Technical Training On The Implementation Of Artificial Intelligence Technology To Improve Early Childhood Basic Skills At RA Darussalam 009

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Abstract .

This study aims to explore the implementation of artificial intelligence (AI) technology through technical training programs designed to enhance basic skills among early childhood students at RA Darussalam 009. As education enters the era of digital transformation, integrating AI tools in early childhood learning has become increasingly relevant to support cognitive, motor, and language development. The technical training involved both educators and parents to ensure the effective adoption of AI-based applications in daily learning activities. The findings indicate that interactive AI media, when used appropriately, significantly improve early literacy and numeracy skills while fostering student engagement and motivation. This initiative also strengthens the digital competencies of teachers and encourages active parental involvement in children's learning processes. The research concludes that AI-assisted learning, supported by structured training, holds great potential in advancing the quality of early childhood education.

Keywords: *Artificial Intelligence; Early Childhood Education; Basic Skills; Technical Training and Digital Learning.*

I. INTRODUCTION

Early childhood education is a fundamental stage in a child's development, which serves as a foundation for building cognitive, social, motor, and communication skills. At the golden age, children have a high capacity to absorb various new information and experiences. Therefore, innovative, interactive, and technology-based learning methods are needed to increase learning effectiveness [1]. In the era of the Industrial Revolution 4.0 and the rapid development of digital technology, artificial intelligence (AI) has become part of various aspects of life, including the world of education. AI can help create more personal, adaptive, and interesting learning methods for early childhood. The use of AI-based technology in education has been proven to increase student engagement, help personalize learning, and make it easier for educators to deliver material more interactively [2].However, based on initial observations conducted at RA Darussalam 009, it was found that the learning process at this institution was still based on conventional methods with very limited use of technology. Educators do not yet have sufficient knowledge about how AI can be used to support early childhood learning. In addition, limited digital resources and lack of special training for teachers mean that technology-based learning innovations cannot be implemented optimally [3].

To overcome these challenges, this community service program aims to provide technical guidance to educators at RA Darussalam 009 regarding the use of artificial intelligence technology in improving basic skills for early childhood. This activity not only aims to improve teachers' understanding, but also to provide assistance in implementing AI technology in learning, so that it can create a more innovative and interesting learning experience for children [4].RA Darussalam 009 is an early childhood education institution that focuses on developing children's basic skills, especially in cognitive, social, motor, and language aspects. Currently, the learning methods used are still based on conventional approaches such as lectures, memorization, and traditional games [5]. Based on the results of interviews and initial observations, several

main problems faced by RA Darussalam 009 related to the application of technology in learning are as follows:

1. Lack of Teacher Understanding and Skills in Using AI Technology
   Educators at RA Darussalam 009 generally do not have sufficient knowledge about how AI works and how this technology can be integrated into learning. The lack of training and digital resources means that they have not been able to utilize the potential of AI technology to its full potential.
2. Minimal Use of Technology in Teaching and Learning Activities
   Currently, learning at RA Darussalam 009 still relies on traditional methods with limited learning aids. In fact, by utilizing AI technology, the learning process can be more interactive and interesting for children. AI-based applications such as voice learning assistants, interactive educational applications, or voice and image recognition systems can help improve understanding and interest in learning in early childhood.
3. Lack of Access to Supportive Digital Resources
   In addition to the lack of teacher understanding, limited access to digital devices such as tablets, laptops, or learning-based AI devices is also an obstacle in implementing AI technology at RA Darussalam 009.
4. Challenges in Adapting Technology to the Needs of Early Childhood
   Not all AI technologies currently available are in accordance with the needs of early childhood. Therefore, it is necessary to select AI applications or systems that can truly help improve children's cognitive, language, and motor skills, while still being in accordance with the right pedagogical approach for early childhood. Based on the identified problems, this community service activity aims to:
   1. Improve digital literacy and understanding of teachers at RA Darussalam 009 about artificial intelligence technology in early childhood learning.
   2. Train educators in using AI-based applications to support basic early childhood skills, such as voice recognition, facial expressions, and AI-based interactions.
   3. Provide assistance in implementing AI technology in the classroom, so that teachers can apply technology-based learning methods effectively.
   4. Compile AI-based learning modules that can be used as references for teachers in adopting technology in early childhood learning.
   5. Produce documentation and best practice reports that can be used as references for other educational institutions in adopting AI for early childhood learning.

II. RESULT AND DISCUSSION

In implementing this community service program, the technology that will be applied to RA Darussalam 009 partners focuses on the use of artificial intelligence (AI) to support early childhood learning. This technology will be used as a tool to improve children's basic skills, such as cognitive, language, social, and motor skills, with more interactive and adaptive learning methods.

1. Introduction to AI in Early Childhood Education

One of the initial steps in implementing technology is to provide digital literacy and basic understanding of AI to teachers at RA Darussalam 009. Teachers will be introduced to the concept of AI, its benefits in education, and applications that can be used in early childhood learning.

2. Use of AI-Based Applications for Interactive Learning
   Some AI applications that will be introduced and applied in learning include:

- Educational Chatbot → AI-based virtual assistant that can interact with children to help them recognize letters, numbers, colors, and objects.
- Voice and Facial Expression Recognition → AI technology that can help children practice pronouncing words and reading facial expressions in a social context.
- AI-Based Learning Applications → Such as Google Read Along to improve reading skills or Duolingo Kids for language learning with fun methods.
- Image and Voice Processing Systems → The use of AI in recognizing children's voices and adjusting learning responses based on their voices, as well as applications that can recognize images and provide AI-based responses.

3. Integration of AI in Learning Curriculum

Once teachers understand the use of AI technology, the next step is to help them integrate AI into daily learning activities. With technical guidance, teachers will learn how to:

- Adapt learning materials with AI applications that support children's basic skills.
- Use AI to provide personalized feedback to children, according to their level of understanding and development.
- Utilize AI technology to increase children's engagement in learning, especially for children who have visual and auditory learning styles.

4. Implementation and Evaluation Assistance

The community service team will provide assistance in implementing AI technology in the classroom. In addition, an evaluation will be conducted on:

- The effectiveness of AI in improving basic skills of early childhood.
- The response of teachers and children to the application of AI in learning.
- The challenges faced by teachers in using AI and their solution strategies.
- The ability to use and utilize cloud computing services for learning.

Fig 1. Implementation of Community Service for students RA Darussalam 009

Fig 2. Implementation of Community Service

Community Service Method

The stages carried out are: in this PKM includes 3 stages that is stage preparation , stage implementation and stages evaluation shown in Figure 2 [6].

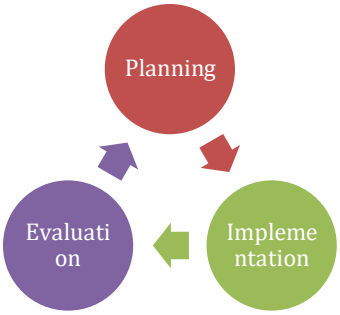

Fig 3. Method of Community Service To the Community

Explanation of the program implementation stages as follows:

1. Preparation Stage:

a. Needs Analysis:

- Identify training needs and competencies required by teachers and students.
- Mapping of infrastructure and resources available at the school.
- Analysis of computer network curriculum and learning plans.

b. Technical Guidance Planning:

- Determine the objectives, materials, and methods of technical guidance.
- Prepare relevant modules and teaching materials.
- Identify competent resource persons and facilitators.
- Determine the schedule, duration, and place of implementation [7].

c. Coordination and Socialization:

- Coordinate with the school to prepare facilities and logistics.
- Inform and invite teachers and students who will participate in technical guidance.
- Ensure commitment and support from school leaders and related stakeholders.

2. Implementation Stage:

a. Opening and Introduction:

- Delivering the objectives, scope, and agenda of the technical guidance.
- Motivating participants to be active and enthusiastic in participating in the activities.

b. Presentation of Material:

- Providing a basic understanding of cloud computing and its benefits.
- Explaining how to access and utilize cloud computing services.
- Practicing the use of cloud computing in computer network learning.
- Discussing strategies for integrating cloud computing into the curriculum and learning[8]

c. Practice and Discussion:

- Providing participants with the opportunity to practice using cloud computing.
- Facilitating discussions and Q&A related to challenges and implementation solutions.
- Providing individual and group guidance and feedback.

3. Evaluation Stage:

a. Assessment of Learning Outcomes:

- Evaluating participants' understanding and skills through tests or assignments.
- Analyzing the impact of technical guidance on teacher and student readiness[9].

b. Feedback and Reflection:

- Ask participants to provide feedback on the material and implementation of technical guidance [10].

2.6 Evaluation Questionnaire

At the end activity training , participants get questionnaire evaluation activity training This covering ten questions completed by 20 participants in accordance table following

Table 1. Evaluation PKM Questionnaire

No	Question	SS	S	N	TS	STS	Total
1	Organized material with good and easy understood	40.5%	50%	9.5%	0%	0%	100%
2	The material is very relevant and appropriate with what I expect	69%	31%	0%	0%	0%	100%
3	The material is already sufficient for I For capable know artificial intelligence technology	21.4%	54.8%	19%	0%	0%	100%
4	This material make it easier I For use artificial intelligence technology	42.9%	54.8%	2.4%	0%	0%	100%
5	The speaker is very understanding the material presented	52.4%	45.2%	2.4%	0%	0%	100%
6	Allocation time delivery material sufficient	38.1%	57.1%	4.8%	4.8%	0%	100%
7	Speaker presenting Contents material with good , easy understood and implemented	38.1%	61.9%	0%	0%	0%	100%
8	Allocation time For discussion sufficient For add knowledge	31%	61.9%	7.1%	0%	0%	100%
9	Speaker give answer question participant with Good	31%	61.9%	7.1%	0%	0%	100%
10	In general overall discussion or ask answer has help increase understanding	40.5%	57.1%	2.4%	0%	0%	100%
	Average	50%	40.50%	4.75%	0.00%	0%	100%

Based on the results of the questionnaire analysis, the training themed "Use of Artificial Intelligence Technology" was successfully implemented very well and received a positive response from the participants. On average, participants felt that the training material was well structured, according to needs, and delivered clearly and applicatively by competent speakers. The average agreement on all aspects of the training reached 90.5% (combined SS and S), indicating a very high level of satisfaction. In addition, no respondents expressed dissatisfaction, reinforcing that this activity had met expectations and had a positive impact on increasing participants' understanding of artificial intelligence technology and cloud computing.

III. CONCLUSION

The implementation of the Community Partnership Program (PKM) has succeeded in providing applicable and innovative training on the use of artificial intelligence (AI) technology in early childhood learning at RA Darussalam 009. Through an interactive and technology-based approach, educators and students have been introduced to intelligent digital learning media that can improve children's basic skills, such as recognizing letters, numbers, shapes, colors, as well as language and logical thinking skills. The evaluation results showed an increase in learning motivation and a positive response from teachers and students to the use of AI-based tools. This training not only broadens teachers' horizons in integrating AI into the learning process, but also supports the creation of a more interesting, effective learning environment that is in line with the development of 21st century educational technology. Therefore, this program can be used as a model in developing digital learning competencies at other levels of early childhood education.

IV. ACKNOWLEDGMENTS

Thank you to the parties who have give information so that activity Devotion to this Community implemented among others the Chancellor Institute Business and Informatics Kosgoro 1957, Head of RA Darussalam 009 and Teachers, Lecturers and Students Faculty Knowledge IBI-K57 computer .

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