

How to Use Emerging Technology to Predict Success in Undergraduate Nursing Programs

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Introduction

Emerging technology has the power to impact institutions of higher education. One approach for using technology is predictive analytics (P.A).

What is P.A.?

Predictive analytics is defined as an arena of statistics that deals with data mining using a variety of technologies to reveal trends and patterns within large data volumes which are then used to predict behaviors and events. Few would argue that a need for registered nurse positions is a national concern, with nursing school attrition rates contributing to the shortage. The successful retention of nursing students relates to a spectrum of variables. Therefore, it is critical that nursing programs admit students with the highest probability of success prior to admission to a nursing program.

Literature Review

A review of the literature revealed several factors associated with student academic success in nursing programs including pre-admission science GPA, and a pre-admission pathophysiology course. Another factor associated with nursing student success includes performances on standardized exams prior to entering nursing school and throughout the nursing program. In an attempt to provide an evidence based admission process the authors chose to utilize predictive analytics as an objective validation component. Criterion related validity was used in a predictive manner to determine the ability to differentiate between successful and unsuccessful students. Content related admission requirements provided the framework for the study. The various entry academic criteria with predictive value selected for success in the nursing program included: TEAS, cumulative GPA, Science GPA, and first time success in completion of pre-requisites.

Methodology

The researchers used a retrospective correlational design to identify relationships between independent variables related to pre-nursing requirements and the dependent variable of successful completion of the nursing program. The retrospective design study allowed the researchers to use archived data to ensure a sufficient sample size. The study was conducted at a traditional BSN program located in the Southwest region of the United States with one central location and two regional locations. The convenience sample consisted of all students admitted to the BSN program from Fall 2015 through Fall 2017. The program admitted three times per year on two campuses and twice per year on one campus, providing a sample size of approximately 907.

Results

Logistic regression was used to determine the relationship between the variables and successful completion of the nursing program. The research findings revealed an approximately 95.2% success rate based on the selected criteria. Thus, only 4.8% were unsuccessful in the nursing program supporting the use of emerging technology of predictive analytics to make admission decisions. Assessment of the prior academic performance of the student was validated as the predictor of success. While the study revealed positive results, some additional areas for consideration would include investigation of demographics, interview processes, and correlation to success.

