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The state of e-learning: Lessons and future trends

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Abstract--E-learning represents one of the most significant and disruptive changes, as well as challenges within our society. Its rapid growth will continue along the following years. As a result of the Covid-19 pandemic, thousands of research papers with different perspectives addressed the role of E-learning along the last two years. The present research addresses the state of E-learning after its fast-tracked imposed implementation along the previous years, as well as the results on academic performance and its future trends.

Keywords--e-learning, education, trends, academic performance, blended learning.

Background

According to Crouch et al. (2021), the present context represents one of the most volatile and uncertain periods in recent years. Faculty must achieve goals within the academic environment that many times seem contradictory. Pedagogy, academic results, economic challenges, and teaching philosophies represent different objectives that must be taken into consideration when managing academics. Furthermore, individual student goals should be aligned with society needs and educational resources. During the past two years, universities across the world requested their professors to continue classes as they used to, but in many cases without a detailed plan, nor training or the adequate resources. Even more challenging, students were evaluated in many cases with similar procedures than during in-person classes, but with a camera monitoring them. Most of the research performed along the past two years, tried to address the differences in

academic performance between in-person and these E-learning experiences. As Fernandez et al. (2022) state, ‘...we should understand the great differences between a well-planned online program and a quick fix to continue providing education’

State of the Matter

Despite the large number of E-learning research who signifies an increase on academic performance versus in-person teaching Aljaser (2019), Jawad and Shalash (2020), Majeed (2021), Keerthi et al. (2022), this potential benefit might not reach all students. These who might have more difficulties accessing technological resources or have weaker educational files and challenging personal contexts might not attain the benefits of E-learning, Fernandez et al. (2022). Furthermore, there are very few studies that take into consideration a control group when comparing academic performance and overlook the fact that assessment settings might be rather different during E-learning, versus in-person teaching. Evidence also suggests (Riegg, 2021), a reduction in the course completion rates, as well as a loss of connection among students and between students and faculty during E-learning. Furthermore, pre-pandemic (Figlio et al., 2013, Joyce et al., 2015; Alpert et al., 2016) as well as pandemic randomized control trials that also eliminate student selection bias (Altindag, 2021), found that E-learning teaching resulted in lower student performance versus in-person teaching.

The drastic forced change from in-person teaching to E-learning from 2020 on and its potential negative academic and personal effects, should not undermine the potential benefits of a well-planned and pedagogically sound E-learning academic experience. The benefits of E-learning include the wide range of on-line ready to use materials and multimedia resources that might enhance the learning experience, the increase on affordability on the student side by reducing schooling, transportation and housing costs, increasing available academic options, while improving attendance and the student balance between academic and social life.

The variables that along the literature have a greater consensus displaying a positive effect on E-learning and academic achievement are the following: students’ readiness, Yavuzalp and Bahcivan (2021), students’ positive attitude towards E-learning, Torun (2020), student engagement Ibrahim et al. (2021), E-learning adoption and digital readiness Kim et al. (2019), instructors’ attitude towards E-learning and E-learning environment Fernandez et al. (2022). E-learning environment along the literature varies its focus from a classroom specific context to a broader personal student framework, as well as the cultural context in which the learning process takes place. As Ibanez and Sisodia (2020) and Ibanez et al. (2022) state, cultural aspects might affect the nature and degree of these relations.

Trends in E-learning

As new technologies evolve, E-learning adapts and is able to meet new student, institution and market demands. Among the trends in E-learning, recent

experiences, and research focus on the following ones. Mobile learning or m-learning focuses on E-learners' requirements by encouraging instructor and student interactions, promoting student engagement, and enhancing the E-learning environment Neffati et al. (2021). Hybrid learning or blended learning allows students to benefit both from the positive aspects of in-person teaching and E-learning. According to Castro-Rodrigues et al. (2021), this model promotes student autonomy and provides a positive effect on motivation and learning effectiveness. Virtual reality and wearable learning already have demonstrated positive effects on students with learning difficulties by providing safe learning environments and the ability to monitor their reaction to the educational process in real time Stasolla (2021). Gamification of certain areas within the E-learning experience provides benefits on student motivation, increases academic engagement, and improves E-learning environments Saleem et al. (2021).

Conclusion

The present and future social, economic, and academic context requires a rapid learning approach Engelbrecht et al. (2021), to respond more effectively to the fast changing and ever more challenging environment that surrounds education. E-learning provides a tool to react and respond to these challenges in a more flexible, adaptable, and far-reaching way than in-person learning. Institutional support, faculty development programs, and providing students with the adequate digital readiness and academic environments, remain critical elements for the success of the present and future implementation of E-learning strategies.

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