



The Innovation of Islamic Education Learning Through Quantum Learning Model

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Abstract

Keywords:

Learning
Innovation;
Islamic
Educational
Learning;
Quantum
Learning.

The quantum learning model is a lively learning transformation with all its nuances that include all the links, interactions, and differences that maximise learning moments and focus on dynamic relationships in the classroom environment interactions that establish a foundation in order to learn. This study aims to elaborate on the implementation of the principles and steps of the quantum learning approach in PAI learning. The method used in the research is a Systematic Literature Review that starts from the process of searching for literature, screening and eligibility testing. The articles reviewed from 2017-2023 publications. The results showed that the implementation of quantum learning in PAI learning can be in the form of; (1) the application of quantum learning principles (everything speaks, everything aims, experience before naming, recognise every effort, if it is worth learning, then it is also worth celebrating, (2) the application of TANDUR steps, namely; Grow, Experience, Name, Demonstrate, Repeat, and Celebrate. Islamic Education Learning Innovation with Quantum Learning Model offers a new and promising approach to improve the quality of Islamic Education learning through active interaction and student empowerment. This research has the potential for personal empowerment.

Abstrak:

Kata Kunci:

Inovasi
Pembelajaran;
Pembelajaran PAI;
Quantum Learning.

Model pembelajaran quantum learning merupakan perubahan belajar yang meriah dengan segala nuansanya yang menyertakan segala kaitan, interaksi, dan perbedaan yang memaksimalkan momen belajar serta berfokus pada hubungan dinamis dalam lingkungan kelas interaksi yang mendirikan landasan dalam rangka untuk belajar. Penelitian ini bertujuan untuk mengelaborasi terkait implementasi prinsip-prinsip dan langkah-langkah pendekatan quantum learning dalam pembelajaran PAI. Metode yang digunakan dalam penelitian adalah kajian Systematic Literature Review yang dimulai dari proses pencarian literatur, scrining dan uji kelayakan. Artikel yang di review

mencaup artikel terbitan tahun 2017-2023. Hasil penelitian menunjukkan implementasi quantum learning dalam pembelajaran PAI dapat berupa: (1) penerapan prinsip quantum learning (segalanya berbicara, segalanya bertujuan, pengalaman sebelum pemberian nama, akui setiap usaha, jika layak dipelajari, maka layak pula dirayakan), (2) penerapan Langkah-langkah TANDUR yaitu: Tumbuhkan, Alami, Namai, Demonstrasikan, Ulangi, dan Rayakan. Inovasi Pembelajaran PAI dengan Model Quantum Learning menawarkan pendekatan yang baru dan menjanjikan untuk meningkatkan kualitas pembelajaran PAI melalui interaksi aktif dan pemberdayaan siswa. Penelitian ini berpotensi memberikan dampak positif pada pemahaman siswa terhadap agama Islam, keterampilan kritis, dan pemberdayaan pribadi mereka.

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1. Introduction

The main problem in the quality of education today is the low quality in the learning process, lack of interest in learning, and student learning outcomes, especially in the ability to think collaboratively¹. Evidence of low-quality learning is when learning is focused on the role of the teacher so that students are not encouraged to develop collaborative thinking skills². Students' inability to collaborate in school is shown by their low ability to do group learning and lack of respect for different opinions³. Students have a narrow view and do not accept other people's opinions. They are reluctant to share roles and responsibilities in working on educational projects together. In addition, their motivation and enthusiasm in completing tasks are very low, and they are less able to appreciate the achievements of their peers⁴.

Therefore, teachers are expected to develop learning activities that are interesting, student-centered, and can form character in students⁵. Teachers should realize that learning can improve students' cognitive, affective, and psychomotor abilities. Teachers should also enable students to be creative,

¹ Syamsu Nahar et al., "Improving Students' Collaboration Thinking Skill under the Implementation of the Quantum Teaching Model," *International Journal of Instruction* 15, no. 3 (2022): 451–64, <https://doi.org/10.29333/iji.2022.15325a>.

² Maskhur Dwi Saputra et al., "Developing Critical-Thinking Skills through the Collaboration of Jigsaw Model with Problem-Based Learning Model," *International Journal of Instruction* 12, no. 1 (2019): 1077–94, <https://doi.org/10.29333/iji.2019.12169a>.

³ Ha Le, Jeroen Janssen, and Theo Wubbels, "Collaborative Learning Practices: Teacher and Student Perceived Obstacles to Effective Student Collaboration," *Cambridge Journal of Education* 48, no. 1 (2018): 103–22, <https://doi.org/10.1080/0305764X.2016.1259389>.

⁴ Judith M Harackiewicz, Jessi L Smith, and Stacy J Priniski, "Interest Matters: The Importance of Promoting Interest in Education," *Policy Insights from the Behavioral and Brain Sciences* 3, no. 2 (June 30, 2016): 220–27, <https://doi.org/10.1177/2372732216655542>.

⁵ I Made Tegeh, I Gusti Lanang Agung Parwata, and Bernadeth Grace Ostaviani, "The Observing Learning Activity Assisted by Concrete Media Improves Student's Conceptual Knowledge," *JPI (Jurnal Pendidikan Indonesia)* 9, no. 2 (2020): 182, <https://doi.org/10.23887/jpi-undiksha.v9i2.25206>.

discuss in groups, can express opinions, can answer questions, respect each other, and can work together to achieve goals⁶. In addition, teachers must understand the principles of learning and instructional principles. They will deal with instructional system design, teaching outcomes, learning variations, strategies, instructional design, instruction delivery systems, and instruction evaluation⁷. In the context of learning Islamic Education (PAI), for example, educators must enable students to be creative in understanding and applying Islamic teachings, discuss in groups to deepen religious understanding, be able to express opinions with a religious foundation, be able to answer questions about Islam with good understanding, respect differences in religious beliefs, and be able to cooperate with other students in achieving religious learning goals.

One of the learning models that can enable students, to be fun, and encourage students to use all their potential is the quantum learning model. The quantum learning model looks at visual, auditory and kinesthetic learning styles. Learning through experience and game activities.

Quantum learning is a form of learning activity that is in an environment that makes happiness⁸. Through the quantum learning model, students are invited to learn in a more comfortable and pleasant atmosphere, so that students will be free to find new experiences in learning⁹. The quantum learning model was first introduced by Georgi Lozanov, a Bulgarian neurologist, psychiatrist, psychologist and educator who experimented with *suggestology* or *suggesto-pedia*. According to Lozanov, suggestions can influence the outcome of learning situations. Some of the techniques used to give positive suggestions include seating students comfortably, installing background music in the classroom, increasing individual participation, and using learning media to make a big impression while highlighting information¹⁰.

The quantum learning model is a lively learning transformation with all the nuances that include all the links, interactions, and differences that maximize learning moments and focus on dynamic relationships in the classroom environment interactions that establish a foundation in order to learn. Quantum learning is a fun learning process, creating educative interactions between

⁶ I Ilyas, A Purwanto, and U Hasanah, "The Influence of Learning Model Self Directed Learning and Personality on Student Learning Results of SMP Negeri 7 Kota Ternate," ... *Journal of Education, Information* ... 3, no. 2 (2020): 252–61, <https://doi.org/10.5281/zenodo.3969856>.

⁷ Akyak et al., "Implementation of Teachers Pedagogy Competence to Optimizing Learners Development in Public Primary School in Indonesia Lecturer of State Islamic University (STAIN), Tulungagung , East Java , Indonesia . Email . Akhyakyunis@yahoo.Co.Id . Adress: STAIN," *International Journal of Education and Research* 1, no. 9 (2013): 1–10.

⁸ Ketut Agustini, I. Wayan Santyasa, and I. Made Tegeh, "Quantum Flipped Learning and Students' Cognitive Engagement in Achieving Their Critical and Creative Thinking in Learning," *International Journal of Emerging Technologies in Learning* 17, no. 18 (2022): 4–25, <https://doi.org/10.3991/ijet.v17i18.32101>.

⁹ Lavenia Ulandari and Edy Surya, "Improving Learning Outcomes of Linear Program with Quantum Teaching Model at Grade X Students SMK-BM PAB 3 Medan Estate," *International Journal of Sciences: Basic and Applied Research* 33, no. 3 (2017): 120–29.

¹⁰ Irfan Masrur, Enny Irawati, and Gunadi Harry Sulisty, "Integrating Writing Process with Quantum Learning Framework in English Language Teaching," *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan* 5, no. 3 (2020): 352, <https://doi.org/10.17977/jptpp.v5i3.13262>.

teachers and students and optimizing an effective learning environment (physical and mental) in learning¹¹.

The Quantum Learning Model, as a dynamic and engaging learning approach, aligns seamlessly with several pedagogical theories that enhance its effectiveness. Problem-Based Learning (PBL) serves as a complementary theory, emphasizing the importance of real-world problem-solving to drive learning. Within the Quantum Learning Model, students are encouraged to explore and solve problems collaboratively, fostering critical thinking and problem-solving skills¹².

Moreover, the Contextual Teaching and Learning (CTL) approach reinforces the Quantum Learning Model by linking learning to real-life contexts. By integrating contextual elements into the learning process, students can better connect theoretical knowledge with practical applications¹³. The Quantum Learning Model, with its focus on various learning styles and experiential activities, resonates with CTL, creating a holistic learning experience that goes beyond mere theoretical understanding.

In addition, the Community Development Theory plays a pivotal role in supporting the Quantum Learning Model. The emphasis on community and collaboration within the Quantum Learning environment aligns with the principles of community development. Students, through group activities and shared learning experiences, contribute to the development of a learning community. This collaborative aspect enhances the overall learning environment, fostering a sense of belonging and shared responsibility¹⁴.

The Quantum Learning Model, with its lively and interactive nature, maximizes learning moments by incorporating elements from Problem-Based Learning, Contextual Teaching and Learning, and Community Development Theory. This amalgamation creates a rich tapestry of educational experiences that not only focuses on dynamic relationships within the classroom but also establishes a solid foundation for learning. Through these theories, Quantum Learning transforms the learning process into a fun and engaging journey, fostering educative interactions between teachers and students while optimizing both the physical and mental aspects of the learning environment¹⁵.

Quantum learning has been widely studied in several studies. The study conducted by Kalsum and Fadila aimed to determine the physics learning outcomes of grade XI students through the quantum teaching method with the

¹¹ Siti Nurina Hakim, Kumaidi, and Abdul Rahman, "Quantum Learning Model to Increase The Internalization of Islamic Values In Busthanul Athfal," *Proceedings of the International Conference on Islamic and Muhammadiyah Studies (ICIMS 2022)* 676, no. Icims (2022): 337–46, <https://doi.org/10.2991/assehr.k.220708.042>.

¹² Rotem Maor et al., "Relationships between Metacognition, Creativity, and Critical Thinking in Self-Reported Teaching Performances in Project-Based Learning Settings," *Thinking Skills and Creativity* 50 (2023): 101425, <https://doi.org/https://doi.org/10.1016/j.tsc.2023.101425>.

¹³ Ni Made Lyvia Komalasari Sudira and I Komang Ngurah Wiyasa, "Contextual Learning Based on Multicultural Increase Students' Knowledge Competence in Civic Education," *International Journal of Elementary Education* 4, no. 3 (2020): 321, <https://doi.org/10.23887/ijee.v4i3.26239>.

¹⁴ Rachel Masika and Jennie Jones, "Building Student Belonging and Engagement: Insights into Higher Education Students' Experiences of Participating and Learning Together," *Teaching in Higher Education* 21, no. 2 (2016): 138–50, <https://doi.org/10.1080/13562517.2015.1122585>.

¹⁵ Hakim, Kumaidi, and Rahman, "Quantum Learning Model to Increase The Internalization of Islamic Values In Busthanul Athfal."

TANDUR technique on cognitive aspects and how effective it was in achieving classical completeness criteria¹⁶. Nahar et al. have also conducted research related to Quantum learning which aims to test quantum teaching and learning methods to improve students' collaborative thinking skills¹⁷. The next study conducted by Miftah and Al Muiz aims to elaborate the quantum learning approach with the learning environment, learning methods and human nature as creatures of God who have very diverse potentials seen from the perspective of Islamic education¹⁸.

In the current study, the researchers want to re-examine quantum learning in PAI learning which is explicitly not studied in previous studies through meta-analysis which aims to confirm previous studies related to quantum learning. The focus of the current research is to elaborate on the implementation of the principles and steps of the quantum learning approach in Islamic Education learning.

2. Methods

Methods are the means used by the author to answer the existing research problem. The method must clear with the location and time of the research, the population and sample of the research, the research variables and the research data. Describe the basic procedures used during the study, including selection of study subjects and observational and analytical methods. The method of your manuscript also mentions detail of your research method.

This research is descriptive qualitative research using a literature review or Systematic Literature Review (SLR). The literature used is articles that are relevant to the research problem or objective. Systematic literature review selects, identifies and evaluates research to answer clearly formulated research questions. Because this research aims to explore the application of quantum learning in learning. In this systematic literature review, the research started by identifying articles related to quantum learning from Scopus and Google Scholar databases through the publish or perish tool. There are four phases involved in literature mapping, namely identification phase, screening phase, eligibility phase and inclusion phase.

Research Questions on Literature Review

Research Question	Motivation
What are the principles and steps of implementing quantum learning?	To identify the principles and steps of quantum learning implementation.
How is the implementation of quantum learning in Islamic Education learning?	To identify the implementation of quantum learning in Islamic Religious Education learning.

¹⁶ Ummu Kalsum and Fadhila, "Implementation of Quantum Teaching Method with TANDUR Techniques on Learning Physics Student Result Class XI IPA SMA PPM Al-Ikhlas," *Journal of Physics: Conference Series* 1028, no. 1 (2018), <https://doi.org/10.1088/1742-6596/1028/1/012202>.

¹⁷ Nahar et al., "Improving Students' Collaboration Thinking Skill under the Implementation of the Quantum Teaching Model."

¹⁸ Muhammad Miftah and Mochammad Nasichin Al Muiz, "Quantum Learning Dan Fitrah Manusia Dalam Perspektif Pendidikan Islam," *Insania* 25, no. 1 (2020): 14–22, <https://doi.org/10.51875/jispe.v2i1.35>.

Phase 1: Identification

Determination of articles that fulfil the set criteria. First, the database sources used for this systematic literature review are Scopus and Google Scholar. With the criteria of articles published between 2017 and 2023. Articles were identified through related keywords based on the two search engines required for the review as shown in Table 1.

Table 1. Keywords used to search for relevant articles

Database	Keywords
Scopus	<i>Quantum Learning, Quantum Learning in Islamic Education</i>
Google Scholar	<i>Quantum Learning, Quantum Learning in Islamic Education.</i>

Table 1 shows that the keyword used in searching for relevant articles is Quantum Learning. The focus determined in this literature leads to research related to Quantum Learning in PAI learning. The next step is to determine the criteria of articles that include and exclude from the focused theme according to the framework required for the review as shown in Table 2.

Table 2. Include and Exclude Criteria

Include Criteria	Exclude Criteria
Journal and proceeding articles	Book chapters, books, review
Articles published in 2017-2023	Unpublished articles between 2017-2023.
English and Indonesian Articles	Unpublished articles in English and Indonesia

Table 2 illustrates the articles selected for follow-up based on the inclusion and exclusion criteria. The full text of each article was downloaded, and articles that met the exclusion criteria were excluded. In other words, the included articles were reviewed and analyzed in depth to answer the research questions. Thus, determining the inclusion and exclusion criteria is crucial to creating a high-quality research review.

Phase 2: Screening

Literature results from Scopus and Google Scholar databases were screened through the Rayyan AI website to separate articles identified as duplicates. Next is the title and abstract screening process, which maps articles based on the title and abstract. Titles were screened for relevance and matched with the keywords used. Then, the abstracts of each article were screened and scanned according to the predetermined inclusion and exclusion criteria.

Phase 3: Eligibility

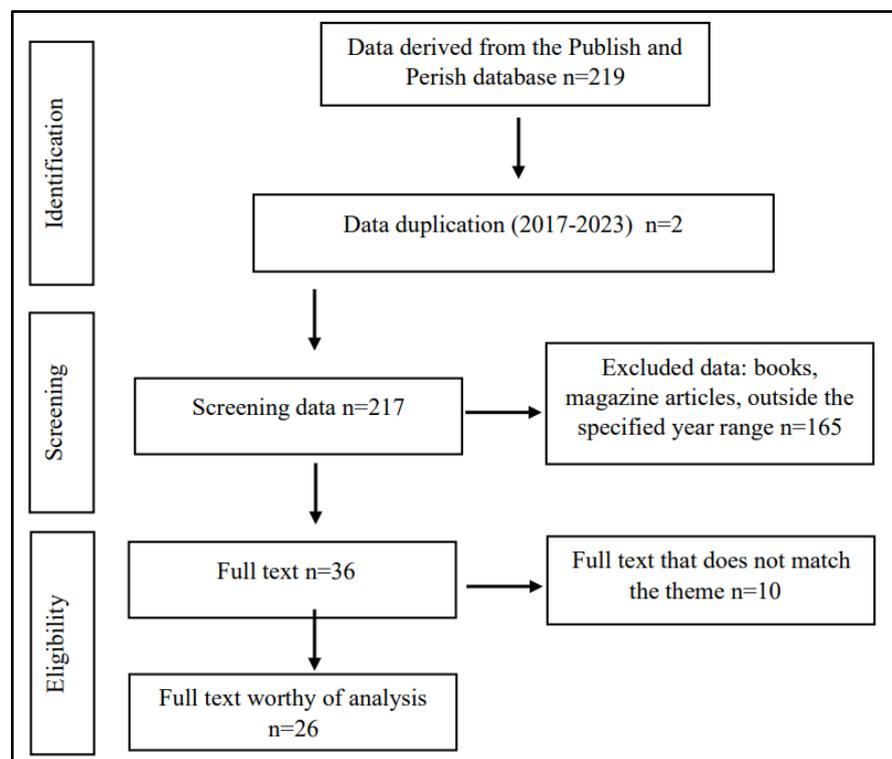
In this phase, articles were analysed and checked for eligibility through the Rayyan AI website. Articles are selected by adjusting the inclusion and exclusion criteria in Table 2. After the article is identified as eligible, the full text of the article is downloaded and the articles that fall under the exclude criteria are separated.

In this phase, articles that are determined to be eligible must be able to map the answers to the questions in the study.

Phase 4: Extraction

After checking the eligibility of articles based on the include and exclude criteria. Eligible articles in the inclusion criteria will be extracted and analyzed according to the statements that will be used as guidelines, namely Participant, Intervention, Comparators conditions, Outcomes, and Studies (PICOS). The data extraction process uses the Joanna Briggs Institute (JBI) model and continues on the study quality of the extracted literature using the JBI model. The following is the article search process using the PRISMA diagram.

Figure 1. Prisma Search Flow for Innovation in Islamic Education Learning through Quantum Learning Literature Model



As the flow of the prism chart above, there are 219 databases from Scopus and Google Scholar accessed through publish and perish software. A total of 2 databases were identified as duplicates. Then the remaining databases are mapped according to the include and exclude criteria. A total of 165 databases are included in the exclusion criteria because the data is in the form of books. A total of 36 databases are also included in the exclude criteria because they do not match the keyword criteria specified in the research. There are 26 databases in the form of articles that fall into the inclusion criteria. In the next stage, the articles will be analyzed and deepened by using the PICOS statements that have been determined.

3. Result and Discussion

3.1 Quantum Learning Model

Quantum Learning originated from the work of Dr Georgi Lozanov, a Bulgarian teacher, who conducted experimental research called Suggestology or Suggestopedia¹⁹. Quantum Learning was first implemented in SuperCamp, an accelerated programme organised by Learning Forum; an international educational institution that emphasises academic competence and soft skills²⁰. Georgi Lozanov named his study Quantum Learning. The results of his research show that a suggestion can influence learning outcomes. According to DePorter and Hernacky, (2002), Quantum Learning is a reflection of the theory of Quantum Physics which has the formula $E = mc^2$ which can be interpreted as follows:

E = Energy (great energy from oneself)

m = mass (all individuals involved, environment, material, and physical)

c = interaction (interaction in the classroom; enthusiasm, effectiveness, and passion)

This implies that the interaction between " m " (teachers, students, media) and " c^2 " (enthusiasm, motivation, and enthusiasm for learning) must produce " E " (energy, skills, or competencies of learners that come from themselves to face a situation of real life)²¹.

The quantum learning model is a combination of various interactions in learning activities in learning activities. The quantum learning model is a model that focuses on the learning process that gives freedom to learners, namely freedom to learn, freedom to interact, freedom to learn, freedom to learn, namely freedom to learn, freedom to interact, freedom to communicate and freedom to access learning resources interact, freedom to communicate and freedom to access learning resources. This will improve the ability to improve collaborative thinking skills and thus will improve student learning outcomes, improve creative, innovative and critical thinking skills and interaction between students.²²

According to DePorter and Hernacki (2007), the quantum learning model consists of five main principles²³. *First*, everything speaks. Everything from the classroom environment to the teacher's body language (eye gaze, hand gestures and so on), papers distributed, lesson plans, and teaching aids all send messages about learning²⁴. *Second*, everything has a purpose. Everything that happens in your knowledge has a purpose. *Third*, Experience before naming. Our brains develop rapidly in the presence of complex stimuli, which will drive curiosity. Therefore, learning best occurs when students have experienced the information before they acquire a name for what they are learning²⁵. *Fourth*,

¹⁹ Barbara K. Given and Bobbi DePorter, *The Quantum Learning System: Excellence in Teaching and Learning, Angewandte Chemie International Edition*, 6(11), 951–952., vol. 13, 2015.

²⁰ Miftah and Al Muiz, "Quantum Learning Dan Fitrah Manusia Dalam Perspektif Pendidikan Islam."

²¹ Masrur, Irawati, and Sulisty, "Integrating Writing Process with Quantum Learning Framework in English Language Teaching."

²² De Porter and B Mike Hernacki, *Quantum Learning* (Bandung: PT Mizan Publika, 2007), https://books.google.co.id/books?id=6%5C_Nx2%5C_6T2cAC.

²³ YusufAy M. BahaddinAcat, "An Investigation the Effect of Quantum Learning Approach on Primary School 7th Grade Students' Science Achievement, Retention and Attitude," *Journal* 5, no. 2 (2014): 11–23.

²⁴ Hakim, Kumaidi, and Rahman, "Quantum Learning Model to Increase The Internalization of Islamic Values In Busthanul Athfal."

²⁵ Abd Ghofur, "The Optimization of Character Building of Students Through the Implementation of Quantum Teaching," no. 20 (2017), <http://dx.doi.org/10.31227/osf.io/r43w5>.

recognize every effort. Learning involves risk. Learning means stepping out of comfort. When students take this step, they deserve to be recognized for their skills and confidence. *Fifth*, if it is worth learning, it is worth celebrating. Celebration is a champion learner's breakfast. Celebrations provide feedback on progress and increase positive emotional associations with learning.²⁶

As for implementing quantum learning, there are several steps that must be taken. According to DePorter, Reardon and Nurin (2000), there are six main steps in the implementation of quantum learning models known as TANDUR. *First*, Grow. Grow students' interest in learning by satisfying students' curiosity in the form of What is the Benefit for Me (AMBAK). Grow a pleasant atmosphere in the hearts of students, in a relaxed atmosphere, foster interaction with students, get into their minds and bring their minds to your mind, convince students why they should learn this and that, learning is a student need, not a necessity²⁷.

Second, Natural. The natural element will encourage the brain's natural desire to explore. Create or bring in common experiences that all students can relate to. Don't use terms that are foreign and difficult to understand, as this will make students feel bored in learning²⁸. *Third*, Name. After students go through learning observations on certain basic competencies, we invite them to write on paper, naming what they have obtained, whether it is information, formulas, thoughts, places, and so on. *Fourth*, Demonstrate. After students' experience learning something, give them the opportunity to demonstrate their abilities, because students will be able to remember 90% if they hear, see and do it. Through the learning experience, students will understand and know that they have enough skills and information²⁹.

Fifth, Repeat; Tie the whole lesson together, showing students how to repeat the material and emphasizing "I know that I do know this". Repetition should be done with the concept of multiple intelligences owned by students. For example, if you learnt how to ride a bicycle and then fell, once you are able to balance yourself, you will be able to use it. You really mastered what you did. *Sixth*, Celebrate. Celebration is the expression of a group of people who have successfully done a task or obligation well. So, it is appropriate if students have done their tasks and obligations well to celebrate by clapping their hands³⁰.

3.2 Implementation of Quantum Learning in Islamic Education Learning

²⁶ S.Utaminingsih M.Masrokah S.Su'ad, M.n.Yermagambetova, "Influence of Quantum Teaching-Learning Model on Social Studies Learning Outcomes," *Journal of ЯСАУИ УНИВЕРСИТЕТИНІН ХАБАРШЫСЫ* 1, no. 123 (2022): 160–69.

²⁷ Rona Taula Sari and Ira Rahmayuni Jusar, "Analysis of Science Learning Process by Using Learning Module of Character Education Oriented through Quantum Learning Approach," *Jurnal Penelitian Dan Pembelajaran IPA* 4, no. 1 (2018): 14, <https://doi.org/10.30870/jppi.v4i1.2252>.

²⁸ Julita, Darhim, and T. Herman, "Capability of Mathematical Strategic Thinking through Quantum Learning Based on Creative Problem Solving," *Journal of Physics: Conference Series* 1320, no. 1 (2019), <https://doi.org/10.1088/1742-6596/1320/1/012099>.

²⁹ Ulandari and Surya, "Improving Learning Outcomes of Linear Program with Quantum Teaching Model at Grade X Students SMK-BM PAB 3 Medan Estate."

³⁰ Mehmet Altın and Asuman Seda Saracaloğlu, "The Effect of Quantum Learning Model on Foreign Language Speaking Skills, Speaking Anxiety and Self-Efficacy of Secondary School Students," *Journal of Language and Linguistic Studies* 15, no. 3 (2019): 1083–1104, <https://doi.org/10.17263/jlls.631550>.

The implementation of Quantum Learning in Islamic Religious Education (PAI) learning involves the use of the principles and steps of quantum learning to increase the effectiveness and efficiency of the PAI learning process. In this approach, quantum principles are applied to aspects such as the interaction between teachers and students, presentation of material, evaluation, and understanding of religious concepts³¹.

Here are the five main principles of Quantum Learning in Islamic Education learning³². *First*, everything speaks. In Islamic Education learning, messages about learning come not only from the teacher and teaching materials, but also from the classroom environment, the teacher's body language, and teaching aids³³. Visual, verbal, and nonverbal communication used by PAI educators can help send a clear and strong message about the importance of understanding Islamic teachings, moral values, and ethics contained in the religion. *Second*, everything has a purpose. Islamic Education learning has a clear and specific purpose. Every aspect of knowledge and experience taught in Islamic Education learning has a purpose related to the understanding of Islamic teachings, the application of religious values in daily life, and the development of student character³⁴. *Third*, experience before naming: In Islamic Education learning, educators can provide in-depth experiences for students before giving names or certain concepts. By providing direct experience, for example through simulations, group discussions, or field exploration, students can develop curiosity and a better understanding of Islamic teachings before learning the concept formally³⁵.

Fourth, Acknowledge every effort. In PAI learning, it is important to recognise every student's effort in learning. Since learning religion involves risk and the pursuit of deep understanding, it is important for PAI educators to acknowledge students' efforts, provide positive feedback, and strengthen students' confidence in learning and applying Islamic teachings. *Fifth*, if it is worth learning, it is also worth celebrating. Celebration in PAI learning can be a means to celebrate students' progress and achievements in learning Islamic teachings. Through celebration, students can feel pride and strengthen positive emotional associations with learning religion. This can motivate students to continue to strive in understanding and applying Islamic teachings in their lives³⁶.

³¹ Hakim, Kumaidi, and Rahman, "Quantum Learning Model to Increase The Internalization of Islamic Values In Busthanul Athfal."

³² Altın and Saracaloğlu, "The Effect of Quantum Learning Model on Foreign Language Speaking Skills, Speaking Anxiety and Self-Efficacy of Secondary School Students."

³³ Di Zou et al., "A Systematic Review of Research on Flipped Language Classrooms: Theoretical Foundations, Learning Activities, Tools, Research Topics and Findings," *Computer Assisted Language Learning* 35, no. 8 (2022): 1811–37, <https://doi.org/10.1080/09588221.2020.1839502>.

³⁴ Dyah Elisabet KUSUMA, Gunarhadi Gunarhadi, and Riyadi Riyadi, "The Development of Problem-Based Quantum Learning Model in Elementary Schoolin," *International Journal of Educational Research Review* 3, no. 3 (2018): 9–16, <https://doi.org/10.24331/ijere.412267>.

³⁵ Carlos Valiente et al., "Emotion-Related Socialization in the Classroom: Considering the Roles of Teachers, Peers, and the Classroom Context.," *Developmental Psychology* 56, no. 3 (2020): 578–94, <https://doi.org/10.1037/dev0000863>.

³⁶ Anne Malar Selvaraj, Hazita Azman, and Wahiza Wahi, "Teachers' Feedback Practice and Students' Academic Achievement: A Systematic Literature Review," *International Journal of Learning, Teaching and Educational Research* 20, no. 1 (2021): 308–22, <https://doi.org/10.26803/IJLTER.20.1.17>.

Table 2: Principles of Quantum Learning in Islamic Education Learning

No	Principle of Quantum Learning	Quantum Learning in Islamic Education Learning
1.	Everything speaks	Messages about learning in Islamic education learning come not only from the teacher and teaching materials, but also from the classroom environment, the teacher's body language, and teaching aids.
2.	Everything has a purpose	Islamic education learning has clear and specific goals related to the understanding of Islamic teachings, the application of religious values in daily life, and the development of student character.
3.	Experience before giving names	Educators of Islamic education learning can provide in-depth experiences for students before learning certain concepts or names through simulations, group discussions, or field explorations to build curiosity and better understanding.
4.	Acknowledge every effort	It is important to acknowledge every student's effort in Islamic education learning, provide recognition for students' efforts, provide positive feedback, and strengthen students' confidence in learning and applying Islamic teachings.
5.	If it is worth learning, then it is worth celebrating	Celebration in Islamic education learning can be a means to celebrate students' progress and achievements in learning Islamic teachings, building students' pride and motivation to continue trying and applying the teachings.

In order to optimize the implementation of quantum learning in PAI learning, the quantum learning steps abbreviated as "*TANDUR*" is the most appropriate alternative to be applied in order to foster a pleasant learning atmosphere.³⁷ *First*, Grow (T). The first step is to foster students' interest in learning by satisfying their curiosity. This can be done by using the "Does it benefit me" (*AMBAK*) approach, where students are given the opportunity to understand why they need to learn Islamic education materials such as tawhid, morals, Arabic and others. In addition, creating a fun, relaxed, and interactive atmosphere is also important in fostering student interest³⁸.

Second, Natural (A). The natural element in learning encourages the student's brain's natural desire to explore. This approach involves creating learning experiences that all students can relate to such as explaining moral values in Islamic stories that are relevant to their experiences. It is important to

³⁷ Kalsum and Fadhila, "Implementation of Quantum Teaching Method with *TANDUR* Techniques on Learning Physics Student Result Class XI IPA SMA PPM Al-Ikhlās."

³⁸ Hansol Lee et al., "The Effectiveness and Features of Formative Assessment in US K-12 Education: A Systematic Review," *Applied Measurement in Education* 33, no. 2 (2020): 124–40, <https://doi.org/10.1080/08957347.2020.1732383>.

use language and concepts that are familiar to students so that they do not feel bored or have difficulty in understanding the material³⁹. *Third*, Naming (N). After student's experience observation and learning on a basic competency, they are invited to name what they have learnt. This can be in the form of writing down information, formulas, thoughts, places, or anything else relevant to the material learnt. By naming what has been learned, students can internalize their understanding.

Fourth, Demonstrate (D). After students have experienced the learning process, give them the opportunity to demonstrate their abilities. Through demonstration, students can apply the knowledge and skills they have acquired. This method utilizes the hear, see and do approach to learning, which can help students remember and understand the material better such as the practice of wudu' and prayer. *Fifth*, Repeat (U). The fifth step is to repeat the material in its entirety. Show students ways to repeat the material and reinforce their belief that they really understand it. This repetition should be done by utilizing the students' multi-intelligence concepts. For example, linking the material to the experience of congregational prayer and then showing that once students have mastered the requirements and pillars of prayer as well as the manners of being a mum and an imam, they can practice congregational prayer well. By repetition, students really master what they have learnt⁴⁰.

Sixth, Celebrate (R). The final step is to celebrate student achievement. Celebration is a group expression of joy for someone who has successfully completed a task or obligation well. When students have completed a task or understood the material well, celebration can provide positive feedback and increase motivation and positive emotional associations with learning⁴¹. For a more detailed explanation, refer to table 3.

Table 3. Quantum Learning Steps in Islamic Education Learning

No	Steps of quantum learning (<i>TANDUR</i>)	Implementation in Islamic education learning
1.	Grow (T)	a. The teacher uses the "Does it benefit me" (<i>AMBAK</i>) approach to motivate students by explaining the benefits of learning Islamic teachings. b. The teacher creates a fun, relaxed, and interactive classroom atmosphere.
2.	Natural (A)	a. The teacher connects Islamic teachings with examples of daily life that are familiar to students. b. The teacher uses language that is easily understood by the students and avoids using complicated or boring terms or

³⁹ Miftah and Al Muiz, "Quantum Learning Dan Fitrah Manusia Dalam Perspektif Pendidikan Islam."

⁴⁰ Fara Nabila Gunawan, Yerry Soepriyanto, and Agus Wedi, "Pengembangan Multimedia Drill And Practice Meningkatkan Kecakapan Bahasa Jepang Ungkapan Sehari-Hari," *JKTP: Jurnal Kajian Teknologi Pendidikan* 3, no. 2 (2020): 187–98, <https://doi.org/10.17977/um038v3i22020p187>.

⁴¹ Shiela Gunawan and Robert Harry Soesanto, "Keakuratan Umpan Balik Asesmen Terhadap Hasil Belajar Kognitif Siswa Pada Pengerjaan Formatif Secara Daring," *Refleksi Edukatika: Jurnal Ilmiah Kependidikan* 13, no. 1 (2022): 10–19, <https://doi.org/10.24176/re.v13i1.6852>.

		concepts.
3.	Naming (N)	<ol style="list-style-type: none"> a. Students are asked to name what they have learnt and share their understanding with the group or class. b. The teacher provides opportunities for students to formulate concepts or write down key points that they have understood.
4.	Demonstration (D)	<ol style="list-style-type: none"> a. Students demonstrate understanding and skills through projects, presentations or simulations. b. The teacher provides constructive feedback and helps students refine their understanding or skills that need to be improved.
5	Repeating (U)	<ol style="list-style-type: none"> a. Teachers facilitate the repetition of material by using learning methods that are appropriate to students' intelligence. b. Students relate the material to personal experiences to reinforce understanding and increase engagement.
6	Celebration (R)	<ol style="list-style-type: none"> a. eachers celebrate the achievements of students who successfully complete tasks or achieve learning objectives. b. Celebration is done through giving recognition, praise, awards, fun classroom activities, or special event.

By following the *TANDUR* steps in Islamic Education (PAI) learning, it is hoped that there will be a comprehensive integration of Problem-Based Learning (PBL), Contextual Teaching and Learning (CTL), and Community Development Theory. Through the implementation of the *TANDUR* steps, it is expected that students will become active participants in the learning process, developing a deep understanding of Islamic teachings. The integration of PBL, CTL, and Community Development Theory ensures that learning is not only effective but also enjoyable, creating a sense of accomplishment and success in achieving learning objectives. This holistic approach, combining innovative learning models and established pedagogical theories, is designed to empower students in their educational journey within the context of Islamic education.

The novelty of this research lies in the innovative integration of the Quantum Learning Model and the *TANDUR* approach in Islamic Religious Education (PAI) learning. The amalgamation of the quantum learning model, accommodating various learning styles, with the *TANDUR* steps, encompassing the processes of growth, naturality, naming, demonstrating, repeating, and celebrating, introduces a novel dimension to PAI learning. This study also brings novelty by applying contextual and problem-based learning principles in the context of Islamic teachings, ensuring that each *TANDUR* step is connected to real-life situations for students. Furthermore, the incorporation of Community Development Theory in the PAI learning context is a unique aspect that can have a positive impact on collaborative and participatory dynamics among students. The novelty is also evident in the emphasis on empowering students through active engagement, creating a dynamic learning environment distinct from conventional methods. The research might introduce novelty by emphasizing a

holistic approach to measuring learning outcomes, encompassing cognitive, affective, and psychomotor aspects, to provide a comprehensive understanding of student achievement in the context of PAI. Through this approach, the research is expected to make a significant contribution to the continuous improvement of the understanding and practices of Islamic religious education.

4. Conclusion

Some important findings are presented in this study. Among them are (1) the application of quantum learning principles, namely; everything speaks, everything aims, experience before naming, recognize every effort, if it is worth learning, then it is also worth celebrating, (2) the application of *TANDUR* steps, namely; Grow, Experience, Name, Demonstrate, Repeat, and Celebrate. The PAI Learning Innovation with Quantum Learning Model offers a new and promising approach to improving the quality of PAI learning through active interaction and student empowerment. This research has the potential to positively impact students' understanding of Islam, critical skills, and personal empowerment.

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