TUXEL: A Technique for User eXperience Evaluation in e-Learning

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Abstract

The widespread adoption of Internet-based technology led educational institutions to invest in new technologies to support teaching and learning process. In this context, platforms such as Learning Management Systems (LMSs) have been adopted by educational institutions to provide teaching materials, online courses and also complement face to face learning. As the number of universities using LMSs grows, research on the quality in use of these platforms regarding quality attributes such as usability and UX has attracted considerable interest. Although several usability/UX evaluation techniques have been proposed in the literature, many authors claim that LMSs have specificities that are not addressed by general evaluation techniques. Given that an LMS should also meet the pedagogical objectives of the instructor, rather than just being easy to use, many authors have been consolidating interface usability criteria with pedagogical aspects in order to evaluate these platforms adequately. However, despite the efforts in developing such techniques, there is no widely accepted set of principles to develop these techniques, and most of them are still in early stages. In this context, this work proposes the development of TUXEL (Technique for User eXperience Evaluation in e-Learning), in addition to a tool designed to support the evaluation process. In order to develop TUXEL, we applied Design Science Research (DSR) methodology, which consists in the design and development of an artifact to interact with a given problem context and improve something in this context to solve a given problem. By employing DSR, the researcher combines theory and practice, developing the artifact with a high level of rigor, driven by theoretical assumptions and empirical evidence. Moreover, DSR allows to clearly define the problem context and highlight the knowledge about how the proposed solution may help. By doing this, the results may be useful for both academic and practitioner audiences, which may use our work as the basis for the development or improvement of usability/UX evaluation techniques.