

Development and validation of student's MOOC-efficacy scale: exploratory factor analysis

ABSTRACT

Massive Open Online Courses (MOOCs), the fast developing teaching and learning platforms of global interest, are the product of higher education's expanded usage of e-learning. MOOCs have been heralded as the potential educational breakthrough for the 21st century. A positive attitude toward self-efficacy is essential for successful MOOC implementation. However, only a few studies have been conducted to ascertain a student's MOOC efficacy level, and a very limited scale for assessing a student's MOOC efficacy has been identified in the context of Malaysia. This study aims to develop and validate a student's MOOC-efficacy scale for higher institutions. In this study, students' MOOC-efficacy was conceived in four ways (i.e. information searching, making queries, MOOC learning, and MOOC usability). A descriptive research design with a scale was employed to collect information from 289 students enrolled in higher institutions. The Educational and Psychological Testing Standards were adapted to develop a scale to gauge students' MOOC-efficacy. The scale's appropriate items, as well as its validity and reliability, were determined using Exploratory Factor Analysis (EFA). Significant levels of validity and reliability for the developed scale were found. The scale comprised four dimensions, i.e., information searching (three items), making queries (seven items), MOOC learning (six items) and MOOC usability (seven items), amounting to a total of 23 items. This scale was then used to determine the efficacy of higher institution students in using MOOCs. The eigenvalues of the four MOOC efficacy dimensions were within the range of 1.39 to 8.49. The factor structures explained 63.9% of the total variance. The scores of reliability varied in the range of 0.822 to 0.890. This work produced a psychometrically sound scale to measure students' MOOC efficacy. Students, educators, administrators, and other individuals may benefit from the application of the verified MOOC efficacy scale. The information generated from the scale can be utilized to determine the training needs of students, educators and MOOC developers.

Keyword: Exploratory Factor Analysis (EFA); Massive Open Online Course (MOOC); Student's; MOOC-efficacy; Scale development; Higher institutions