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# Correlates of English Immersion Program: A Study of Academic Performance and Gender Differences among ESL Chinese Students

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## Abstract

Wenzhou-Kean University (WKU), a Sino-US Cooperative University in China, adopts the English Immersion Program across curricular programs. Perceived positive influences on students' learning of this instructional model remain scarce. Hence, this paper aimed to determine the correlation between the English Immersion Program, Academic Performance, and Gender among Chinese-ESL students at WKU. Convenience, random, and snowball sampling of 283 students, a response rate of 10.5%, were applied to represent the WKU student population. Descriptive-correlational design for data analysis was used in this cross-sectional research project. Conclusively, findings revealed a significant strong positive relationship between course type, immersion location, instructional design, and academic performance. Course length and academic performance showed a significant moderate positive relationship. Gender and English Language Learning significantly differ. Male students hold higher perceptions of their writing skills and knowledge mastery in learning efficiency. Other indicators do not. Interestingly, findings showed no significant difference in students' subjective assessment in their listening, reading, and writing skills in comparison to the objective assessments provided by external institutions.

## Keywords

English Immersion Program, English Language Learning, Learning Efficiency, Class Participation, and Gender Differences

## 1. Introduction

Under the current situation of globalization, English, as an international language, is increasingly being valued in China. The Chinese government encourages its citizens to attend ESL/EFL classes (Jafarigohar & Mortazavi, 2017) and incorporated English as a compulsory course for college students (Zhou & Zhou, 2016). In 2001, after China's New Course Standards were edited, the English teaching and learning strategies gained more and more attention in schools and universities (Wu, 2009). The English Immersion Program was one of the instructional approaches popularly used by teachers in English teaching to reduce the number of young people who cannot adapt to international communication due to language barriers. However, because the said English teaching model is new and has not matured yet in China, it lacks comprehensive implementation (Qiang & Siegel, 2012).

Wenzhou-Kean University (WKU), as a Sino-US Cooperation University, adopts the English Immersion Program

where all the courses are taught in English. Class discussions and presentations are pervasively interwoven in designing students' learning experiences. Compared with the English teaching model of traditional universities in China, this model in WKU has positively influenced students. They are somehow ahead of traditional college English majors. However, literature to support the perceptions on the positive effects of these instructional models remains scarce.

The distinctive profile of ESL Chinese learners in an English Medium of Instruction (EMI) environment contributes further to the scarcity of literature compared to existing studies conducted among ESL learners in Western educational settings. Thus, the study aimed to describe, correlate, and compare the male and female students' attitudes towards the English Immersion Program and Academic Performance at WKU. This research will provide empirical data that would be helpful to educators, teaching practitioners, university administrators, and other researchers to make informed decisions. Also, using this educational model in developing curricular reforms, instructional and pedagogical methods, and university-wide support programs is evidently beneficial.

## 1.1. English Immersion Program

English Immersion Program (EIP) is defined as the immersion program in which the medium of instruction in all courses is in the English language (Porter, 2000). EIP practices brought forth a great leap in English teaching in China (Siegel, 2011). In this research, EIP is based on four aspects: course length, immersion location, course types, and instructional design.

Ferguson (2010) reported the course length of EIP as short-term, medium length, and long-term. In Hodara's (2015) study, compared to shorter English language courses, the long-term courses gave learners more time to fully immerse themselves in the English atmosphere. Hence, their ability to use English improved faster. The immersion location of EIP classifies countries as English-speaking and non-English-speaking (Mauk, 2003). According to the study of Li, Wang, and Zheng (2018), students with overseas study experience in English-speaking countries tended to respond faster and more fluently during communication.

The course type of EIP categorizes courses as required (professional), elective, general education, and English language preparation. Students who study professional knowledge in English are significantly higher in the level of professional knowledge than students in traditional universities (Anderson et al., 2006). Doganalp (2016) reported that the difficulty factor of an elective course taught in English is higher since students have to accept non-native language transfer. Chu and Lin (2017) reported that if the professor teaches the general education class in English, it will enrich students' critical thinking ability. In addition, in Bai and Wang's (2020) research, English preparation courses apparently helped students' English proficiency, especially their speaking skills.

Instructional methods can be defined as "the techniques that teachers use to help students become independent, strategic learners" (Kizlik, 2018). According to the research done by Wallace (2014), students who learn background information have a more comprehensive understanding of the course content and participate in the class more than others. Scaffolding has proved useful in promoting learners' writing skills (Lai & Calandra, 2010) and listening ability (Talebinejad & Akhgar, 2015).

Class discussion means an interaction between teachers and students with the purpose of developing students' capabilities to expand their understanding (Witherspoon et al., 2016). According to Carrasco and Irribarra's (2018) study, through class discussion, students know how to accept controversial voices and learn from each other. Asking effective questions with clear direction is a good way to lead class discussion because students can grasp the "central idea" that makes the discussion more effective (Dallimore, Hertenstein, & Platt, 2004). The class discussion also enhances students' critical thinking ability because they need to listen and attract information from others' ideas (Hew & Cheung, 2010).

## 1.2. Academic Performance

Academic performance has traditionally measured student achievement in a variety of subjects. It presents how well students accomplish their academic assignments (Agrawal & Nehajul, 2017). This study's academic performance was based on three aspects: English language learning, learning efficiency, and class participation.

English language learning is a compulsory course for Chinese students, which has a far-reaching influence on students' study and career preparation (Zhou & Zhao, 2016). It has grown in importance as a major lingua franca in the global arena but is rarely used by the Chinese (Davydova, 2017). The mastery of four skills, including listening, speaking, reading, and writing, has a significant impact on English Language Learning (Sadiku, 2015).

Learning efficiency reflects students' learning ability and degree of knowledge mastery (Cernazanu-Glavan, Pacurar, & Pacurar, 2013). This process of measuring is difficult to be quantitatively calculated, for it is influenced by subjective

factors. Considering the actual learning process, students could better evaluate themselves by comparing it to other processes of their learning experiences. Thus, two aspects—the concentration of attention and the degree of knowledge mastery—can be used for comparison (Budde, Voelcker-Rehage, Pietraßyk-Kendziorra, Ribeiro, & Tidow, 2008). These factors reflect the learning efficiency because they rely on the students' ability to follow the professor's teaching ideas and test the concentration of students' attention (Guskey, 2015).

Class participation, in Dancer and Kamvounias' (2005) work, is defined as the extent to which students involve themselves in a class, course, etc. It measures students' engagement, for it sees students' performance as a factor (Daggett, 1996). Instructor's attitudes toward students (Roehling, Vincent, Kooi, Dykema, Quisenberry, & Vandlen, 2013), and the students' personal feelings (Aydin, 2013) are two elements that determine class participation. Roehling's work explains that students will be reluctant to participate in the class when the instructors are not open to their ideas. At the same time, students' involvement is positively related to self-confidence, especially for EFL students (Aydin, 2013).

As shown in Figure 1, the English Immersion Program is correlated to Academic Performance and Gender.

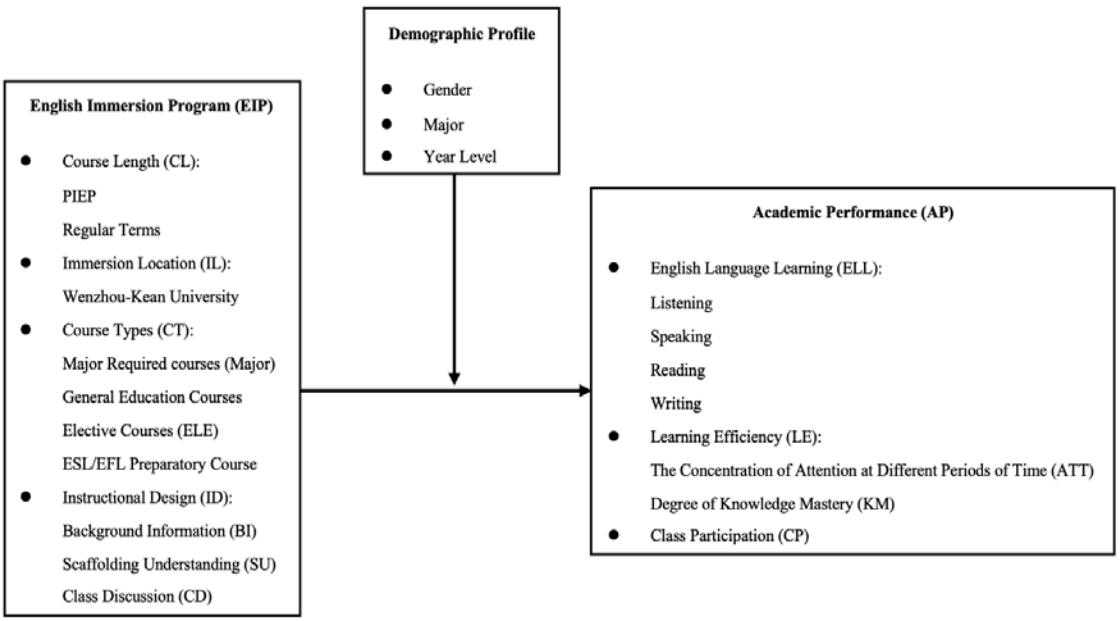


**Figure 1. Conceptual Framework.**

## 1.3. Gender Difference and English Immersion Program

The role of gender in students' attitudes towards the English Immersion Program needs to be closely examined. Ludwig (as cited in Feery, 2008) discovered that there are gender differences regarding students' motivation for learning a foreign language. According to Maccoby and Jacklin (as cited in Coates, 2004), over time, the difference in attitudes between male and female students will gradually shrink and eventually become indistinguishable. However, according to Sabra's (2018) study, female students are more positive towards learning English as a foreign language while male students are more confident in their English abilities.

## 1.4. Gender Difference and Academic Performance

Gender difference in undergraduates' academic performance is one of the top research topics worth investigating. In Zhang and Tsang's Paper presented at the International Forum on Economics of Education (2012), they measured the gender gap in language learning by analyzing participants' National College Entrance Exam (NCEE) grades. The result showed that female performs better than male. However, in STEM (Science, Technology, Engineering, and Mathematics), the male academic performance is better than the female students. Nevertheless, this gap might have decreased over time and across countries in recent years (Zhang & Tsang, 2015).

### 1.4.1 Gender Difference in English Language Learning

Recent scientific studies explore English Language Learning among different genders from the biological perspective.

They found that a gene related to vocalization and language learning is more active in girls than in boys for producing more protein. In that case, young girls learn language earlier and faster than boys in their pre-school years (Sabra, 2018). When it continues into early school age, there is no evident difference between boys and girls (Coates, 2004), for their brain development tends to be balanced.

In previous studies, self-beliefs, which means students' perceptions of themselves, also influence their English language learning. Male and females have different tendencies in believing in themselves; it explains why there is a gender gap in students' learning achievement (Ansell & Doerr, 1996).

On the one hand, Payne and Lynn (2010) used both subjective (self-report survey) and objective measurements (reading comprehension task) to assess students' second language learning ability. They found that no matter what a student's native tongue is, girls, perform significantly better than boys in second language acquisition. However, in a study conducted by Wucherer and Reiterer (2018), the male students performed better than the female students in both listening and speaking ability. This variety is also related to the confidence gap, which refers to a male over female advantage in student self-confidence and willingness to engage in learning tasks (Falco & Crethar, 2008).

#### 1.4.2 Gender Difference in Learning Efficiency

For the learning efficiency, Hirschfeld and Thomas (2011) put forward that the female gender is related to less mastery of knowledge compared with the male gender in limited time duration. They connected this result with individuals' knowledge mastery and further career-relevant factors. At the same time, Hirschfeld and Thomas also pointed out that this difference is strongly related to age. It is not possible to directly distinguish the learning efficiency of different people simply by their gender.

#### 1.4.3 Gender Difference in Class Participation

In 2008, Chajut and Saporta examined the gender difference in students' class participation in both online and face-to-face learning. The finding revealed that the online environment was not attractive enough for either gender to participate in class. In contrast, findings showed that male students behave more actively than female students in offline class discussions. Whereas female students prefer to write down their opinions rather than speak out in front of people. In Nayee's study conducted in 2015, there was a similar finding that males tended to derive greater class participation from discussions than female students even though they have equal ability to contribute substantial comments.

## 2. Methodology

Descriptive-correlational design and quantitative approach were used in this project to determine the correlation between the English Immersion Program and Chinese-ESL Students' academic performance. The research was conducted at Wenzhou-Kean University (WKU), a Chinese-American jointly established university. Having the status of a higher educational institution, WKU adopts the English Immersion Program across curricular programs to help students adapt to the American educational system.

Convenience, random, and snowball sampling of 283 students, a response rate of 10.5%, was applied to represent the WKU student population. The questionnaire was posted through the survey website named Wenjuanxing. Cronbach's alpha was used to test the reliability of the research instrument. A six-point attitudinal Likert scale was applied to describe respondents' attitudes and preferences. Numbers closer to 1 represented strong disagreement (SD), and 6 represented strong agreement (SA).

T-test was used to measure the difference by gender. The level of significance used for each test was set at 0.05.

## 3. Discussion and Result

### 3.1. Students' attitudes towards English immersion program

Table 1 presents the students' attitudes towards the English immersion program in the aspects of course length, immersion location, course types, and instructional design. For the course length of the English immersion program, students prefer PIEP ($\overline{X}1$=4.81), ($\overline{X}2$ = 4.80). Results showed students' preference as follows: for immersion location, they agree that Wenzhou-Kean University is a good immersion location to study ($\overline{X}$=4.74) and they have the confidence to talk with their professors in English ($\overline{X}$= 4.65); for course types, the "major required and EFL/ESL Preparatory course" ranked first ($\overline{X}$= 4.84) and second ($\overline{X}$= 4.49). For instructional design, students prefer the use of relevant pictures to explain new vocabularies ($\overline{X}$= 5.09) and the pictures or video clips to explain difficult concepts ($\overline{X}$= 5.06).

**Table 1. Students' Attitudes towards English Immersion Program**

| Item No. | Descriptive Statements | Mean X | SD | Scaled Response |
|---|---|---|---|---|
| 1.1.1 | I actively participated in the class activities during PIEP. | 4.80 | 1.10 | Agree |
| 1.1.2 | I think the PIEP helped me adapt to the WKU learning environment quickly. | 4.81 | 1.14 | Agree |
| 1.2.1 | I think the courses taken during the fall/spring terms give me more time to immerse myself in the English atmosphere. | 4.72 | 1.09 | Agree |
| 1.2.2 | I think the courses taken during summer/winter terms are fast-paced. | 4.91 | 1.01 | Agree |
| | **Students' attitudes toward course length.** | **4.81** | **1.08** | Agree |
| 2.1.1 | I think Wenzhou-Kean University is a good place to study. | 4.74 | 1.00 | Agree |
| 2.1.2 | I have the confidence to talk with my professors in English at Wenzhou-Kean University. | 4.65 | 1.03 | Agree |
| 2.1.3 | I enjoy talking with my classmates in English at Wenzhou-Kean University. | 4.01 | 1.31 | Somewhat Agree |
| | **Students' attitudes toward immersion location.** | **4.46** | **0.92** | Somewhat Agree |
| 3.1.1 | I enjoy taking the major required courses because I think I can learn a lot of professional knowledge from them. | 4.84 | 1.06 | Agree |
| 3.2.1 | I always find the elective courses which I choose interesting. (eg. PHIL, AH, MUSIC, ...). | 4.38 | 1.21 | Somewhat Agree |
| 3.3.1 | I believe that my general education courses can make me think more critically after taking these courses (eg. GE, HIST, MATH, COMM, ENG 1430 & 2403, PS). | 4.41 | 1.18 | Somewhat Agree |
| 3.4.1 | I find EFL/ESL Preparatory courses (eg. ESL 0305/0303/0405/0403) easy to follow. | 4.49 | 1.22 | Somewhat Agree |
| | **Students' attitudes toward course types.** | **4.53** | **0.92** | **Agree** |
| 4.1.1 | I find it easier to understand the knowledge of the course topic when my professor asks us to read and familiarize ourselves with the content before the class or at the beginning of the class. | 4.92 | 0.88 | Agree |
| 4.1.2 | I find it difficult to understand if the professor directly starts talking about something new without providing initial background information. | 4.62 | 1.07 | Agree |
| 4.2.1 | I understand better the difficult reading content when my professor shows the graphic organizers (i.e. knowledge map). | 4.98 | 0.82 | Agree |
| 4.2.2 | I can concentrate more in class when my professor uses a lot of nonverbal communication (facial expressions, hand gestures, voice tones, body language). | 5.02 | 0.86 | Agree |
| 4.2.3 | I am more engaged in class when my professor shows some pictures or video clips when there are difficult concepts to understand. | 5.06 | 0.88 | Agree |
| 4.2.4 | I understand new vocabularies better when my professor uses relevant pictures to explain them. | 5.09 | 0.85 | Agree |
| 4.3.1 | I develop my capability to expand my understanding in class discussions. | 4.88 | 0.91 | Agree |
| 4.3.2 | I learn to accept the controversial opinions of other students in class discussions. | 5.02 | 0.83 | Agree |
| 4.3.3 | I expand my knowledge from the shared information of others in class discussions. | 4.99 | 0.92 | Agree |
| 4.4.4 | I prefer professors to provide instructions before class discussions. | 4.92 | 0.91 | Agree |
| | **Students' attitudes toward instructional design.** | **4.95** | **0.70** | **Agree** |
| | **Students' attitudes toward English Immersion Program** | **4.69** | | **Agree** |

a. Legend: Strongly Agree (5.51-6.00); Agree (4.51-5.50); Somewhat Agree (3.51-4.50); Somewhat Disagree (2.51-3.50); Disagree (1.51-2.50); Strongly Disagree (1.00-1.50).

### 3.2. Students' Academic Performance

Table 2 presents indicators that are used to measure students' perceptions of the factors that influence their academic performance. Three major categories are "English language learning", "learning efficiency", and "class participation". Within English language learning, this research focuses on English listening, speaking, reading, and writing while in the category of learning efficiency, "the Concentration of attention at different periods of time" and "Degree of Knowledge Mastery" are two sub-fields.

For students' attitudes toward their English language learning, their perception of reading ability "I can read faster than before" ($\overline{X}$=4.60), and "I have the ability to read more complex articles or essays" ($\overline{X}$=4.55) ranked higher than the other three skills. The use of technical products ($\overline{X}$=4.75) and sleep quality ($\overline{X}$=5.20) were two factors that highly influenced students' perception of their learning efficiency. However, they were not always satisfied with their quiz/test/examination grades ($\overline{X}$=3.84) when it comes to measuring their knowledge mastery. Their professor's openness ($\overline{X}$=5.08) and concerns ($\overline{X}$=5.03) ranked as the highest factors that promote mobilizing students' participation in the class.

**Table 2. Students' Academic Performance**

| Item No. | Descriptive Statements | Mean X | SD | Scaled Response |
|---|---|---|---|---|
| 1.1.1 | I can understand clearly about what the professor discussed in class. | 4.66 | 0.92 | Agree |
| 1.1.2 | I completely understand what he/she means when I am talking with English native speakers. | 4.28 | 1.03 | Somewhat Agree |
| 1.2.1 | I can communicate with others in English more fluently. | 4.28 | 1.08 | Somewhat Agree |
| 1.2.2 | My pronunciation is better than before. | 4.62 | 0.97 | Agree |
| 1.3.1 | I can read faster than before. | 4.60 | 0.96 | Agree |
| 1.3.2 | I have the ability of reading more complex articles or essays. | 4.55 | 1.02 | Agree |
| 1.4.1 | I can use more advanced words in my essay writing. | 4.33 | 1.08 | Somewhat Agree |
| 1.4.2 | My writing speed is faster. | 4.45 | 1.03 | Somewhat Agree |
| | **Students' attitudes toward English Language Learning** | **4.47** | **0.82** | **Somewhat Agree** |
| 2.1.1 | I pay more attention to my professor's class when he/she uses some technological products (PowerPoint, video, audio…). | 4.75 | 0.99 | Agree |
| 2.1.2 | I learn more effectively in the class if I have slept well the day before. | 5.20 | 0.87 | Agree |
| 2.2.1 | I am confident with my ideas when my professor asks questions. | 4.28 | 1.02 | Somewhat Agree |
| 2.2.2 | I can finish my homework after each class very smoothly. | 4.44 | 1.06 | Somewhat Agree |
| 2.2.3 | I am always satisfied with my quiz/test/examination grades. | 3.84 | 1.20 | Somewhat Agree |
| | **Students' attitudes toward Learning Efficiency** | **4.50** | **0.79** | **Somewhat Agree** |
| 3.1.1 | I actively participate in class when my professor shows concern for students. | 5.03 | 0.89 | Agree |
| 3.1.2 | I actively participate in class when my professor is open to my original ideas. | 5.08 | 0.87 | Agree |
| 3.1.3 | I actively participate in class when I am confident with my answers. | 4.57 | 1.07 | Agree |
| 3.1.4 | I actively participate in class when I feel relaxed in the class. | 4.68 | 1.09 | Agree |
| | **Students' attitudes toward class participation** | **4.84** | **0.82** | **Agree** |
| | **Students' attitudes toward their academic performance** | **4.60** | | **Agree** |

Legend: Strongly Agree (5.51-6.00); Agree (4.51-5.50); Somewhat Agree (3.51-4.50); Somewhat Disagree (2.51-3.50); Disagree (1.51-2.50); Strongly Disagree (1.00-1.50).

## 3.3. Correlation of English Immersion program and Students' Academic Performance and Practical Implications

Bivariate Correlational analysis as shown in Table 3 was used to determine the relationship between English Immersion Program and Academic Performance. Analysis was categorized into four parts: Correlations of Course Length, Immersion Location, Course Type, Instructional Design, and Academic Performance.

### 3.3.1 Course Length and Academic Performance

When individual dimensions of course length and academic performance were considered, regular term and overall academic performance showed the highest correlation (r=0.452) at the .05 level of significance. There is a moderate positive correlation between course length and class participation (r=0.427). The moderate positive correlation indicates that since regular terms give students more time to immerse themselves in the English language environment, the more students moderately participate in class. Furthermore, when professors are open to students' original ideas and show their concern, students can easily immerse themselves in the English atmosphere through class participation. The regular course length has a weak positive correlation to students' English language learning (r=0.347) and learning efficiency (r=0.345).

However, regular terms can be categorized into long terms (Fall/Spring semester) and short terms (Summer/Winter semester). Courses in the long term are spread out in 15 weeks with two class sessions per week. On average, courses in the short term are spread out in 3 to 4 weeks with two and half hour's sessions every day. Long terms (Fall/Spring semester) showed the highest correlation (r=0.327) at the 0.05 level of significance with overall academic performance. However, the correlation coefficient between short terms (Summer/Winter semester) and overall academic performance is much lower (r=0.094). In particular, the lowest correlation between short terms and students' learning efficiency (r=0.093) needs immediate attention. It indicates that short regular terms, referring to summer and winter semesters, are fast-paced. This likely contribute to lower students' learning efficiency than long regular terms (r=0.316).

PIEP had the lowest correlation with overall academic performance (r=0.325). The lowest correlation between PIEP and students' knowledge mastery (r=0.166) cannot be ignored. It implies that during the short course PIEP, students may not be able to master knowledge as they did in regular terms.

### 3.3.2 Course Type and Academic Performance

The results revealed a strong positive relationship between course type and overall academic performance (r=0.699) at the 0.05 level of significance. When individual dimensions of course type and academic performance were considered, the major required courses and the overall academic performance had the highest correlation (r=0.602). It implies that the more professional knowledge students gain in major required courses, the higher the students' academic performance.

Results established a moderate positive correlation between major required courses and learning efficiency (r=0.553). The correlation indicates that the more technological products (PowerPoint, video, audio...) the professor uses and the more the students sleep well, the higher learning students acquire in their professional knowledge courses.

It is worthy of attention that the correlation between EFL/ESL preparatory courses and all indicators within the overall academic performance is at the lowest level (r=0.494). The data implies that students pay less attention in class since EFL/ESL preparatory courses might be too easy.

### 3.3.3 WKU Immersion Location and Academic Performance

Table 3 shows that there is a strong positive relationship between overall WKU immersion location and overall academic performance (r=0.686) at the 0.05 level of significance. When immersion location and individual dimensions of academic performance were considered, there was a strong positive correlation. The following are the correlations ranked from highest to lowest between WKU immersion location and individual facets of academic performance: English language learning (r=0.653); learning efficiency (r=0.621); and class participation (r=0.571). It implies that when students perceive WKU as a good place to study and have more confidence to talk with professors in English, their pronunciation and fluency in English will be better.

**Table 3. Bivariate correlation of English immersion program and academic performance**

| Bivariate Correlation of English Immersion Program and Academic Performance | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| English Immersion Program | Academic Performance | | | | | | | | | |
| | English Language Learning | | | | | Learning Efficiency | | | Class Participation | Overall Academic Performance |
| | Listen | Speak | Read | Write | Overall | KM | ATT | Overall | | |
| **Course Length** | | | | | 0.347* | | | 0.345* | **0.427*** | |
| PIEP | 0.211* | 0.286* | 0.244* | 0.206* | 0.266* | **0.166*** | 0.330* | 0.258* | 0.357* | 0.325* |
| Regular term | 0.282* | 0.324* | **0.369*** | 0.337* | 0.375* | 0.349* | **0.381*** | 0.410* | 0.439* | **0.452*** |
| a. Summer/Winter | 0.203* | 0.131* | 0.114* | 0.076* | 0.120* | 0.172* | 0.288* | **0.093*** | 0.140* | **0.094*** |
| b. Fall/Spring | 0.293* | 0.391* | 0.303* | 0.366* | 0.330* | 0.396* | 0.342* | **0.316*** | 0.297* | **0.327*** |
| **Immersion Location** | 0.592* | **0.617*** | 0.562* | 0.525* | **0.653*** | 0.543* | 0.552* | **0.621*** | 0.571* | **0.686*** |
| **Course Type** | | | | | **0.624*** | | | **0.637*** | **0.624*** | **0.699** |
| Major | 0.410* | 0.466* | 0.517* | 0.499* | 0.541* | 0.465* | **0.523*** | **0.553*** | 0.534* | **0.602*** |
| Electives | 0.391* | 0.421* | 0.403* | 0.380* | 0.455* | 0.466* | 0.387* | 0.499* | 0.468* | 0.525* |
| General Education | 0.337* | 0.424* | 0.477* | 0.442* | 0.481* | 0.437* | 0.407* | 0.486* | 0.447* | 0.522* |
| Preparatory (ESL) | **0.287*** | 0.365* | 0.407* | 0.423* | 0.425* | 0.440* | 0.378* | 0.476* | 0.437* | 0.494* |
| **Instructional Design** | | | | | 0.554* | | | 0.590* | **0.707*** | **0.651*** |
| Background Information | 0.283* | 0.369* | 0.375* | 0.289* | 0.375* | **0.265*** | 0.522* | 0.407* | 0.487* | 0.469* |
| Scaffolding | 0.403* | 0.462* | 0.479* | 0.377* | 0.490* | 0.351* | **0.890*** | 0.538* | 0.659* | 0.624* |
| Class Discussion | 0.464* | 0.503* | 0.515* | 0.441* | 0.548* | 0.417* | 0.668* | 0.578* | **0.684*** | 0.669* |

*Correlation is significant at the 0.05 level

### 3.3.4 Instructional Design and Academic Performance

There is a strong positive correlation between overall instructional design and overall academic performance (r=0.651) at the 0.05 level of significance. Findings indicate that if students get a suitable instructional design within the class time, their academic performance improves accordingly. When individual dimensions of academic performance were considered, instructional design and class participation showed the highest correlation (r=0.707). This implies that if instructors use appropriate instructional design, such as using relevant pictures to explain new vocabularies and showing some pictures or video clips to introduce difficult concepts, students will participate more in class.

Particularly, class discussion is one of the most effective ways of instructional design, whose correlation with class participation has a strong positive correlation (r=0.684). If professors can provide instructions before class discussion and they are open to the student's original ideas, students will participate more in class. In the area of learning efficiency, which is one indicator of academic performance, scaffolding has the strongest correlation with students' attention (r=0.890). Teachers' scaffolding instruction can also make students pay more attention to their classes.

Compared with scaffolding and class discussion, the correlation between background information and all indicators within the overall academic performance is at the lowest level (r=0.469). Finding accentuates that when professors ask students to familiarize themselves with the content before class teaching, it has a significantly moderate impact on students' academic performance. Specifically, the correlation between background information and students' knowledge mastery has the lowest correlation (r=0.265). It indicates that even though the teacher provides background information, the student does not fully master this knowledge that helps them get a satisfactory grade or finish their homework smoothly.

### 3.3.5 Comparative Assessment of Students' English Language Learning and TOEFL/IELTS reports

T-test was performed to examine the degree of significant differences that existed between students' perceived English language learning and results of either their TOEFL/IELTS score reports. As shown on Table 4, no significant differences were shown in reading, writing, and listening skills. These findings suggest that students' subjective assessment in these proficiencies is at the same level as the objective assessment reports provided by external institutions.

However, speaking skills showed significant differences. The test produced a significant value ($p < 0.05$) of 0.022. The findings suggest that students' subjective assessment is higher than the TOEFL score reports. The emerging difference can be coming from their personal belief that their pronunciation is better than before, and they can communicate with others in English more fluently.

**Table 4. Comparative Assessment of Students' English Language Learning and TOEFL/IELTS reports**

| Comparative Assessment of Students' English Language Learning and TOEFL reports | | | | | |
|---|---|---|---|---|---|
| | | Listening | Speaking | Reading | Writing |
| Subjective Assessments | P Value | 1.000 | 0.022* | 0.855 | 1.000 |
| | Mean-English Language Learning | 23.80 | 24.10 | 25.20 | 23.20 |
| Objective Assessments | Mean-TOEFL | 23.80 | 21.72 | 25.00 | 23.20 |
| **Comparative Assessment of Students' English Language Learning and IELTS reports** | | | | | |
| | | Listening | Speaking | Reading | Writing |
| Subjective Assessments | P Value | 0.323 | 0.076 | 0.815 | 0.189 |
| | Mean-English Language Learning | 6.995 | 6.832 | 7.043 | 6.652 |
| Objective Assessments | Mean-IELTS | 7.239 | 6.370 | 6.978 | 6.326 |

## 3.4. Gender Differences

The T-test was used to determine significant differences between gender and students' attitudes towards the English Immersion Program and Academic Performance

### 3.4.1 Gender Difference and English Immersion Program.

As shown in Table 5, the result indicated that no gender difference exists in students' attitudes towards the English Immersion Program. For course length, "There were no statistically significant differences between groups means by gender", as determined by T-test ($p > .05$, $p=.150$) "… for the PIEP", and ($p > 0.05$, $p=0.697$) "…for the regular terms". For immersion location, "There were no statistically significant differences between group means by gender", as determined by T-test ($p > 0.05$, $p=0.863$) "…for WKU". For course types, "There were no statistically significant differences between group means by gender", as determined by T-test ($p > 0.05$, $p=0.331$) "… for the major required courses", ($p > 0.05$, $p=0.674$) "… for the elective courses", ($p > 0.05$, $p=0.560$) "…for the general education courses", and ($p > 0.05$, $p=0.960$) "…for the ESL/EFL preparatory courses". For instructional design, "There were no statistically significant differences between group means by gender", as determined by T-test ($p > 0.05$, $p=0.219$) "…for background information", ($p > 0.05$, $p=0.127$) "…for scaffolding", and ($p > 0.05$, $p=0.295$) "…for class discussion".

**Table 5. Gender Difference in Students' Attitudes towards English Immersion Program and Their Academic Performance**

| Gender Difference in Students' Attitudes towards English Immersion Program | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Course Length | | Immersion Location | Course Type | | | | Instructional Design | | |
| | PIEP | Regular | WKU | Major | ELE | GE | ESL | Background Information | Scaffolding | Class Discussion |
| P-Value | 0.150 | 0.697 | 0.863 | 0.331 | 0.674 | 0.560 | 0.960 | 0.219 | 0.127 | 0.295 |
| Mean-Male | 4.643 | 4.847 | 4.477 | 4.926 | 4.421 | 4.474 | 4.495 | 4.679 | 4.934 | 4.861 |
| Mean-Female | 4.894 | 4.802 | 4.456 | 4.797 | 4.358 | 4.385 | 4.487 | 4.816 | 5.092 | 5.000 |
| **Gender Difference in Students' Academic Performance** | | | | | | | | | | |
| | English Language Learning | | | | | Learning Efficiency | | | Class Participation | |
| | Listen | Speak | Read | Write | Overall | Knowledge Mastery | Attention | Overall | | |
| P Value | 0.057 | 0.067 | 0.246 | 0.010* | 0.042* | 0.004* | 0.362 | 0.225 | 0.542 | |
| Mean-Male | 4.621 | 4.595 | 4.674 | 4.611 | 4.626 | 4.425 | 4.905 | 4.665 | 4.887 | |
| Mean-Female | 4.390 | 4.377 | 4.539 | 4.281 | 4.405 | 4.064 | 5.001 | 4.536 | 4.818 | |

### 3.4.2 Gender Difference and Academic Performance

*Gender Difference and English Language Learning*

As shown in Table 5, the test result produced significant values ($p < 0.05$) of 0.04 for the overall English language learning and 0.01 for the writing ability. As the significance values are below 0.05, the findings suggest a significant difference in students' English language learning by gender. It implies that male students hold higher perceptions regarding their English language learning, specifically their writing skills, than female students. This can likely be attributed to the subjective assessment of male students' perceptions that they have better self-beliefs, self-confidence, and willingness to engage in learning tasks (Ansell & Doerr, 1996; Falco & Crethar, 2008). On the contrary, in the objective assessment conducted by Zhang and Tsang (2015) study, the findings revealed that females perform better than males in English Language Learning. Similarly, female students perform better in reading comprehension abilities (Payne & Lynn, 2010).

*Gender Difference and Learning Efficiency*

As shown in Table 5, the results of the test produced no significant value ($p > 0.05$) of 0.362 for students' concentration of attention and a significant value ($p < 0.05$) of 0.004 for knowledge mastery. As the significance value is below 0.05, it suggests a gender difference in students' knowledge mastery. The finding indicates that male students have better knowledge mastery than female students. It supports the previously mentioned study that the female gender has less mastery of knowledge than the male gender (Hirschfeld & Thomas, 2011).

*Gender Difference and Class Participation*

As shown in Table 5, the results revealed no significant difference in class participation by gender. The test produced no significant value ($p > 0.05$) of 0.542. The findings suggest that male students' attitudes towards class participation are at the same level as female students. The findings contradict the previous study of male students' having more active participation than female students in offline class discussion.

## 4. Recommendations and Conclusion

In conclusion, the findings revealed a significant strong positive relationship between course type, immersion location, instructional design, and academic performance. Students have better academic performance when they gain more professional knowledge in their major required courses. Students' learning efficiency improves when they have a good sleep and pay more attention in class. Students' perception of a good learning environment and confidence to talk with their professor positively influence their English pronunciation and fluency. Students' class participation increases with the application of appropriate instructional designs and the usage of technological products.

A significant moderate positive relationship between course length and academic performance was established. The longer students are immersed in the English language environment during the Fall and Spring terms, the more they participate in class compared to the Winter and Summer terms.

Gender and English Language Learning significantly differ. Male students hold a higher perception of their writing skills than female students. Other overall indicators do not. Although male students significantly hold a higher perception of their mastery knowledge than female students in individual dimension testing.

Taking into consideration the distinctiveness of the WKU students' profile by which the English Immersion Program has been implanted, the following are thereby recommended:

A. Reduce course offerings during winter and summer terms. Students think these short regular terms are fast-paced. Learning efficiency was at its lowest contribution to academic performance.

B. Keep up/Sustain WKU's good learning environment since it is a strong predictor of students' academic performance.

C. Strengthen non-professional courses while incorporating more challenging learning experiences in ESL/EFL preparatory courses to increase students' academic performance.

D. Encourage students to frequently use the English language to communicate with classmates and friends.

E. Integrate technological tools and technology applications across the various course types.

F. Intensify the usage of relevant pictures or video clips to help students understand new knowledge during the class.

G. Create a relaxing classroom environment to elicit active student participation.

H. Be open-minded to students' original and divergent ideas.

## References


Agrawal, M. and Nehajul, M. S. K. (2017). Predictors of academic performance: Emotional intelligence and stream among graduate students. Educational Quest, 8(3), 743-750. http://dx.doi.org/10.5958/2230-7311.2017.00130.1.

Anderson, P., Lawton, L., Rexeisen, R., and Hubbard, A. (2006). Short-Term Study Abroad and Intercultural Sensitivity: A Pilot Study. International Journal of Intercultural Relations (INT J INTERCULT RELAT), 30, 457-469. https://doi.org/10.1016/j.ijintrel.2005.10.004.

Ansell, E. and Doerr, H. M. (1996). NAEP findings regarding gender: Achievement, affect, and instructional experience. In P. A. Kenney & E. A. Silver (Eds.), *Results from the sixth mathematics assessment of the National Assessment of Educational Progress* (pp. 73-106). Reston, VA: NCTM.

Aydin, S. (2013). Teachers' perceptions about the use of computers in EFL teaching and. learning: the case of Turkey. Computer Assisted Language Learning, 26(3), 214-2.

Bai, L. and Wang, Y. X. (2020). Pre-departure English language preparation of students on joint 2+2 programs. https://doi.org/10.1016/j.system.2020.102219.

Budde, H., Voelcker-Rehage, C., Pietraßyk-Kendziorra, S., Ribeiro, P., and Tidow, G. (2008). Acute coordinative exercise improves attentional performance in adolescents. Neuroscience letters, 441(2), 219-223.

Carrasco, D. and Irribarra, D. (2018). The role of classroom discussion. *IEA Research for Education*, 87-101. https://doi.org/10.1007/978-3-319-78692-6_6.

Caspi, A., Chajut, E., and Saporta, K. (2008). Participation in class and in online discussions: gender differences. Computers & Education, 50(3), 718-724. https://doi.org/10.1016/j.compedu.2006.08.003.

Cernazanu-Glavan, C., Pacurar, C., and Pacurar, A. (2013). A Model for Efficiency Estimation of Student Activity Depending on Environmental Comfort Parameters. Metalurgia International, 18(9), 221-226.

Chu, Jo-Yin and Eric S. Lin. (2017). "The Learning Effectiveness About the Ability of Critical Thinking in General Courses and its Application of Institutional Research." Journal of Education & Psychology, 40(4), 29-62. [TSSCI]

Coates, J. (2004). *Women, Men and Language: a sociolinguistic account of gender differences in language.* Harlow (GB): Pearson Longman.

Daggett, Luann. (1997). Quantifying Class Participation. Nurse educator, 22, 13-4.

Dallimore, E. J., Hertenstein, J. H., and Platt, M. B. (2004). Classroom participation and. discussion effectiveness: Student-generated strategies. Communication Education, 53(1). DOI: 10.1080/0363452032000135805.

Dancer, D. and Kamvounias, P. (2005). Student involvement in assessment: A project. Designed to assess class participation fairly and reliably. Assessment & Evaluation in Higher Education, 30(4), 445-454.

Davydova, J. (2017). Teaching Global English. English Today, 33, 62-63.

Doganalp, B. and Doganalp, S. (2016). Determination of elective course based on hierarchical fuzzy topsis method with matlab Software/Matlab yazilimiyla hiyerarsik bulanik TOPSIS yöntemine dayali seçmeli dersin belirlenmesi. Selcuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, (35), 103-114.

Education & Bilingualism, 21(1), 118-134. doi:10.1080/13670050.2016.1142499.

Falco, L. D. and Crethar, H. (2008). Skill-builders: Improving middle school students' self-beliefs for learning mathematics. Professional School Counseling, 11(4), 229-235.

Feery, K. (2008). Current Perspectives on the Role of Gender in Second Language Acquisition (SLA) Research, The ITB Journal: Vol. 9: Iss. 1, Article 4.

Ferguson, J. M. and DeFelice, A. E. (2010). Length of online course and student satisfaction, perceived learning, and academic performance. International Review of Research in Open and Distance Learning, 11(2).

Gatwiri, G. (2015). "The Influence of Language Difficulties on the Wellbeing of International Students: An Interpretive Phenomenological Analysis." Inquiries Journal/Student Pulse, 7(05).

Guskey, Thomas. (2015). Mastery Learning. International Encyclopedia of the Social & Behavioral Sciences. 10.1016/B978-0-08-097086-8.26039-X.

Hew, K. F. and Cheung, W. S. (2010). Possible factors influencing Asian students' degree of participation in peer-facilitated online discussion forums: A case study. Asia Pacific Journal of Education, 30(1), 85-104. https://doi.org/10.1080/02188790903503619.

Hirschfeld, R. and Thomas, C. (2011). Age- and gender-based role incongruence: implications for knowledge mastery and observed

leadership potential among personnel in a leadership development program. Personnel Psychology, 64(3), 661-692. https://doi.org/10.1111/j.1744-6570.2011.01222.x.

Hodara, M. (2015). The effects of English as a second language courses on language minority community college students. Educational Evaluation and Policy Analysis.

Jafarigohar, M. and Mortazavi, M. (2017). The Impact of Scaffolding Mechanisms on EFL Learners' Individual and Socially Shared Metacognition in Writing. Reading & Writing Quarterly, 33: 3, 211-225. DOI: 10.1080/10573569.2016.1154488.

Lai, G. and Calandra, B. (2010). Examining the effects of computer-based scaffolds on novice teachers' reflective journal writing. Educational Technology Research and Development, 58(4), 421-437.

Nayee, B. (2015). Why Should We Care About The Gender Difference in Classroom Participation? Penn Journal of Philosophy, Politics & Economics, Vol. 10, Iss. 1, Article 2.

Payne, T. W. and Lynn, R. (2011). Sex differences in second language comprehension. Personality & Individual Differences, 50(3), 434-436. doi:10.1016/j.paid.2010.10.026.

Porter, R. P. (2000). The Benefits of English Immersion. Educational Leadership, 57(4), 52-56.

Qiang, Haiyan and Siegel, Linda S. (2012). Introduction of English Immersion in China: A Transplant with Modifications. International Education, Vol. 41, Issue (2).

Roehling, P., Vander Kooi, T., Dykema, S., Quisenberry, B., and Vandlen, C. (2013). Engaging the millennial generation in class discussions. College Teaching, 59(1), 1-6.

Sabra, S. (2018). Gender differences in young learners' English skills in Swedish schools: A study of perceived and actual gender differences in skills, attitude towards and interest in the English language.

Sadiku, L. M. (2015). The importance of four skills reading, speaking, writing, listening in a lesson hour. European Journal of Language and Literature.

Siegel, L. S. (2011). Early English immersion in Xi'an, China: An experiment in English language teaching. Frontiers of Education in China, 6(1), 1-7. doi: http://dx.doi.org/10.1007/s11516-011-0119-1.

Talebinejad, R. M. and Akhgar, F. (2015). The Impact of Teacher Scaffolding on Iranian Intermediate EFL Learner's Listening Comprehension Achievement. Theory and Practice in Language Studies, Vol. 5, No. 5, pp. 1101-1105, May 2015. DOI: http://dx.doi.org/10.17507/tpls.0505.27.

Wallace, J., Jones, C., and Sloss, T. (2014). *Research-Based Best Practices for Closing the Achievement Gap between English Language Learners and Non-English Language Learners in Southeastern School District*. http://search.proquest.com/docview/1648740387/abstract/72D92AD8964444A9PQ/1.

Witherspoon, M., Sykes, G., and Bell, C. (2016). Leading a Classroom Discussion: Definition, supportive evidence, and measurement of the ETS® National Observational Teaching Examination (NOTE) assessment series (Research Memorandum No. RM-16-09). Princeton, NJ: Educational Testing Service.

Wu, X. (2009). A study on oral English proficiency and learning strategies of pupils in English immersion class (Master). South China Normal University (People's Republic of China), Peoples Republic of China. Retrieved from http://search.proquest.com/docview/1869125260/9FE4D5E606E64D9DPQ/1center.

Wucherer, B. V. and Reiterer, S. M. (2018). Language is a girlie thing, isn't it? A psycholinguistic exploration of the L2 gender gap. International Journal of Bilingual.

Zhang, Y. and Tsang, C. M. (2012). Gender gap in the National College Entrance Exam performance in China. Paper presented at the *International Forum on Economics of Education* in Beijing, China on November 2-4, p. 2012.

Zhang, Y. and Tsang, M. (2015). Gender gap in the national college entrance exam performance in China: a case study of a typical chinese municipality. Asia Pacific Education Review, 16(1), 27-36. https://doi.org/10.1007/s12564-014-9351-8.

Zhou, J. Z. and Zhou, P. (2016). Data mining research based on analysis of the Chinese-foreign cooperation in running schools. Applied Mechanics and Materials, 536-537, 376-381. doi: http://dx.doi.org.kean.idm.oclc.org/10.4028/www.scientific.net/AMM.536-537.376.

Zhou, Y. and Zhao, J. (2016). Three primary tasks of the first college English class in China. Theory and Practice in Language Studies, 6(11), 2186-2190.