

Critical Success Factors for Sustainable Online Engineering Education in Bangladesh

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Abstract

The largest disruption of education system in the history has been created due to the global pandemic COVID-19. According to WHO, nearly 1.6 billion learners in more than 190 countries are being affected by the lockdown of educational institutes during this COVID-19 pandemic. In Bangladesh, all the educational institutes have remained closed since 17 March, 2020. More than 36 million learners including the engineering students are now facing the discontinuation of their regular academic curriculum and losing the learning opportunities. This interruption in the engineering education will have a significant negative impact on the country's economy since it will interrupt the supply of engineers for the country in the near future. The only alternative way is the online learning system for the continuation of the engineering education during this COVID-19 pandemic. Many educational institutes have tried to start the online education in Bangladesh. However, many of them have failed to establish the effective and sustainable online learning system since this is a very new phenomenon to the academicians of Bangladesh. Therefore, this study aims to explore the critical success factors for delivering the sustainable online education to the engineering students during COVID-19 pandemic. Reviewing the previous literature from various renowned databases, 10 success factors for efficient and sustainable online engineering education were selected initially. A detailed questionnaire was prepared based on these factors and sent to 30 experts through email. These experts were selected using purposive sampling method and all of them have more than 12 years of experiences on the method and practice of teaching. After collecting all the responses from the experts, Pareto analysis has been performed to identify the most significant critical success factors for sustainable online engineering education. The findings show that the selection of appropriate technology, customization of course structure, support from the institution, selection of appropriate evaluation system and support from the students are the most 5 significant critical success factors for sustainable online engineering education in Bangladesh. Although many established technologies are now available for online education, selection of appropriate technology according to the course context is very crucial to make the online education system sustainable. Effective online engineering education largely depends on the course structure and contents. Hence, customization of course structure is required to ensure effective online engineering education. Moreover, support from the institution as well as from the students is required to make the online education system sustainable. It is also required to select the appropriate evaluation system for the students to make the online learning more interactive. The findings of the study can help the academicians and the authorities to formulate effective strategies to establish effective and sustainable online education system in Bangladesh.

Keywords

Sustainable Online Education; Critical Success Factors; Engineering Education; COVID-19; Pareto Analysis.

Biographies

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