Improving Interactivity via iControl: A Presentation Mobile app

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Abstract: Quality teachers are ones who have positive effects on student studying progress via blended teaching and learning (T and L) of content, pedagogic, communications and interpersonal skills. They have integrated information technology (IT) tools in T and L inside and outside the classroom. T and L while controlling IT tools such as computer, PowerPoint, Media Player, wireless presenter and etc. can be very troublesome especially when multiple tasks are in progress. The teacher usually has difficulties to juggle between controlling the computer and interacting to the students who are sitting far away from him or her. In order to improve interactivity between teacher and students in an integrated learning environments, this study aims to design and develop a mobile app (*iControl*) that can remotely control a specific connected server computer for presentation. *iControl* aims to turn a smartphone into a presentation tool. *iControl* can remotely control a connected computer for presentation on the go. Among the usages of the app include functioning as a controller for mouse, keyboard, presentation, media player, camera for current screenshot, file transfer, file downloader and system power. An empirical test of 196 students has been carried out for investigating the effectiveness of the developed mobile app. The results show improvement on interactivity between teacher and students with the developed mobile app.

Keywords: Interactivity, presentation, integrated learning, teaching and learning

Using Academic Analytics to Predict Dropout Risk in Engineering Courses

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Abstract: The increase of data generated and stored in the educational databases makes it possible to obtain essential information about the teaching and learning process. School dropout and performance problems continue to represent issues which challenge teachers, researchers and higher education institutions to seek

solutions. Through the use of academic analytics techniques for data analysis, a sample of 1,844 students between graduates and dropouts on the period between 2007 and 2015 were used as the basis. The methodology followed is essentially quantitative and it allowed to compare student profiles and degrees based on scores, number of attempts and other performance indicators. The data set was processed using Excel software for statistical analysis and R software for data mining using the k-Means and C5.0 algorithms. The propose of a model based on decision trees has as main objectives the generation of standardized instructions, easy interpretation and allow the addition of several possible outcomes, contributing to the decision-making process. The results of this study resulted in contributions which enable higher education institutions to identify students with performance problems and those at risk of dropout and, therefore, allow teachers and course directors to adopt better strategies to increase success and reduce dropout.

Keywords: academic analytics, higher education, dropout, education, engineering

Game Based Learning in Laboratory Practice

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Abstract: This paper describes a tool that it used in pedagogy nowadays, Gamification, which is based in the use the psychology of the game, its mechanics, and dynamics in non-ludic environments such as a classroom or a laboratory. This paper presents the experience within a teaching innovation project of the University of Alcalá in Spain, mainly the gamification of several laboratory practices. The main objective of the project is to eliminate the negative prejudices, fear or rejection generated by students when studying science subjects, thus turning the learning process into a game, combining challenges and fun and which seeks the motivation of the students at the same time that