

Using Gamified Digital Media to Assist Working Parents in Maintaining Involvement in their Young Children's Learning and Development

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INFO ARTIKEL

Riwayat Artikel:

Received : 28 Oktober 2024

Revised : 25 November 2024

Accepted : 26 November 2024

Keywords: Educational,
Gamified, Parenting,
Children

Kata Kunci: Pendidikan,
Permainan, Orang Tua,
Anak-anak

DOI: 10.62335

ABSTRACT

This research explores the potential of gamified digital media platforms, in helping working parents stay actively involved in their young children's learning development. As work demands increase, parents often struggle to balance professional responsibilities with parenting duties. Using qualitative methods, including interviews and observations, a prototype app designed to engage both parents and children in educational activities was developed and tested. The findings suggest that digital platforms can significantly enhance parental involvement, offering flexible, accessible, and engaging ways for parents to support their children's learning in a meaningful and enjoyable way.

ABSTRAK

Penelitian ini menelusuri potensi platform gamified media digital dalam membantu para orang tua untuk tetap secara aktif terlibat dalam perkembangan belajar anak usia muda. Seiring dengan meningkatnya tuntutan pekerjaan, orang tua sering mengalami kesulitan membagi keseimbangan antara tanggung jawab kerja dengan tanggung jawab sebagai orang tua. Dengan menggunakan metode qualitative seperti wawancara dan observasi, sebuah prototype app dikembangkan dan diuji penggunaannya. Hasilnya mengindikasikan bahwa platform digital dapat meningkatkan keterlibatan orang tua terhadap perkembangan anak secara signifikan. Memberikan keleluasaan, kemudahan akses, dan cara yang menarik untuk para orang tua untuk mendukung proses pembelajaran anak-anak mereka dengan cara yang berarti dan menyenangkan.

1. BACKGROUND

Balancing work and family life is a significant challenge for many parents, especially when it comes to maintaining active involvement in their young children's development. Parents' engagement with their children in stimulating activities such as reading, singing, and storytelling, as well as exposing young children to diverse experiences are all indicators of higher quality parenting (Black et al., 2017). Yet, traditional methods of parental engagement, such as attending school events or participating in daily activities, are often difficult for working parents to manage due to time constraints and work commitments. However, taking into account the digital natives, generations born into a world where digital technology is wholly integrated into life (Prensky, 2001), might imply that connectivity may be achieved through using such technologies. This offers new opportunities for parents to stay connected with their children's educational and developmental progress.

In recent years, adoption of technology, signaled by the massive numbers of gadgets such as the mobile phone, has increased (Jardim, 2017). This leads to the rapid diffusion of technologies like tablets and iPads. The adoption level varies based on available technology, age, gender, and social group. Parents, relatives, or teachers introduce these devices to children at an early age, using them to work and entertain.

Early childhood is a crucial stage of development, characterized by significant growth and rapid development. Children under eight years old have a greater capacity to absorb information through their senses (Louis, 2016). This stage accelerates in areas such as interpersonal competence, allowing them to interact appropriately with others. This stage is crucial for a child's overall growth and development.

Research has revealed that incorporating education into a playing environment makes the learning process easier for children, and that utilizing gameplay in education is one way this method is applied (Utomo, Setiawan, 2022). The growing popularity of mobile phones and gadgets use by children has become a part of life in the past decade, and despite being a continuing source of worry for both teachers and parents, the way we spend our time and communicate with each other has undoubtedly changed as a result of technology, particularly with the younger generation of children who uses electronics excessively (Radensky, Christakis, 2016). However, it has also been noted that multiliteracy approach in education seems to be the ideal form of learning process; one that incorporates audio as well as visuals such as photography, illustrations, symbols and typography (Dewi, 2019). This makes digital media as a platform, which inherently supports multiliteracies approach, a potentially ideal tool to utilize in the research. There is a very strong connection between play and technology, and embracing early adoption of technology and potential uses of gamification which can be taken advantage of by educators and parents (Tootell et al, 2014).

This research aims to investigate how gamified digital media platforms can serve as a tool for working parents to stay engaged in their children's learning. Specifically, by developing a minor prototype app and assessing its effectiveness in fostering parental involvement and enhancing children's educational experiences.

2. LITERATURE REVIEW

a. Interview

For the research, in-depth interviews were conducted with informants and experts to understand their experiences, opinions, and thoughts on a specific issue. Clinical Psychologists Nasri Zulhaidi M. Psi, and Linda Ernawati M. Psi were among the specialists. Respondents Fio Maria, Kartika Putriana, and Farananda Ginanjar, all parents to young children, were interviewed. The aim was to gain insights into their experiences and the contextual factors influencing their view on use of digital tools. Observations were also conducted to see how parents and children interacted with the app in real-time.

b. Literature

A substantial amount of information and concepts have been gathered and organized from various sources, including online and physical libraries, through the examination and analysis of journal articles and written materials.

3. RESEARCH AND DESIGN METHODOLOGY

To understand the effect digital media platforms and gaming may have on parental involvement, this study employed a mixed-methods approach, combining qualitative interviews and secondary data sources related to the study, such as books, website, and articles. The research employs various methods, including in-depth interviews with experts and parents of younger children, literature review, and observational research, to gain a comprehensive understanding of the topic and achieve the best possible outcome.

The prototype app, named "Time Call," was co-developed with features designed to engage both parents and children. Key features included:

1. Collaborative problem-solving missions for children and parents, historic literacy, and moral values such as honesty and perseverance.
2. The game can be played together in person, or separately while the children are home, and the parents are at work.
3. Follows material from school textbooks.

The game aims to enhance communication and cooperation among players, enhancing relationships and facilitating significant interactions. Players will learn about Indonesia's history through moving back and forth, igniting interest in various periods and their significance, for children aged 6-10.

The creation follows these phases:

1. Concepting Phase: Deciding the type of gamified app based on the data and information which has been collected.
2. Design Phase: Creation of the visual direction of the app.
3. Development Phase: Programming the app to a functioning state, while implementing the

visual concept.

4. Game Testing Phase: Testing the designed game app with the targeted users.

A student named Almira Talitha Azeline Mulyadi assisted with the creation of the visual assets as well as the programming.

4. DISCUSSION

a. Theoretical Foundation.

- Definition of family: A family is the smallest unit of society in Indonesia, consisting of the head and other members who live together under one roof. According to the Indonesian Ministry of Health, a family “the smallest unit of society consisting of the head of the family and other members who assemble and live together under one roof”. This definition emphasizes the importance of family in shaping society and maintaining a healthy environment. The recognition of parents' roles and functions assists to complement and enrich one another in a mutually beneficial way (Moran-Ellis, 2010).

- Definition of Early Childhood: According to UNICEF, individuals who are in their early childhood are in a stage of their lives that is characterized by a period of significant and quick development. Children that are less than eight years old are considered to be in their "early childhood." Children of this age have a greater capacity to absorb what they take in through their senses. One of the many areas that the child's growth and development is accelerating in at this age, including the ability to interact appropriately with others is interpersonal competence.

- Definition of Game: According to the Merriam-Webster and Oxford dictionaries, a “game” can be summarized as a physical or mental competition conducted according to rules, where participants can compete or collaborate with each other, an activity usually conducted for amusement, but also as a form of educational tool.

- Theory on Game Design: The design of a video game decides which decisions players will be able to make within the context of the game world and what effects those decisions will have on the remainder of the experience. The difficulty of the game, how the user will be able to operate the game, what information the game will convey to him, and how the game will communicate to him are all determined by the game design. The game design also defines whether the game will have win or loss criteria. In short, the design of the game is what decides each and every aspect of how the gameplay will work (Salen-Zimmerman, 2004).

- Theory on Typography in Games: Typographic aspects, like character, setting, and level designs, are important elements in games. The typographic elements of a game are important design aspects because they facilitate the connection between the user and the game and allow the user to be steered throughout the game.

Typographic modifications in games can be seen in digital surroundings, and this subject is analyzed in screen typography. Typographic applications in games that fall under the purview of screen typography necessitate a variety of adaptations in terms of legibility, readability, esthetics, and appropriateness. High-definition LCD televisions and monitors have rendered pixelization

obsolete. Nonetheless, text on screens must be altered in many ways to make it more legible. Furthermore, the compatibility of typography and product, typeface selection, and aesthetic look are some of the most important things to consider (Chan, Rabinowitz, 2006).

- Theory on Color in Games: The study of color contributes to the advancement of knowledge in a number of fields, including physics, biology, psychology, art, and design. It is a helpful tool for the game designer to emphasize function, and it is a useful one for the marketer to set themselves out with. This article discusses color in video games, including its function, how technological advancements have enhanced color presentation, and how the way our biology works affects our ability to see color. (Tulleken, 2015).

- Theory on Interactive Design: This is the definition of animation: a visual message, form, or structure that changes over time through movement (Brenda Laurel and S Joy Mountford, 1990). Numerous philosophical systems have investigated the psychological impacts of animation. The motion effect theory asserts that individuals are naturally drawn to moving items (Sundar and Kalyanaraman, 2004). People's physiological responses to movies change (Reeves and Clifford Nass, 1996), and they often get more agitated than usual (Detenber, Simons, and Bennett Jr., 1998). These physiological inputs frequently result in subjective evaluations of an individual's emotions (Lang, 1979). Similarly, the distinctiveness theory proposes that animation's ability to visually differentiate itself from the rest of the screen's stimuli during the early stages of information processing may enable it to direct a person's attention to a specific area of the display (Cropper and Evans, 1968). After capturing the audience's attention, the distinctive elements might enhance the audience's recollection of the highlighted material (Li and Bukovac, 1999).

b. Project Review.

The findings suggest that gamified digital media like Time Call can potentially play a crucial role in supporting working parents' involvement in their children's development and learning process. The flexibility and accessibility of these tools make them well-suited to the demands of modern work-life balance. However, addressing concerns about children's screen time and improving digital literacy among parents are essential for maximizing the benefits of these platforms.

The following are screen captures of the prototype game developed along with a student who developed the illustrations for the prototype.

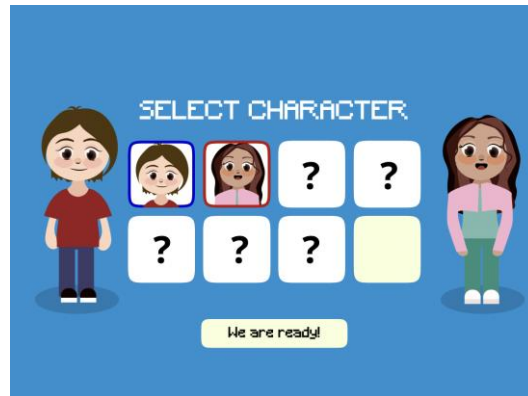


Figure 1. Character Selection screen for customization.

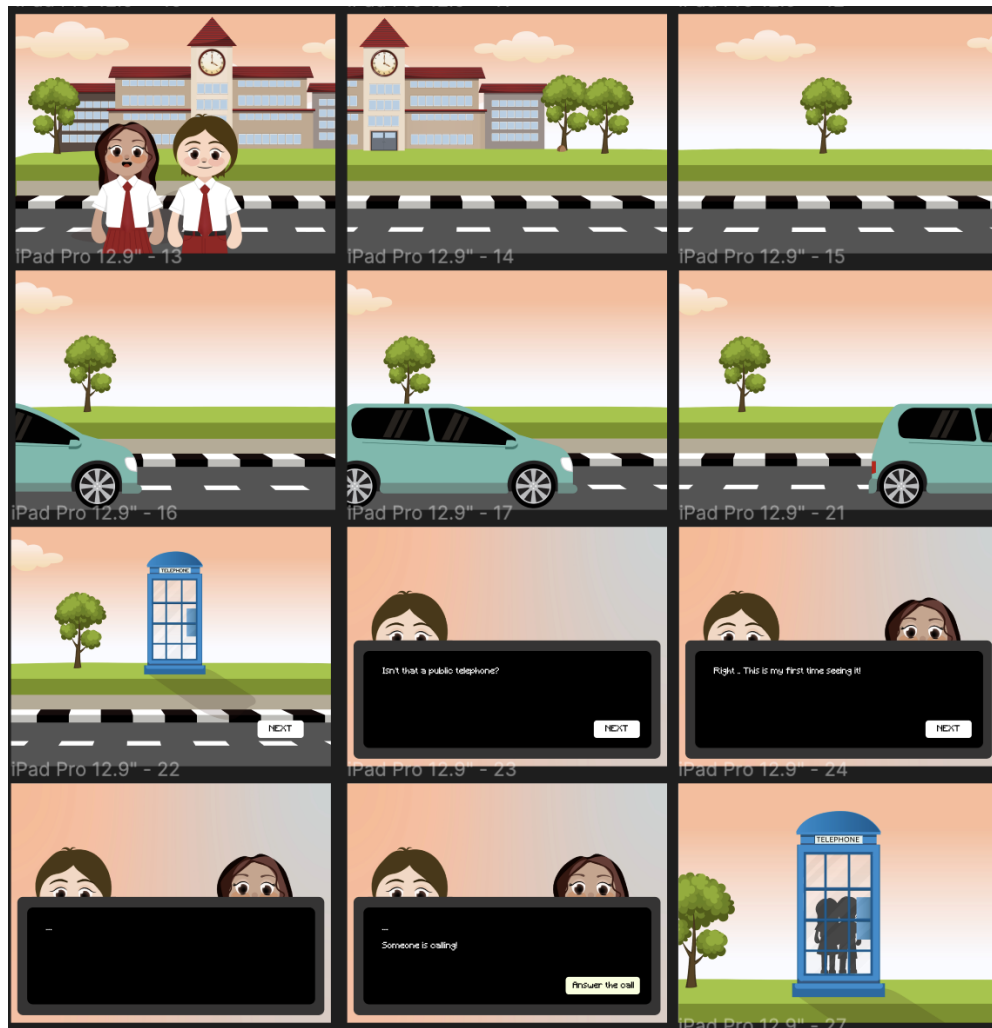


Figure 2. Character Selection screen for customization.

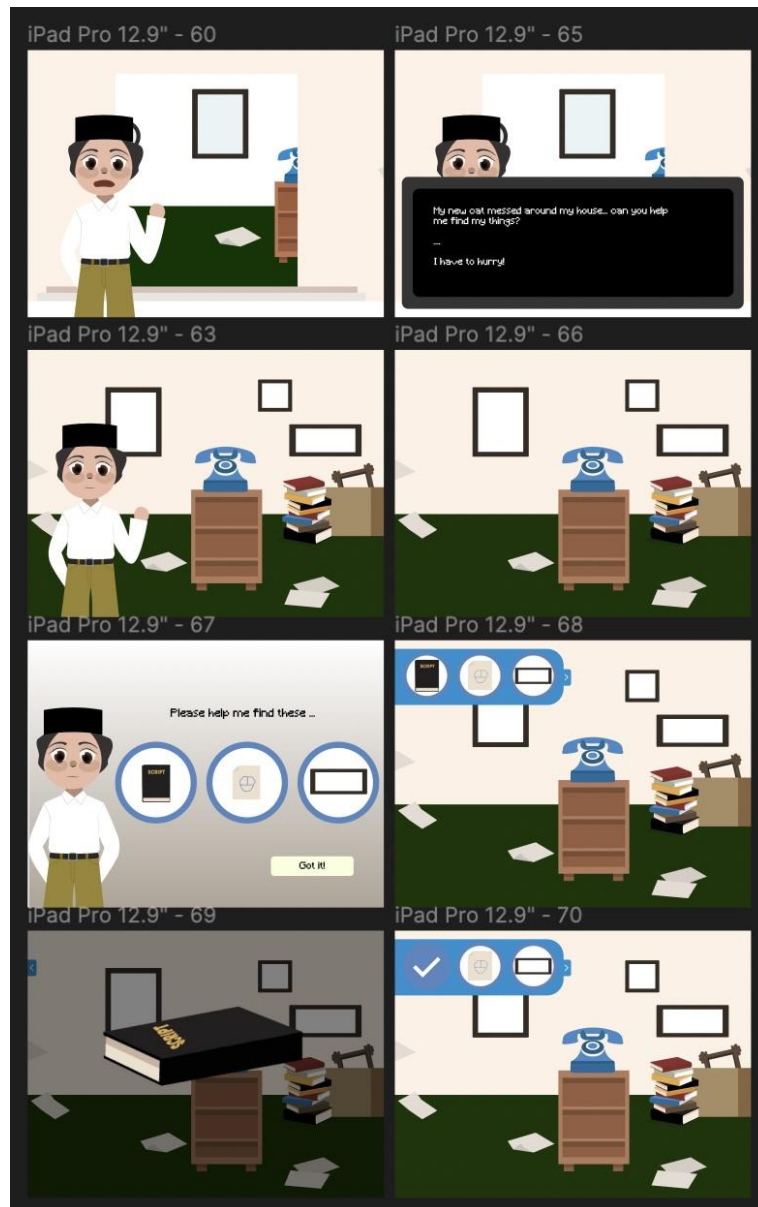


Figure 3. Interactive gameplay as seen on an iPad Pro 12.

Limitations come from the study's small sample size and short duration limit the generalizability of the findings. Future research should involve larger, more diverse samples and longer evaluation periods to fully understand the long-term impact of such tools. Another limitation is in the development of the app itself, being a prototype using Figma, and not a properly developed app.

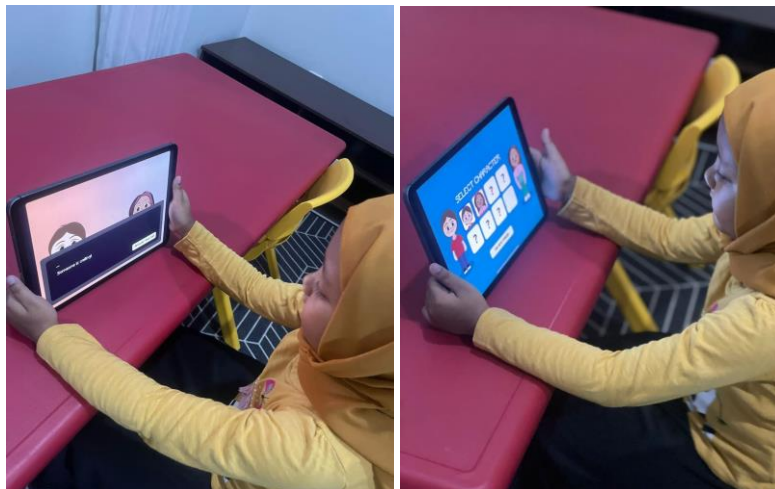


Figure 4. Playtesting on an iPad Pro 12.



Figure 5. Collaborative playtesting on an iPad Pro 12.

5. CONCLUSION

a. Result.

Gamified digital media holds promise as tools to help working parents stay involved in their young children's learning development. Children's use of personal computers and mobile devices has become widespread in various countries, with exposure varying based on factors such as technology type, age, gender, and social group. Tablets and other gadgets are being rapidly spread, with parents,

relatives, or teachers introducing children to them from a young age. To take advantage of this, a prototype co-op game with mixed media was developed to maximize interaction between parents and children.

In-depth interviews with professionals and parents were conducted to gain insights and advice for the targeted users. The prototype of the game 'Time Call' was created. This prototype aims to fill the needs of children and parents while maximizing interaction. Afterwards user testing revealed that the design and technical aspects of the app prototype were effective, with no significant issues encountered, except for minor technicalities.

b. Suggestion.

The prototype app therefore demonstrated potential in enhancing parental engagement and supporting child learning through fun, interactive, and structured activities. Continued research and development in this area could lead to more effective and widely adopted solutions.

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