

Cover Sheet

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Title of project:

Exploring determinants of international students' academic performance using longitudinal data analysis

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Abstract

Exploring determinants of international students' academic performance using longitudinal data analysis

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A large body of literature has investigated the various academic, social, psychological, and demographic factors contributing to academic achievement of international students enrolled in English-medium higher education institutions. Among these predictors of international students' academic performance, their academic English skills are found to be one of the most significant precursors to academic success given that academic achievement measured by their Grade Point Averages (GPAs) were strongly associated with their English language proficiency measured by standardized academic English language exams such as Test of English as a Foreign Language (TOEFL) and International English Language Testing System (IELTS) (Martirosyan, Hwang, & Wanjohi, 2015; Morris & Maxey, 2014; Wardlow, 1999). In contrast, some other prior studies (Krausz et al., 2005; Xu, 1991) reported that English skills are not strongly correlated with academic performance. However, previous studies have only focused on overall English proficiency test scores overlooking the relationships between subskills of English and cumulative GPAs over multiple semesters as an indicator of academic achievement. Additionally, a possible moderated mediation effect (Preacher, Rucker, & Hayes, 2007) of academic English-support courses provided on campus on the relationship between English proficiency level and academic success has not yet been investigated. To this end, this proposed study aims to fill this gap by exploring the relationships between various predictors of international students' academic success including SAT and TOEFL iBT subsection scores and their cumulative GPAs obtained in multiple semesters using longitudinal data analysis and by examining the moderating mediation effect of English-support classes on academic achievement. This research will make an important contribution to this under-research area and enables us to identify significant determinants of academic achievement of international students, which will help us to provide an appropriate proactive support service to make them better prepared for academic demands.

(292 words)

Project Description

Exploring determinants of international students' academic performance using longitudinal data analysis

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Purpose and Objectives

In recent years, the number of international students enrolled in the undergraduate program in the US has been growing and their academic success is increasingly more important to each higher education institution given that competition for recruiting more qualified international students becomes more intense between each other. However, most of international students arrive on campus without being fully prepared for academic demands mostly due to their lack of academic English skills, although they passed a minimum level of standardized academic English proficiency exams such as the Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS). Many of international students are found to have difficulties in writing academic papers, understanding lectures, and engaging in academic discussions with other English-speaking students. Since international students' weak academic English skills are big hurdles to overcome on the way to academic achievement, the Department of Second Language Studies at IUB has developed and administered the online Indiana Academic English Test (IAET) since Fall 2017 to identify international students who need additional support for improving their academic English skills and to place them into appropriate levels of English Language Improvement Program (ELIP) courses. My previous learning analytics project research shows that the reliability of the IAET was satisfactory, and concurrent validity of each of the subtests in the IAET was established by the fact that the IAET test scores matched other measures of the students' academic English abilities. The results also suggested that the argument for the consequential validity of the IAET can be supported by the fact that international students who were enrolled in ELIP courses improved their academic writing abilities after instruction and their cumulative GPAs were comparable to those who were exempted from or were tested out of the IAET. Nonetheless, it should be noted that the various academic, social, psychological, and demographic factors contribute to academic achievement of international students enrolled in English-medium higher education institutions. Among these predictors of international students' academic performance, their academic English skills are found to be one of the most significant precursors to academic success. It is thus important to explore the extent to which different aspects of English language proficiency of international students affect their academic success.

Significance and Impact

The results of this proposed study will enable us to identify significant determinants of academic achievement of international students and will help us to provide an appropriate proactive support service to make them better prepared for academic demands. This research will give an insight into the relative importance of factors contributing to academic achievement of international students and how our ELIP courses mediate the way such factors affect international students' academic performance.

Anticipated Outcomes

I anticipate finding that the level of academic English skills measured by TOEFL iBT scores will be the most significant determiner of academic achievement of international students, and particularly academic writing skills will be the best predictor of their academic success, and ELIP courses designed to enhance their academic writing skills will mediate the effects of entering English proficiency levels on academic success.

Research Methodology

This study will use accumulative GPAs of international students obtained in multiple semesters (Fall 17, Spring 18, and Fall 18) as outcome variables. Their SAT scores, overall TOEFL iBT test scores, each subsection score of the TOEFL iBT (reading, listening, speaking, and writing) will be used as predictors. Additionally, information about their course enrollment into various ELIP courses including T121 (Academic Literacy 3), T102 (Academic Listening), T103 (Pronunciation Improvement), and T104 (Speaking Fluency Development) will also be used as a moderated mediation variable. Multilevel modeling will be used for data analysis along with analyses of conditional indirect effects, which is also known as moderated mediation effects (Preacher, Rucker, & Hayes, 2007). All of the statistical analyses will be performed with R (version 3.2.1; R Core Team, 2015).

Measuring Success

This project will utilize the data sets of students' cumulative GPAs over multiple semesters, their SAT test scores, and their TOEFL iBT test scores. The project will be successful if the results demonstrate that international students who were placed into each ELIP courses would minimize the effects of their level of English proficiency on academic success.

Previous Research

A large body of literature has investigated the various academic, social, psychological, and demographic factors contributing to academic achievement of international students enrolled in English-medium higher education institutions. Among these predictors of international students'

academic performance, their academic English skills are found to be one of the most significant precursors to academic success given that academic achievement measured by GPAs were strongly associated with their English language proficiency measured by standardized academic English language exams (Martirosyan, Hwang, & Wanjohi, 2015; Morris & Maxey, 2014; Wardlow, 1999). In contrast, some other prior studies (Krausz et al., 2005; Xu, 1991) reported that English skills were not strongly correlated with academic performance. However, previous studies have only focused on overall English proficiency test scores overlooking the relationships between subskills of English and cumulative GPAs over multiple semesters as an indicator of academic achievement. Additionally, a possible moderated mediation effect (Preacher, Rucker, & Hayes, 2007) of academic English-support courses provided on campus on the relationship between English proficiency level and academic success has not yet been investigated.

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