsibility [30].

From these various studies, it could be concluded that behaviorism provided significant result in shaping student character, especially when implemented consistently and supported by the school environment.

The main strength of the behavioristic approach lay in its ability to shape observable and measurable behaviors. However, one of its primary limitations was its lack of emphasis on intrinsic motivation and students' internal thought processes. This limitation is especially relevant in religious education, where values such as intention (niyyah), sincerity (ikhlas), and spiritual awareness are not always externally visible. Therefore, behaviorism should ideally be integrated with humanistic and affective approaches that foster moral consciousness and spiritual reflection. This integration could result in PAI instruction that is not only behaviorally effective but also spiritually and psychologically meaningful [31].

4. Conclusion

This study shows that the behavioristic approach to learning Islamic Religious Education (PAI) can positively contribute to the improvement of morals and discipline among elementary school students, as seen in grade V students at SDN 141 Palembang. Students demonstrated good habits, such as discipline in worship, honesty, and mutual respect, through the systematic application of positive reinforcement, including verbal praise and symbolic rewards. This finding also confirms the relevance of behaviorism theory in religious values-based character education, especially in children of concrete operational age. However, this approach has limitations in reaching the affective aspects and intrinsic motivation of students, which are important components in the internalization of religious values.

Based on this, it is recommended that future educational research and practice combine behavioristic approaches with humanistic and spiritual approaches to achieve more thorough and sustainable learning outcomes. Future research also needs to consider longitudinal designs to measure long-term impact, use digital technology to reinforce positive behavior reinforcement, and involve more diverse school contexts to make the results more generalizable. In addition, it is important to explore the perceptions of teachers and students so they understand the dynamics of implementing this approach more comprehensively in the field.

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References

[1] Badan Pemeriksa Keuangan, "Undang - Undang Republik Indonesia No 20 Tahun 2003," 2003. [Online]. Available: https://peraturan.bpk.go.id/details/43920/uu-no-20-tahun-2003

[2] E. A. Jasmine, S. Yani, M. A. Daulay, I. Kurnia, and M. F. Al Panzil, "Penerapan teori belajar BF Skinner dalam mata pembelajaran PAI [Implementing B.F. Skinner's Learning Theory in the Teaching of Islamic Religious Education]," *El-Mujtama J. Pengabdi. Masy.*, vol. 4, no. 1, pp. 62–72, (in Indonesia), 2024, doi: https://doi.org/10.47467/elmujtama.v4i1.3160.

[3] S. Suyadi, "Penerapan Teori Belajar Behavioristik Skinner Dalam Pembelajaran Baca Tulis Al-Qur'an: Di SDIT Alam Nurul Islam Yogyakarta [Implementing Skinner's Behaviorist Learning Theory in Qur'anic Literacy Instruction: A Case Study at SDIT Alam Nurul Islam Yogyakar," *Ulumuddin J. Ilmu-Ilmu Keislam.*, vol. 11, no. 2, pp. 177–192, (in Indonesia), 2021, doi: https://doi.org/10.47200/ulumuddin.v11i2.895.

[4] D. Intyaswati, W. T. Saputra, S. Maryam, and A. Setiadarma, "Pembiasaan Sholat Dhuha untuk Pembentukan Karakter dan Disiplin Siswa Madrasah Ibtidaiyah Khoirul Huda Depok dengan Metode Participatory Action Research (PAR) [Implementing Dhuha Prayer as a Means of Character and Discipline Formation Among Students at Ma," *Smart Dedication J. Pengabdi. Masy.*, vol. 2, no. 1, pp. 102–108, (in Indonesia), 2025, doi: https://doi.org/10.70427/smartdedication.v2i1.155.

[5] A. Ihwanah and M. Astuti, "Integrasi Pendekatan Empirisme dan Behaviorisme dalam Pembelajaran PAI di Era Digital [Integrating Empiricist and Behaviorist Approaches in Islamic Religious Education (PAI) in the Digital Age]," *Didakt. J. Kependidikan*, vol. 13, no. 1, pp. 281–292, (in Indonesia), 2024, doi: https://doi.org/10.58230/27454312.1333.

[6] N. Nurfadillah, A. A. Muis, A. Khaisyurahman, and E. Sapitri, "Behavioristic Learning Theory," in *Proceeding of International Conference on Education, Society and Humanity*, 2024, pp. 1268–1274. [Online]. Available: https://ejournal.unuja.ac.id/index.php/icesh/article/view/8039

[7] K. Harto and E. Suryana, *Teori dan Pembelajaran: Fondasi Filosofis dan Psikologis untuk Pendidikan Abad 21*. Yogyakarta: Semesta Aksara, 2021.

[8] M. Daulay and Y. Karneli, "Pemikiran I. Pavlov dan BF Skinner dan Implementasinya dengan Layanan BK [Theories of I. Pavlov and B.F. Skinner and Their Implementation in Guidance and Counseling (GC) Services]," *J. Al-Irsyad J. Bimbing. Konseling Islam*, vol. 6, no. 2, pp. 329–350, (in Indonesia), 2024, doi: https://doi.org/10.24952/bki.v6i2.15038.

[9] Halimatuzzahrah and Syamsul Arifin, "Implementation of Behavioristic Theory in Forming Students' Disciplinary Character in PAI Learning at SDN 1 Taman Ayu," *Bull. Sci. Educ.*, vol. 4, no. 3 SE-Articles, pp. 238–244, Dec. 2024, doi: https://doi.org/10.51278/bse.v4i3.1586.

[10] N. Robithotul Khoir and A. Ikhwan, "Pembelajaran Behavioristik Madrasah dalam Meningkatkan Motivasi Belajar dan Ibadah Siswa [The Application of Behaviorist Learning in Madrasahs to Enhance Students' Motivation in Learning and Worship]," *J. Pendidik. Nusant.*, vol. 1, no. 3, pp. 175–185, (in Indonesia), 2022, doi: https://doi.org/10.55080/jpn.v1i3.36.

[11] A. D. Yahya, "Konsep Perkembangan Kognitif Perspektif Al-Ghazali Dan Jean Piaget [Cognitive Development: A Comparative Perspective of Al-Ghazali and Jean Piaget]," *KONSELI J. Bimbing. dan Konseling*, vol. 5, no. 2, pp. 97–104, (in Indonesia), 2018, doi: https://doi.org/10.24042/kons.v5i2.3501.

[12] M. F. Arib, M. S. Rahayu, R. A. Sidorj, and M. W. Afgani, "Experimental research dalam penelitian pendidikan [The Role of Experimental Research in Educational Research]," *Innov. J. Soc. Sci. Res.*, vol. 4, no. 1, pp. 5497–5511, (in Indonesia), 2024, doi: https://doi.org/10.31004/innovative.v4i1.8468.

[13] Sugiyono, *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Jakarta: Alfabeta, 2013.

[14] D. N. Al Husaeni, A. R. Gintara, G. F. Nabila, and M. Nursalman, "Mengungkap Pentingnya Uji Normalitas dan Homogenitas dalam Penelitian: Studi Kasus dan Aplikasinya [Exploring the Significance of Normality and Homogeneity Testing in Research: Case Studies and Practical

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Applications]," *J. Pendidik. Tambusai*, vol. 9, no. 1 SE-Articles of Research, pp. 829–839, (in Indonesia), Jan. 2025, [Online]. Available: http://jptam.org/index.php/jptam/article/view/24268

[15] D. Taluke, R. S. M. Lakat, and A. Sembel, "Analisis preferensi masyarakat dalam pengelolaan ekosistem mangrove di pesisir pantai kecamatan loloda kabupaten halmahera barat [Analysis of Community Preferences in Mangrove Ecosystem Management on the Coastal Area of Loloda District, West Halmahera Reg," *Spasial*, vol. 6, no. 2, pp. 531–540, (in Indonesia), 2019, doi: https://doi.org/10.35793/sp.v6i2.25357.

[16] L. Widayati and R. Wijaya, "Implementasi Pendidikan Karakter Disiplin dan Tanggung Jawab Berbasis Tradisi Pesantren di SMP Plus Al Hadi Tuban [The Implementation of Discipline and Responsibility Character Education Based on Pesantren Traditions at SMP Plus Al Hadi Tuban]," *Kaji. Moral dan Kewarganegaraan*, vol. 12, no. 1 SE-Articles, pp. 119–129, Oct. 2024, doi: https://doi.org/10.26740/kmkn.v12n1.p119-129.

[17] P. G. Subhaktiyasa, "Evaluasi Validitas dan Reliabilitas Instrumen Penelitian Kuantitatif: Sebuah Studi Pustaka [Evaluation of Validity and Reliability in Quantitative Research Instruments: A Literature Review]," *J. Educ. Res.*, vol. 5, no. 4, pp. 5599–5609, (in Indonesia), 2024, doi: https://doi.org/10.37985/jer.v5i4.1747.

[18] I. W. S. Zebua and S. Astuti, "Pengembangan Instrumen Penilaian Sikap untuk Mengungkap Sikap Disiplin Siswa SD [Developing an Attitude Assessment Instrument to Measure Discipline Among Elementary School Students]," *J. Basicedu*, vol. 8, no. 5, pp. 3877–3887, (in Indonesia), Aug. 2024, doi: https://doi.org/10.31004/basicedu.v8i5.8691.

[19] P. D. W. G. Yuniahans, R. Parlika, R. S. Arhinza, V. F. Majid, and M. G. Alifian, "Uji validitas aplikasi si-book menggunakan SPSS dengan kombinasi metode r-tabel dan cohen's kappa [Evaluating the Validity of the SI-BOOK Application Using SPSS: A Combined Approach of r-Table Method and Cohen's Kappa]," *J. Teknol. Inf. J. Keilmuan dan Apl. Bid. Tek. Inform.*, vol. 16, no. 2, pp. 121–133, (in Indonesia), 2022, doi: https://doi.org/10.47111/jti.v16i2.5001.

[20] F. Aryanti, Q. F. P. Wahyono, C. D. Araminta, L. K. Jannah, and E. Kusumastuti, "Uji Validitas dan Reliabilitas Dalam Edukasi Agama Islam Untuk Anak Usia Dini Melalui Film Rara dan Nussa di Era Digital Dengan Software SPSS [An Evaluation of Validity and Reliability in Early Childhood Islamic Education through the Films Rara and Nussa ," *Algoritm. J. Mat. Ilmu Pengetah. Alam, Kebumian dan Angkasa*, vol. 2, no. 5, pp. 85–94, (in Indonesia), 2024, doi: https://doi.org/10.31004/basicedu.v6i4.3206.

[21] F. D. P. Anggraini, A. Aprianti, V. A. V. Setyawati, and A. A. Hartanto, "Pembelajaran statistika menggunakan software SPSS untuk uji validitas dan reliabilitas," *J. Basicedu*, vol. 6, no. 4, pp. 6491–6504, 2022.

[22] M. Mawardi, "Rambu-rambu penyusunan skala sikap model Likert untuk mengukur sikap siswa [Guidelines for Constructing a Likert-Type Attitude Scale for Assessing Student Attitudes]," *Sch. J. Pendidik. Dan Kebud.*, vol. 9, no. 3, pp. 292–304, (in Indonesia), 2019, doi: https://doi.org/10.24246/j.js.2019.v9.i3.p292-304.

[23] T. D. Hastjarjo, "Rancangan eksperimen-kuasi [Quasi-Experimental Design]," *Bul. Psikol.*, vol. 27, no. 2, pp. 187–203, (in Indonesia), 2019, doi: https://doi.org/10.22146/buletinpsikologi.38619.

[24] T. D. Cook, D. T. Campbell, and A. Day, *Quasi-experimentation: Design & analysis issues for field settings*, vol. 351. Boston: Houghton Mifflin Boston, 1979. [Online]. Available: https://dickyh.staff.ugm.ac.id/wp/wp-content/uploads/2009/ringkasan buku quasi-experimentakhir.pdf

[25] E. Rahmaniar, M. Maemonah, and I. Mahmudah, "Kritik terhadap teori perkembangan kognitif Piaget pada tahap anak usia sekolah dasar [A Critique of Piaget's Cognitive Development Theory in the Context of Elementary School-Aged Children]," *J. Basicedu*, vol. 6, no. 1, 2022, doi: https://doi.org/10.31004/basicedu.v6i1.1952.

[26] A. Sadriani, M. R. S. Ahmad, and I. Arifin, "Peran guru dalam perkembangan teknologi pendidikan di era digital [Teachers' Role in Advancing Educational Technology in the Digital Age]," in *Seminar Nasional Dies Natalis 62*, 2023, pp. 32–37, (in Indonesia). doi:

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https://doi.org/10.59562/semnasdies.v1i1.431.

[27]   N. A. H. Sidik, "Pengembangan karakter disiplin dan mandiri siswa melalui pendekatan behavioristik pada masa pandemi Covid-19 di SDI Surya Buana dan SD Anak Saleh Kota Malang," Universitas Islam Negeri Maulana Malik Ibrahim, 2022. [Online]. Available: http://etheses.uin-malang.ac.id/35120/

[28]   Z. Siregar, A. Amin, and A. Suradi, "Upaya guru PAI dalam membentuk karakter religius siswa di SMP Negeri 13 Kota Bengkulu [The Role of Islamic Education Teachers in Developing Students' Religious Character at SMP Negeri 13, Bengkulu City]," *Innov. J. Soc. Sci. Res.*, vol. 4, no. 3, pp. 11298–11314, (in Indonesia), 2024, doi: https://doi.org/10.31004/innovative.v4i3.11899.

[29]   S. Rahmawati and K. Nurachadija, "Inovasi pendidikan dalam meningkatkan strategi mutu pendidikan [Innovations in Education to Strengthen Strategies for Improving Educational Quality]," *BERSATU J. Pendidik. Bhinneka Tunggal Ika*, vol. 1, no. 5, pp. 1–12, (in Indonesia), 2023, doi: https://doi.org/10.51903/bersatu.v1i5.303.

[30]   E. W. Maryam, *Psikologi Sosial Penerapan Dalam Permasalahan Sosial [The Application of Social Psychology in Addressing Social Issues]*. 2019. doi: https://doi.org/10.21070/2019/978-602-5914-69-0.

[31]   M. Murjazin, A. Nurhuda, L. Susanti, and Y. S. Azami, "Psychological and Physiological Motives in Humans (Study on Verses of The Qur'an)," *Suhuf*, vol. 35, no. 1, pp. 30–44, 2023, doi: 10.23917/suhuf.v35i1.22581.