Visual Representation of the Students' Controllable Factors, Which Affects Their Performance, Using the PS2CLH Model

Authors:

Arlindo Almada, London Metropolitan University, United Kingdom
Qicheng Yu, London Metropolitan University, United Kingdom
Preeti Patel, London Metropolitan University, United Kingdom

Abstract:

In recent years, the number of studies measuring and representing students' learning and performance has increased. However, there remains a lack of research that represents and measures factors within students' control and which impact their academic success. For university managers, subject tutors and academic mentors, it is essential to measure, visually represent, analyse and monitor student performance alongside factors affecting their academic achievement, in order to enhance the student experience. This research evaluates the connection among students' behaviours and lifestyles, in particular the controllable factors which affect students' performance. Controllable factors incorporated in our PS2CLH model are the perspectives of Psychology, Self-responsibility, Sociology, Communication, Learning and Health & wellbeing. This paper proposes a visual representation and measure, in three-dimensional space, of a student-controllable learning factor that affects their performance, based on the PS2CLH model. A cluster presentation allows for targeted interventions for students who need additional support, it also indicates clearly where each student stands and the necessary direction each student needs to take to get to the desired cluster. Initial data presents a clear pattern of creating a diagonal of seven clusters or stages from the bottom $(0, 0, 0)$ to the top $(100, 100, 100)$ and leading to the use of filters or queries to better visualisation and understanding of controllable factors such as fear,

anxiety, stress and time management. Preliminary results highlight patterns of best-performing students with specific factors located into the highest clusters six and seven. This insight facilitates data-driven decisions and effective student interventions.