

CLOSING THE GAP BETWEEN SECONDARY EDUCATION AND HIGHER EDUCATION

Heba Bakr Khoshaim^{1*}, Tasneem Ali², Ahmed Bakr Khoshaim³

¹Assist. Prof. Dr., Prince Sultan University, Saudi Arabia, hkhoshaim@psu.edu.sa

²Assist. Prof. Dr., Prince Sultan University, Saudi Arabia, tali@psu.edu.sa

³Assist. Prof. Dr., Umm Al-Qura University, Saudi Arabia, abkhoshaim@uqu.edu.sa

*Corresponding author

Abstract

Challenges facing students when they transit from secondary education to higher education is a well-known international phenomenon. Researchers from all over the world have addressed such difficulties and proposed solutions. Reasons behind the struggle include, but are not limited to, high school curricula, college environment, student's personality and resistance to change, and economic factors. The Preparatory Year Program (PYP)—a mandatory one-year program for most higher education institutions in the Kingdom of Saudi Arabia—is one of many trial solutions to close the gap during the transition to the college level. The PYP focusses on improving students' English language proficiency, mathematical competencies, and personality traits. Yet, being recently introduced, not enough studies have been done to evaluate the success of the PYP program. Is PYP successful in preparing students for the college life? Do students performances in the PYP affect their performances when they move to higher education? What are the limitations of the PYP? These questions and more are yet to be addressed. In this session, the researchers present initial results of a research study that examines the effectiveness of the PYP. Using data from a private university in Saudi Arabia, the correlation between PYP Grade Point Average and college-level courses Grade Point Average has been tested. The sample included 1160 college-level students who completed the PYP before joining any academic program. Results showed that there was significant correlation between PYP and college-level courses. The session will also discuss the limitations of the PYP and the need for future research.

Keywords: Preparatory Year Program, PYP, Higher Education, College Readiness.

1. INTRODUCTION

Education is the platform for any nation's development and growth. Supporting the young generation to acquire higher education degrees is becoming essential to the individual level, the family level, and the country level. When students enter colleges and universities, they will most likely succeed if they have the pre-knowledge needed for higher education, or in other words if they are *ready*. This is clearly a non-negotiable statement. What is questionable, however, is the definition of students' readiness, and how do we measure it (Maruyama, 2012). From all over the world and for many years, educators attempted to address

the above questions. In the Kingdom of Saudi Arabia, relatively recent movements and transformation of the higher educational system aimed to prepare students for higher education ensuring their success in higher education (Ministry of Education, 2015). Namely, a full one-year of academic courses has been introduced as a compulsory program prior to admission to any academic program at higher education institutions. This program is called the *Preparatory Year Program* (PYP).

The PYP is one full academic year of basic courses such as mathematics, English proficiency, health physical education, and computational skills. The PYP also addresses students' presentation, communication and collaboration skills. Students are required to complete all courses in the PYP before joining any academic program.

2. NEED OF THE STUDY

Entering and continuing in higher education is a major step in a student's life. Yet, many students struggle during the first year, which might cause them to change their major and in some cases quit higher education. Hence, making the transition from high school to higher education as smooth as possible is a non-negotiable objective for all higher education institutions.

The Kingdom of Saudi Arabia has clearly classified education as its priority. "Saudi Arabia is experiencing an aggressive investment in the key pillar of the knowledge-based economy, namely, education and learning, innovation, and information technology" (Ministry of Higher Education, n.d.). Introducing the PYP aimed to ease the transition challenge from secondary schools to higher education. Although there are some suggested results that PYP has achieved its goals, there are some arguments about the necessity and need for it to be maintained. Students, families, and educators considered PYP to be essential and valuable for high school graduates (Alghamdi, 2015; McMullen, 2014). However, there is a concern that it cannot be maintained especially considering economical factors. Many universities, hence, tried to either embed the program with the bachelor degree or give it up for an external contractor (e.g. Princess Noura bint Abdulrahman University). Moreover, the amount of studies looked at PYP efficiency is still very minimal and most of them considered public universities. Therefore, it is essential to evaluate the effectiveness of the program and suggest its usefulness to be continued. This paper discusses the extent that PYP has achieved its goals.

3. LITERATURE REVIEW

College readiness implies acquiring certain competencies. In fact, Maruyama (2012) argued that even if students are not going to attend higher education, it is essential that they graduate from secondary education with college readiness competencies because such competencies are required to succeed in the workforce and in life in general. Such competencies include, but are not limited to, time management, problem solving, critical thinking, and presentation proficiency.

When students graduate from high school with a lack of these competencies, they struggle in higher education. In fact, challenges faced by students in the transition period from secondary schools to colleges are international phenomena that have been addressed for many years and by numerous researchers. From all around the world, educators have discussed this problem. For example, Julia and Veni (2012) stated that part of the reasons behind the struggle faced by freshmen students could be due to academic readiness, personality characters, and economical factors. Other reasons could include stress and the ability to deal with the new environment (Julia & Veni, 2012). The authors further argued that being in the top of the pyramid in high school and moving to be at the base of the pyramid in first year undergraduate programs has a negative emotional effect on students. Not only that, but first year freshmen students should deal with multi cultural environments where the demands and the expectations are totally different from what they have experienced in high school. As stated by Profanter (2014), culture can be defined as "a cognitive, moral, and emotional system.." (p. 220). Julia and Veni (2012) emphasized that students come to college from diverse cultural backgrounds, norms, and values. In addition, such values and norms were imposed by their guardian. However, when they move to college, they have to deal with these differences and get a chance to develop their own norms, identities and values.

In most part of the world, students during secondary education are treated as dependent and they are given handy knowledge and services. Also, students are not required to deal with scheduling of classes, for instance, or book searching. Especially in the Kingdom of Saudi Arabia (KSA), spoon-feeding is a clear cultural phenomenon at all secondary schools. In many cases, especially economical privileged students, students depend on personal tutoring sessions to cover and complete regular assignments. Alotaibi (2014) described the private tutoring issue in Saudi Arabia as being a "byproduct and characteristics..." (p. 79) of

the educational system. The author stated that "private tutoring is on the increase despite government efforts to combat it" (p. 79). Hence, learning to be independent is one essential skill needed for college.

Aslan and Gelbal (2016) stated that anxiety would decrease as students excel in their college years. Thus, freshmen students experience the highest anxiety among their classmates. The authors further added that if the student had to leave the parents and move to another place to pursue higher education, the anxiety factor would definitely be higher. In 2005, King Abdullah started a fundamental program of hundreds of thousands of international scholarships. Male and female Saudi students were given the chance and the financial support to continue their education at universities in the US, Canada, Malaysia, China, Japan and others. The goal of the program is to equip the young generation with knowledge and skills to match the rapid growth in the Kingdom in all areas. However, it was noted that cultural shocks caused many studying abroad students to fail! Abouammoh and Smith (2013) identified 10 factors affecting Saudi students when they study abroad stressed on the change of the culture as a major influence. Not surprisingly, these factors are similar to what was identified by Gebhard (2012) when focusing on international students' adaptation.

Academically, students are definitely treated differently in college. They are expected to be independent, responsible, and collaborative. They are required to search for knowledge, and strive for success. The freshmen classes usually have a huge number of students. Consequently, students do get less attention. Rice (2009) pointed out the ideology of higher education classes could be so weird, unexpected, and confusing to students, which might negatively affect their adjustment. On the other hand, Heng (2014) argued that teacher's behavior (support, understanding, and communication skills) could have a huge impact on first-year academic performance of students even more than the teacher's pedagogical skills.

Being supported directly by the family provides security and comfort. This security is gone once a student enters college. In some parts of the world, and especially in Saudi Arabia, students are given extreme caring while in school. Their parents often follow up on homework completion, punctuality and school demands. This all disappear once at college where students are expected to be on their own. Koepke and Denissen (2012) argued that parents have a big role in supporting their children to be independent. The shape of the relationship as a child-parent and to what extent the parents express their acceptance and expectation of the independence affect the ability of the student to be independent.

So, what is the definition of smooth transition? Or when can we say that a student has adapted to the new environment? When can we give a student the green light that he/she has overcome the obstacles and dealt with the struggle? One could argue that being in good standing academically is probably the major indicator. However, punctuality, making friends, being socially involved with others, participating in extracurricular activities are all other indicators of adaptation. It was argued that there should be several indicators about students' readiness to college (Maruyama, 2012) and that we cannot rely on one measure such as the ACT, argued the author.

Educators and policy makers have tried several approaches to support students' readiness. Some of these programs start at the secondary level, and others just after graduating. The Preparatory Year Program is KSA's approach to support high school graduate readiness to higher education. Some studies have looked at the effect of PYP on students' achievements, behavior and attitude. All results suggested that PYP is deemed valuable by all stakeholders. For example, it was reported that students themselves value the PYP (Alshumaimeri & Alghamdi, 2009). Alshumaimeri (2013) addressed six sections from the PYP at one of the largest public universities in KSA. Students' motivational level was measured at the beginning, middle and the end of the semester. The author argued that students' motivation increased upon the completion of the PYP. On the other hand, Alenaizy (2015) suggested that 21% of the stakeholders believe that PYP helped in improving students' readiness. The author also argued that it was believed that students' competencies in English and math improved by at least 24%.

King Saud University conducted a study on PYP students through the Center of Excellence in Learning and Teaching (Center of Excellence in Learning and Teaching, 2013). One of the suggested results is that the average GPA of a student at the end of the first semester is higher in those who completed the PYP prior the first semester than those who did not complete the PYP. Moreover, at another prestigious public university, it was suggested that due to the PYP, students are able to achieve higher grades in TOEFL, their studying have positively improved, and they have become more responsible and active learners (Al-assaf, 2015).

A similar program to the PYP is presented by Giuliano and Sullivavn (2007). It is a summer program prior to admission to higher education programs at the BlackBoard institute in the United States. The goal is to bridge the gap between secondary education and tertiary education (Giuliano & Sullivan, 2004, 2007). "Summer Success... was very influential and beneficial. Without the support and guidance that I received

during and even after the program I would have had a very tough time with college and dealing with all the transitions college entails” (Giuliano & Sullivan, 2004, p. 34)

4. METHODOLOGY

The purpose of this study is to examine if the Grade Point Average of PYP (PYP GPA) is a predictor of college Grade Point Average. The academic qualifications variables are PYP GPA and College GPA. The college GPA is calculated at the time when a student completes freshman (first year of the academic program). The primary research question is:

1. Is there any significant correlation between PYP GPA and College GPA?

The secondary question is:

2. Does PYP prepare students for College?

4.1 Hypotheses

The following null hypotheses are proposed:

Hypothesis 1: There is no correlation between PYP GPA and College GPA.

Hypothesis 2: PYP GPA is not a significant predictor for College GPA.

4.2 Variables

The continuous independent variable PYP GPA and continuous dependent variable College GPA were recorded as shown in Table 1:

Table 1: The continuous Variables in the Data Analysis

Category	Categorization
PYP GPA	0-4
College GPA	0-4

4.3 Samples and Data Collection

The population of the study is students who completed the PYP and some of the courses in the academic program including the first college-level mathematics course. The sample was collected from one private university in Riyadh, the capital city of Saudi Arabia: Students who were admitted from academic years 2010-2014 who completed PYP and the first college-level mathematics course. Data set includes 1160 subjects, comprising 580 female and male students respectively.

The data was collected through the office of Deanship of Admission and Registration. The four-year data of all eight semesters was downloaded and scrutinized through intensive screening. The sample was limited to students who took both semesters of PYP before starting their major. All students who transferred directly to college programs were excluded from the sample.

4.4 Data Analysis

The data was collected in Excel spreadsheet in order to do analysis using XLSTAT. The descriptive statistics of the sample were generated for the quantitative characteristics: PYP GPA and College GPA. The correlation coefficient was used to answer the primary research question: “Is there any significant correlation between PYP GPA and College GPA?”

5. RESULTS

The purpose of the study was to measure the effect of PYP GPA on the variance of College GPA.

Hypothesis 1: There is no correlation between PYP GPA and College GPA.

Hypothesis 2: PYP GPA is not a significant predictor for College GPA.

5.1 Descriptive Statistics of the Sample

The sample data of 1160 students, obtained from the Deanship of Admission and Registration, showed that

Mean College GPA is 2.793 (SD=.763) and Mean PYP GPA is 2.790 (SD=.803) as shown in Table 2.

Table 2: Descriptive statistics for quantitative variables, College GPA, PYP GPA (n= 1160)

	College GPA	PYP GPA
Minimum	0.620	0.76
Maximum	4.000	4.00
Mean	2.793	2.790
Std. Deviation	0.763	0.803

It was noted that there was fairly strong positive correlation between PYP GPA and College GPA ($r = 0.746$), which means that PYP GPA and College GPA tend to increase or decrease together. The Coefficient of Determination (.557) explains 56% variation in College GPA due to PYP GPA. The Durbin –Watson goodness of fit statistics = 1.732 (less than 2) shows that residuals are not auto-correlated (Table 3).

Observations	1160.000	
Sum of weights	1160.000	
DF	1158.000	
R²	0.557	
Adjusted R²	0.556	
MSE	0.258	
RMSE	0.508	
MAPE	17.445	
DW	1.732	

The secondary research question was: “Does PYP prepare students for College?” Based on second research question, the null hypothesis, “PYP GPA is not a significant predictor for College GPA” was tested and the ANOVA results showed that PYP GPA predicted very well the College GPA ($p < .0001$) (Table 4). Thus, the null hypothesis was rejected at $\alpha = 0.05$ and it was concluded that PYP GPA is the predictor and overall the model is significant. The t-test resulted in the significance effect of PYP GPA (Table 5) at $\alpha = 0.05$. Thus, at the 95% confidence level, based on the sample data, it is concluded that a 1-unit increase in PYP GPA will result in an increase by an average between approximately .673 and .746 in the College GPA. The estimated regression model (Equation 1) indicated that for a 1-unit increase in PYP GPA one can expect an average increase of 0.71 increase in College GPA.

Table 4: ANOVA-Regression Analysis (College GPA)

Regression	DF	Sum of Squares	Mean Squares	F	p-value
Model	1	376.002	376.002	1455.170	< 0.0001
Residual	1158	299.216	0.258		
Total	1159	675.219			

Table 5: Regression output of the Model (College GPA)

	Coefficients	Standard Error	t-test	p-value	Lower (95%)	Upper (95%)
Intercept	0.814	0.054	15.086	< 0.0001	0.708	0.920
PYP GPA	0.709	0.019	38.147	< 0.0001	0.673	0.746

$$\text{College GPA} = 0.8144 + 0.7093 * \text{PYP GPA} \quad (1)$$

6. SUMMARY

The results presented in this section divulge some noteworthy results. College GPA has significant positive correlation with PYP GPA. Since the data was collected over a period of eight semesters, there was a chance of autocorrelation between the residuals; The Durbin-Watson test statistic showed that no such autocorrelation existed between them. Also, the suggested simple linear regression model is the best-fit model.

7. DISCUSSION AND CONCLUSION

Students face major challenges when they start tertiary education. Such challenges are translated through their academic performance, attitude, and willingness to complete the academic program. At the Kingdom of Saudi Arabia, high school graduates are required to complete one year of preparatory courses to strengthen their mathematical skills, English language proficiency, and personality traits. It was believed that this preparatory year will ease the transfer and support students at the beginning of their college life. This study investigated the effectiveness of the PYP by examining data from a private university at the KSA. Results revealed that there is a high correlation between students' performance at PYP and college level. The regression model suggests that PYP GPA predicts a student's GPA when they move to the college level.

The results of the study support previous studies that looked at the PYP (ex: Alenaizy, 2015). They also coincide with various stakeholders' agreement. However, due to economical factors, some public universities either discarded the PYP or embedded it within the program itself. Hence, more studies are needed to support the need to maintain the PYP as a major approach to close the gap between secondary school and higher education.

8. ACKNOWLEDGMENT

The researchers would like to acknowledge Prince Sultan University for their support to this research.

REFERENCE LIST

- Abouammoh, B., Smith, L. (2013). Social issues confronting Saudi students undertaking international study: An exploratory investigation. *International Journal of Innovation, Creativity and Change*, 1(1), 1–22.
- Al-Assaf, A. (2015, April). The Prep year program and KFPUM. *Paper presented at the First National Conference of Preparatory Year in Saudi Universities*, Riyadh, KSA.
- Alenaizy, B. (2015, April). The reality of the PYP from the perspectives of Saudi press. *Paper presented at the First National Conference of Preparatory Year in Saudi Universities*, Riyadh, KSA.
- Alghamdi, M. (2015). Satisfaction of preparatory year students with university services. *World Journal of Education*, 5(5), 117–129.
- Alotaibi, G. (2014). Causes of private tutoring in English: perspectives of Saudi secondary school students and their parents. *Studies in Literature and Language*, 8(3), 79–83.
- Alshumaimeri, Y. A. (2013). The effect of an intensive English language program on first year university students' motivation. *Journal of Educational & Psychological Sciences*, 14(1), 11–32.
- Alshumaimeri, Y., & Alghamdi, F. (2009, March). Perceptions of Saudi PYP students about the IEP at King Saud University. *Paper presented at IATEFL 43rd Annual Conference*, Cardiff, UK.

- Aslan, S., & Gelbal, S. (2016). Separation-individuation of late adolescents: A longitudinal study, *Educational Studies and Reviews*, 11(1), 1–15. DOI: 10.5897/ERR2015.2570
- Center for Excellence in Learning and Teaching (2013). *Evaluation PYP at King Saud University*. Unpublished study, Center for Excellence in Learning and Teaching, King Saud University, Riyadh, KSA. Retrieved from https://celt.ksu.edu.sa/sites/celt.ksu.edu.sa/files/attach/tqwym_lsn_lthdyry.pdf
- Gebhard, J. G. (2012). International students' adjustment problems and behaviors. *Journal of International Students*, 2(2), 184–193.
- Giuliano, B. A., & Sullivan, J. L. (2004). How do you measure success? *Journal of College Science Teaching*, 34(3), 41–43.
- Giuliano, B. A., & Sullivan, J. L. (2007). Academic wholism: Bridging the gap between high school and college. *American Secondary Education*, 35(3), 7–18.
- Heng, K. (2014). The effects of faculty behaviors on the academic achievement of first-year Cambodian urban university students. *Educational Research for Policy and Practice*, 13(3), 233–250.
- Julia, M., & Veni, B. (2012). An Analysis of the factors affecting students' adjustment at a university in Zimbabwe. *International Education Studies*, 5(6), 244–250.
- Koepke S., Denissen, J. A. (2012). Dynamics of identity development and separation-individuation in parent-child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review*, 32(1), 67–88. DOI: 10.1016/j.dr.2012.01.001.
- McMullen, M. G. (2014). The value and attributes of an effective preparatory English program: Perceptions of Saudi University students. *The English Language Teaching*, 7(7), 131–140.
- Ministry of Higher Education (2009). *Saudi's higher education achievements & challenges. Global assessment & international experts' views*. Retrieved from //www.mohe.gov.sa/en/default.aspx
- Ministry of Education. (2015). *Education in the Kingdom of Saudi Arabia: National indicator and international benchmarking*. Riyadh, KSA: Observatory on Education.
- Ministry of Higher Education (n.d.). Saudi's higher education achievements & challenges. Global assessment & international experts' views. Retrieved 25.01.2012, from //www.mohe.gov.sa/en/default.aspx
- Maruyama (2012). Assessing college readiness: should we be satisfied with ACT or other threshold scores? *Educational Researcher*, 41(7), 251–261. DOI: 10.3102/0013189X12455095
- Profanter, A. (2014). Achievements and challenges in the educational realm in Saudi Arabia. *European Scientific Journal*, 1, 207–222.
- Rice, K. G. (2009). Separation-individuation and adjustment to college: A longitudinal study. *Journal of Counseling Psychology*, 39, 203–213.