



Research Paper

Proposing a causal model of online teaching effectiveness based on online teaching literacy: The mediating role of online teaching self-efficacy: A path analysis

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Abstract

Aim: This study aimed to propose a causal model of online teaching effectiveness based on online teaching literacy, with the mediating role of online teaching self-efficacy. The statistical population of this applied quantitative correlational research comprised all professors of Payame Noor universities in Iran. The sample consisted of 350 professors, conveniently selected. Online Teaching Literacy, Online Teaching Self-Efficacy, and Online Teaching Effectiveness Questionnaires were used to collect data, which were analyzed in SPSS 24 and AMOS. The findings showed a correlation of 0.68 between online teaching literacy and online teaching self-efficacy, a correlation of 0.70 between online teaching literacy and online teaching effectiveness, and a correlation of 0.77 between online self-efficacy and online teaching effectiveness, significant at the $p < 0.01$ level.

Keywords: *Online teaching effectiveness, Professors, Online teaching self-efficacy, Online teaching literacy*

Introduction

The growth and development of information and communication technology (ICT) have revolutionized the modern methods of electronic learning and expanded online classes into an inclusive format to reduce costs and save time (Keengwe & Georgina, 2012:370). As a result, educational institutions have oriented towards free and accessible educational systems for mass audiences (Hanushek, 2011:475; Rudestam, 2004:427). In fact, we are entering a new world of education in which learners can teach themselves regularly through online courses (Anderson, 2008:22). ICTs have recently created new challenges and opportunities for educational design (Sejzi, Aris & Yahya, 2012:566). Universities and educational centers cannot meet the needs of the country and the large number of applicants for high-quality education merely through face-to-face education. As such, most universities have turned their attention towards virtual education (Yasini & Taban, 2015:183).

Meanwhile, some researchers have shown that the relationship between online teaching effectiveness and online teaching literacy is mediated by variables such as educational satisfaction (Aldhahi et al., 2022:1329) and the level of online teaching self-efficacy (Ozkan, Koseler, & Baykal, 2009: 112). The present study examined the role of online teaching self-efficacy in the relationship between online teaching effectiveness and online teaching literacy. The COVID-19 pandemic has impacted the activity of universities and educational institutions (Baroudi & Shaya, 2022). Thus, this study aimed to propose a causal model of online teaching effectiveness on online teaching literacy with the mediating role of online teaching self-efficacy.

Methodology

This was an applied quantitative correlational study using path analysis. The statistical population comprised all the professors of Payame Noor universities in Iran who (according to self-reports) participated in one or more online courses and electronic education in the academic year 2021-2022. A sample of 350 was conveniently selected. By eliminating the incomplete questionnaires and outliers, 335 questionnaires were finally included in the data analysis.

Descriptive statistical methods (mean and standard deviation), Pearson's correlation, and structural equation modeling (SEM) were used to analyze the data to propose the model.

The participants of this study were four female Ph.D. candidates. This small sample was selected because this study needed specific detailed interpretive descriptions and a deeper interaction with each individual. Semi-structured interviews were used to collect the data. Due to the COVID-19 pandemic,

the interviews were conducted through phone calls, and the additional steps were taken through WhatsApp Messenger. The interviews were transcribed immediately, and the final transcripts were handed over to the participants for review.

Results

Based on the findings of the research, it was found that among the sub-components of online teaching literacy, time management has the highest average and technical competence has the lowest average, which shows that the attention and emphasis on the variable of time management has been more than other variables. Also, based on the findings, it was found that among the sub-components of online teaching self-efficacy, the classroom management sub-component has the highest average and the effectiveness sub-component in student participation has the lowest average, which shows that the attention and emphasis on the online teaching self-efficacy variable is relatively high. It has been more to other variables. In addition, the findings show that among the sub-components of the effectiveness of online teaching, the sub-component of interaction between professors has the highest average, on the basis of which it can be said that this variable is more important and the participants have devoted higher scores to this sub-component.

Based on the obtained correlation coefficients, it is clear that the relationship between the self-efficacy of online teaching and the effectiveness of online teaching is higher than other relationships, which indicates the importance of self-efficacy in the field of online teaching effectiveness.

AMOS bootstrap maximization method was used to check the significance of indirect hypotheses. Considering the significance of the direct paths of online teaching literacy to the effectiveness of online teaching and at the same time the confirmation of the path of online teaching self-efficacy to the effectiveness of online teaching was investigated through the bootstrap method. As the results show, the lower limit of the confidence interval for online teaching self-efficacy as a mediating variable between online teaching literacy and online teaching effectiveness is (-0.0115) and its upper limit is (-0.0611). The confidence level for this confidence interval is 95.

Considering that zero is outside this confidence interval, this relationship is a significant mediator; Therefore, online teaching self-efficacy plays a role as a mediating variable in the relationship between online teaching literacy and online teaching effectiveness.

Discussion and conclusion

This study aimed to test the fit of the proposed model and the causal relationships between predicting online teaching effectiveness based on online teaching literacy mediated by online teaching self-efficacy in the form of a structural model.

The findings revealed that online teaching self-efficacy mediated the relationship between online teaching literacy and online teaching effectiveness. One of the most important theoretical implications of this study is that it has identified and fully examined a major variable in virtual and online teaching and learning (online teaching self-efficacy) and delineated its relationship with other variables; all this contributes to the theoretical development of online learning. One of the most important practical implications of this study is the development of two questionnaires (for online teaching self-efficacy and online teaching literacy), which will help researchers when investigating online teaching.

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