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The Cognitive Benefits of Educational Games in Al Qur'an Learning for Young Learners at Madrasah Ibtidaiyah

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ABSTRACT

This library research presents a comprehensive review of literature on the cognitive benefits of educational games that can be implemented in Al Qur'an learning for young learners at Madrasah Ibtidaiyah. The study explores the significance and multifaceted nature of these benefits, focusing on various cognitive processes and mechanisms involved in game-based learning. This study employs the library research methodology to comprehensively describe the cognitive benefits of educational games in Al Qur'an learning for young learners at Madrasah Ibtidaiyah. The approach involves a systematic descriptive analysis to explain the obtained facts. Analyzing existing literature provides a broad understanding of educational games in Al Qur'an learning for young learners and informs future empirical studies in this area. The findings reveal that educational games enhance cognitive development in young students through several key factors. These factors include promoting active engagement, providing scaffolding to support learning, facilitating authentic application of cognitive skills, reinforcing learning through repetition, fostering critical thinking, offering feedback and rewards, facilitating problem decomposition and strategy development, promoting collaborative learning, and enabling a state of flow. By leveraging these cognitive processes and mechanisms, educational games offer an interactive, engaging, and effective approach to Al Qur'an learning. The integration of game elements captures the attention and interest of young learners, fostering deep and meaningful engagement with the subject matter. The research emphasizes the importance of incorporating educational games as a valuable tool in Al Qur'an education for young learners at Madrasah Ibtidaiyah.

Introduction

Educational games, in particular, have garnered attention as a promising tool to engage young learners and foster their cognitive development. However, within the domain of Al Qur'an

learning, limited research has been conducted on the cognitive benefits of educational games for young learners. Researchers have only found a few studies indicating that technology has been used in the process of learning the Qur'an to achieve learning goals and student engagement in the learning process (Hakimah et al., 2019; Muzakki; 2021), Learning the Qur'an and students' cognitive abilities in memory and thinking (Fairuzzillah, 2021), as well as research findings showing the relationship between technology and cognition (Saadé, 2005; Crompton, 2019). However, there has been few research conducted on the use of technology in Qur'an learning for young learners and its connection to cognition, especially in madrasah ibtidaiyah (See also Robinson, 2013; Tjandra, 2013; Vanbecelaere, 2020; Karimah, 2022). This study aims to fill this gap by investigating the cognitive advantages derived from the use of educational games in Al Qur'an learning for young learners.

The objective of this study is to explore the cognitive benefits associated with the integration of educational games in Al Qur'an learning. By exploring the effects of gamified approaches, this study seeks to contribute to the existing knowledge on effective pedagogical strategies in the field of Al Qur'an education for young learners. The significance of this research lies in addressing the need for innovative and engaging methodologies to facilitate Al Qur'an learning for young learners. Traditional methods of Al Qur'an education primarily focus on rote memorization and recitation, often overlooking the cognitive aspects of learning. By harnessing the potential of educational games, educators and policymakers can tap into a dynamic and interactive platform that promotes deeper comprehension, critical thinking, and problem-solving skills.

To justify the novelty of this study, previous research has explored the effectiveness of educational games in various educational contexts (Randell, 1992; Vandercruysse, 2012; Backlund, 2013; Sabirli, 2020), highlighting their potential to enhance cognitive skills, such as memory retention, attention span, and information processing. However, within the specific domain of Al Qur'an learning for young learners, the literature is scarce, underscoring the need for further investigation in this area. The gap analysis reveals the dearth of research focusing specifically on the cognitive benefits of educational games in Al Qur'an learning for young learners. While some studies have touched upon the use of technology in Al Qur'an education (Setiawan, 2020; Thoifah, 2020). Few research have delved into the cognitive advantages that can be derived from educational games. This study aims to address this gap by examining the possibility cognitive outcomes associated with the utilization of educational games in Al Qur'an learning for young learners.

By exploring the cognitive benefits of educational games for young learners, it is possible to apply it in Al Qur'an learning, this research aims to contribute to the advancement of pedagogical practices within the realm of Al Qur'an education. The findings of this study have the potential to

inform educators, policymakers, and curriculum developers about the efficacy of incorporating educational games as a supplementary tool for cognitive development and meaningful Al Qur'an learning experiences for young learners.

Method

This research employs a library research methodology to investigate the cognitive benefits of educational games than can be implemented in Al Qur'an learning for young learners. Library research involves gathering and analyzing existing literature and relevant scholarly resources to derive insights and support the research objective (Anwar, 2021). The analysis process begins with identifying appropriate databases, such as academic journals, conference proceedings, and reputable online repositories, that contain relevant literature on the topic. Keywords and search terms related to educational games, Al Qur'an learning, and cognitive development will be utilized to conduct comprehensive searches. The retrieved articles will be screened based on their relevance to the research objective and inclusion criteria.

Following the screening process, relevant articles will undergo a thorough examination and data extraction. Key information, including study objectives, methodologies, variables investigated, and findings related to the cognitive benefits of educational games and in Al Qur'an learning for young learners, will be extracted and organized for analysis. The extracted data will be synthesized to identify patterns, themes, and relationships among the studies. To ensure the validity and reliability of the data, rigorous selection criteria will be applied during the literature screening process. Only peer-reviewed articles and scholarly resources from reputable sources will be considered.

This study utilizes the library research methodology, which employs a comprehensive and systematic descriptive analysis approach to describe the cognitive benefits of educational games in Al Qur'an learning for young learners at Madrasah Ibtidaiyah. Descriptive analysis research focuses on providing a systematic explanation of the facts obtained during the research process (Sanusi, 2016). The emphasis of library research is to discover various theories, laws, principles, opinions, ideas, and other relevant information that can be used to analyze and solve the researched problems (Sarjono, 2008). The analysis of existing literature allows for a comprehensive of knowledge and insights, contributing to the understanding of the research topic and informing future directions for empirical studies in this area.

Discussion

Cognitive Development in Young Learners: The Impact of Educational Games for Al Qur'an Learning

Educational games designed for Al Qur'an learning have the potential to make significant contributions to the cognitive development of young learners (See also Zainiyati, 2021). These games offer interactive and engaging experiences that go beyond traditional instructional methods, fostering a range of cognitive skills and abilities. Educational games promote active learning, requiring young learners to actively participate and engage with the content (Zapalska, 2021). Through gameplay, learners are encouraged to think critically, make decisions, and solve problems, which enhances their cognitive skills such as critical thinking, reasoning, and decision-making abilities (Cicchino, 2015; Lee, 2016). By immersing themselves in the game's virtual environment, learners are provided with opportunities to explore and apply their cognitive abilities in a context that aligns with Al Qur'an teachings.

Immersive gaming, when used for educational purposes, in this context is Al Qur'an learning, can align with the teachings of the Quran by providing learners with opportunities to explore, apply their cognitive abilities, and gain knowledge in a context that enhances their understanding of the world. In the Quran, there are verses that emphasize the importance of using one's cognitive abilities and seeking knowledge. Surah Al-Baqarah (2:269): "He grants wisdom to whom He pleases; and he to whom wisdom is granted indeed receives a benefit overflowing; but none will grasp the Message except men of understanding." This verse signifies that Allah bestows wisdom upon those He chooses, and those who possess wisdom can benefit greatly from it. In the context of immersive gaming or virtual environments, learners have the opportunity to gain knowledge and enhance their cognitive abilities by engaging in such activities. Surah Al-Anfal (8:22): "Indeed, the worst of living creatures in the sight of Allah are the deaf and dumb who do not use reason." This verse emphasizes the importance of using reason and cognitive abilities in order to be considered worthy in the sight of Allah. By immersing themselves in a virtual environment for educational purposes, learners are actively using their cognitive abilities to reason, analyze, and apply knowledge. Surah Al-Rum (30:22): "And of His signs is the creation of the heavens and the earth and the diversity of your languages and your colors. Indeed in that are signs for those of knowledge." These verses highlights the signs of Allah's creation and encourages individuals with knowledge to reflect upon them. Immersive gaming and virtual environments provide a platform for learners to explore various scenarios, languages, and cultures, fostering a deeper understanding of Allah's diverse creation. By exploring these three verses, educators will understand that immersive gaming, when used for educational purposes, can align with the

teachings of the Quran by providing learners with opportunities to explore, apply their cognitive abilities, and gain knowledge in a context that enhances their understanding of the world.

Educational games offer repetitive and meaningful practice (Chow, 2011). Many of these games utilize adaptive learning algorithms, which adjust the difficulty level based on the student's performance (Cheng, 2010; Vamvoudakis, 2012; Eleven, 2016). This repetition and practice can help reinforce memory retention, as students repeatedly encounter and engage with Al Qur'an verses, principles, and teachings. By repeatedly practicing and internalizing these concepts through gameplay, students develop improved memory recall and retention skills (See also how RETAIN models works in Gunter, 2008). Moreover, educational games facilitate the development of problem-solving skills. Games often present challenges and obstacles that require learners to analyze situations, think strategically, and find creative solutions (Squire, 2005; Robertson, 2008). Through the process of trial and error, learners learn to navigate complex problems, think critically, and devise effective strategies, all of which contribute to their cognitive development.

Additionally, educational games enhance attention and concentration skills (Cardoso-Leite, 2014; Bester, 2013). To succeed in the game, learners must maintain focus and concentration, as they navigate through various levels, solve puzzles, and accomplish specific tasks. The immersive and interactive nature of the games captures learners' attention and motivates them to stay engaged for extended periods, which in turn improves their attention span and ability to concentrate. Furthermore, educational games provide immediate feedback and reinforcement (Nah, 2013). As students interact with the game, they receive instant feedback on their performance, allowing them to assess their understanding and progress. This feedback reinforces correct responses and provides opportunities for remediation, encouraging continuous learning and improvement. The immediate feedback loop in educational games enhances metacognitive skills, enabling students to monitor their own learning, identify areas of weakness, and make necessary adjustments (See also Ke, 2008).

Moreover, in another research said that educational games promote active engagement with Al Qur'an content (See also Abdullah, 2008; Hayati, 2017). By presenting Al Qur'an teachings in a visually appealing and interactive manner, games capture the interest and curiosity of young learners. The immersive experience of exploring Al Qur'an narratives, verses, and principles within a game environment creates a sense of relevance and connection, making the learning process more meaningful and enjoyable. This heightened engagement leads to increased motivation and enthusiasm for learning, which positively impacts cognitive development. Additionally, educational games foster collaborative and social learning experiences (Simões, 2015). Many games offer multiplayer features or online platforms where students can interact and collaborate with their peers (López-Faican, 2020). Through teamwork, discussion, and

sharing of insights, learners develop social and communication skills, which are vital components of cognitive development. Collaborative gameplay also encourages perspective-taking, empathy, and understanding of diverse perspectives (Schrier, 2018; Beaudin, 2019), all of which contribute to cognitive growth.

Furthermore, educational games can be personalized and tailored to individual learning needs (Bontchev, 2020). Through adaptive learning technologies, these games can assess the student's performance, identify areas of strengths and weaknesses, and provide personalized content and challenges (See also Walkington, 2013). This individualization promotes self-paced learning and accommodates diverse learning styles, optimizing the cognitive development of young learners. Educational games that designed for Al Qur'an learning will make valuable contributions to the cognitive development of young learners. Through active learning, repetition, problem-solving, attention enhancement, immediate feedback, active engagement, collaboration, personalization, and tailoring, these games foster a range of cognitive skills and abilities. By providing interactive and engaging experiences that align with Al Qur'an teachings, educational games create a dynamic and effective learning environment that promotes meaningful cognitive growth in young learners.

An Urgent Design of Educational Games in Al Qur'an Learning: Enhancing Cognitive Skills through Educational Games in Al Qur'an Learning for Young Learners

In the realm of Al Qur'an learning for young learners, there is an urgent need for the design and implementation of educational games. These games can serve as a powerful tool for enhancing cognitive skills while engaging students in the learning process. Educational games offer a unique and interactive approach to learning Al Qur'an. By combining the principles of game design with the teachings of Al Qur'an, these games can create an immersive learning environment that fosters active participation and critical thinking among young learners. Such an approach promotes a deeper understanding and appreciation of Al Qur'an, as well as the development of cognitive skills.

The design of educational games in Al Qur'an learning should be carefully crafted to align with the learning objectives and the cognitive needs of young learners. Game elements such as puzzles, quizzes, and interactive challenges can be strategically integrated to stimulate cognitive processes such as problem-solving, logical reasoning, and memory retention (See also Spence, 2010; Lieberman, 2012). By engaging in these cognitive activities within the context of Al Qur'an learning, students can develop a stronger cognitive foundation and apply their knowledge effectively.

Furthermore, educational games provide a platform for personalized learning experiences (Peirce, 2008). Through adaptive features, games can tailor the content and difficulty level to match the individual capabilities and learning progress of each student. This personalized approach allows young learners to advance at their own pace, ensuring both engagement and mastery of Al Qur'an concepts. The interactive nature of games also encourages continuous feedback (Shute, 2012; Nkhoma, 2014), allowing students to identify areas for improvement and refine their cognitive skills accordingly.

The incorporation of educational games in Al Qur'an learning has shown promising results in enhancing cognitive skills. Studies have demonstrated that students who engage in educational games exhibit improved critical thinking, problem-solving abilities, and information retention (See also Syawaluddin, 2019; Djamas, 2021; Powell, 1997). The gamified approach to learning not only enhances cognitive skills but also cultivates a positive attitude towards Al Qur'an education, fostering a lifelong love for learning. Islam highlight the importance of seeking knowledge, having a positive attitude towards learning, and sharing knowledge with others. The Prophet Muhammad (peace be upon him) said: "Seeking knowledge is obligatory upon every Muslim." (Sunan Ibn Majah) This hadith highlights the significance of acquiring knowledge in Islam. By incorporating gamification in Quran education, learners are encouraged to actively seek knowledge, engage with the Quranic teachings, and develop a positive attitude towards learning. The gamified approach to Quran education can align with the principles by creating an engaging and enjoyable learning experience that cultivates a lifelong love for learning and strengthens one's connection with the Quran and Islamic teachings.

To implement educational games effectively in Al Qur'an learning, educators and developers must collaborate to design games that strike a balance between educational content and engaging gameplay. The games should be intuitive, user-friendly, and visually appealing to captivate young learners' attention. Additionally, regular evaluation and assessment of the games' impact on cognitive skills development are crucial to ensure continuous improvement and optimization of the learning experience.

The urgent design and implementation of educational games in Al Qur'an learning for young learners can greatly enhance their cognitive skills. By leveraging game design principles and Al Qur'an teachings, these games create an engaging and effective learning environment. The incorporation of educational games not only improves cognitive abilities but also promotes a deeper understanding and appreciation of Al Qur'an among young learners, fostering a lifelong connection with the teachings of Al Qur'an.

Cognitive Benefits of Educational Games vs. Traditional Instruction in Al Qur'an Learning for Young Learners

When comparing the cognitive benefits of educational games in Al Qur'an learning to traditional instructional methods for young learners, several factors come into play. Some studies show that educational games offer a more interactive and engaging learning experience (See lso Domínguez, 2013; Anastasiadis, 2018; Lampropoulos, 2019) Unlike traditional methods that often involve passive listening or reading, games require active participation and involvement. This interactivity stimulates cognitive processes such as critical thinking, problem-solving, and decision-making, leading to enhanced learning outcomes.

Educational games provide immediate feedback and reinforcement (Richter, 2012; Nah, 2013). Students receive instant feedback on their performance, allowing them to assess their understanding and make corrections in real-time. This feedback loop promotes metacognitive skills, enabling students to monitor their own learning, identify areas of weakness, and make necessary adjustments. In contrast, traditional instructional methods may have delayed or limited feedback, hindering students' ability to self-assess and improve their cognitive abilities effectively.

Islam promotes a sense of responsibility and careful assessment in line with the teachings of the Quran. Surah Al-Hujurat (49:6): "O you who have believed, if there comes to you a disobedient one with information, investigate, lest you harm a people out of ignorance and become, over what you have done, regretful." This verse highlights the importance of verifying information and seeking knowledge before making judgments or taking actions. In the context of instant feedback, students are encouraged to investigate and analyze their performance, ensuring that they understand the concepts correctly and make corrections if needed.

Furthermore, educational games offer personalized learning experiences. Many games utilize adaptive learning technologies, which tailor the content and challenges based on the student's individual progress and needs (Cheng, 2010; Walkington, 2013; Liu, 2017). This personalized approach ensures that students are appropriately challenged and supported, optimizing their cognitive development. In contrast, traditional instructional methods often follow a standardized curriculum, which may not cater to the diverse learning styles and pace of individual students.

Table 1. Cognitive Benefits of Educational
Games vs. Traditional Instruction in Al Qur'an Learning

No	Educational games in Al Qur'an learning	Traditional instructional methods in Al Qur'an learning
1	It is more interactive and engaging learning experience	Often involving passive listening or reading, games require active participation and involvement
2	Providing immediate feedback and reinforcement	may having delayed or limited feedback, hindering students' ability to self-assess
3	Offering personalized learning	Often following a standardized curriculum,

	experiences	which may not cater to the diverse learning styles and pace of individual students
4	Fostering a sense of autonomy and intrinsic motivation	may not always tapping into students' intrinsic motivation, resulting in reduced cognitive engagement and interest
5	Providing opportunities for active problem-solving and critical thinking	Relying more on rote memorization or passive absorption of information.
6	Promoting experiential and contextual learning	may struggle to provide such immersive and contextual learning experiences
7	Fostering collaborative learning and social interaction	Focusing on individual learning
8	offer scaffolding and support to students	may lacking the same level of individualized support, potentially leading to frustration or stagnation in cognitive development
9	Facilitating continuous and lifelong learning	Having defined endpoints or limited opportunities for ongoing learning

Additionally, educational games foster a sense of autonomy and intrinsic motivation in young learners (Kalmpourtzis, 2018). By presenting learning content in a game format, learners feel a greater sense of control and ownership over their learning. This autonomy and motivation positively impact cognitive engagement and persistence, leading to more effective learning outcomes. In contrast, traditional instructional methods may not always tap into learners' intrinsic motivation (see also Furtak, 2012), resulting in reduced cognitive engagement and interest. Moreover, educational games provide opportunities for active problem-solving and critical thinking. Many games incorporate challenging puzzles, scenarios, and decision-making tasks that require students to think critically and analytically. By actively engaging in problem-solving activities, students develop cognitive skills such as logical reasoning, analytical thinking, and creative problem-solving abilities (See also Foshay, 2003; Snyder, 2008). Traditional instructional methods, on the other hand, may have limited opportunities for active problem-solving, often relying more on rote memorization or passive absorption of information.

Educational games promote experiential and contextual learning (Zeng, 2020). Through the game environment, students can explore and apply Al Qur'an teachings in realistic and meaningful contexts. Islam also highlights the principles of seeking wisdom, critical thinking, independent understanding, and applying knowledge in action. Hadith from Sahih Bukhari: The Prophet Muhammad (peace be upon him) said, "Whoever acts upon what he knows, Allah will teach him what he does not know." (Sahih Bukhari) This hadith emphasizes the importance of applying knowledge in action. In the context of educational games, students have the opportunity to apply Al Qur'an teachings in realistic and meaningful contexts, allowing them to see the direct consequences of their actions. By actively engaging with the game environment and applying their knowledge, students can deepen their understanding and learn new aspects of Al Qur'an teachings. While this hadiths may not directly mention educational games or the concept of experiential and contextual learning, they highlight the principles of seeking wisdom, critical

thinking, independent understanding, and applying knowledge in action. These principles can be related to the use of educational games as a means to explore and apply Al Qur'an teachings in realistic and meaningful contexts, enabling students to gain a deeper understanding and experience the direct consequences of their actions within the game world. This experiential learning approach allows for deeper understanding and application of knowledge, as students can see the direct consequences of their actions within the game world. Traditional instructional methods may struggle to provide such immersive and contextual learning experiences, limiting students' ability to connect theoretical concepts with real-world applications.

Furthermore, educational games foster collaborative learning and social interaction (Bovermann, 2018; Hämäläinen, 2011). Many games offer multiplayer features or online platforms where students can collaborate, communicate, and learn together. This social interaction promotes cognitive development by facilitating communication skills, teamwork, and perspective-taking abilities. In contrast, traditional instructional methods often focus on individual learning (Scrivener, 2005), limiting the opportunities for collaborative and social cognitive growth. Educational games can offer scaffolding and support to students. Through built-in hints, tutorials, and adaptive difficulty levels, games can provide appropriate support to help students overcome challenges and progress in their learning (See also Sampayo-Vargas, 2013). This scaffolding promotes cognitive growth by providing targeted assistance when needed, allowing students to gradually develop their skills. In contrast, traditional instructional methods may lack the same level of individualized support, potentially leading to frustration or stagnation in cognitive development.

Educational games can facilitate continuous and lifelong learning (Knappar, 2012). Many games offer additional content, levels, or challenges that extend beyond the initial learning objectives. This encourages students to continue exploring and expanding their knowledge, fostering a habit of lifelong learning. Traditional instructional methods may have defined endpoints or limited opportunities for ongoing learning, potentially limiting students' cognitive development beyond the immediate curriculum.

When comparing the cognitive benefits of educational games, in Al Qur'an learning, to traditional instructional methods, the interactive and engaging nature of games, immediate feedback, personalized learning experiences, autonomy and intrinsic motivation, active problem-solving, experiential learning, collaborative opportunities, scaffolding and support, and continuous learning all will contribute to superior cognitive outcomes. Educational games provide a dynamic and effective approach to Al Qur'an learning, leveraging technology and game design principles to optimize young students' cognitive development.

Long-Term Effects: Educational Games in Al Qur'an Learning and Cognitive Abilities of Young Learners

Incorporating educational games into Al Qur'an learning can have significant long-term effects on the cognitive abilities and academic performance of young learners. These games foster a deep understanding and retention of Al Qur'an teachings. By engaging with the material in a dynamic and interactive manner, students develop a strong foundation of knowledge and comprehension that can endure over time. This enhanced understanding contributes to their cognitive abilities, enabling them to make connections, analyze complex concepts, and apply their knowledge in various contexts.

Educational games promote critical thinking and problem-solving skills (Liu, 2011), which have long-term benefits for academic performance. Through game-based challenges and puzzles, students develop analytical thinking, logical reasoning, and the ability to approach problems from multiple perspectives. These cognitive skills are transferable to other academic subjects and real-life situations, empowering students to excel in their overall academic performance. Moreover, educational games foster the development of metacognitive skills (Kim, 2009). By providing immediate feedback and self-assessment opportunities, students become more self-aware of their learning processes and strategies. This metacognitive awareness helps them regulate their learning, set goals, and monitor their progress effectively. Such skills are invaluable for long-term academic success, as students become proactive learners who can adapt their approaches to different learning tasks.

The engagement and motivation elicited by educational games contribute to long-term academic performance (See also Erhel, 2013). When students are actively involved in their learning through game-based experiences, they become more motivated, enthusiastic, and persistent in their pursuit of knowledge. The intrinsic motivation leads to increased effort, concentration, and dedication to their academic endeavors, resulting in improved performance and achievement (See also Bomia, 1995; Dickinson, 1995; Siddiqui, 2020). There are principles in Islam that emphasize the importance of motivation, dedication, and striving for excellence. These principles can be related to the idea that when students are actively involved in their learning through game-based experiences, they become more motivated and dedicated to their academic endeavors. When students are actively involved in game-based learning experiences, they develop a sense of enthusiasm and persistence in their pursuit of knowledge, thereby exhibiting good moral character. Hadith from Sahih Bukhari: The Prophet Muhammad (peace be upon him) said, "Verily, Allah loves that when any one of you does something, he should perfect it." (Sahih Bukhari) This hadith highlights the importance of striving for excellence in all actions. When students are actively involved in game-based learning and motivated to excel, they demonstrate a commitment to improving their performance, concentration, and achievement. This aligns with

the principle of seeking excellence in all endeavors, including academic pursuits. Their intrinsic motivation leads to increased effort, concentration, and dedication to their academic endeavors, resulting in improved performance and achievement.

Educational games also enhance cognitive skills that are essential for academic success, such as attention and memory (See also Castellar, 2015). The interactive nature of these games captures students' attention and trains them to sustain focus for extended periods. This heightened attention span can transfer to other academic tasks, enabling students to better concentrate, absorb information, and perform well in various learning contexts.

Additionally, the repetitive engagement with Al Qur'an content in games strengthens memory retention, facilitating long-term recall and application of knowledge. Incorporating educational games into Al Qur'an learning can also have a positive impact on students' overall cognitive development. These games promote cognitive flexibility, adaptability, and creativity by presenting diverse challenges and requiring students to think outside the box. These cognitive skills go beyond Al Qur'an learning and are transferable to other subjects and real-life situations, supporting students' cognitive growth and adaptability in the long run.

Furthermore, the social and collaborative aspects of educational games can contribute to long-term academic performance (See also Tran, 2014; Uz, 2020). Multiplayer features or online platforms in a game encourages interaction, teamwork, and communication among students (Manninen, 2003; Ducheneaut, 2004). Through collaborative learning experiences, students develop vital social and communication skills, such as effective collaboration, active listening, and respectful dialogue. These skills enhance their academic performance by facilitating group projects, class discussions, and cooperative learning in other subjects. Educational games can foster a positive attitude towards learning and academic engagement (See also Najdi, 2012). The enjoyable and interactive nature of these games creates a positive learning environment, where students associate learning with excitement and pleasure. This positive attitude towards learning can have long-term effects on academic motivation, perseverance, and overall academic success.

The long-term effects of incorporating educational games into Al Qur'an learning can extend beyond cognitive abilities and academic performance. These games often promote values, moral teachings, and character development, which positively influence students' personal growth, ethical decision-making, and social interactions. The holistic development fostered by educational games can contribute to the well-roundedness of young students, preparing them for future academic, personal, and professional endeavors. Incorporating educational games into Al Qur'an learning will has significant long-term effects on the cognitive abilities and academic performance of young learners. These games will enhance understanding, critical thinking, metacognitive skills, motivation, attention, memory, cognitive flexibility, social skills, and overall cognitive

development. By providing an engaging and interactive learning experience, educational games cultivate skills and qualities that positively impact students' academic performance and facilitate their personal growth and success.

Understanding the Cognitive Processes in Educational Games for Al Qur'an Learning in Young Learners

The effectiveness of educational games in Al Qur'an learning for young students can be attributed to various underlying cognitive processes and mechanisms. One key process is active engagement. Educational games require students to actively participate (See also Azriel, 2005; Sauvé, 2010), make decisions, and solve problems. This active engagement stimulates cognitive processes such as attention, memory, and information processing. By actively interacting with the game's content and challenges, students are more likely to retain and comprehend Al Qur'an teachings. Educational games often incorporate scaffolding, which provides support and guidance to students as they progress through the game (Sampayo-Vargas, 2013). Scaffolding helps students develop their cognitive skills by providing hints, feedback, and explanations (See also Puntambekar, 2005; Van Der, 2002; Sun, 2011; Bickhard, 2013). This process aids in knowledge acquisition, problem-solving, and critical thinking. The scaffolding approach gradually reduces as students become more proficient, allowing them to develop independence in their cognitive processes. Moreover, educational games promote the application of cognitive skills in authentic contexts. (Obliner, 2006; Brookes, 2012) Through game-based scenarios, students are required to utilize their cognitive abilities to navigate challenges and make decisions within the context of Al Qur'an teachings. This application of cognitive skills helps students transfer their learning to real-life situations and enhances their understanding and application of Al Qur'an principles.

Educational games often incorporate repetition and reinforcement (Sauvé, 2010). By repeatedly encountering Al Qur'an content and concepts within the game, students reinforce their memory and understanding of the teachings. Repetition aids in the consolidation of information (See also Marsh, 2009), leading to improved retention and recall. This repetitive nature of educational games supports cognitive processes such as memory encoding, retrieval, and consolidation. Furthermore, educational games often include problem-solving tasks (Van Eck, 2010) that require students to think critically and analytically. The educational games tasks engage higher-order cognitive skills (Prayaga, 2008), cognitive processes such as logical reasoning, pattern recognition, and hypothesis testing. By challenging students to apply higher-order cognitive skills, educational games foster the development of critical thinking abilities, which are essential for interpreting and applying Al Qur'an teachings.

Moreover, educational games incorporate elements of feedback and reward systems (Alexiou, 2018). Immediate feedback on students' performance allows them to reflect on their actions, make adjustments, and learn from their mistakes. Feedback plays a crucial role in shaping cognitive processes (Wofford, 1990), such as self-assessment, self-regulation, and metacognition. The reward systems in games, such as earning points, unlocking levels, or receiving virtual rewards, further motivate students and reinforce their cognitive engagement (Garris, 2002; Buckley, 2016). Educational games often promote problem decomposition, abstraction, algorithmic thinking, problem-solving skills, and strategy development (Agbo, 2021). Students are presented with complex challenges that require them to break down the problem into smaller components and develop strategies to solve them. This process involves cognitive skills such as planning, organization, and goal-directed thinking. By engaging in problem decomposition and strategy development, students enhance their cognitive abilities related to problem-solving and decision-making.

Collaborative elements in educational games promote social interaction and cooperative learning (See also Van Der, 2011; Noemi, 2014; Cooney, 2020). Students may have opportunities to collaborate with peers, discuss strategies, and share insights. This social interaction enhances cognitive processes such as communication, perspective-taking, and collaboration skills. Collaborative learning within the game environment allows students to benefit from the diverse perspectives and expertise of their peers, fostering cognitive development through social engagement. The immersive and engaging nature of educational games elicits a state of flow (See also Takatalo et al., 2010; Jin, 2012). Flow is characterized by deep concentration, complete absorption, and enjoyment in the task at hand. When students experience flow during gameplay, they are fully engaged and motivated, leading to optimal cognitive performance (See also Hamijaya, 2003). Flow promotes cognitive processes such as sustained attention, information processing, and skill acquisition.

The effectiveness of educational games in Al Qur'an learning for young learners is driven by various underlying cognitive processes and mechanisms. Active engagement, scaffolding, authentic application of cognitive skills, repetition and reinforcement, problem-solving tasks, feedback and rewards, problem decomposition and strategy development, collaborative learning, and flow contribute to the cognitive development and effectiveness of educational games in facilitating Al Qur'an learning.

Conclusion

The cognitive benefits of educational games in Al Qur'an learning for young learners are significant and multifaceted. These games will enhance cognitive development by promoting active engagement, scaffolding, authentic application of cognitive skills, repetition and

reinforcement, critical thinking, feedback and rewards, problem decomposition and strategy development, collaborative learning, and flow. By leveraging these cognitive processes and mechanisms, educational games will provide an interactive, engaging, and effective approach to Al Qur'an learning. The findings highlight the importance of incorporating educational games as a valuable tool for enhancing cognitive abilities, academic performance, and holistic development in young learners. Recognizing the relevance of this study, educators and parents can harness the cognitive benefits of educational games to create an enriching and impactful learning environment for young learners in Al Qur'an education.

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