

RESEARCH BRIEF:

Evidence based curriculum design – Statistically linking CARP usage levels and nursing student attrition

Nurse educators are increasingly interested in implementing evidence-based curriculum. As a partner in the education of future nurses, ATI continuously seeks to empirically validate outcomes associated with its nursing education solutions. This paper outlines one such validation effort and highlights the predictive relationship between the utilization of CARP and class level attrition rates. Study findings show a statistically significant relationship between higher CARP utilization and lower nursing student attrition. Implications of this relationship are discussed.

INTRODUCTION

Prevention of academically related turnover through the implementation of evidence-based curriculum design represents a best practice in attrition prevention. Although ATI has many products that are designed to assist students achieve their dreams of becoming a nurse, it is only through effective implementation of these products in concert with quality nursing curriculum that meaningful reductions in attrition can be realized. This paper outlines the attrition-related reductions that are possible through effective use of ATI's Comprehensive Assessment and Review Program (CARP). The CARP product is used by a majority of ATI customers and therefore presents a unique opportunity to empirically examine product usage and attrition patterns across thousands of cohorts of nursing students.

METHOD

Defining Product Usage

As CARP is comprised of several different products and tests, usage data was gathered for each component (e.g., Comprehensive Predictor, Pharmacology Made Easy, Content Mastery Series). To be considered a CARP user, a student needed to actively use a majority of CARP components. After individuals were designated as either CARP-users or non-CARP-users, usage patterns were evaluated at the cohort level. Cohorts were considered to be "À la carte" if 0% of students were "CARP users" (i.e., less than a majority of

CARP products were being used by the student). "Very Low" usage cohorts were identified if between 1 and 24% of students were deemed to be active CARP users. Additional usage designations were identified using the criteria outlined in Table 1.

Table 1. CARP usage segmentation

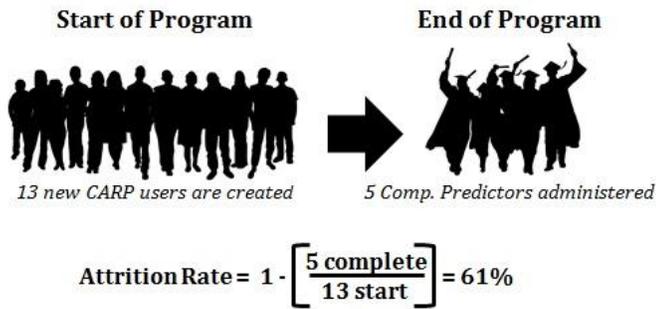
Usage Category	Usage Levels (i.e., proportion of class deemed to be a "CARP user")
À la carte	0%
Very Low	1-24%
Low	25-49%
Moderate	50-74%
High	75-100%

Defining Attrition

There are fundamental methodological problems associated with the study of attrition (Deary et al., 2003; Glossop, 2001). The lack of a common method for calculating attrition across programs makes it difficult to analyze attrition throughout higher education. The CARP product offers a unique insight into nursing student attrition due to its inclusion throughout the duration of a student's academic career. For example, at the beginning of any nursing program cohort, a set number of users are granted access to CARP content. Furthermore, at the conclusion of the program, any remaining students within the same cohort are granted access to ATI's Comprehensive Predictor assessment. As a result, CARP and its associated Comprehensive Predictor assessment may be used as a

product-based proxy for starting and ending class size for each cohort, and used to calculate a cohort attrition rate as shown in Figure 1.

Figure 1. Product based attrition calculation



Data Collection & Analysis

Three years of ATI CARP product usage data were examined. A minimum of 5 students per cohort were required for inclusion in this study's analysis. As usage patterns were categorized into 5 groups (e.g., À la carte, Moderate, etc.), ANOVA was used to evaluate the relationship between CARP usage and cohort attrition.

FINDINGS

A statistically significant relationship between usage level and average class level attrition was observed $F(5,6474) = 7.308, p < .001$. When this relationship is examined further, (see Figure 2), the "high" CARP usage group was found to be associated with significantly lower attrition rates compared to all other usage

groups. These differences represent a moderate effect size (weighted average Cohen's $d = .437$) and underscore the potential impact of CARP utilization on student attrition.

CONCLUSION

ATI's Comprehensive Assessment and Review Program was designed to be a supplement to course materials as well as a means for nursing students to review potentially difficult course content. As such, CARP can serve as a means to retain students at risk for academic-related attrition. The research outlined in this paper underscores that greater levels of CARP implementation are associated with lower attrition rates. As a result, nurse educators can be assured that consistent implementation of CARP has potential to positively impact attrition rates.

REFERENCES

Deary, I. J., Watson, R., & Hogston, R. (2003). A longitudinal cohort study of burnout and attrition in nursing students. *Journal of advanced nursing, 43*(1), 71-81.

Glossop, C. (2001). Student nurse attrition from pre-registration courses: investigating methodological issues. *Nurse Education Today, 21*(3), 170-180.

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Figure 2. Average attrition rates by class-level CARP utilization

