Title	オンライン学習経験を向上させるためのMOOCの非同期型ディスカッションフォーラムデザイン:SWAYAM の事例研究
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Abstract

Background

Though online learning has shown rapid growth in the past two years, it still lacks relevant learning discussions among learners and instructors specifically in the case of asynchronous courses. The effectiveness of asynchronous online learning can be determined by analyzing the discussion forums. Also, numerous studies in the past few years have increasingly focused on design issues of massive open online courses (MOOCs), but only a few researchers have focused on designing the discussion forum of MOOCs by bridging the gap between the learners and the educational designer in learning experiences to improve the interaction among learners and instructors. In addition, the literature on this discipline from the student's perspective is sparse and is based only on the classification of discussion forum posts.

Originality

This doctoral research conducted a unique navigation experiment to address the discussion forum's organization and the forum usability issues from the learner's perspective. The research combined both quantitative and qualitative approaches to understanding discussion forum posts and learners' experiences. These findings add substantially to our understanding of an interactive user interface in terms of design, usability, and time efficiency that can increase the interest of learners and instructors.

Research objectives

The main research objective of the thesis is to propose a design method for discussion forum of MOOCs focusing on interaction to enhance learning experiences. Accordingly, this research has two sub-objectives: The first sub-objective is to recommend principles for relevant interaction through developing a classification method of posts in an asynchronous discussion forum. The second sub-objective is to bridge the gap between learners and educational designers of MOOCs through designing asynchronous discussion forums.

Research methods

The first study to fulfill sub-objective 1, namely Study1, presents a framework for analyzing content-related and non-content-related posts and their interaction in an asynchronous discussion forum. The second study to achieve the second sub-objective 2 conducted an unique navigation experiment to observe learners' behaviour and usability of asynchronous discussion forum. The experiment was designed based on three factors: 1.) classification of posts and type of participants, 2.) design of three different patterns of discussion forum 3.) evaluation of learner's experience.

Findings

The findings of study 1 suggest significant recommendations that help in increasing relevant interactions among learners and instructors along with eight principles. The most striking observation to emerge from the analysis was the redundancy of non-content related posts was high in number which hinders the relevant discussion related to course content. Interestingly, it is found that overall course design is directly proportional to the learning process. Therefore, eight principles based on social, cognitive, and teaching presence were recommended in asynchronous learning and discussion forum to enhance the learning process and maintain interaction among learners and instructors.

Study 2 contributes to the re-designing of the effective asynchronous discussion forum to improve the quality of the learning process. Despite interest in issues faced by learners, most of the studies have focused on the instructor's experience and the learner's performance in MOOCs. The present study is expected to contribute to our understanding of learners' perspectives in asynchronous discussion forums. There is a significant difference between the user interface of the original and the other two redesigned discussion forums that were designed based on the results of the first sub-objective study. Our research has highlighted the importance of discussion forum design that MOOC designers can implement for effective and efficient interaction in the asynchronous discussion forum. This study contributes to improving the quality of the learning process in online learning.

Implications

Implementing the discussed designed themes based on human-centered, elements of the educational model and machine learning model leads to a better understanding of discussion form posts and aid in re-designing the asynchronous discussion forum. A framework for the classification of posts and investigating responsible factors for relevant interaction among learners and instructors from study 1 can be adopted by researchers, developers, and facilitators of MOOCs. It is recommended that the design theme discussed in the research study should be adopted by the MOOC designer along with the understanding of the roles of the instructors and the learners for an effective and efficient online education system. A well-designed asynchronous discussion forum leads to better construction of structured knowledge and ultimately in the learning process and improves the overall growth of MOOCs. Research study 2 provides a framework with design demerits, design merits, and design ideas to bridge the gap between learners and the educational designer for learning experiences in the asynchronous discussion forum of MOOCs and create equal attention and opportunities for learners. Our study provides the foundation for a new way of constructing knowledge and producing better online education systems in developing countries also.