English Proficiency and Academic Achievement: Can Students' Grades in English Courses Predict Their Academic Achievement?[1]

Budi Waluyo[2] & Benjamin Panmei[3], Walailak University, Thasala, Nakhon Si Thammarat, Thailand

Abstract

Research into the relationship between English proficiency and academic achievement was built upon the concern of the academic success of international students studying in English-speaking countries, raising the question if such a relationship exists in domestic EFL learners studying at a university in their home country. This study, therefore, expands the exploration to the investigation among EFL learners in a non-English speaking country, i.e., Thailand by considering the variables at a micro-level across general English courses involving course grade and academic achievement—grade point average (GPA). The analysis involved the data of 2,150 students studying six different English courses from various academic majors. These results revealed significant correlations and strong predictive powers of students' grades in English courses on their GPAs across a year of study and proficiency. The findings sustain the argument that although various factors affect students' academic achievement, English proficiency seems to have predictive power. Nowadays English-medium instruction (EMI) has attracted a myriad of interests from universities in non-English-speaking countries. Therefore, the findings of this study suggest that improving students' English proficiency would lead them to obtaining better academic achievement.

Resumen

Estudios sobre la relación entre el dominio del inglés y el rendimiento académico se basan en la preocupación por el éxito académico de los estudiantes internacionales que estudian en países de habla inglesa. Esto plantea la pregunta ¿existe tal relación en los estudiantes nacionales de inglés como lengua extranjera que estudian en una universidad de su país de origen? Así, este estudio busca ampliar la investigación para incluir estudiantes de inglés como lengua extranjera en un país que no habla inglés, , Tailandia, al considerar las variables a un nivel micro en los cursos de inglés general que involucran la calificación del curso y el rendimiento académico. El análisis incluyó los datos de 2,150 estudiantes que cursaban seis cursos de inglés diferentes de diversas especialidades académicas. Estos resultados revelaron correlaciones significativas y altamente predictivas entre las calificaciones en los cursos de inglés en el promedio de calificaciones ene general a lo largo de un año de estudio. Los hallazgos sustentan el argumento de que, aunque varios factores afectan el rendimiento académico de los estudiantes, el dominio del inglés parece tener poder predictivo. En la actualidad, la instrucción a través del inglés ha generado interés en universidades de países de habla no inglesa. Por lo tanto, los hallazgos de este estudio sugieren que mejorar el dominio del inglés de los estudiantes los llevaría a obtener un mejor rendimiento académico.

Introduction

Since the 1980s, researchers in the field of English as a Second Language (ESL) or English as a Foreign Language (EFL) have been questioned about the cutoff scores that can be used to assess an applicant's English proficiency and to predict their academic success at the university level. (Graham, 1987). Interest in this topic has been growing; however, most of the research has only explored the relationship between English proficiency and academic achievement in the case of international students (e.g., Geide-Stevenson, 2018; Hasan & Akhand, 2014). Besides, English-speaking countries have often been used as the primary research context (e.g., Cloate, 2016; Neumann et al., 2019).

In contrast, little research has been conducted on the role of English proficiency on domestic students studying ESL/EFL across universities in non-English speaking countries, creating a gap in knowledge as to whether the relationship between English language proficiency and academic achievement should only be examined in international students studying in English-speaking countries. In addition, the preceding research has used scores of standardized tests, such as IELTS and TOEFL, as a measure of English proficiency, while exploiting Grade Point Average (GPA) as a measure of academic achievement (e.g., Schoepp, 2018; Thorpe et al., 2017). Student performance in English courses might have drawn a more direct connection to academic achievement when measured by GPA than IELTS and TOEFL; students' English course grades contribute to students' overall GPA, whereas students' IELTS and TOEFL scores do not. Thus, driven by this knowledge, this study examines the relationship between English proficiency and academic

achievement from the context of domestic EFL learners in a non-English-speaking country, i.e., Thailand, by focusing on students' English course grades and GPAs at a university level.

In the present day, both English proficiency and academic achievement are of importance for students' success, not only for their studies but also for their future careers. Therefore, studies examining if there are significant correlations between these two variables or predictive roles playing one on another can be valuable insights for teachers, curriculum designers, and educational policymakers. It is undeniable that various factors, e.g., socioeconomic status, social support, mental health, can affect student academic achievement, yet among them, foreign language proficiency has been suggested to also have predictive power (Bayliss & Raymond, 2004; Sothan, 2019). In the case of international students studying in English-speaking countries, it is natural to think that student's academic success may closely be tied to their English proficiency level as English is the main language of instructions in academic courses and activities. Nonetheless, is it also the case for students studying English courses at universities in home countries? The relation between foreign language proficiency and academic achievement is complex, yet it may closely be associated with how the foreign language is used within the academic context that students are involved in (Agirdag & Vanlaar, 2018). Since the measurement of internationalization and quality of higher education has always included English in teaching and learning activities, a link between EFL students' proficiency measured by their grades in English courses and their academic achievement measured by GPA is worth exploring, not to mention that it can, further, extend the study in this research. Hence, this study addresses the following research question:

Can students' grades in general English courses predict their academic achievement?

Most universities in non-English speaking countries have required domestic students to take English proficiency tests, either standardized or localized made tests, before the start of the first academic year; the results are usually used for determining whether students need to attend general academic English courses or have the requirement waived. In the long term, this practice is also to ensure that students will be able to cope with future academic courses within their academic majors. A recent study by Yung and Fong (2019) pointed out that regardless of students' proficiency levels, they all needed to attend academic English courses in their first year of study; they advise, "… no one should be exempt based on the results of language tests …" (p. 314), given that students' prior English learning may not cover the features of academic English at the university level. Correspondingly, Yung and Cai's study (2020) revealed that high English proficiency students as indicated by English test results did not automatically do well in all aspects of academic English skills, especially writing. English language enhancement courses have been advocated to be vital as foundational units across all degree programs (Fenton-Smith et al., 2017).

Despite the small number, several studies have been carried out to examine if students' grades in academic English courses have some connection to their overall academic achievement. An early study by Black (1991) identified that students' grades from academic English courses were positively correlated with their overall academic achievement measured by average scores from all required courses, except English courses. Students' grades in English and Science courses were observed to be effective predictors of the academic achievement of students majoring in Psychology (Huws et al., 2006). The positive influence of high grades in English courses on students' academic achievement potentially comes from the connection to the development of literacy skills – reading and writing. Goldstein and Perin (2008), who ran binary logistic regression analyses on institutional data from a large urban community college in the U.S., discovered that students who completed English courses with high scores attained better academic achievements than those with lower scores. They, further, suggest, "students may increase the likelihood of academic success by improving their literacy skills through the completion of English courses" (p. 112). The study was replicated by Allen et al. (2017) and consistent results suggested that freshman-level composition courses such as academic/general English courses are fundamental for literacy development and preparation before facing complex tasks in the future courses.

Recently, in a large-scale study examining the determinants of academic performance among university students in Cambodia, Sothan (2019) identified the significant role of students' English ability on predicting undergraduate students' academic achievement and further, argued:

> In a vast majority of empirical studies, English ability has not been investigated as one of the factors affecting student performance at university, but in case of a non-native English speaking country, such as Cambodia (included in the Expanding Circle based on Low (2019)), English language plays a significant role in every student's academic life in higher education because sufficient English ability enables students to read a variety of books published in English, which later provides them with opportunities to gain more knowledge and improve their academic performance. (p. 9)

Since GPA is determined by weighing students' grades in all the courses taken during the entire period of undergraduate study, the magnitude of the influence of English proficiency may occur during their studies in each academic course. Among the influential variables, van Zyl et al. (2020) discovered that the difficulty level of the English language in course materials and assessment could cause negative effects on students' academic achievement. Quantitative results from Neumann et al.'s study (2019) pointed out that students' course grades can be dependent on students' English language proficiency, especially since English as a medium of instruction (EMI) has been implemented by universities worldwide. Students' grades were observed to have a significant correlation with the use of English in reading and writing during undergraduate study at a university in Saudi Arabia (Alharbi & Yakout, 2018). However, Arsad et al. (2014) obtained different results despite using similar correlational analyses. They collected students' GPAs and scores in engineering and English courses at a university in Malaysia. Their study created three models where students' grades in engineering courses and English courses were mixed. In their hierarchical regression analyses, the model that involved English courses was not significant, suggesting that fundamental subjects in students' academic majors could significantly predict their GPA, yet English courses had neither direct nor little effects on students' academic achievement. They noted that since the students' majors emphasized calculation and problem-based solving, the English course emphasizing report writing and communication would not significantly affect students' overall academic achievement.

Method

The design of this study was quantitative, with an emphasis on examining the predictive roles of students' grades in general English courses on academic achievement measured by GPA. It involved the data of students' grades and GPAs from various general English courses in different years of study and different levels of proficiency at Walailak University, Thailand, as illustrated below.
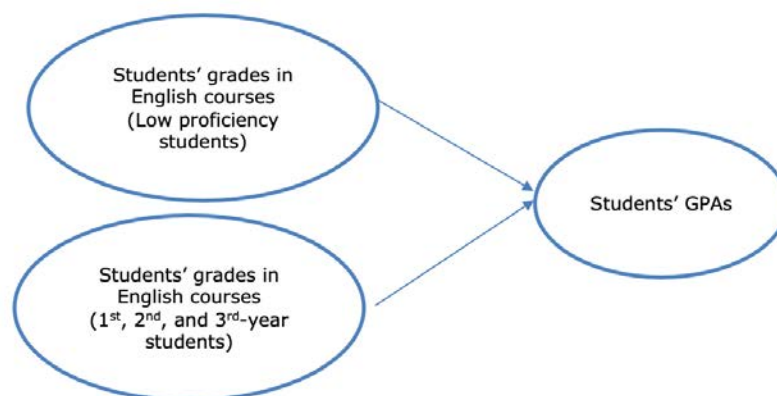

Figure 1: The proposed research model

Participants and English courses

This study was conducted in the third academic term of 2020-2021 at an autonomous university in Thailand. As indicated in Figure 1, this study involved first, second, and third-year students studying different general English courses, e.g., Academic Reading and Writing, Academic Listening and Speaking, English for Presentation, English for Media Communication. It also examined English courses taken by students who

were considered to have low proficiency levels. The details of the participants and English courses are provided below.

Course 1

The first English course was Academic Reading and Writing taken by first-year students. As shown in Table 1, there were 1298 students (75%/975 females; 25%/325 males) from the Schools of Management (16.9%/219), Architecture (3.8%/50), Engineering (9.8%/127), Liberal Arts (5.6%/73), Informatics (6.9%/89), Agriculture (1%/13), Political Science and Law (6.9%/90), Science (3.6%/47), Nursing (12.9%/168), Public Health (9.9%/129), Allied Health Sciences (14.5%/189), and Pharmacy (8%/104). The means of students' grades and GPAs were 76.76 (SD = 8.03) with a minimum grade of 50 and 2.82 (SD = .51) with the lowest GPA at 1.27, respectively. This course was coded as "Course 1".

Course 2 and 3

The second and third courses were about English presentation undertaken by second-year students. The courses include: 1) English Presentation in Humanities and Social Sciences, consisting of 89 students (67.4%/60 females; 32.6%/29 males) from the School of Management (7.9%/7), Architecture (51.7%/46), Liberal Arts (15.7%/14), Informatics (23.6%/21), and Science (1.1%/1), with the average grade and GPA at 68.56 (SD = 8.47) and 2.71 (SD = .45), respectively, and 2) and English Presentation in Sciences and Technology, involving 154 students (83.8%/129 females; 16.2%/25 males), from School of Architecture (4.5%/7), Engineering (1.9%/3), Agriculture (9.1%/14), Political Science and Law (.6%/1), Public Health (46.1%/71), and Allied Health Sciences (37.7%/58), with the means of students' grades and GPAs at 77.42 (SD = 7.34) and 2.99 (SD = .57). These two courses were coded as "Course 2" and "Course 3".

Course 4

The third course was named English for Business Communication studied by third-year students. The total of the students was 122 (76.2%/93 females; 23.8%/29 males) from the School of Management (100%/122). The means of student's grades and GPAs were 74.99 (SD = 4.69) and 2.75 (SD = .42), correspondingly. This course was coded as "Course 4".

Course 5 and 6

This study also analyzed two English courses taken by first-year students who had low proficiency levels. These students had to take a fundamental English course in their first academic term and could only take English courses after obtaining satisfying results. Their placement test results showed their low level of proficiency in English before the start of their first academic term. When this study was conducted, the students took two courses: 1) English Communication Skills, containing 47 students (61.7%/29 females; 38.3%/18 males) from School of Management (53.2%/25), Liberal Arts (6.4%/3), Informatics (19.1%/9), and Political Science and Law (21.3%/10), with the means of students' grades and GPAs at 60.91 (SD = 5.95) and 2.19 (SD = .47), and 2) Academic Listening and Speaking, including 440 students (68%/299 females; 32%/141 males) from School of Management (26.1%/115), Architecture (6.1%/27), Engineering (15.7%/69), Liberal Arts (5%/22), Informatics (15%/66), Political Science and Law (12.3%/54), Nursing (.5%/2), Public Health (18.6%/82), and Pharmacy (.7%/3), with the means of students' grades and GPAs at 67.93 (SD = 7.07) and 2.64 (SD = .46), respectively. These two courses were coded as "Course 5" and "Course 6".

Data collection

This study collected the students' grades in English courses and their GPAs in July 2020, as recorded by the General English Course Board of the university. Researchers took the data from the grade report spreadsheets. As part of the research ethic procedures, this study had received approval from the research committee of the School of Language and General Education, Walailak University.

Data analysis

To answer the research question, the researchers performed multiple linear regressions to examine if students' grades in English courses could predict their academic achievement (GPA). As displayed in Table 1, none of the values of skewness and kurtosis from the collected data exceeding -2 and +2, signaling the normality of the data (George & Mallery, 2010). Afterwards, the collected data in each course were examined

by using multiple linear regressions. Effect size, i.e., Cohen's f^2, was also calculated as required in multiple regression (Selya et al., 2012).

		N	Min	Max	Mean	SD	Skewness	Kurtosis
Course 1	Grade	1298	50	93	76.78	8.01	-0.85	0.58
	GPA	1298	1.27	4	2.82	0.50	-0.23	-0.27
Course 2	Grade	89	50	87	68.56	8.47	-0.01	-0.04
	GPA	89	1.69	3.8	2.71	0.45	0.12	-0.21
Course 3	Grade	154	64	92	77.42	7.36	0.49	-1.10
	GPA	154	1.73	4	2.99	0.57	0.05	-1.20
Course 4	Grade	122	63	88	74.99	4.69	0.10	0.55
	GPA	122	1.91	3.65	2.75	0.42	0.15	-0.91
Course 5	Grade	47	50	72	60.91	5.95	-0.14	-0.73
	GPA	47	1	3	2.19	0.47	-0.39	-0.12
Course 6	Grade	440	50	84	67.93	7.07	-0.14	-0.32
	GPA	440	1.27	4	2.64	0.46	0.06	0.04

Table 1: Descriptive statistics

Result and Discussion

Results

Multiple linear regressions were performed in each course to reveal whether students' grades in English courses could predict their academic achievement. The results are presented below.

Course 1, Academic Reading and Writing First-year students

Students' grades and GPAs were positively correlated ($r = .46$, $p < .001$). A significant regression equation was obtained: $F(1, 1296) = 376.83$, $p < .001$). The regression model could explain 23% of the variance in the outcome variable ($R^2 = .23$). The semi-squared partial correlations indicated that students' grades in Course 1 accounted for a significant variability in their GPAs ($sr^2 = .475$, $p < .001$) with small effect size ($f^2 = .30$). As seen in Figure 2, the results of the normal probability plot of the residuals were linear, inferring that the error terms were normally distributed in the regression model. The thick dark line was the result of the big sample size in Course 1.
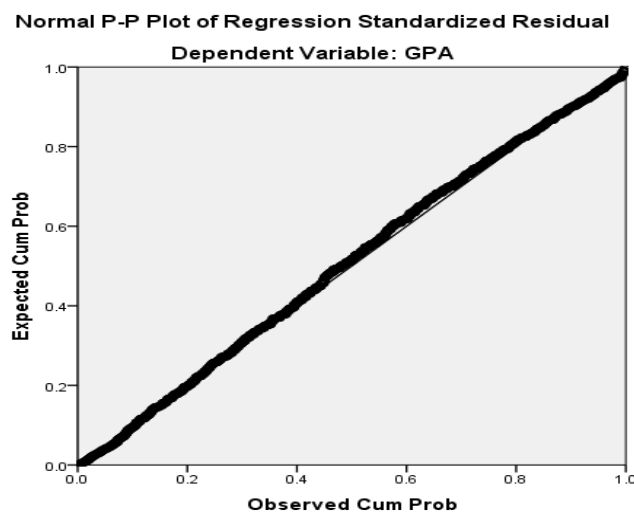

Figure 2: Normas probability plot of residuals in Course 1

Course 2 and 3, English Presentation Courses, second-year students

In Course 2, a positive correlation was observed between students' grades and GPAs ($r = .47$, $p < .001$). The linier regression results disclosed a significant equation: $F(1, 88) = 24.15$, $p < .001$). About 22% of the variance in the outcome variable could be explained by the model ($R^2 = .22$). Students' grades in Course 2

accounted for a significant variability in their GPAs ($sr^2 = .466$, $p < .001$) with small effect size ($f^2 = .28$). Furthermore, the analysis results from Course 3 revealed bigger statistical numbers. Students' grades and GPAs were strongly correlated ($r = .88$, $p < .001$).

The significant regression equation was $F (1, 152) = 506.99$, $p < .001$, which could explain 77% of the variance in the outcome variable ($R^2 = .77$). Students' grades in Course 3 could significantly predict the variability in GPAs ($sr^2 = .877$, $p < .001$) with large effect size ($f^2 = 3.35$). The normal probability plots of residuals in Course 2 and 3 indicated that error terms were normally distributed. with no outliers, as seen in Figure 3.
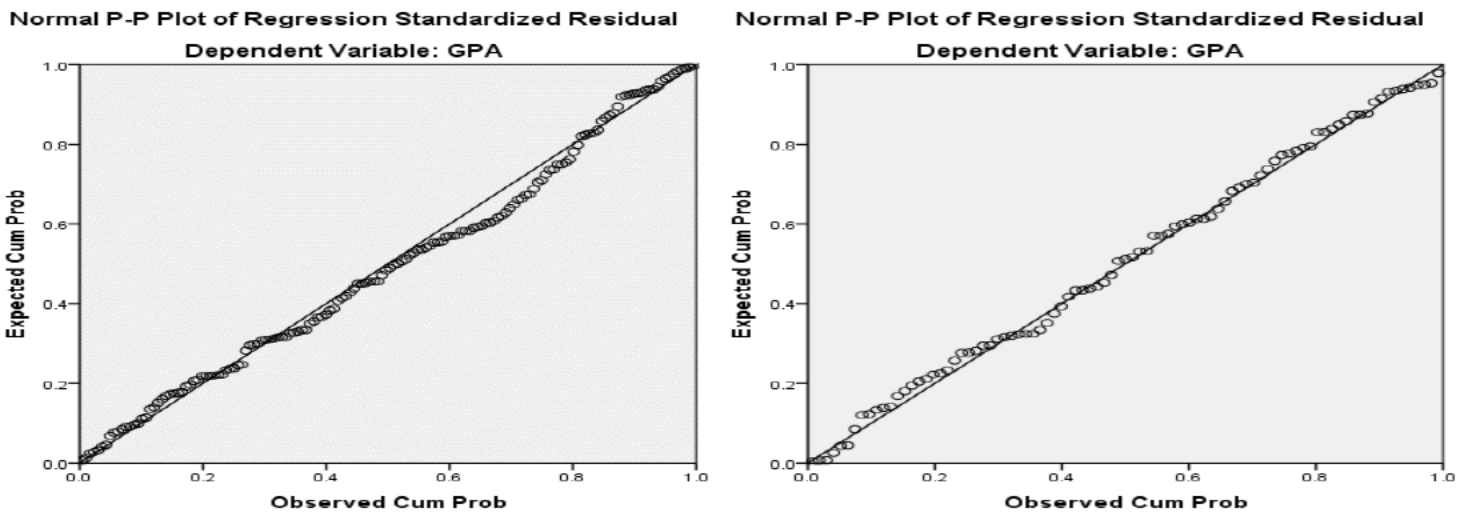

Figure 3: Normal probability plot of residuals in Course 2 and 3

Course 4, English for Business Communication, Third-year students

Students' grades and GPAs had a significant, positive correlation ($r = .46$, $p < .001$). The regression equation was also significant: $F (1, 120) = 32.53$, $p < .001$). Students' grades accounted for 21% of the variability in their GPAs ($R^2 = .21$). The semi-squared partial correlations a significant amount of variability could be explained by students' grades in Course 4 ($sr^2 = .462$, $p < .001$) with small effect size ($f^2 = .27$). Figure 4 below illustrates the linearity of the normal probability pot of residuals in Course 4.
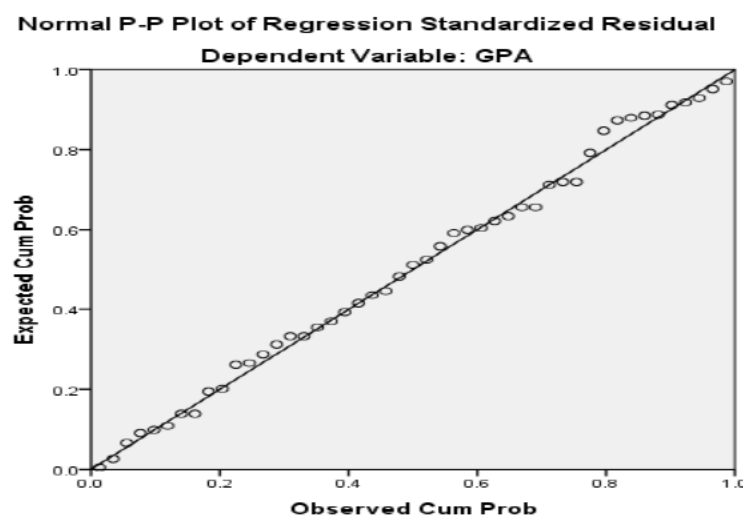

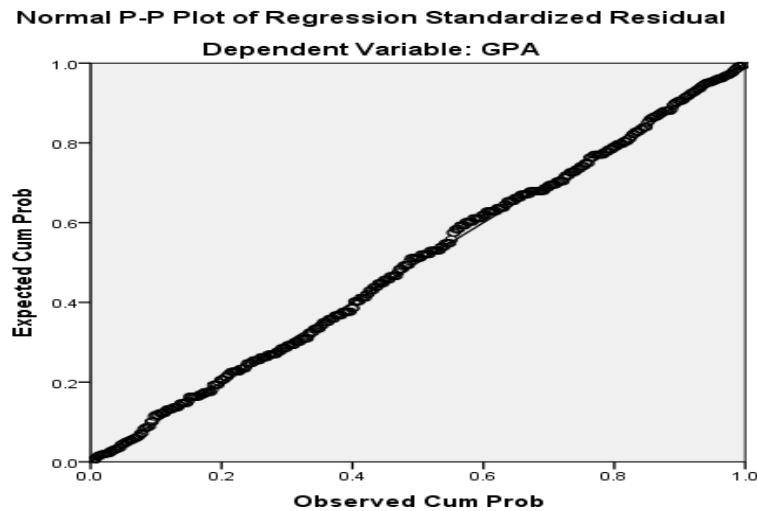Figure 4: Normal probability plot of residuals in Course 4

Figure 5: Normal probability plot of residuals in Course 5 and 6

The correlation between students' grades and GPAs was significantly positive in Course 5 ($r = .33$, $p = .02$). A significant regression equation was attained ($F (1, 45) = 5.67$, $p = .02$) which could explain 11% of the variance in the outcome variable ($R^2 = .11$). The variability was confirmed to be significant amount ($sr^2 = .334$, $p = .02$) with small effect size ($f^2 = .12$). Similarly, a significant correlation ($r = .31$, $p < .001$) and regression equation ($F (1, 438) = 45.93$, $p < .001$) in Course 6. Approximately, students' grades could estimate 10% of the variance in GPAs ($R^2 = .10$). A unique amount of variability could be accounted by students' grades ($sr^2 = .308$, $p < .001$) with small effect size ($f^2 = .11$). The distribution of the residuals in Course 5 and 6 was also found to be linear without outliers, as displayed in Figure 6.
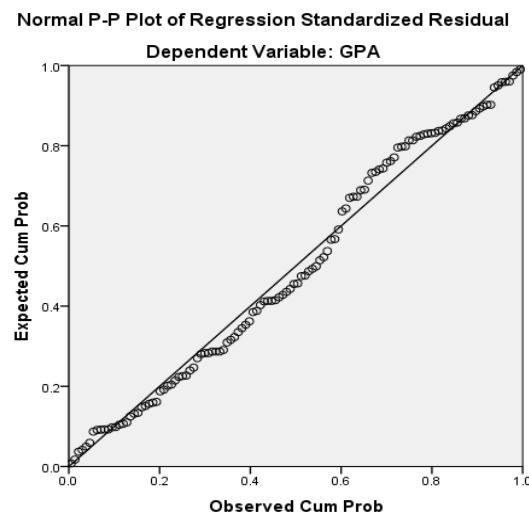

Figure 6: Normal probability plot of residuals in Course 5 and 6

Discussion

The results suggest that students' grades in general English courses could predict their academic achievement measured by GPA. Regardless of the year of study, students' grades were found to be a significant predictor of GPA. The most startling results emerged from the analysis in Course 4, in which students' grades could explain 77% of the variance in students' GPAs with of Second-year students. The students came from the School of Architecture, Engineering, Agriculture, Political Science and Law, Public Health, and Allied Health Sciences. The means of students' grades and GPAs were also the highest among the analyzed courses, implying that the students had a higher level of proficiency. Preceding studies have suggested that although student academic achievement is likely influenced by a wide range of variables,

proficiency in a foreign language such as English has been found to have predictive power (Bayliss & Raymond, 2004; Sothan, 2019), which is consistent with the results of this study. The degree of the influence may depend on how English is used within the academic context where students are immersed (Agirdag & Vanlaar, 2018).

This research also examined students' grades and GPAs from two courses that were taken by low proficiency students. Different results had initially been expected before the analysis was conducted. However, the analysis results revealed similar patterns to the courses undertaken by regular students in Course 1, 2, 3, and 4. Students' grades could explain about 10-11% of the variance in students' GPAs. This finding sustains the argument that English courses are of importance for undergraduate students regardless of their proficiency levels. Recently, Yung and Fong (2019) carried out a study on first year-undergraduate students' perceptions of learning academic English at a university in Hong Kong; the study involved learners with varying proficiencies. Their study identified the gap between the English learned at high school and university, emphasizing the fundamental need for first-year students to attend English courses at university, regardless of their proficiency levels. In their latest study, Yung and Cai (2020) noted that English test results that were commonly used to measure students' English proficiency levels did not necessarily reflect students' English language competence in all aspects of English skills. Therefore, English courses are crucial as foundational units for students in all academic majors (Fenton-Smith et al., 2017). The current study's findings support the notions that, first, not only first-year students, but also second and third-year students, would benefit from taking general English courses, and second, regardless of English proficiency levels, all students need to take general English courses to achieve academic success at the university level. Regarding to the type of English courses, the results sustain the argument that students obtain benefits from general English courses through the enhancement of literacy skills – reading and writing (Alharbi & Yakout, 2018; Allen et al., 2017; Goldstein & Perin, 2008). The results have also implied that students' grades in English presentation courses (Course 2 and 3) could predict their GPAs. Sothan (2019) argued that in the case of EFL learners in a non-English speaking country, having adequate English ability is of the essence in academic life, which can be a determining factor of the extent in knowledge gain and academic progress. Additionally, the results of this study were different from the findings of Arsad et al.'s study (2014) who discovered non-significant results. They observed that while fundamental subjects in students' academic majors could predict their GPA, English courses had neither direct nor indirect effect on students' academic achievement. From the analysis of Course 3 that involved Business majors, this study still found a positive correlation between students' grades in English and GPAs, with the grades contributing around 21% to their GPAs. Van Zyl et al. (2020) noted that the difficulty level of the English language used in course materials and assessment may also have some effect on students' grades, but still be influential to students' academic achievement.

Conclusion

As explained earlier, much of the research into English proficiency and academic achievement has been centered on international students studying in English-speaking countries. However, the need for research focused on the role of English proficiency on domestic EFL learners' academic success at the university level has considerably emerged because of the trend on the adoption of English-medium instruction (EMI) by universities in non-English-speaking countries. In this era of globalization, the internationalization of higher education is inevitable, and increasing the number of courses taught in English has become one of the most preferable strategic plans among universities, especially in Asia (Kırkgöz, 2009). Such ideas are enforced by educational policies set by national governments. There have been concerns and critiques over the implementation of EMI since the last decade, e.g., a policy approach is still inadequate as it overlooks some key aspects at the micro-level (Joe & Lee, 2013), issues on teachers and students' insufficient English competence (Zacharias, 2013), and threats to national language and identity (Kirkpatrick, 2011). In Thailand, the English-medium curricula have been assumed not to accommodate students' perceptions and experiences (Hengsadeekul et al., 2010).

Irrespective of the debates around implementing EMI, the findings of this study have identified the crucial roles of general English courses on academic success for first, second, and third-year students as well as

high and low proficiency students. This study has pointed out that students' grades in English courses are closely related to their GPAs, which means that the relationship may become even stronger when students study at a university that has fully implemented EMI. In such a context, the university is encouraged not only to focus on how to implement EMI but also on how to improve the contents of general English courses that can help prepare students better for more advanced English-medium courses. EMI has triggered the shift from teaching English to teaching with English (Doiz & Lasagabaster, 2020; Ducker, 2018). Even in the context where EMI is not fully functioning, as in this study, general English courses still play a key role.

The main objective of this study was to examine if students' grades in English courses could predict their GPAs. The examination involved different general English courses taken by students in different years of study and proficiency levels. The analysis results confirmed positive correlations and predictive powers of students' grades on their GPAs. These results offer new insights on the roles of English courses for undergraduate students studying at university in a non-English speaking country. With the growing interest in the implementation of EMI, the results highlight the fundamental roles of English courses for other academic courses taught in English. It is acknowledged that although the results are discussed in the implication on EMI, this study does not directly involve the concept of EMI in the research design, which is a limitation. This study also does not use qualitative data that can delve into students' perspectives further. Hence, future studies are recommended to include both the concept of EMI and qualitative data in the investigation.

References

Agirdag, O., & Vanlaar, G. (2018). Does more exposure to the language of instruction lead to higher academic achievement? A cross national examination. *International Journal of Bilingualism, 22*(1), 123 137. https://doi.org/10.1177/1367006916658711

Alharbi, M. F., & Yakout, S. M. (2018). English language proficiency and academic performance of Nursing Students speaking English as a second language *Pielegniarstwo XXI wieku / Nursing in the 21st Century, 17*(4), 5 11. https://doi.org/10.2478/pielxxiw 2018 0035

Allen, N. J., DeLauro, K. A., Perry, J. K., & Carman, C. A. (2017). Does literacy skill level predict performance in community college courses: A replication and extension. *Community College Journal of Research and Practice, 41*(3), 203 216. http://dx.doi.org/10.1080/10668926.2016.1179606

Arsad, P. M., Buniyamin, N., & Manan, J. A. (2014). Students' English language proficiency and its impact on the overall students' academic performance: An analysis and prediction using neural network model. *WSEAS Transactions on Advances in Engineering Education, 11*, 44 53. http://www.wseas.org/multimedia/journals/education/2014/a105710-111.pdf

Bayliss, D., & Raymond, P. M. (2004). The link between academic success and L2 proficiency in the context of two professional programs *Canadian Modern Language Review, 61*(1), 29 53. https://doi.org/10.3138/cmlr.61.1.29

Black, J. (1991). Performance in English skills courses and overall academic achievement. *TESL Canada Journal, 9*(1), 42 56. https://doi.org/10.18806/tesl.v9i1.595

Cloate, R. (2016). The relationship between international students' English test scores and their academic achievements. *Journal of Pedagogic Development, 6*(2), 1 8. http://hdl.handle.net/10547/611800

Doiz, A., & Lasagabaster, D. (2020). Dealing with language issues in English medium instruction at university: A comprehensive approach *International Journal of Bilingual Education and Bilingualism, 23*(3), 257 262. https://doi.org/10.1080/13670050.2020.1727409

Ducker, N. (2018). English as a medium of instruction. *The TESOL encyclopedia of English language teaching*. Wiley & Sons. https://doi.org/10.1002/9781118784235.eelt0968

Fenton Smith, B., Humphreys, P., Walkinshaw, I., Michael, R., & Lobo, A. (2017). Implementing a university wide credit bearing English language enhancement programme: Issues emerging from practice. *Studies in Higher Education, 42*(3), 463 479. https://doi.org/10.1080/03075079.2015.1052736

Geide Stevenson, D. (2018). Does English proficiency affect academic performance?. *International Review of Economics Education, 28,* 41 48. https://doi.org/10.1016/j.iree.2018.04.002

George, D., & Mallery, P. (2003). SPSS for Windows step by step: A simple guide and reference. 11.0 update (4th ed.). Allyn & Bacon.

Graham, J. G. (1987). English language proficiency and the prediction of academic success. *TESOL Quarterly, 21*(3), 505 521. https://doi.org/10.2307/3586500

Goldstein, M. T., & Perin, D. (2008). Predicting performance in a community college content area course from academic skill level. *Community College Review, 36*(2), 89 115. https://doi.org/10.1177/0091552108322631

Hasan, M. K., & Akhand, M. M. (2014). EFL students' English language proficiency and their academic achievement. *ABAC Journal, 34*(2), 64 70. http://www.assumptionjournal.au.edu/index.php/abacjournal/article/view/80/52

Hengsadeekul, C., Hengsadeekul, T., Koul, R., & Kaewkuekool, S. (2010). English as a medium of instruction in Thai universities: A review of literature. In *Selected topics in education and educational technology 9th WSEAS International Conference on Education and Educational Technology, EDU '10, Iwate Perfectual University, Japan, October 4 6, 2010.* (pp. 89 94). https://wseas.org/multimedia/books/2010/Japan/EDU.pdf

Huws, N., Reddy, P., & Talcott, J. (2006). Predicting university success in psychology: Are subject specific skills important?. *Psychology Learning & Teaching, 5*(2), 133 140. https://doi.org/10.2304/plat.2005.5.2.133

Joe, Y., & Lee, H. K. (2013). Does English medium instruction benefit students in EFL contexts? A case study of medical students in Korea. *The Asia Pacific Education Researcher, 22*(2), 201 207. https://doi.org/10.1007/s40299 012 0003 7

Kırkgöz, Y. (2009). Students' and lecturers' perceptions of the effectiveness of foreign language instruction in an English medium university in Turkey. *Teaching in Higher Education, 14*(1), 81 93. https://doi.org/10.1080/13562510802602640

Kirkpatrick, A. (2011). English as a medium of instruction in Asian education (from primary to tertiary): Implications for local languages and local scholarship *Applied Linguistics Review, 2*, 99 120. https://doi.org/10.1515/9783110239331.99

Neumann, H., Padden, N., & McDonough, K. (2019). Beyond English language proficiency scores: Understanding the academic performance of international undergraduate students during the first year of study. *Higher Education Research & Development, 38*(2), 324 338. https://doi.org/10.1080/07294360.2018.1522621

Schoepp, K. (2018). Predictive validity of the IELTS in an English as a medium of instruction environment. *Higher Education Quarterly, 72*(4), 271 285. https://doi.org/10.1111/hequ.12163

Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A practical guide to calculating Cohen's f^2, a measure of local effect size, from PROC MIXED. *Frontiers in psychology, 3*, 111. https://doi.org/10.3389/fpsyg.2012.00111

Sothan, S. (2019). The determinants of academic performance: Evidence from a Cambodian University. *Studies in Higher Education, 44*(11), 2096 2111. https://doi.org/10.1080/03075079.2018.1496408

Thorpe, A., Snell, M., Davey Evans, S., & Talman, R. (2017). Improving the academic performance of non native English speaking students: The contribution of pre sessional English language programmes. *Higher Education Quarterly, 71*(1), 5 32. https://doi.org/10.1111/hequ.12109

van Zyl, G., Bezuidenhout, J., & Adefuye, A. (2020). Factors affecting academic performance in anatomical sciences at a South African university: Students' perspectives. *Africa Education Review, 17*(3), 52 73. https://doi.org/10.1080/18146627.2019.1596748

Yung, K. W. H., & Cai, Y. (2020). Do secondary school leaving English examination results predict university students' academic writing performance? A latent profile analysis. *Assessment & Evaluation in Higher Education, 45(4), 629 642 https://doi org/10 1080/02602938 2019 1680951*

Yung, K. W. H., & Fong, N. (2019). Learning EAP at university: Perceptions of high achieving first year ESL undergraduates. *ELT Journal, 73*(3), 306-315. https://doi.org/10.1093/elt/ccz019

Zacharias, N. T. (2013). Navigating through the English medium of instruction policy: Voices from the field. *Current Issues in Language Planning, 14*(1), 93 108. https://doi.org/10.1080/14664208.2013.782797