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Development and Perceived Usability Evaluation of a Mobile application for Notetaking

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Abstract

INTRODUCTION: Notetaking is considered, by many educators, as one of the critical actions of learning. There are several note-taking methods and approaches. Based on these methods and approaches, various applications, whether mobile, desktop or -Web-based, were developed.
OBJECTIVES: In this paper, a novel note-taking application based on Cornell Technique, is presented. Its development process and user acceptance trend are exhibited and results for user evaluation based on user satisfaction are presented.
METHODS: For the software development process, Incremental Model was adopted. Requirement Analysis included, aside from examining principles and related note-taking structure of Cornell Technique, investigating (i) how to perform notetaking as an activity of learning, (ii) its product and (iii) relationship of notes for the purpose of storage. Models containing sub-activities, such as reviewing note have been identified and some were selectively adopted and related functions such as review alert (tickler) and collaboration on notetaking have been implemented. To the purpose of storage, a tree-based scheme called collection was modelled. User interfaces were first designed as mockups and click-through prototype using Adobe XD. The mobile application was implemented in Dart programming language. Google's Firebase Service and Flutter Framework was adopted. The mobile application was compared with its equivalents in the Google Play Store and user statistics were investigated. To evaluate perceived usability, the System Usability Scale is adopted and applied to 14 university students conforming to determined persona.
RESULTS: The application has been published in Google Play Store for users to install for free on 18th March 2022. As of 10th September 2023, total number of downloads is 5K and the Cornell Note mobile app is currently installed on 1108 devices. For the last three-month period (from 11th June to 10th September 2023), the active users per month changed in an increasing trend from 450 to 589. The average engagement time on 11th of April 2023 was 28 minutes 00 seconds. As the number of monthly active users increased, the average engagement time measured on 10th September 2023 decreased to 23 minutes 31 seconds. However, engagement rates measured were 76.91% and 77.19%, respectively. The mean SUS score was found to be equal to 79.5.
CONCLUSION: The user statistics and comparison with equivalent mobile applications reveal that Cornell Note has potential to grow as a mobile application for notetaking since it has a good perceived usability, however, there is room for improvement. Considering any extra marketing effort was not spent for the application such as application store optimization, the statistics are another evidence for user appeal and acceptance. However, it is important to add new functionality without complicating the user experience so that user appeal and acceptance boosts.

Keywords: notetaking, Cornell Technique, e-learning, mobile application

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