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# MDA Framework for SportQuest Gamification Design: Enhancing Motivation for a Healthy and Competitive Lifestyle

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## Abstract

Physical inactivity remains a significant global health challenge, affecting approximately 81% of adolescents and a third of the adult population worldwide. Particularly in developing countries, physical inactivity rates can reach up to 70%, leading to increased prevalence of chronic diseases such as obesity, diabetes, and cardiovascular conditions. This research introduces SportQuest, a gamification-based application aimed at enhancing motivation for physical activities. The application employs the MDA (Mechanics, Dynamics, Aesthetics) framework to integrate elements of games into physical activities, focusing on improving engagement, user experience, and long-term motivation. The survey revealed that 40% of users face challenges maintaining consistent physical activity, emphasizing the importance of gamification in addressing these barriers. The effectiveness of SportQuest was evaluated using the Game User Experience Satisfaction Scale (GUESS) and customized surveys focusing on user engagement, visual appeal, and motivation. Results indicate that SportQuest gamification elements significantly enhance motivation, encouraging consistent participation. The overall feedback from SportQuest users across all categories averages at 81.3%, demonstrating the application's effectiveness in engaging users and delivering a satisfying gamified experience. These findings highlight that gamification elements, such as reward systems and social engagement, are crucial in sustaining motivation and enhancing the overall user experience in sports activities.

**Keywords:** Gamification, Game User Experience Satifaction Scale, Healthcare system, Physical activity



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