Academic Adjustment and Performance among Filipino Freshmen College Students in the Health Sciences: Does Senior High School Strand Matter?

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ABSTRACT

To address the immense need to strengthen the health workforce, as influenced by graduation rate of health sciences students, dropout rate, academic adjustment, and performance, this study is focused to determine the difference in the academic adjustment and performance of first-year students in the health sciences courses in the Philippines. In addition, the study seeks to determine the moderating effect of senior high school strand on the relationship between academic adjustment and performance among Filipino freshmen college students. A sample of 14,062 participants in different health science disciplines at 79 higher education institutions (HEIs) in the Philippines were recruited to answer survey questionnaires. Descriptive analysis revealed that among the sample, students from STEM senior high school (SHS) strand obtained the highest levels of academic adjustment and performance. One-Way ANOVA revealed that there was a significant difference in the academic adjustment and performance when students are stratified according to SHS strand. Moreover, moderation analysis showed that SHS strand significantly moderates the relationship between academic adjustment and performance. Findings of the study have several implications to theory and education practice.

Keywords – Academic Adjustment, Academic Performance, College Freshmen, Health Sciences, Philippines, Senior High School, SHS, SHS Strand

INTRODUCTION

Health professionals are significant drivers in the delivery of care to the sick. They are trained to perform medical procedures that come up with results that serve as reference for the diagnosis of various diseases. The value of the health workers is ubiquitous in almost all areas in the hospital; however, there appears to be a problem regarding their number which seriously impedes the time for attending health concerns from the public.

Globally, the health workforce is estimated to be 59 million workers, which translates to nine health professionals per one thousand population (WHO, 2006). It was predicted that there will be an 18 million shortage in the health workforce in 2030 (WHO, 2016). In Southeast Asia alone. this prediction means that 4.7 million more health professionals are needed to achieve extensive coverage. In the Philippines, the shortage of medical professionals is very prominent. In 2014, the country had only 3.5 doctors attending for every ten thousand population. This is significantly farther from the ideal ratio of 1 to 1.5 doctors per 1,000 Filipino population. According to the Department of Health, the country's ratio of health labor force, which includes doctors, nurses, radiologic technologists and midwives, is at 19.70 per 10,000 population. This number is still lower than the 23:10,000 critical threshold ratio recommended by WHO.

To combat the issue of shortage, numerous health reform strategies have been formulated. The implementation of Universal Health Care Law provides scholarship opportunities for undergraduate students who wish to pursue allied and health-related programs in accredited higher education institutions. The law required them to render at least three years of return service after graduation to increase the health workforce in the country. Despite the surge of various health reform initiatives, the country still struggles to attain its target number of health workers.

Previous reports demonstrated that the shortage of health professional is intertwined with the low number of graduates in the attended courses (Kinfu, Dal Poz, Mercer, & Evans, 2009; Levit, & Patlak, 2009; Naicker, Eastwood, Plange-Rhule, & Tutt, 2010; Zurn, Dal Poz, Stilwell, & Adams, 2003). Poor academic performance and inability to adjust to the health science courses were correlates to dropout number, an indicator of graduation rate (McFarland, Cui, & Stark, 2018).

Low academic performance and adjustment to college are phenomena not new in the global education institutions. In fact, Gabriela (2010) reported 60% of students who cannot adjust to college drop out early in school. Sahin, Arseven, and Kilic (2016) reported that students who cannot establish good relationships with their friends, teachers and school administration, who do not like the school and the subjects have a higher tendency to be absent from school and to drop out of school. Fan and Wolters (2014) also stated that the specific causes of school dropouts include the difficulty of adjusting with the school curriculum.

In the Philippines, the low academic adjustment of college students of Pampanga Agricultural College results in poor academic achievement (Calaguas, 2011). It was reported in the study of Hernandez (2017) that first-year students from the selected higher-education institutions in Calapan City have poor social adjustment. They can easily adjust to college life in terms of academics, attachment to school, and emotional. Still, it takes them a while to be socially adjusted.

While there is a current interplay among academic adjustment, performance, and drop out in the country, the Philippine education system is also challenged to be at par with the global education arena. In light of this, the country adopted the K-12 primary education

curriculum last 2016 through the Republic Act 10533. This curriculum expands the four-year secondary education to a six-year junior and senior high school. One of the unique features of the curriculum is the ability of the students to choose a strand in senior high school. The senior high school strand contains subjects that prepare the students in their career in college and industry. Thus, the choice of senior high school strand is of great importance; however, the students may take a college degree which is not aligned with the strand taken in senior high school (i.e. non-STEM students taking dentistry).

Previous researches explored the difference of adjustment among college students in different year levels (Jain, 2017), among male and female secondary school students (Panth, Chaurasia, & Gupta, 2015), among male and female senior high school students (Kaur & Chawla, 2016), and among students in different higher education institutions (Hernandez, 2017). However, there is a lack of research examining the difference of adjustment in the Philippine higher education institutions, especially in health science courses. Also, there is a dearth of research about the influence of strand taken during senior high school on the academic adjustment of freshmen. To the best of the author's knowledge, there are no existing studies which examined the moderating effect of senior high school strand on the relationship between academic adjustment and performance among Filipino freshmen college students.

To address the immense need to strengthen the health workforce, as influenced by graduation rate of health sciences students, dropout rate, academic adjustment, and performance, this study is focused to determine the difference in the academic adjustment and performance of first-year students in the health sciences courses in the Philippines. In addition, the study seeks to determine the moderating effect of senior high school strand on the relationship between academic adjustment and performance among Filipino freshmen college students. The results of the study may serve as quality indicator in the implementation of the K-12 primary education curriculum. As the country is taking a great leap in providing the best education to its students, the present study may be used as reference in the formulation of academic policies and guidelines in both secondary and tertiary education systems.

OBJECTIVES OF THE STUDY

The purpose of this quantitative study was to determine the difference in the academic adjustment and performance of first-year students in the health sciences courses in the Philippines. Further, this study examines the moderating effect of senior high school strand on the relationship between academic adjustment and performance among Filipino freshmen college students.

THEORETICAL LENS

There is a theoretical importance to the issue of misalignment between senior high strand and college course among the students in higher education institutions. The vertical alignment theory and academic elitism theory are some of the education theories that explain the phenomenon of misalignment between senior high school strand and college course.

Vertical Alignment Theory

The vertical alignment theory assumes a clear, direct and linear relationship between the concepts transferred to learners in various levels of learning process (Kurz, Talapatra, & Roach, 2012). The theory argues that the learners who take vertically aligned curriculum demonstrate better learning outcomes (Kagan, Carroll, Comer, & Scott-Little, 2006). A vertically aligned curriculum involves teaching the students lessons and course to prepare them in the next education level.

The theory proposes that teaching is purposefully structured and logically sequenced so that students are learning the knowledge and skills that will progressively prepare them for more challenging, higher-level work (Kurz et al., 2012). On this note, the vertical alignment theory argues that the misalignment between senior high strand and college course is a phenomenon which could disrupt the learning progression of the students.

The learning progression perspective contends that there must be a purposeful sequencing of teaching and learning expectations across multiple developmental stages, ages, or grade levels (Lee, & Liu, 2010). The learning progression is characterized by the standards described at each education level that must be intended to address specific learning needs and abilities of students at a particular stage of their intellectual, emotional, social, and physical development. In this regard, the misalignment between senior high strand and college course affects these standards leading to poor development of cognitive, psychomotor, and affective learning dimensions. The theory claims that students exposed to vertically misaligned curriculum tend to score low in the assessment, and face multiple psychological dilemma including inability to adjust and poor help-seeking behavior.

Academic Elitism Theory

The academic elitism view on the misalignment between senior high school strand and college course is that only knowledgeable individuals in the field with immense academic qualification are deemed to achieve higher scores in academics, thereby increasing the chance of academic success (Rambe, & Moeti, 2017). The theory claims that in highly competitive academic environments, only those individuals with meritorious academic background can endure academic challenges in terms of difficult quizzes and projects (Mukharji, 2017).

The tendency towards academic elitism is most pronounced in highly competitive and highly regarded academic tracks, such as college. The academic elitism theory contends that college students, especially the freshmen, who have strong prior knowledge on the course taken, will be able to adapt with the environment and obtain excellent marks. The theory also claims that students who have either poor academic background and knowledge on the chosen course, are suppressed and left behind in their academic track.

In light of this theory, the phenomenon of misalignment between senior high school strand and college course is perceived as barrier for adjusting and achieving high learning outcomes in college. The theory argues that students who have no prior knowledge and poor

academic background to college course are predicted to underperform in classes and unable to adjust in highly competitive environments.

CONCEPTUAL FRAMEWORK

Figure 1 shows the conceptual framework of this research study. The framework was summed up based on previous literature as stated in the introduction section. As shown, academic adjustment and senior high school (SHS) strand are proposed to significantly influence academic performance. Furthermore, the interaction between academic adjustment and SHS strand is proposed to significantly influence academic performance.

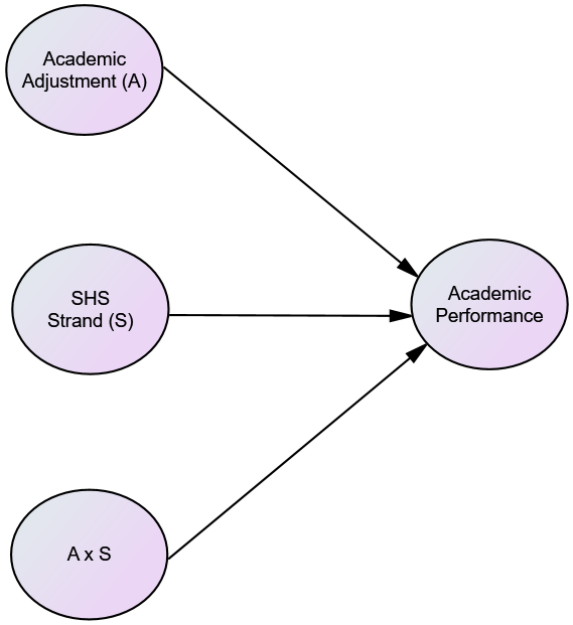

Figure 1. Conceptual framework of the study

METHODOLOGY

Design

A survey design was used for this descriptive quantitative research study investigating the level of adjustment to college and academic performance. Specifically, this study utilized a nonexperimental survey research design, using questionnaires with the intent of generalizing from a sample to a population. According to Creswell (2013), several advantages for using survey methods include (a) surveys are relatively economical; (b) the turnaround in data collection is fast; (c) they are useful in describing the characteristics of a large population; and (d) as a result, large samples are practical, making the results statistically important even when examining multiple variables.

Setting and Participants

The present study was based upon a sample of 14,062 participants (males = 7,093, females = 6,969). All the participants were first year students in different health science disciplines (Radiologic Technology, Medical Laboratory Science, Nursing, Physical Therapy, Occupation Therapy, Pharmacy, Optometry) at 79 higher education institutions (HEIs) in the Philippines. The mean age for the male students was 19.93 years (SD = 6.66), and 19.30 years (SD= 5.83) for the female students. In total, 14,062 questionnaires were distributed to the students. Together 14,050 questionnaires were responded to leaving a total dropout of 0.00085%. This dropout concerned three HEIs that the participants chose not to respond to at all, and one participant that was completed incorrectly. None of these 12 questionnaires was included in the analyses.

Instrumentation

Primary data were taken from the responses to the standard Student Adaptation to College Questionnaire (SACQ) which was developed by Baker and Siryk (1989) and used in the study of Petersen et al., (2009) and Clinciu and Cazan (2014). The SACQ is utilized to measure the quality of students' adjustment to college. It is a 67-item self-report questionnaire used as a diagnostic tool for identifying students experiencing difficulty adjusting to college and who may benefit from remedial interventions, and as an assessment tool in research. Four different dimensions of adjustment are identified in the scale namely the academic, social, personal-emotional adjustment, and institutional attachment. The scale thus consists of four sub-scales, with each sub-scale measuring a different aspect of adjustment. The answer format used was a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale was scored such that a high score corresponds with a high level of adjustment. Because item numbers 1, 3, 4, 5, 8, 9, 13, 14, 15, 16, 18, 19, 23, 24, 26, 27, 30, 33, 36, 37, 43, 44, 46, 47, 50, 53, 54, 55, 62, 63, 65, 66 and 67 are positively-phrased questions, these were scored in a way that 5 corresponds to strongly agree and 1 corresponds to strongly disagree. Because item numbers 2, 6, 7, 10, 11, 12, 17, 20, 21, 22, 25, 28, 29, 31, 32, 34, 35, 38, 39, 40, 41, 42, 45, 48,

49, 51, 52, 56, 57, 58, 59, 60, 61 and 64 are negatively-phrased questions, scoring was reversed in a way that 5 corresponds to strongly disagree and 1 corresponds to strongly agree.

Petersen et al. (2009) reported the alpha reliabilities of the SACQ sub-scales. Academic adjustment (24 items) has a Cronbach's alpha of .84, social adjustment (20 items) has a Cronbach's alpha of .84, personal-emotional adjustment (15 items) has a Cronbach's alpha of .78 and attachment (15 items) has a Cronbach's alpha of .86. Nunnally (1978) asserted that questionnaires used in survey research should have at least .70 Cronbach's alpha to become reliable.

Procedure

Questionnaires were distributed to the participants on several different locations within the HEIs, including the library and lecture halls. Participants were asked to complete the questionnaire after being informed about the purpose and duration (10– 15 minutes) of the study. Participants were also ensured complete anonymity and informed that they could end their participation whenever they liked.

RESULTS

Descriptive and Inferential Analysis

Table 1 presents the mean, standard deviation (SD), and F-value of the academic performance and adjustment stratified by senior high school (SHS) strand. In terms of academic adjustment, students from STEM (M=4.41, SD=0.29) obtained the highest academic adjustment score, followed by ABM (M=4.07, SD=0.33), HUMSS (M=4.04, SD=0.30), Industrial Arts (M=3.82, SD=0.75), Home Economics (M=3.81, SD=0.76), Agri-Fishery Arts (M=3.80, SD=0.81), and GAS (M=2.55, SD=0.45).

In terms of academic performance, students from STEM (M=86.67, SD=1.32) had the highest academic performance, followed by ABM (M=86.06, SD=1.68), HUMSS (M=85.67, SD=1.43), Industrial Arts (M=83.21, SD=1.76), Home Economics (M=82.29, SD=1.37), Agri-Fishery Arts (M=81.90, SD=1.97), and GAS (M=78.65, SD=1.23). All of the academic performance scores were above the passing rate of 75%.

One-ANOVA revealed that there was a significant difference in the academic adjustment and performance when students are stratified according to SHS strand. This implies that the academic adjustment and performance of the students vary based on the SHS strand taken.

Table 1. Descriptive and One-Way ANOVA of academic adjustment and performance

Academic Adjustment			
Strand	**Mean**	**SD**	**F-value**
GAS	2.55	0.45	354.65**
HUMSS	4.04	0.30	
STEM	4.41	0.29	
ABM	4.07	0.33	
Agri-Fishery Arts	3.80	0.81	
Home Economics	3.81	0.76	
Industrial Arts	3.82	0.75	
ICT	3.71	0.82	
Academic Performance			
Strand	**Mean**	**SD**	**F-value**
GAS	78.65	1.23	175.41**
HUMSS	85.67	1.43	
STEM	86.67	1.32	
ABM	86.06	1.68	
Agri-Fishery Arts	81.90	1.97	
Home Economics	82.89	1.37	
Industrial Arts	83.21	1.76	
ICT	80.21	1.48	

Moderation Analysis

Multiple linear regression analysis was used in order to examine the moderation effect of senior high school (SHS) strand between academic adjustment and performance. The analysis indicated that about 86% of the variation in the dependent variable (i.e., academic performance) could be explained by the main effect and the interaction effect (R^2=.88, adjusted R^2=.86, p<.001). The main effect of academic adjustment (B=.68, t=3.12, p=.002) was significant and contributed uniquely to high level of academic performance. Furthermore, the results indicated that the moderator effect was significant. This was the interaction between academic adjustment and SHS strand (B=.98, t=2.86, p=.005) (Figure 2).

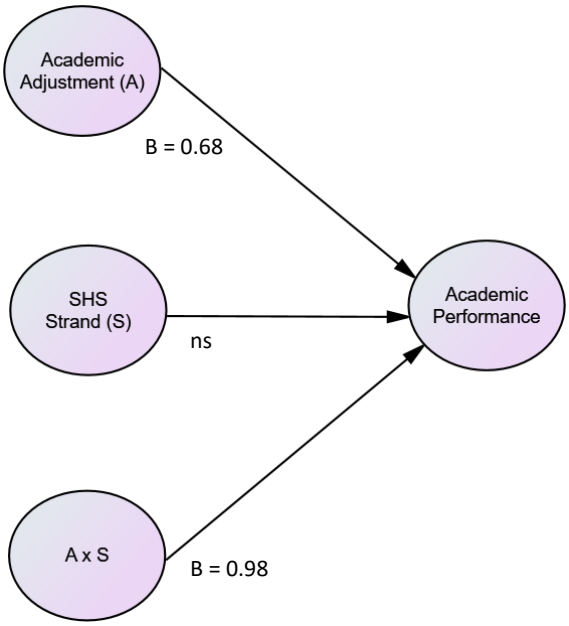

Figure 2. Moderation model showing the main effect and significant moderator effect on academic performance

DISCUSSION

The results in the present study show (i) that there was a significant difference in the academic adjustment and performance when students are stratified according to SHS strand and (ii) that there was a significant interaction between academic adjustment and SHS strand on academic adjustment.

The significant difference that exists in the students in different SHS strands suggest that the academic adjustment and performance of the students vary based on the SHS strand taken. This is the first study to explore the differences that exist among college freshmen in the health science when students are stratified by SHS strand, hence, comparison to previous studies is difficult. It can be observed that college freshmen in the health science who took STEM adjusted and academically performed well compared to other students from different SHS strands. This is highly indicative that prior knowledge of these students from SHS in the STEM strand is essential in their adjustment process and performance in the academic milieu.

The present study showed that the interaction between academic adjustment and SHS strand influenced academic performance. Moderation effects between academic adjustment and SHS strand imply that the students experiencing high levels of academic adjustment and belonging to STEM strand obtained higher levels of academic performance than those who experience low levels of academic adjustment and belong to other SHS strands. Nevertheless, SHS strand by itself did not predict academic performance. In this regard, it is important that the absence of academic adjustment is a better predictor of academic performance than the presence of SHS strand. A modification to this statement could be that belonging to STEM strand in conjunction with the high levels of academic adjustment increases academic performance. This result fits to the concept indicating that different combinations of these SHS strands are related to different measures of academic adjustment and performance. Ultimately, there is a moderating effect of SHS strand on the relationship between academic adjustment and performance.

The results of the study have several implications to theory and education practice. The study provided additional knowledge on the theory of academic adjustment and performance among freshmen students in the health sciences. The SHS strand moderates the relationship between academic adjustment and performance and this could substantially extend other theories that may be conceptualized in future studies pertaining the performances of students in the health science programs. In the education practice, bridging programs that may strengthen the adjustment and performance of the students in the health sciences may be conducted and if already conducted, may be sustained. Strategies that improve the academic adjustment and performance of students who took other than STEM strands in their SHS are highly encouraged.

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