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INVENTION AND INNOVATION EXHIBITION

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INTERNATIONAL JASIN MULTIMEDIA & COMPUTER SCIENCE
INVENTION AND INNOVATION EXHIBITION (I-JaMCSIIIX) 2023

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A Game-Based Learning on Food Nutrition For Children

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Abstract— Food nutrition for young children significantly impacts their overall growth, development, and well-being. A well-balanced diet not only sustains their energy for an active lifestyle but also for their immune system. In addition, it helps prevent nutritional deficiencies that can lead to health problems and cognitive impairments. Introducing healthy eating habits early on increases the likelihood of children carrying these practices into adulthood, benefiting their long-term health, including mental and emotional wellness. The food pyramid serves as a visual representation of a healthy and balanced diet, providing guidelines on the types and quantities of food required to meet dietary needs, even for children. The lack of engagement among children in learning about the food pyramid is a global concern, impacting their health and development. While parents universally aspire to their children's well-being, insufficient awareness of the food pyramid's principles contributes to health problems, including undernutrition and overnutrition. The prevalence of childhood obesity is on the rise, paralleled by instances of underweight and stunting. Despite the growing availability of educational technology, there is a noticeable absence of nutrition-focused content in children's games. Existing studies emphasize the potential of games in promoting healthier dietary habits, but the quantity of games addressing food nutrition remains limited. A small fraction of game apps specifically target children's nutrition education, and the gamified approach could enhance engagement and understanding. This study aims to develop a Game-Based Learning (GBL) application to educate young children about the nutritional value of food, enabling them to distinguish between healthy and unhealthy options based on the food pyramid. The Game Development Lifecycle (GDLC) methodology was employed for this project, adhering to its straightforward and stringent game design standards. User experience (UX) is assessed through the User Experience Questionnaire (UEQ) to gather feedback for application improvement. The results reveal a remarkable average of 78.68%, indicating high user satisfaction with the application. The game's potential impact on children is significant as food nutrition is crucial for human well-being. A comprehensive game-based solution addressing food nutrition for children holds promise for fostering healthier behaviors and addressing the health above challenges. Future research should focus on incorporating more setting functionality into the game, expanding its availability on various platforms, particularly mobile devices, and addressing any existing issues or flaws.

Keywords—Game-Based Learning, food nutrition game, food pyramid game, children's nutrition



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