Weaving Muhammadiyah educational hope: Implementation of behavior theory in the curriculum

Mas'odi, M.[1], M. Nur Hakim[1,*], Rani Darmayanti[1], and Saiful Amien[1]

[1]Universitas Muhammadiyah Malang, Indonesia
[*]Corresponding author: nurhakim@umm.ac.id

ABSTRACT Education is one of the main pillars of building people's character and knowledge. Muhammadiyah, one of the most prominent Islamic Education and da'wah organizations in Indonesia, continues to strive to improve the quality of education through various innovations and the implementation of relevant educational theories. This study examines the implementation of behavioural theory in the Muhammadiyah education curriculum and how this implementation contributes to realizing educational expectations in Indonesia. Using a systematic literature review (SLR) method with a bibliometric approach from publications from the last ten years 2014-2024), this research identifies various learning strategies and practices implemented by Muhammadiyah educational institutions in adopting the principles of behaviour theory. The study results show that the behavioristic approach has been integrated into the Muhammadiyah education curriculum through positive reinforcement, behaviour modification, and results-based learning. Implementing this behavioural theory has contributed significantly to improving the quality of learning and developing student character, which aligns with Muhammadiyah's values and principles. This research provides new insights regarding the potential for integrating behavioural theory in Islamic education and its contribution to achieving broader educational goals.

1. INTRODUCTION

Education is one of the main pillars of character development and the progress of a nation. In the Indonesian context (Nurhakim et al, 2024; Filkov et al, 2023), Muhammadiyah, one of the most prominent Islamic organizations (Muttaqin, 2023), is essential in providing quality education relevant to the times' challenges (Azizah, 2023). However, amidst the rapid development of science and technology (Sukmono, 2023), Muhammadiyah education faces various problems, ranging from a curriculum that is less adaptive to change and teaching methods that are still conventional to the challenge of integrating Islamic values with modern science (Sulistiyanto, 2006; Humaidi et al, 2021; Al-Hamdi, 2023). Therefore, an innovative approach is needed to address these challenges, including implementing behavioural theory in the Muhammadiyah education curriculum (Sugianto et al, 2022).

Behavioural theory, or behavioural theory, is a learning theory that emphasizes changing individual behaviour through the learning process. This theory starts from the assumption that all behaviour can be taught and learned through interaction with the environment. In an educational context, applying behavioural theory can help students understand the subject matter cognitively and internalize the values and expected behaviour (Usmiyatun et al, 2023). This is relevant to Muhammadiyah's academic vision, which aims to make the nation's life intelligent and shape students' noble character according to Islamic values (Vedianty et al, 2022; Ahmed et al, 2021).

Implementing behavioural theory in the Muhammadiyah education curriculum can be done through various strategies (Utomo et al, 2023), such as implementing a fair and transparent reward and punishment system, using more interactive and applicable learning methods, and integrating Islamic values in each subject matter. Thus, it is hoped that Muhammadiyah's education will produce graduates who excel academically and have high moral and spiritual integrity (Muhammad et al, 2023). This will undoubtedly be an essential asset in building educational hopes in Indonesia, especially in facing increasingly complex global challenges.

Based on facts in the field, previous literature results state that education has a strategic role in shaping the character and competence of the nation's next generation amid globalization and increasingly complex challenges (Sunarti, 2022; Nashir et al, 2019). Muhammadiyah, one of Indonesia's largest Islamic organizations, has a strong vision of producing a young generation of quality, noble character, and intellectual and spiritual excellence (Sari, 2020). In this context, the urgency of the need for innovative and applicable educational approaches becomes very important (Hartana et al, 2021; Akmalia, 2023). The implementation of behavioural theory in the Muhammadiyah education curricu-

lum emerged as one strategy to answer these challenges, with the hope of reviving the hope of education that is capable of producing individuals who are not only academically intelligent but also have high social adaptability.

There has been much research on Muhammadiyah education, especially regarding implementation and behavioural theory. However, research entitled "Wearing Hope in Muhammadiyah Education: Implementing Behavior Theory in the Curriculum" brings a new perspective and offers several significant advantages.

First, this research offers an innovative perspective on how behavioural theory can be integrated into the Muhammadiyah education curriculum. This approach allows research to see theory as a theoretical framework and how it is applied in everyday educational practice. This aims to see the effectiveness of implementing theory in improving the quality of education and student learning outcomes.

Second, another strength of this research is its emphasis on creating hope. This shows that it does not only focus on the mechanical implementation of theory but also on how Muhammadiyah education can contribute to building the character and hopes of its students. Thus, this research not only contributes to academic literature but also inspiring and transformative educational practice.

Third, this research will provide comprehensive insight into the challenges and opportunities in implementing behavioural theory in the Muhammadiyah education curriculum. This includes understanding the specific conditions in Muhammadiyah educational institutions and how they can adapt theory and practice to achieve desired educational goals. Thus, this research is essential for the academic community and educational practitioners, especially in Muhammadiyah education.

The research entitled "Wearing Hope in Muhammadiyah Education: Implementing Behavioral Theory in the Curriculum" offers a fresh and in-depth perspective regarding applying behavioural theory in education. Using the Systematic Literature Review (SLR) Method and a bibliometric approach, this research extensively explores the literature available through the Google Scholar database, providing a solid analytical framework and structured methodology. This allows the research to identify and integrate findings from previous studies, resulting in a valuable synthesis of knowledge on this topic.

Integrating behavioural theory into the Muhammadiyah education curriculum shows the concrete application of the theory and explores the potential transformation that can be produced. Focusing on how Muhammadiyah education can create hope and build student character is an innovative step that raises the value of more than just academic education. This shows that education is not only about transferring knowledge but also about forming resilient, hopeful individuals with strong character.

The bibliometric approach used in this study adds another significant dimension. By analyzing citation networks, word frequencies, and trends in the literature, this research not only identifies existing knowledge gaps but also establishes a foundation for future research. This shows that the research "Weaving Hope in Muhammadiyah Education: Implementing Behavior Theory in the Curriculum" is relevant academically and practically, providing new insights that can be applied in developing a more effective and transformative educational curriculum. This study examines the implementation of behavioural theory in the Muhammadiyah education curriculum and how this implementation contributes to realizing educational expectations in Indonesia.

2. METHODS

The Systematic Literature Review (SLR) method is a critical and systematic approach to searching scientific literature to answer specific research questions. In the context of research on "Wearing Hope in Muhammadiyah Education: Implementing Behavior Theory in the Curriculum", SLR is an essential tool for exploring and evaluating related literature. This allows researchers to get a comprehensive and detailed picture of how Behavior Theory can be integrated into the Muhammadiyah Education curriculum. Using the PRISMA technique in this process ensures transparency and systematization of research, enabling researchers to identify and evaluate relevant studies efficiently.

In Figure 2, the first step is the Identification of the Research Problem. The research could focus on implementing behaviour theory in the Muhammadiyah education curriculum to achieve the expected educational goals. The second step is selection criteria, which determines the inclusion and exclusion criteria for reviewing the studies. Especially when exploring complex topics such as the historicity of Muhammadiyah and its implications for the development of progressive Islamic progress. In this context, databases such as Google Scholar, Scopus, Crossref, and the Publish or Perish tool are essential in identifying and accessing relevant literature studies. The main aim is to gather an in-depth understanding of progress and its meaning and implementation in the Muhammadiyah Islamic movement, especially in this modern era. The third step is a search strategy. In the literature selection process, it is essential to consider strict inclusion and exclusion criteria, with a particular focus on predetermined keywords such as "Muhammadiyah Education", "Behavior Theory", "Curriculum", "Literature Review", and "Implementation". These criteria ensure that only the most relevant and high-quality literature is analyzed. By collecting 28 articles that fit these criteria, researchers can use a bibliometric approach for data analysis and visualization. This approach identifies trends, patterns, and relationships between existing research, providing valuable insight into how behavioural theory has been integrated into the Muhammadiyah Education curriculum and its influence on learning.

Data analysis, carried out by classifying literature into relevant categories and analyzing it to answer research questions, offers a broad view of implementing behaviour theory in Muhammadiyah education. Presentation of primary and secondary data in the form of narratives, tables or diagrams makes understanding more accessible and allows readers to capture the essence of implementing theory in educational practice. Through careful analysis, this research is expected to provide new insights and valuable recommendations for the further development of Muhammadiyah Education, creating hope for a more inclusive and progressive educational future.
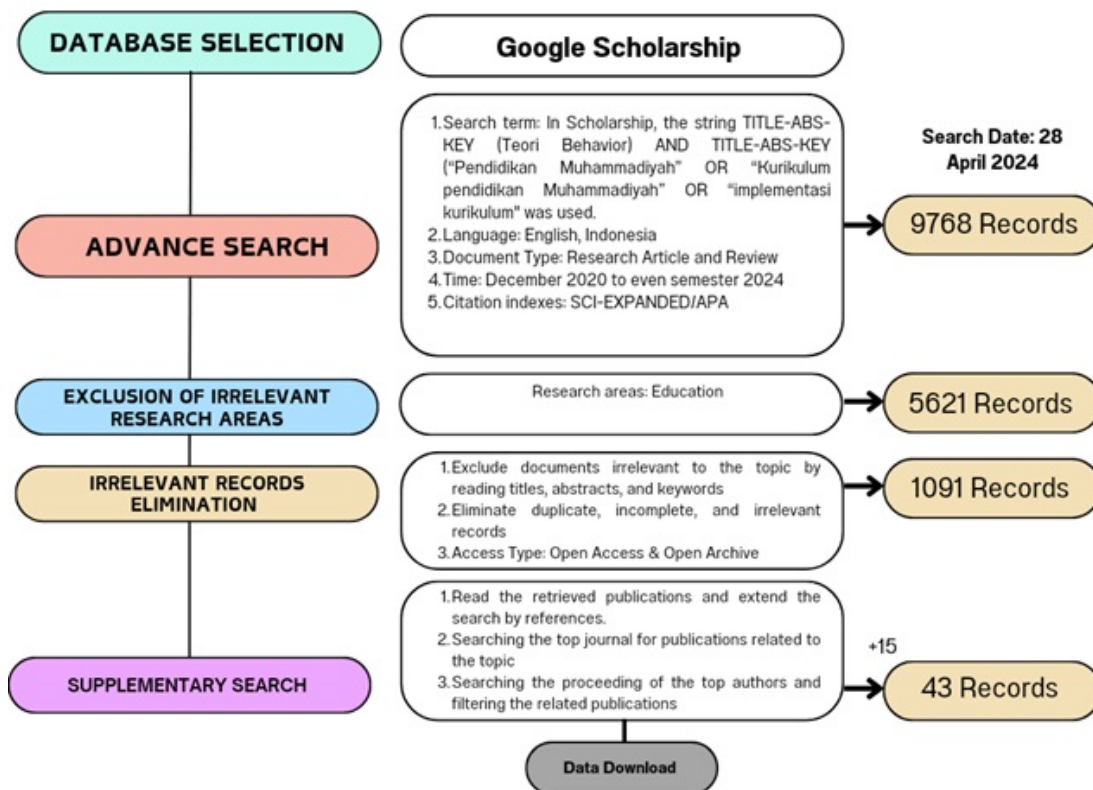
FIGURE 1. PRISMA technique

3. RESULT & DISCUSSION

3.1 Review: Articles with the top 10 references based on number of citations

Articles with the top 10 references based on the number of citations regarding research related to "Muhammadiyah Education", "Implementation" and "Behavior Theory" can be seen in Table 1.

The analysis results in Table 1 show that education is a field continuously experiencing innovation and research, especially in integrating various theories and methods to improve the quality of learning. Among the different approaches that have been tested, Muhammadiyah Education and the implementation of Behavior theory have significantly impacted the world of education. These highly cited articles offer in-depth insight into how these approaches can improve teacher candidates' and students' critical thinking and problem-solving skills.

The first article, "Promoting Critical Thinking and Problem-Solving Skills of Preservice Elementary Teachers through Process-Oriented Guided-Inquiry Learning (POGIL)" with 62 citations, shows the importance of using inquiry-based learning methods to prepare prospective elementary school teachers. The POGIL method, which emphasizes active and collaborative learning, has proven effective in improving prospective teachers' critical thinking and problem-solving skills. This provides strong evidence that innovative learning approaches can prepare teachers who are more competent and responsive to contemporary educational needs.

The second article, "Exploring primary students' problem-solving abilities by doing tasks like PISA's ques-

tions," with 50 quotes, explores primary school students' problem-solving abilities through tasks similar to PISA questions. This provides a new perspective in assessing and improving students' problem-solving abilities, essential skills in the 21st century. Through the implementation of PISA-based tasks, this research shows great potential in stimulating students' critical and analytical thinking abilities.

Finally, with 46 citations, the article "Self and Peer Assessments in active learning models to increase metacognitive awareness and cognitive abilities" highlights the importance of self-assessments and peer assessments in active learning models. This research revealed that through self- and peer-assessment, students become more aware of their metacognitive processes and experience improvements in their cognitive abilities. This confirms again that active and reflective learning can significantly develop students' learning skills.

Through their high number of citations, these three articles emphasize the importance of innovative and reflective approaches in education. They significantly contribute to the academic literature and offer practical guidance for educators to implement more effective learning strategies. With a focus on improving critical thinking and problem-solving skills, research in the field of Muhammadiyah Education and the implementation of Behavior theory provides valuable insights for the future of education.

3.2 Trend Analysis of Co-citation Authorship based on Cited Authors

Co-citation authorship analysis is essential in understanding how a research topic develops and how researchers

No	Author(s) ID	Titles	Year	Source Title	Cited by
1	57194465468	Promoting critical thinking and Problem-Solving Skills of Pre-service Elementary Teachers through Process-Oriented Guided-Inquiry Learning (POGIL).	2018	International Journal of Instruction (Saputro et al, 2019)	62
2	57164852000	Exploring primary student's problem-solving abilities by doing tasks like PISA's questions.	2012	Journal on Mathematics Education (Novita & Hartono, 2012)	50
3	57190660805	Self and peer assessments in active learning model to increase metacognitive awareness and cognitive abilities.	2017	International Journal of Instruction (Pantiwati, 2017)	46
4	57208031768	The fiqh of disaster: The mitigation of COVID-19 in the perspective of Islamic education-neuroscience.	2020	International Journal of Disaster Risk Reduction (Suyadi, 2020)	44
5	57208125115	Hybrid-PjBL: Learning outcomes, creative thinking skills, and learning motivation of the pre-service teacher.	2019	International Journal of Instruction (Rahardjanto & Fauzi, 2019)	44
6	56780251800	The demise of moderate Islam: New media, contestation, and reclaiming religious authorities.	2020	Indonesian Journal of Islam and Muslim Societies (Akmaliah, 2020)	33
7	57194465468	Using inquiry-based laboratory instruction to improve critical thinking and scientific process skills among preservice elementary teachers.	2019	Eurasian Journal of Educational Research (Saputro et al, 2019)	30
8	57194465468	Pesantren: The miniature of moderate Islam in Indonesia.	2015	Indonesian Journal of Islam and Muslim Societies (Ni'am, 2015)	24
9	57215843951	Analysis of the level of students' critical thinking skills in biological materials at Muhammadiyah High School in Palembang City.	2020	Universal Journal of Educational Research (Nawawi & Azhari, 2020)	18
10	57190063333	The correlation between self-efficacy and peer interaction towards students' employability in vocational high school	2021	International Journal of Evaluation and Research in Education (Mardianti et al, 2021)	17

connect with each other through the works they cite. In the context of research related to "Muhammadiyah Education", "Implementation", and "Behavior Theory", this approach can reveal how theory and practice in Muhammadiyah education can be analyzed and developed through the lens of behavioural theory, as ?? 2.

Muhammadiyah education, one of Indonesia's most significant education systems, has unique characteristics and an educational philosophy rooted in Islamic values. Implementing behavioural theory in the context of Muhammadiyah education could be an exciting research area, considering that this theory emphasizes the influence of the environment on learning behaviour. In co-citation authorship analysis, researchers can identify the principal works that have been widely cited in previous research, providing an overview of how concepts in behaviour theory have been adapted and applied in educational practice within the Muhammadiyah environment.

Using co-citation data to map scientific networks between authors provides deep insight into how research works relate to each other and contribute to developing a scientific field. In this context, the research focuses on implementing behavioural theory in Muhammadiyah education, which is gaining attention because of its relevance to creating values and ethics-based education. With 12 clusters showing a diversity of perspectives and approaches, this analysis reveals how the various central works contribute to a broader understanding of the subject.

In particular, three works represented by (Zukiwsky et al, 2020; Nurmansyah et al, 2022; Nashir, 2019; Hudha et al, 2018; Amin, 2020), show a broad spectrum of research ranging from local dynamics and global involvement of the Islamic modernist movement in Indonesia, financial behavior of religious organizations, to the effectiveness of learning models in increasing bioethical knowledge. Although focused on different areas, these three studies collectively provide insight into how behavioural theory can be implemented in the context of Muhammadiyah education, which focuses not only on the transfer of knowledge but also on developing ethical attitudes and decisions.
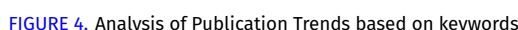
The unique finding of this research is identifying how behavioral theory interacts with values and practices in Muhammadiyah education, showing that its implementation is a theoretical framework and a practical tool to facilitate learning and ethical development. This emphasizes the importance of integration between theory and practice in education, as well as highlighting the critical role played by Muhammadiyah education in forming individuals who are not only intellectually intelligent but also morally and ethically strong.

3.3 Analysis of co-authorship networks, especially in the context of specific countries

Co-authorship network analysis, especially in the context of certain countries, allows us to identify and evaluate the linkages between researchers in specific fields, in this case, "Muhammadiyah Education", "Implementation", and "Behavior Theory". The results of this analysis in Figure 3.

In Figure 3, the results of the analysis of publications on "Muhammadiyah Education", "Implementation", and "Behavior Theory" show the existence of 20 items with 15 clusters and 22 links with a total link strength of 39, providing an overview of the authorship collaboration that occurs between countries. These results show Indonesia's dominance in literature contributions with 189 documents, represented in red, showing Indonesia's important role and leadership in research and publications in this field.

International cooperation can also be seen from the involvement of other countries, such as Malaysia, with eight texts and Australia, with six texts (Montroy et al, 2014; Alexander & Colomy, 2019; Ahmed et al, 2021). This shows that although Indonesia leads in the number of publica-

FIGURE 2. Trend Analysis of Co-citation Authorship based on Cited Authors

tions, collaboration with other countries is essential in developing scientific writing in this area. This collaboration can take various forms, from joint writing knowledge exchange to joint research that enriches the quality and depth of analysis in Muhammadiyah education and related theories.

These findings emphasize the importance of cross-country collaboration in scientific development (Marzano & Novembre, 2017), especially in Muhammadiyah education and the application of behavioural theory in education. With its significant volume of documents, Indonesia acts as a center for research and publications, but collaboration with Malaysia and Australia shows that learning and knowledge exchange is global and not limited by geographical boundaries. This indicates a positive trend in scientific

research, where international collaboration can produce more innovative and impactful scientific works.

3.4 Analysis of Publication Trends based on keywords

Analysis of publication trends related to joint authorship, especially those reviewing research keywords related to "Muhammadiyah Education", "Implementation", and "Behavior Theory", shows significant developments in the last few years (2014-2024), in Figure 4 (with maximum documents 25, minimum documents 2).

Analysis of publication trends related to co-authorship, particularly highlighting the keywords "Muhammadiyah Education", "Implementation", and "Behavior Theory", reveals a marked increase in research volume in recent years. With exploration involving up to 946 items, divided into 25 clus-

FIGURE 3. Analysis of co-authorship networks, especially in the context of specific countries

Weaving Muhammadiyah educational.../Mas'odi, M et al.

FIGURE 4. Analysis of Publication Trends based on keywords

ters and almost 9944 links with a total link strength reaching 42182, this analysis provides deep insight into the dynamics and focus of related research. The first cluster that stands out with keywords such as "fatwa", "java", and "ulama" indicates a strong interest in religious aspects and locality (Yang, 2020; Nursaid et al, 2021), while other clusters such as those represented by "democracy" and "Qur'an" highlight the interaction between democratic values and religious interpretation (Liu, 2021; Elda, 2018; Amit, 2002).

In the cluster that is more directly related to "Behavioral Theory", the discovery of keywords such as "behavioural factors" (Yu, 2017), "financial behaviour" (Jang & Kim, 2021), and "aggression behaviour" (Zukiwsky et al, 2020) shows that there is a research trend that links behavioural theories with various aspects of life, from finances to aggressive behaviour (Dodge, 1980). This confirms that there are efforts to understand and implement behavioural theory in a broader context (Park & Lee, 2012), including in education, psychology, and religious studies. In particular, the association between "Muhammadiyah Education" and "Implementation" indicates the existence of research that seeks to integrate Muhammadiyah principles and behavioural theories in educational approaches and religious practices (Novak, 2015; Gurley, 2018; Fernandes, 2014).

Although this analysis provides a broad overview of current research trends, there are several limitations in the detail and depth of analysis of each theme or keyword. For example, how specifically "Behavior Theory" is implemented in the context of "Muhammadiyah Education" is not fully revealed. Additionally, this analysis did not detect new or niche aspects of research that may not have been widely explored—such as the influence of digital technology on education and religious behaviour. Therefore, although this analysis provides valuable insight into general trends and research focus, there is still much room for further exploration and deeper understanding of specific topics in diverse contexts.

3.5 Content Trend Analysis based on keywords: Weaving Hope for Muhammadiyah Education

Content trends related to the keyword "Education, Muhammadiyah, and Behavior Theory" describe the efforts and initiatives the Muhammadiyah organization undertook to advance education in Indonesia. Muhammadiyah, as one of the most prominent Islamic organizations in Indonesia, has a vital role in developing quality and inclusive education, which not only focuses on academic aspects but also on developing character and Islamic values. The results of this analysis in Figure 5.

Analysis of content trends based on keywords in the context of "Muhammadiyah Education" with a particular focus on "Behavior Theory" reveals several new aspects and niches that have not been explored much. By reducing the minimum document limit to just one, this analysis highlighted several titles that reflect the implementation of behavioural theory in various aspects of sharia education and finance (Sun, 2023; Meyer, 2014). Titles such as "The Role of Job Satisfaction, Financial Knowledge and Sharia Financial Behavior as a Basis for Measuring Financial Literacy" (Muñoz-Murillo, 2020; Bucholz, 2008), "Analysis of behavioural factors causing student academic cheating" (Wang, 2014; Frambach, 2014) and "Observing cheating behaviour among EFL students at Islamic universities in Indonesia" show the research focuses on behavioural aspects in education and finance.

In the first title, studies regarding job satisfaction (Williams, 1991; Podsakoff, 2021), financial knowledge, and sharia financial behaviour indicate the importance of understanding financial literacy in the sharia context, especially in the Muhammadiyah education environment. This is relevant to behavioural theory, which emphasizes the influence of knowledge and satisfaction on individual behaviour. Meanwhile, the second and third titles highlight the problem of academic cheating and cheating behaviour, indicating the need for a more in-depth approach to understanding and addressing students' behavioural issues.
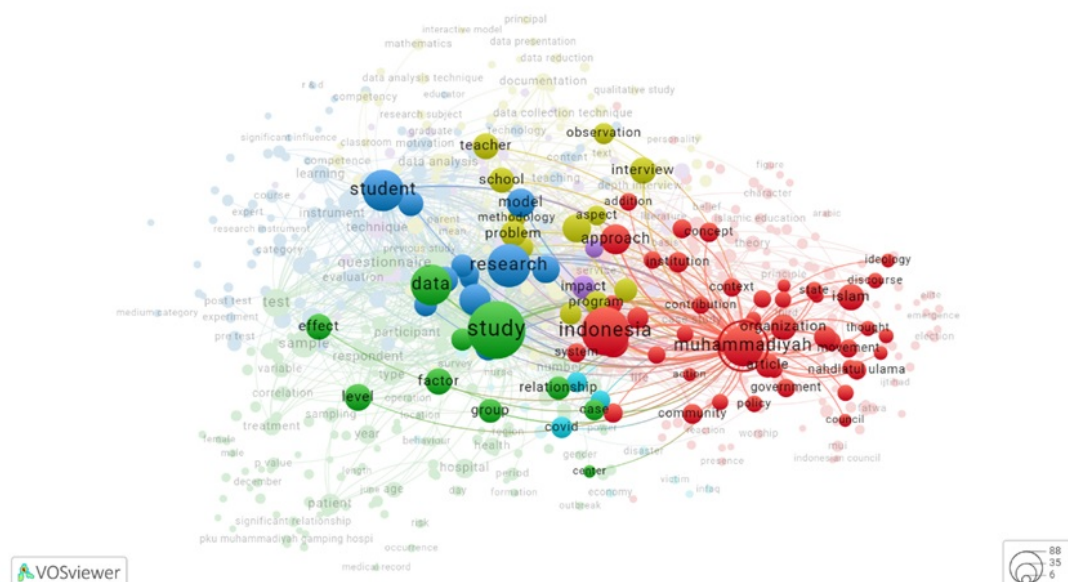
FIGURE 5. Content Trend Analysis based on keywords: Weaving Hope for Muhammadiyah Education

The integration of Behavioral Theory in the Muhammadiyah Curriculum (White, 2011; Darmayanti et al, 2023) is a strategic step to develop education that not only focuses on academic knowledge (Leone, 2015; Gordon, 2020), but also the formation of student character. Behaviour theory emphasizes learning through conditioning, reinforcing positive behaviour and minimizing negative behaviour(Nesbitt et al, 2015). This approach can be efficient in Muhammadiyah education as it prioritizes moral and spiritual values.

First, integration can start by identifying the core values you want to instill through the curriculum, such as honesty, discipline, cooperation and caring. Then, teachers can design learning activities that allow students to practice these values in real situations. For example, through group activities to teach cooperation or social projects to instill awareness. Positive behaviour can be reinforced through praise, rewards, or particular privileges, while negative behaviour can be overcome with logical consequences that educate, not punish.

Second, behavioural theory can also be integrated into learning through technology. Educational applications and online platforms can be used to monitor and strengthen students' positive academic and social behaviour. Technology can assist teachers in providing quick and consistent feedback, two critical components of behavioural conditioning.

Lastly, Muhammadiyah schools must involve parents and the community in this character education process. Workshops and seminars can be held to provide an understanding of behaviour theory and how it is applied at home and in the community. Collaboration between school, home and community will create a consistent environment for students to develop positive behaviour.

The results and findings of this analysis underline the importance of integrating behavioural theory in educational strategies and implementation in the Muhammadiyah environment. By understanding the various factors that influence individual behaviour, both in the context of sharia finance and academic integrity, Muhammadiyah

Education can create hope for creating a learning environment that is more ethical, transparent and in line with Islamic values. Implementing behavioural theory in education will increase Sharia's financial literacy and academic integrity and contribute to the formation of positive student character and behaviour.

Behaviour theory, or behavioural theory, is an approach in psychology which emphasizes that human behaviour can be studied and modified through interaction with its environment. In the educational context, this theory offers the perspective that student behaviour can be shaped and directed by providing appropriate and consistent stimuli. Muhammadiyah education, as part of the education system in Indonesia, adopts moderate and progressive Islamic values, aiming to develop individuals who excel academically and have noble morals and good personalities.

Muhammadiyah education can integrate behavioural theory by applying active, participatory and results-oriented learning methods. The designed curriculum does not only focus on theoretical knowledge but also practical applications in everyday life so that students can internalize the values taught. Providing positive feedback and reinforcement for desired behaviour can stimulate students to continue to behave positively.

This approach is similar to behaviourism theory's principles, which emphasizes that one's environment strongly influences individual behaviour. In Muhammadiyah education, an Islamic educational environment rich in Islamic values and practices plays a vital role in shaping and directing student behaviour. This environment functions as a place to transfer knowledge and as a space for internalizing Islamic values that will guide students in all aspects of their lives.

This holistic concept of Muhammadiyah education emphasizes the importance of developing a young generation who is intellectually intelligent, spiritually and morally strong. This effort balances material and spiritual progress, where students are equipped with the latest knowledge and technology while remaining rooted in Islamic values. Thus, Muhammadiyah education seeks to form individuals who

can contribute positively to the progress of Muslims and society in line with universal and inclusive Islamic principles.

Muhammadiyah's education is exciting to discuss, especially from the perspective of behavioural theory—this theory was developed by psychologists such as B.F. Skinner, emphasized the importance of changes in behaviour that can be observed and measured as a result of the learning process. Muhammadiyah education, with its holistic approach, tries to apply these principles in its educational practice. The curriculum adopted by Muhammadiyah educational institutions focuses not only on cognitive aspects or academic knowledge alone, but also on students' affective and psychomotor development, including aspects of emotions, attitudes and skills.

Integration between general knowledge and religion is one of the characteristics of Muhammadiyah education. This enriches students' knowledge from various aspects and facilitates the formation of desired character and behaviour. Through the religious education provided, students are taught about Islamic values , which are expected to be internalized and reflected in daily behaviour. Internalizing these values is very relevant to behavioural theory, which emphasizes learning through positive reinforcement, which gradually forms the desired behaviour.

In addition, extracurricular activities offered by Muhammadiyah schools play an essential role in supporting student character formation. Through these activities, students get the opportunity to develop their skills and interests and interact and collaborate in diverse social situations. This helps students practice the values they have learned while reinforcing positive behaviour through direct experience. Thus, Muhammadiyah education is not only relevant to behavioural theory in a theoretical context but is also very practical in its implementation to form individuals who have strong character and are by Islamic values.

Overall, applying behavioural theory in the curriculum and teaching methods in Muhammadiyah schools shows how education is about academic knowledge and character and behaviour formation. Through structured learning strategies, positive and negative reinforcement, and a focus on student motivation, Muhammadiyah schools strive to create a learning environment conducive to students' holistic development.

Implementing Behavior Theory in the Muhammadiyah curriculum in Muhammadiyah schools can be done through several strategic approaches that integrate Islamic values with behaviour-based learning principles. Behaviour theory, or behavioural theory, emphasizes learning as a process of changing behaviour that can be observed and measured through interaction with the environment. Here are some ways to implement it (Susetyarini et al, 2024; Khalid, 2018; Bramantoro, 2020):

a. Implementation of the Reward and Punishment System: In the context of Muhammadiyah schools, a reward and punishment system can be implemented to strengthen positive behaviour and reduce negative behaviour in students. Awards can take the form of praise, certificates of achievement, or other prizes to recognize and motivate good behaviour, such as activeness in religious activities, good manners, and academic achievement. Instead, the punishment must be educational and proportional, aimed at correcting behaviour without damaging student enthusiasm;

b. Project-Based Learning: Through a project-based learning method that integrates Islamic values, students are invited to be directly involved in activities with real goals relevant to everyday life. This allows students to apply concepts learned in class in real situations while observing the consequences of their behaviour. Projects can relate to social, religious, or environmental activities, all designed to strengthen positive behaviour by the values taught in Islam;

c. Strengthening Through Extracurricular Activities: Muhammadiyah schools can provide a variety of extracurricular activities that not only enrich students' learning experiences but allow them to develop positive habits and behaviour. Activities such as study groups, sports clubs, and humanitarian organizations can be a means of applying behavioural theory. Through these activities, students can learn about the importance of cooperation, discipline, responsibility, and caring for others, all of which are applications of behavioural theory in an Islamic context.

Through implementing these strategies, Muhammadiyah schools can successfully integrate behavioural theory into their curriculum while instilling deep Islamic values in their students. This helps create a learning environment conducive to students' academic and character development of Muhammadiyah's principles.

4. CONCLUSION

This research suggests several strategies that can be followed up further to improve behavioural theory integration in the Muhammadiyah education system. First, the report recommends adopting a more structured and systematic approach to positive reinforcement. This can be achieved by setting clear, achievable student goals, consistently recognizing their achievements, and encouraging positive behaviour patterns and academic excellence.

Second, there is an emphasis on the need for ongoing teacher training and development. Educators play an essential role in applying behavioural theory effectively. Therefore, providing teachers with ongoing professional development opportunities will equip them with the latest methodologies in behaviour modification and active learning strategies. This will not only improve their teaching practices but also ensure that they are prepared to meet the diverse learning needs of their students.

Finally, this research underscores the importance of involving parents and the community in the educational process. By creating a supportive ecosystem around students that reinforces the values and principles taught in schools, Muhammadiyah institutions can foster an environment that promotes academic success and moral development. Collaborative efforts between educators, parents, and community leaders can contribute significantly to the holistic development of students, making them well-rounded individuals with strong ethical and moral values.

References

Ahmed, H., Ekman, L., & Lind, N. (2023). Planned Behavior, Social Networks, and Perceived Risks: Understanding

Farmers' Behavior toward Precision Dairy Technologies. *Journal of Dairy Science.* https://doi.org/10.3168/jds.2023-23861

Ahmed, M., Usmiyatun, U., Darmayanti, R., Purnamasari, P., & Choirudin, C. (2021). CODE ATI: Sewing Activities with Various Patterns Affect the Cognitive Aspects of Kindergarten Children? *AMCA Journal of Education and Behavioral Change,* 1(1), 22–25.

Akmalia, A. (2023). Effect of Financial Literacy, Lifestyle and Self-Control on Consumptive Behavior Considering Students of University of Muhammadiyah Yogyakarta in Indonesia. *Lecture Notes on Data Engineering and Communications Technologies,* 182, 361–371. https://doi.org/10.1007/978-3-031-40971-4_34

Akmaliah, W. (2020). The Demise of Moderate Islam: New media, Contestation, and Reclaiming Religious Authorities. *Indonesian Journal of Islam and Muslim Societies,* 10(1), 1–24. https://doi.org/10.18326/ijims.v10i1.1-24

Alexander, J. C., & Colomy, P. (2019). " Institutionalization" and" Collective Behavior": Points of Contact Between Eisenstadt's Functionalism and Symbolic Interactionism. *Comparative Social Dynamics.* https://doi.org/10.4324/9780429044755-23

Al-Hamdi, R. (2023). Political Consciousness of Muhammadiyah: Historical Trajectories and Future. *Studia Islamika,* 29(3), 451–484. https://doi.org/10.36712/sdi.v29i3.15866

Amin, S. (2020). The Effect of Problem-Based Hybrid Learning (PBHL) Models on Spatial Thinking Ability and Geography Learning Outcomes. *International Journal of Emerging Technologies in Learning,* 15(19), 83–94. https://doi.org/10.3991/ijet.v15i19.15729

Amit, M. (2002). High-stakes Assessment as a Tool for Promoting Mathematical Literacy and the Democratization of Mathematics Education. *Journal of Mathematical Behavior,* 21(4), 499–514. https://doi.org/10.1016/S0732-3123(02)00147-5

Azizah, U. S. Al. (2023). Exploration of Sharia Bank Services in Muhammadiyah's Higher Education Students. *Contributions to Management Science,* 455–464. https://doi.org/10.1007/978-3-031-27860-0_41

Bramantoro, T. (2020). Intention and Oral Health Behavior Perspective of Islamic Traditional Boarding School Students Based on Theory of Planned Behavior. *Pesquisa Brasileira Em Odontopediatria e Clinica Integrada,* 20. https://doi.org/10.1590/pboci.2020.039

Bucholz, J. (2008). Using Literacy-Based Behavioral Interventions and Social Stories to Improve Work Behavior in Employees with Developmental Disabilities. *Education and Training in Developmental Disabilities,* 43(4), 486–501.

Darmayanti, R., Suyono, G., Gunawan, I. I., Hidayat, A., & Maghfiroh, I. (2023). Sustainable Lifestyle: Study of Independent Curriculum Implementation in Terms of Mathematics learning and P5 implementation. *AMCA Journal of Education and Behavioral Change,* 3(2).

Dodge, K. A. (1980). Social cognition and children's aggressive behavior. *Child Development.* https://www.jstor.org/stable/1129603

Elda, F. (2018). Gender Differences in the Knowledge of Tuberculosis and Health Care Seeking Behaviors: A cross Sectional Study Among the Students in the Islamic Boarding School (Pesantren) in Garut, West Java, Indonesia. *Journal of International Dental and Medical Research,* 11(1), 228–231.

Fernandes, D. (2014). Financial Literacy, Financial Education, and Downstream Financial Behaviors. *Management Science,* 60(8), 1861–1883. https://doi.org/10.1287/mnsc.2013.1849

Filkov, A. I., Tihay-Felicelli, V., Masoudvaziri, N., Rush, D., Valencia, A., Wang, Y., Blunck, D. L., Valero, M. M., Kempna, K., Smolka, J., De Beer, J., Campbell-Lochrie, Z., Centeno, F. R., Ibrahim, M. A., Lemmertz, C. K., & Tam, W. C. (2023). A Review of Thermal Exposure and Fire Spread Mechanisms in Large Outdoor Fires and the Built Environment. *Fire Safety Journal,* 140, 103871. https://doi.org/10.1016/j.firesaf.2023.103871

Frambach, J. (2014). Quiet or Questioning? Students' Discussion Behaviors in Student-centered Education Across Cultures. *Studies in Higher Education,* 39(6), 1001–1021. https://doi.org/10.1080/03075079.2012.754865

Gordon, I. D. (2020). Information Seeking Behaviors, Attitudes, and Choices of Academic Mathematicians. *Science and Technology Libraries,* 3, 253–280. https://doi.org/10.1080/0194262X.2020.1758284

Gurley, L. E. (2018). Educators' Preparation to Teach, Perceived Teaching Presence, and Perceived Teaching Presence Behaviors in Blended and Online Learning Environments. *Online Learning Journal,* 22(2), 197–220. https://doi.org/10.24059/olj.v22i2.1255

Hartana, B., Sanosra, A., & Nursaid, N. (2021). The Effect of Organizational Commitment and Culture on Organizational Citizenship Behavior (OCB): A Case Study of Teacher at Muhammadiyah High School, Jember Regency. *Jurnal Sains Manajemen Dan Bisnis Indonesia,* 11(2), 96–107.

Hudha, A. M., Amin, M., Sumitro, S. B., & Akbar, S. (2018). The Effectiveness of Oidde Learning Model in the Improvement of Bioethics Knowledge, Ethical Decision, and Ethical Attitude of Biology Pre-service Teachers. *Journal of Baltic Science Education,* 17(6), 960–971. https://doi.org/10.33225/jbse/18.17.960

Humaidi, N., Darmayanti, R., & Sugianto, R. (2022). Challenges of Muhammadiyah's Contribution in Handling Covid-19 in the MCCC Program in Indonesia. *Khazanah Sosial,* 4(1), 176–186.

Jang, H., & Kim, J. (2021). Effects of Investment Behavior Factors and Sub-attributes for Lots Shopping Building on Investment Intention: Comparative Studies between Factor Level and Attribute .... *The Journal of the Korea Contents Association.* https://koreascience.kr/article/JAKO202102539795558.page

Khalid, M. (2018). When and how Abusive Supervision Leads to Knowledge Hiding Behaviors: An Islamic Work ethics Perspective. *Leadership and Organization Development Journal*, 39(6), 794–806. https://doi.org/10.1108/LODJ-05-2017-0140

Leone, A. (2015, 11 May). Effects of a Token Economy System on Student Academics, Behavior, and Homework Completion. Western Illinois University ProQuest Dissertations Publishing. *search.proquest.com*. https://search.proquest.com/openview/4f380fe7b6fd1e64597eb6493cc2fb13/1?pq-origsite=gscholar&cbl=18750

Liu, H. (2021). Long Term Leaching Behavior of Arsenic from Cemented Paste backfill Made of Construction and Demolition Waste: Experimental and Numerical Simulation Studies. *Journal of Hazardous Materials*, 416. https://doi.org/10.1016/j.jhazmat.2021.125813

Mardianti, N., Wijayati, P. H., & Murtadho, N. (2021). The Correlation between Students' Reading Anxiety and their Reading Comprehension in ESP Context. *International Journal of Language Education*, 5(2), 15–29. https://doi.org/10.26858/ijole.v5i2.15440

Marzano, G., & Novembre, A. (2017). Machines that Dream: A New Challenge in Behavioral-Basic Robotics. *Procedia Computer Science*, 104, 146–151. https://doi.org/10.1016/j.procs.2017.01.089

Meyer, J. De. (2014). Does Observed Controlling Teaching Behavior Relate to Students' Motivation in Physical Education? *Journal of Educational Psychology*, 106(2), 541–554. https://doi.org/10.1037/a0034399

Montroy, J. J., Bowles, R. P., Skibbe, L. E., & Foster, T. D. (2014). Social Skills and Problem Behaviors as Mediators of the Relationship between Behavioral Self-regulation and Academic Achievement. *Early Childhood Research ....* https://www.sciencedirect.com/science/article/pii/S0885200614000246

Muhammad, I., Angraini, L. M., Darmayanti, R., Sugianto, R., Usmiyatun, U., & … (2023). Students' Interest in Learning Mathematics Using Augmented Reality: Rasch Model Analysis. *Edutechnium Journal of Educational Technology*, 1(1), 89–99.

Muñoz-Murillo, M. (2020). The Role of Cognitive Abilities on Financial Literacy: New Experimental Evidence. *Journal of Behavioral and Experimental Economics*, 84. https://doi.org/10.1016/j.socec.2019.101482

Muttaqin, A. (2023). Muhammadiyah, Sufism, and the Quest for 'authentic' Islamic Spirituality. *Indonesian Journal of Islam and Muslim Societies*, 13(1), 199–226. https://doi.org/10.18326/ijims.v13i1.199-226

Nashir, H. (2019). Muhammadiyah: The Political Behavior of Modernist Muslim Elite in Indonesia. *Humanities and Social Sciences Reviews*, 7(4), 837–844. https://doi.org/10.18510/hssr.2019.74111

Nashir, H., Jinan, M., & Setiaji, B. (2019). Muhammadiyah: The Political Behavior of Modernist Muslim Elite in Indonesia. *Humanities and Social Sciences Reviews*, 7(4), 837–844. https://doi.org/10.18510/hssr.2019.74111

Nawawi, S., & Azhari, A. T. (2020). Analysis of the Level of Critical Thinking Skills of Students in Biological Materials at Muhammadiyah High School in Palembang City. *Universal Journal of Educational Research*, 8(3D), 47–53. https://doi.org/10.13189/ujer.2020.081707

Nesbitt, K. T., Farran, D. C., & Fuhs, M. W. (2015). Executive Function Skills and Academic Achievement Gains in Prekindergarten: Contributions of Learning-related Behaviors. *Developmental Psychology*. https://psycnet.apa.org/record/2015-22645-001

Ni'am, S. (2015). Pesantren: The Miniature of Moderate Islam in Indonesia. *Indonesian Journal of Islam and Muslim Societies*, 5(1), 111–134. https://doi.org/10.18326/ijims.v5i1.111-134

Novak, E. (2015). Using Video Game Play to Improve Education-majors' Mathematical Performance: An Experimental Study. *Computers in Human Behavior*, 53, 124–130. https://doi.org/10.1016/j.chb.2015.07.001

Novita, R., & Hartono, Y. (2012). Exploring Primary Student's Problem-solving Ability by doing Tasks Like PISA's Question. *Journal on Mathematics Education*, 3(2), 133–150. https://doi.org/10.22342/jme.3.2.571.133-150

Nurhakim, M., Darmayanti, R., & Pongsibanne, M. W. (2024). Indonesian Vs Thailand: The Historicity of Muhammadiyah's" Founding idea," What is the Vision of Muhammadiyah's Mission? *Assyfa Journal of Islamic Studies*, 2(1).

Nurmansyah, M. I., Handayani, S., Kurniawan, D. W., Rachmawati, E., & Alim, A. M. (2022). Congregational Worshiping and Implementation of the COVID-19 Preventive Behavioral Measures During the Re-opening Phase of Worship Places Among Indonesian Muslims. *Journal of Religion and Health*, 61(5), 4169–4188. https://doi.org/10.1007/s10943-022-01593-7

Nursaid, N. Q. F. P., Fatimah, F., Ismanto, T., & Priyohadoko, N. T. (2021). The Role of Leadership, Organizational Citizenship Behavioral and Work Environment in Improving Employee Job Satisfaction. *Journal of Economics, Finance and Management Studies*, 4(11), 2157–2167.

Pantiwati, Y. (2017). Self and Peer Assessments in Active Learning Model to Increase Metacognitive Awareness and Cognitive Abilities. *International Journal of Instruction*, 10(4), 185–202. https://doi.org/10.12973/iji.2017.10411a

Park, J. S., & Lee, K. (2012). Modification of Severe Violent and Aggressive Behavior Among Psychiatric Inpatients through the use of a Short-term Token Economy. *Journal of Korean Academy of Nursing*. https://synapse.koreamed.org/articles/1002782

Podsakoff, N. P. (2021). Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: A meta-analysis. *Journal of Applied Psychology*, 92(2), 438–454. https://doi.org/10.1037/0021-9010.92.2.438

Rahardjanto, A., & Fauzi, A. (2019). Hybrid-PjBL: Learning Outcomes, Creative Thinking Skills, and Learning Motivation of Preservice Teacher. *International Journal of*

Instruction, 12(2), 179–192. https://doi.org/10.29333/iji.2019.12212a

Saputro, A. D., Rohaeti, E., & Prodjosantoso, A. K. (2018). Promoting Critical Thinking and Problem Solving Skills of Preservice Elementary Teachers through Process-Oriented Guided-Inquiry Learning (POGIL). *International Journal of Instruction*, 11(4), 777–794. https://doi.org/10.12973/iji.2018.11449a

Saputro, A. D., Rohaeti, E., & Prodjosantoso, A. K. (2019). Using inquiry-based Laboratory Instruction to Improve Critical Thinking and Scientific Process Skills among Preservice Elementary Teachers. *Eurasian Journal of Educational Research*, 2019(80), 151–170. https://doi.org/10.14689/ejer.2019.80.8

Sari, D. E. (2020). The Effect of Financial Literacy and Pocket Money on Consumer Behavior of Universitas Muhammadiyah Surakarta (UMS) Students. *International Journal of Scientific and Technology Research*, 9(2), 4235–4237.

Sugianto, R., Darmayanti, R., & Humaidi, M. N. (2022). Muhammadiyah Education's Readiness in The Society 5.0 Era. *Al'Adalah*, 25(1), 21–34.

Sukmono, F. G. (2023). Fastabiq.Id: A Model of Muhammadiyah's Management Media Community at the Grassroots. *E3S Web of Conferences*, 440. https://doi.org/10.1051/e3sconf/202344003003

Sulistiyanto, P. (2006). Muhammadiyah, Local Politics and Local Identity in Kotagede. *Sojourn*, 21(2), 254–270. https://doi.org/10.1355/SJ21-2F

Sun, D. (2023). Transitioning From Introductory to Professional Programming in Secondary Education: Comparing Learners' Computational Thinking Skills, Behaviors, and Attitudes. *Journal of Educational Computing Research*. https://doi.org/10.1177/07356331231204653

Sunarti, S. (2022). Factors Affecting E-Smoking Behavior in Public Health Students of University Muhammadiyah Kalimantan Timur. *BIO Web of Conferences*, 54. https://doi.org/10.1051/bioconf/20225400008

Susetyarini, R. E., Baiduri, B., Darmayanti, R., Nuryami, N., Siregar, Y. S., & … (2024). Learning Reform: Why does Behavioral Theory prevent interactive teaching? *AMCA Journal of Community Development*, 4(1), 43–50.

Suyadi. (2020). The Fiqh of Disaster: The Mitigation of Covid-19 in the Perspective of Islamic Education-neuroscience. *International Journal of Disaster Risk Reduction*, 51. https://doi.org/10.1016/j.ijdrr.2020.101848

Usmiyatun, U., Mustafa, A., Darmayanti, R., & Azlamah, M. I. (2023). JEJE in Improving Elementary Students' Speaking Skills, what Learning Models and Strategies are Suitable? AMCA *Journal of Education and Behavioral Change*, 3(1), 39–43.

Utomo, D. P., Amaliyah, T. Z., Darmayanti, R., Usmiyatun, U., & Choirudin, C. (2023). Students' Intuitive Thinking Process in Solving Geometry Tasks from the Van Hiele Level. JTAM (*Jurnal Teori Dan Aplikasi Matematika*), 7(1), 139–149.

Vedianty, A. S. A., Nurhayati, D., Darmayanti, R., & Lestari, A. S. B. (2022). MANIS: Mathematics, Analysis, and Mathematical Communication. How is the Student's Self-confidence? AMCA *Journal of Education and Behavioral Change*, 2(2).

Wang, R. (2014). Studentlife: Assessing Mental Health, Academic Performance and Behavioral Trends of College Students using Smartphones. UbiComp 2014 - *Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, 3–14. https://doi.org/10.1145/2632048.2632054

White, R. (2011). Building Schools of Character: A Case-Study Investigation of Character Education's Impact on School Climate, Pupil Behavior, and Curriculum Delivery. *Journal of Applied Social Psychology*, 41(1), 45–60. https://doi.org/10.1111/j.1559-1816.2010.00701.x

Williams, L. J. (1991). Job Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and In-Role Behaviors. *Journal of Management*, 17(3), 601–617. https://doi.org/10.1177/014920639101700305

Yang, Q. F. (2020). Balancing Cognitive Complexity and Gaming Level: Effects of A Cognitive Complexity-based Competition Game on EFL students' English Vocabulary Learning Performance, Anxiety and Behaviors. *Computers and Education*, 148. https://doi.org/10.1016/j.compedu.2020.103808

Yu, T. K. (2017). Understanding Factors Influencing Information Communication Technology Adoption Behavior: The Moderators of Information Literacy and Digital Skills. *Computers in Human Behavior*, 71, 196–208. https://doi.org/10.1016/j.chb.2017.02.005

Zukiwsky, N. M., Girard, T. E., & Zuidhof, M. J. (2020). Effect of an Automated Marking System on Aggressive Behavior of Precision-fed Broiler Breeder Chicks. *Journal of Applied Poultry Research*, 29(4), 786–797. https://doi.org/10.1016/j.japr.2020.06.005