



Heuristic Evaluation of Play4Fit Health and Fitness App: A Comparison Between Experts and Novices Evaluators

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Abstract. Heuristic evaluation (HE) can be used to effectively identify usability issues in various interfaces. However, it has not been widely used in evaluating smartphone apps, especially in the health and fitness domain. One reason is the lack of HCI experts, which makes incorporating HE into the design process difficult. This paper presents the results of a study that compared HE performed by three HCI experts and three novices in evaluating a gamification app for health and fitness on a smartphone. The study used Smartphone Mobile Application heuRisTics (SMART), which focuses on smartphone apps, and a severity rating scale to determine the severity of the usability issues. These issues were mapped to the SMART heuristic. The findings indicate that novices may identify usability issues that the experts overlooked. While the experts identified eighteen usability issues, the novices found only four; however, the novice's findings may be used as a substitute for HE when experts are unavailable. Both experts and novices identified two similar usability issues, but their severity ratings differed. One possible solution to address the lack of usability issues identified by novices in HE is to use more novices instead of experts in the evaluation process.

Keywords: *experts; gamification; heuristic evaluation; health and fitness; novices; smartphone app.*

1 Introduction

The advent of digital technology has significantly changed the way people interact with various devices as they spend significant amounts of time on computers, tablets, smartphones, and television. Unfortunately, the excessive use of technology has led to unhealthy habits, particularly among teenagers, such as excessive television time and uncontrollable extreme dieting [1]. In 2011, teenagers spent nearly two hours a day on online activities and approximately three hours watching TV [2]. Meanwhile, the average daily smartphone time was almost three hours in 2019 [3]. Consequently, their physical activity time has significantly reduced, leading to physical and mental issues [4]. Regular exercise can reduce stress, anxiety, depression, obesity, coronary heart disease, heart failure, and cancers, among other health issues [5], [6]. Therefore, it is essential

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