Virtual Learning during COVID-19: Exploring Challenges and Identifying Highly Vulnerable Groups Based on Location

ABSTRACT

Amid the outbreak of the COVID-19 pandemic in the year 2020, educational platforms have been forced to change and adapt from conventional physical learning to virtual learning. Nearly all higher learning institutions worldwide are forced to follow the new educational setting through virtual platforms. Sabah is one of the poorest states in Malaysia with the poorest infrastructure, with the technology and communication facilities in the state remaining inept. With the changes in virtual platforms in all higher education institutions in Malaysia, higher learning institutions in Sabah are expected to follow the lead, despite the state lagging in its development. This has certainly impacted the overall productivity and performance of students in Sabah. Therefore, this study aims to explore the challenges of the implementation of virtual learning among students in Sabah. More specifically, this study seeks to identify vulnerable groups among students based on their geographical location. To achieve the objective of this study, a survey has been conducted on a total of 1,371 students in both private and public higher learning institutions in Sabah. The sample selection for this study was determined using a purposive sampling technique. Based on Principal Component Analysis (PCA), it was found that there are five challenges in virtual learning faced by students in higher learning institutions in Sabah. These are the unconducive learning environment (var(X) = 20.12%), the deterioration of physical health (var(X) = 13.40%), the decline of mental health (var(X) = 12.10%), the limited educational facilities (var(X) = 10.14%) and social isolation (var(X) = 7.47%). The K-Means Clustering analysis found that there are six student clusters in Sabah (Cluster A, B, C, D, E & F), each of which faces different challenges in participating in virtual learning. Based on the assessment of location, almost half of the total number of districts in Sabah are dominated by students from Cluster A (9 districts) and Cluster B (4 districts). More worryingly, both Cluster A and Cluster B are classified as highly vulnerable groups in relation to the implementation of virtual learning. The results of this study can be used by the local authorities and policymakers in Malaysia to improve the implementation of virtual learning in Sabah so that the education system can be more effective and systematic. Additionally, the improvement and empowerment of the learning environment are crucial to ensuring education is accessible and inclusive for all societies, in line with the fourth of the Sustainable Development Goals (SDG-4).