



# Efforts to Improve RA Learners' Understanding of the Solar System Through Interactive Learning Media at Sholawat Islamic Boarding School

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**Abstract:** This community service aims to improve the understanding of students at RA Pondok Sholawat, Caruban, Madiun, East Java, about the Solar System through interactive learning media. Based on the initial observations, it was found that traditional learning methods cannot attract interest and improve students' understanding optimally. To overcome this problem, an intervention was carried out in the form of a grant for a set of touchscreen laptops and training teachers on using interactive learning media. The results showed an increase in the enthusiasm and involvement of students in the learning process and an increase in teacher competence in utilizing technology as a learning tool. This program created a more pleasant and effective learning atmosphere and positively impacted the quality of learning at RA Pondok Sholawat. Interactive learning media is expected to be an innovative model that can be applied in other educational institutions to improve students' understanding of scientific concepts from an early age.

**Keywords:** Solar systems; interactive learning media; early childhood education; touchscreen laptops; Community service are also available.

## Introduction

Childhood is a golden period for brain development and children's curiosity (Rahman Prasetyo, 2020) (Lestari et al., 2020). During this time, children can absorb information quickly and enthusiastically (Harris et al., 2017). One of the topics that can tickle their curiosity is the universe, especially the Solar System. However, traditional learning approaches often make this topic feel abstract and difficult for early learners (Ramsden, 1997) (Ruiz-Primo et al., 2011), ultimately hindering their interest in learning science.

This issue is also a concern in RA Pondok Sholawat, Caruban, Madiun East Java. Teachers often need help explaining Solar System concepts using conventional methods that are less interactive (Plummer et al., 2015). Learners need a more creative approach to absorb the material well (Rahmonova, 2022). Engaging and

interactive learning media are needed to help learners explore the universe more fun and more easily (Malchenko et al., 2023).

As a solution, the program Efforts to Improve RA Learners' Understanding of the Solar System through Interactive Learning Media at Pondok Pesantren Sholawat is here to overcome these obstacles. This program aims to develop interactive learning media that uses animation to facilitate better understanding.

This program benefits not only students but also teachers at RA Pondok Sholawat. Training in interactive learning media helps teachers improve the quality of learning and provide a more memorable learning experience (Pallud, 2017). With the availability of devices such as touchscreen laptops and interactive applications, learning becomes more dynamic and interesting so that the teaching and learning process at RA Pondok Sholawat can run more effectively.

## How to Cite:

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More than that, the program can potentially have a long-term positive impact. With a better understanding of the Solar System and basic science concepts, learners increase their knowledge and develop their interest in science.

Hopefully, this young generation will grow into innovative and insightful individuals, ready to face future challenges.

## Method

This program is carried out by directly observing the learning process at RA Pondok Sholawat. Observations are made to understand how the current teaching methods are applied (Weston et al., 2021) and how students respond to the subject matter provided by the teacher (Zaare, 2013), especially related to the topic of the Solar System. This observation involves observing teaching and learning activities, using learning aids, and student responses to the material. The observation showed that: 1) the learning media used is still limited to printed materials and whiteboards; 2) students seem less interested and easily lose focus during learning; 3) teachers need more interactive tools to explain complex scientific concepts such as the Solar System.

Based on these observations, there is an urgent need for interactive learning media that can help students understand Solar System material in a more visual and fun way.

## Result and Discussion

In response to the observation that traditional learning methods are less effective in teaching the concept of the Solar System to young children, this program provides a concrete solution in the form of a technology device grant. RA Pondok Sholawat received a set of touchscreen laptops specifically designed to support interactive learning. These laptops not only function as hardware but are also equipped with interactive learning media applications made to facilitate teachers' and students' learning of the Solar System.

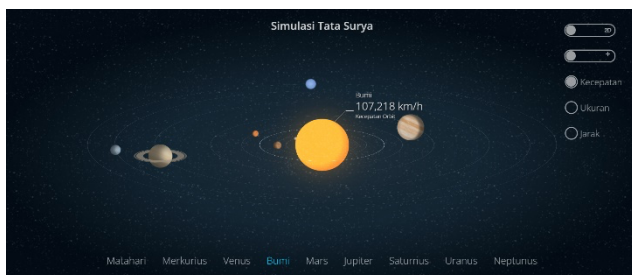


Figure 1. Screenshot of Learning Media

Features of this interactive learning media include animation and simulation. Animations with moving

images explain Solar System concepts in an interesting and easy way for children to understand. For example, the planets revolve around the sun or a simulation of the earth's rotation.

Simulations with interactive activities allow children to explore the Solar System virtually. They can manipulate images and models to learn about planetary characteristics and natural phenomena, such as eclipses or seasonal changes.

The community service program at RA Pondok Sholawat, Caruban, Madiun, East Java, successfully demonstrated that using interactive learning media is an effective solution to improve students' understanding of the Solar System. Based on observations, traditional learning methods are not optimal in attracting interest and improving early childhood understanding of scientific concepts.



Figure 2. Handover of touchscreen notebook to RA Pondok Sholawat

Through the provision of grants in the form of a set of touchscreen laptops and training on the use of interactive learning media to teachers, there was a significant increase in students' engagement and enthusiasm when learning. The children became more active, interested, and easily understood the learning materials, while the teachers felt more assisted and confident in conveying scientific concepts more interestingly.



Figure 3. Training on the Use of Laptops and Learning Media

Overall, this activity has a positive impact on students and teachers in an effort to improve the quality of learning at RA Pondok Sholawat. This program is also the first step in encouraging the application of technology in learning at the early childhood level, hoping that it can become a model for other educational institutions in implementing more innovative and interactive teaching methods.



Figure 4. Enthusiasm of Learners After Demonstration

## Conclusion

Based on the results of the activities, it was concluded that an increase in the enthusiasm and involvement of students in the learning process and an increase in teacher competence in utilizing technology as a learning tool. This program created a more pleasant and effective learning atmosphere and positively impacted the quality of learning at RA Pondok Sholawat. Interactive learning media is expected to be an innovative model that can be applied in other educational institutions to improve students' understanding of scientific concepts from an early age

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Last but not least, we thank all those who have provided assistance and support, both moral and material, which made this program possible. This program can be a sustainable first step in improving the quality of education in RA Pondok Sholawat and other educational institutions.

## References

- Harris, P. L., Bartz, D. T., & Rowe, M. L. (2017). Young children communicate their ignorance and ask questions. *Proceedings of the National Academy of Sciences*, 114(30), 7884–7891. <https://doi.org/10.1073/pnas.1620745114>
- Lestari, R. H., Mudhawaroh, M., & Ratnawati, M. (2020). Intelligence Optimization in the Golden Age by Stimulating the Right-Brain in Mojokrapak Village, Tembelang District, Jombang Regency. *NUCLEUS*, 1(2), 58–61. <https://doi.org/10.37010/nuc.v1i2.166>
- Malchenko, S. L., Poliarenko, V. S., & Prykhozha, Y. O. (2023). Interactive technology use during the study of the Universe. *Journal of Physics: Conference Series*, 2611(1), 012013. <https://doi.org/10.1088/1742-6596/2611/1/012013>
- Pallud, J. (2017). Impact of interactive technologies on stimulating learning experiences in a museum. *Information & Management*, 54(4), 465–478. <https://doi.org/10.1016/j.im.2016.10.004>
- Rahman Prasetyo, A. (2020). *Early Childhood Physical, Cognitive, Socio-Emotional Development*. 4(2). <https://doi.org/10.29313/ga:jpaud.v4i2.6049>
- Rahmonova, G. S. (2022). Pedagogical-Psychological Features Of The Development Of Non-Standard Way Of Thinking In Students. *European Science Review*, 3–4, 17–20. <https://doi.org/10.29013/ESR-21-1.2-17-20>
- Ramsden, J. M. (1997). How does a context-based approach influence understanding of key chemical ideas at 16+? *International Journal of Science Education*, 19(6), 697–710. <https://doi.org/10.1080/0950069970190606>
- Ruiz-Primo, M. A., Briggs, D., Iverson, H., Talbot, R., & Shepard, L. A. (2011). Impact of Undergraduate Science Course Innovations on Learning. *Science*, 331(6022), 1269–1270. <https://doi.org/10.1126/science.1198976>
- Weston, T. J., Hayward, C. N., & Laursen, S. L. (2021). When Seeing Is Believing: Generalizability and Decision Studies for Observational Data in Evaluation and Research on Teaching. *American Journal of Evaluation*, 42(3), 377–398. <https://doi.org/10.1177/1098214020931941>
- Zaare, M. (2013). An Investigation into the Effect of Classroom Observation on Teaching Methodology. *Procedia - Social and Behavioral Sciences*, 70, 605–614. <https://doi.org/10.1016/j.sbspro.2013.01.099>