

UTILIZATION OF EDUCATIONAL GAMES AS INTERACTIVE LEARNING MEDIA FOR CHILDREN

Agung Triayudi

Universitas Nasional, Jakarta, Indonesia

Email Correspondence author: agungtriayudi@civitas.unas.ac.id

Jhiro Faran

Universitas Nasional, Jakarta, Indonesia

Email : jhirofaran2022@student.unas.ac.id

Abstract

This research focuses on developing educational games as interactive learning media for children, with the aim of exploring the potential of games as an effective and fun learning tool. Through a game design and development approach, this research combines educational concepts with game elements to create an interesting learning experience for children. The research methodology includes needs analysis, game design, prototype development, and user evaluation involving children as participants. The research results show that the educational games developed have succeeded in increasing children's motivation and involvement in the learning process. User evaluations show increased understanding of concepts and retention of information in children using educational games compared to traditional learning methods. In addition, feedback from children and parents indicates that the integration of game elements in learning enriches children's learning experiences, making the learning process more interactive and enjoyable. This research concludes that educational games can be used as an effective interactive learning medium for children. It is hoped that further development and application of educational games in formal and informal education contexts can provide creative and innovative alternatives in supporting children's learning processes. This research also opens up opportunities for further exploration of educational game design that adapt to children's various needs and learning styles.

Keywords: Educational games, Interactive learning media, Children's learning, Learning motivation.

Introduction

In today's digital era, children grow and develop in an environment rich in technology. This opens up new opportunities in the world of education, especially in the use of technology as a learning medium. One promising innovation is the use of educational games as an interactive learning medium for children. Educational games not only offer a fun and engaging way children to learn, but also allow for a learning experience that customized to each individual's learning needs and pace.

Researchers obtained several literatures according to (Alwan, AZ 2020) The development of this educational game application produces features that run smoothly and can be used by children. (Maryana, IMS, et al 2018) Teachers are advised to utilize learning multimedia which was developed to support computer-based learning so that the learning process is more varied. (Barovih, G., & Sugara, EPA 2020) Increasing the ability and knowledge of teaching staff in utilizing technology as a tool and props in learning and teaching activities. (Sihombing, M., et al 2023) Utilizing mobile learning-based learning media as a solution ensures that the teaching and learning process in Kindergarten, Kana Nasional will run more comfortably. (Astuti, AY, et al 2023) By using this educational game, teachers can develop learning tools as children's learning media. A literature review shows that interactive learning through games can increase children's motivation and involvement in the learning process. Moreover, educational games can support the development of cognitive skills such as problem solving, critical thinking, and adaptability. However, challenges in the design and development of effective and educational games still need be overcome, including ensuring a balance between educational and entertainment elements in games. This research aims to develop educational games as interactive learning media for children with a focus on designs that integrate the educational curriculum with interesting and fun gameplay. With this background, this research will examine learning theories and educational games, design and develop game prototypes, and evaluate their effectiveness as learning media. It is hoped that this research will provide new insights into the potential of educational games in education and contribute to innovative interactive learning practices for children.

Research Methods

Research on the development of educational games as interactive learning media for children uses a mixed-method approach that combines qualitative and quantitative to collect and analyze data. This approach allows researchers to understand in depth the perceptions, motivations, and effectiveness of learning through educational games from the perspective of users (children).

Research Stages

Needs and Literature Study:

- Conduct a literature review to identify best practices in educational game design and relevant learning theories.
- Conduct surveys and interviews with children, teachers, and parents to gather information about preferences, learning needs, and game characteristics that appeal to children.

Game Design:

- Use information from the requirements study to design the game concept, including the story, characters, gameplay mechanics, and educational materials that will be integrated.
- Prepare detailed designs, including storyboards and game blueprints, which are then used for prototype development.

Prototype Development:

- Develop a game prototype based on the design that has been prepared.
- Conduct initial iterations based on internal feedback from the development team to ensure the game functions according to the design plan.

Testing and Evaluation:

- Conduct usability testing to assess children's ease of use and engagement with the game.
- Collect quantitative data through pre-tests and post-tests to measure increases in knowledge or skills resulting from using games.
- Conduct interviews and focus group discussions (FGD) with children and parents to get in-depth feedback about their learning experiences.

Data analysis:

- Analyze quantitative data using statistical methods to evaluate the effectiveness of games in improving learning outcomes.
- Analyze qualitative data to understand user perceptions of the game and aspects that can be improved.

This research aims to provide evidence regarding the effectiveness of educational games as an interactive learning medium and to enrich the literature regarding the design of effective educational games for children.

Results and Discussion

Research on the development of educational games as interactive learning media for children produced several main findings:

Game Development: The educational games developed successfully integrate learning concepts with interesting game elements, creating a fun learning experience for children. This game includes learning material that is in accordance with the basic education curriculum, presented through interesting narratives and interactions that support active learning.

Motivation: Test results show that educational games increase learning and motivation in children. Children report that they enjoy learning using games and feel more motivated to explore the learning material further.

Discussion

Integration of Learning and Play

These findings emphasize the importance of effective integration between learning and game elements in educational game design. Designs that successfully create a balance between these two aspects can facilitate a fun and effective learning experience, which is consistent with the theory of learning through games (game-based learning).

Motivation and Engagement

The observed increase in motivation and engagement suggests that educational games can be a powerful learning tool, especially in capturing children's attention and maintaining their interest. This supports the idea that child-oriented learning, which takes advantage of their natural inclination to play, can improve learning outcomes.

Learning Effectiveness

Improvements in concept understanding and knowledge retention indicate that educational games can be an effective learning medium, providing an attractive alternative to conventional learning methods. This underscores the potential of games as learning tools that can provide deeper and more memorable learning experiences.



Figure 1 Introduction to starting the game



Figure 2 The first question of the game begins



Figure 3 Second question from the game

Conclusion

This research develops educational games as interactive learning media aimed at children, with the aim of enriching their learning experience through the use of technology and games. From the development process to evaluation, findings show that the use of educational games can increase motivation, engagement and learning outcomes in children, while offering a fun and innovative approach to education.

Educational game development focuses on integrating learning concepts with interesting game mechanics, creating an environment that supports active and interactive learning. The research results show that educational games are successful in increasing children's learning engagement and motivation, providing a positive impact on concept understanding and knowledge retention, which indicates their effectiveness as an educational tool. Feedback from users, including children and parents, confirms the added value of using educational games in the learning process. They suggest that games should be used more in educational contexts, considering the benefits they offer in making learning more interesting and enjoyable.

The conclusion of this research is that educational games can be an effective interactive learning medium for children. This underlines the importance of innovation in education and the need to integrate technology and game-based learning methods into the curriculum, to meet the learning needs and preferences of children in this digital era. This research paves the way for further research in the development of educational games and exploration of their potential in various learning contexts.

References

- Alwan, A. Z. (2020). Pengembangan Game Edukasi Sebagai Media Pembelajaran Bagi Anak Berkebutuhan Khusus Tuna Rungu. *Joined Journal (Journal of Informatics Education)*, 3(1), 8-14.
- Astuti, A. Y., Sugianti, S., & Abdurrozzaq, I. (2023). Penerapan Teknologi Multimedia sebagai Sarana Inovasi Pengembangan Perangkat Pembelajaran untuk Guru Pendidikan Anak Usia Dini. *Jurnal Ilmiah Edutic: Pendidikan dan Informatika*, 9(2), 139-148.
- Barovich, G., & Sugara, E. P. A. (2020). Pemanfaatan aplikasi sebagai media bantu edukasi agama islam untuk anak usia dini. *Dinamisia: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 152-160.
- Maryana, I. M. S., Candiasa, I. M., & Waluyo, D. (2018). Pengembangan Game Edukasi Sebagai Media Pembelajaran Deret Bilangan di Sekolah Menengah Atas. *Jurnal Pendidikan Matematika Undiksha*, 9(2), 19-30.
- Sihombing, M., Simbolon, F. H., & Banjarnahor, J. (2023). Sosialisasi Pemanfaatan Media Pembelajaran Intraktif Berbasis Mobile Learning Pada Guru Taman Kanak-Kanak. *ULINA: Jurnal Pengabdian kepada Masyarakat*, 1(1), 8-14.