



# The comparison of pre-class learning effect on Thai undergraduates' academic performance, speaking self-efficacy, and speaking anxiety in the flipped learning applied Korean classes<sup>\*</sup>

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Kim, Chun-Ye. 2024. The comparison of pre-class learning effect on Thai undergraduates' academic performance, speaking self-efficacy, and speaking anxiety in the flipped learning applied Korean classes. *Linguistic Research* 41(Special Edition): 157-183. This study sought to compare the effects of PLP (Pre-class Learning Performance) on academic performance, speaking self-efficacy, and speaking anxiety in the Flipped Learning (FL)-applied Korean language classes. Beginner-level Thai KFL learners (N=76) were recruited from Korean 1 course at a university in Thailand. After traditional classes were implemented during the first half of the semester, academic performance and the surveys of speaking self-efficacy and speaking anxiety were undertaken for pre-tests. After FL was applied during the second half of the semester, the participants were divided into 2 groups according to the quiz scores from PLP. At the end of the semester, post-tests were implemented, and the results were analyzed by one-way ANCOVA. Group A with an adequate level of PLP outperformed in the written tests with a statistically significant level [F (1,73)=6.900,  $p=.010$ ] whereas the speaking test was nullified due to the violation of assumptions. Group A demonstrated a significant decrease in speaking anxiety [F (1,73)=4.776,  $p=.032$ ], while speaking self-efficacy did not show a difference between groups. This result implies that despite the short period of applying FL, the adequate level of PLP enabled the learners to outperform in the written tests. The effect of PLP on diminishing speaking anxiety should be noted by teachers so that they may put an adequate focus on managing pre-class learning in FL to optimize learning atmospheres. (Mae Fah Luang University)

**Keywords** comparison of effects, PLP (Pre-class Learning Performance), FL (Flipped Learning), academic performance, speaking self-efficacy, speaking anxiety

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## 1. Introduction

FL (Flipped Learning) indicates an educational approach that provides a more efficient and effective outcome, by flipping traditional strategies. FL combines asynchronous online lectures that learners proceed with prior to class with synchronous classroom learning activities which facilitates the interactions with learners and peers or teachers (Bergmann and Sams 2012; Strayer 2012; Bishop and Verleger 2013; Hamdan et al. 2013; Herreid and Schiller 2013; Kilbane and Milman 2013; Mason, Shuman, and Cook 2013; McLaughlin et al. 2014). Based on Bloom's taxonomy, FL empowers learners to achieve the low-order of cognitive skills, remembering and understanding, through pre-class learning. Therefore, during in-class learning, learners can place more focus on acquiring high-order of cognitive skills, applying, analyzing, evaluating, and creating through some collaborative activities. (Anderson and Krathwohl 2001; Hwang, Lai, and Wang 2015; Blau and Shamir-Inbal 2017).

In general, FL has 2 or 3 phases of learning procedures, which are pre-class learning, in-class learning, and post-class learning. In pre-class learning, educators share learning materials on the platform that learners can access freely and assign them to study at their own pace. During in-class learning, learners are expected to be more active and more engaged in class activities. In the phase of post-class learning, learners are assigned to do some follow-up assignments. So far, many studies have argued that the phase of in-class learning is critical for the success of FL (Bergmann and Sams 2012; Lee, Lim, and Kim 2017). Even though pre-class is the substantial phase that distinguishes FL from other teaching approaches, less attention has been paid to pre-class learning in an FL setting. Recently some studies verified the significant and remarkable effect of pre-class learning and proposed to rethink pre-class learning (Lee and Choi 2018). This result reflects the trend that people started to outweigh pre-class learning over in-class learning in FL strategy. With the significance of pre-class learning arising, the concept of FLR (Flipped Learning Readiness) was introduced. It defines learners' status in the pre-class phase, how much they are ready to learn and how they intend to prepare themselves with the contents prior to class (Hao 2016; Lee and Choi 2018; Polat, Hopcan, and Arslantaş 2022). FLR was categorized into 5 sub-dimensions by Hao (2016), which are; a) learner control and self-directed learning, b) technology self-efficacy, c) motivation for learning, d) in-class communication self-efficacy, and e) doing previews. From the educator's end, they

need to be convinced by the explicit data that proves effectiveness of FLR so that they may exercise more appealing teaching methods in pre-class learning. In this study, the researcher wants to examine how learners' PLP, that is, doing previews, a sub-dimension of FLR, affects the learners' academic performance and emotional dimensions in FL-applied Korean language classes in the condition that in-class learning is identical. By proceeding with this, this research might contribute to empirically prove whether PLP plays a significant role in FL or not. Since, in the present study, the concept of FLR is slightly broad, the researcher wants to use the term PLP (Pre-class Learning Performance) level, determined by the quiz scores from preview contents in the lecture video.

The purpose of this study is to investigate whether PLP entails significant differences in emotional dimensions as well as academic performance. The effect of FL has been verified by much research in terms of academic performance more than in terms of learners' emotional dimensions. While the emotional dimensions have been considered a significant factor in other disciplines, in the field of SLA (Second Language Acquisition), they used to be overlooked and underrated (Garrett and Young 2009; Dörnyei and Ryan 2015; Dewaele, Magdalena, and Saito 2019). If language performance is a visible and measurable dimension for language learning, emotion is an invisible and underlying dimension, which should be appropriately highlighted. Language educators have been so caring about improving learners' skills that they have failed to deal with emotional dimensions to a proper extent. Out of various emotional dimensions, in this study, speaking self-efficacy and speaking anxiety will be examined in the context of FL-applied Korean language classes since they are very closely connected to speaking skills.

Speaking self-efficacy is an individual's own belief that one can deliver one's thoughts and opinions in an efficient manner in a specific situation (Lopez and Snyder 2009). Speaking anxiety is a complex of feelings and behaviors that result from challenges and difficulties in language learning process (Horwitz, Horwitz, and Cope 1986: 128). Learning a foreign language is not always a joyous journey but a challenging process for many learners. Even if learners want to communicate smoothly with teachers and classmates in a target language, anxiety hinders them from speaking foreign languages confidently (Horwitz, Horwitz, and Cope 1986). Therefore, when educators apply any teaching approaches, they should consider whether a certain approach will influence learners' emotional dimensions positively or not. By examining

the effect of specific phase of FL, pre-class stage, on academic and emotional dimensions, this research will contribute to provide more diverse implication and perspectives to KFL learners and educators who are interested in implementing FL.

## **2. Literature review**

The previous studies were explored in 3 mainstreams: the pre-class learning in the FL setting, the association between FL and academic performance, and the association between FL and speaking self-efficacy and speaking anxiety.

### **2.1 The pre-class learning in the FL approach**

When researchers investigated the effect of FL, they scarcely broke down the phases of it, they compared the effects as a whole. However, the design of each phase of FL should be fully considered if the researchers want to investigate the outcome more deeply and specifically than just comparing the whole effect of FL strategy (Chen et al. 2023).

In the FL approach, it was considered that the in-class phase is a more essential part of FL than the pre-class phase (Bergmann and Sams 2012; Lee, Lim, and Kim 2017). Yet, some studies pointed out the importance of pre-class learning, which contended that pre-class learning affects the outcome of FL more than in-class learning (Lee and Choi 2018; Chen et al. 2023). Lee and Choi (2018) showed that pre-class learning had almost 2 times as strong a positive correlation with final learning achievement, compared to the strength of the relationship between in-class learning and outcome. Given that the core value of FL lies in that the learners should study the contents before class (Abuhmaid and Abood 2020) if learners are dedicated and faithfully invest their time and effort in pre-class learning, it might guarantee a successful FL. Several studies have demonstrated that pre-class activities positively affect learners' academic performance (Moravec et al. 2010; Thai, De Wever, and Valcke 2017; Lee and Choi 2018). Chen et al. (2023) reported that pre-class behavior emerged as a good predictor of assignment scores. From the learners' perspective, pre-class learning might be challenging because it depends on how well they can proceed with their autonomous learning. Unlike in-class learning where the learners

are directed and facilitated by teachers, in pre-class learning, learners bear all responsibilities for learning by themselves (Hwang and Lai 2017). The challenges lie in that the learners don't feel like doing previews and they often fail to take control of self-paced learning (Hao 2016). Han and Klein (2019) also pointed out the significance of pre-class learning because in-class learning benefits from pre-class learning, which enables learners to build good foundational knowledge.

As people tried to examine the effectiveness of FL, the importance of assessment of FLR was highlighted by several researchers (Hao 2016; Lai and Hwang 2016). The level of FLR is one of the strongest factors that guarantee the success of FL (Hao 2016). Furthermore, the association between FLR and several variables was actively explored and positively confirmed (Hao 2016; Durak 2018; Lee and Choi 2018). Even though PLP has been attracting more attention, few studies have investigated how it interacts with academic performance and emotional realms. This is the gap to fill in through this study.

## **2.2 The association between FL and academic performance**

Much research has reported that FL notably improved student learning outcomes (Day and Foley 2006; Zappe et al. 2009; Deslauriers and Wieman 2011; McLaughlin et al. 2014; Hung 2015). In the perspective of FL's usefulness, most teachers might admit that FL is one of the most effective educational strategies.

When the researchers validate the effects on academic performance, by primarily comparing the effect between FL and Non-FL (Mason, Shuman, and Cook 2013; Hung 2015; Yousefzadeh and Salimi 2015; Adnan 2017; Chen and Hwang 2019; Nam 2019; Challob 2021; Hsiao, Hung, and Huang 2021; Nourinezhad, Hadipourfard, and Bavali 2021; Öztürk and Çakıroğlu 2021). Mason, Shuman, and Cook (2013) compared the effectiveness of FL to a traditional class in terms of content coverage, student performance on quizzes and exams, and student observations and perception of the inverted classroom. Yousefzadeh and Salimi (2015) demonstrated that there were significant differences between flipped and ordinary classes in students' learning outcomes. Öztürk and Çakıroğlu (2021) reported that the group with self-regulated learning in the FL setting performed better in grammar scores, speaking, reading, and writing. It was also reported that FL had a positive impact on EFL learners'

speaking performance (Chen and Hwang 2019). The learners in FL strategy outperformed the control group on the examinations (Hsiao, Hung, and Huang 2021). The effect of FL was also verified in the writing performance (Nourinezhad, Hadipourfard, and Bavali 2021). Nam (2019) explored the effect of FL on aspects of learners' academic performance along with intercultural competence, and autonomy. Challob (2021) investigated the effects of using flipped learning on students' English writing performance in English writing classes through a qualitative case study. Few studies demonstrated an inconsistent result, which reported that as for academic performance, no significant differences were found between the FL and traditional classrooms (Clark 2013). Generally, FL has an extensive advantage for all 4 language skills in academic performance. However, as the influence of PLP on academic performance was rarely touched by previous research, the current study exerts to fill this gap.

When it comes to academic performance in language classes, generally it takes less time for the learners to grasp the knowledge about a certain language. In contrast, it requires more time for the learners to perform their knowledge at a decent level. In this study, written tests were implemented to assess learners' understanding of the language itself, whereas speaking tests were conducted to evaluate the learners' ability to perform their knowledge in an oral format. Then the results were compared in groups with a good level of PLP and with a poor level of PLP. This is an attempt to clarify whether the PLP will influence the learners' academic achievement depending on the learners' PLP level.

### **2.3 The association between FL and speaking self-efficacy and speaking anxiety**

Even though the FL approach has been applied extensively in foreign language education recently, there is comparatively less empirical research on how FL approach is associated with emotional aspects. The notion of self-efficacy was established by Albert Bandura in 1995. Self-efficacy is an individual's belief in his or her ability to practice behaviors or skills (Bandura 1995; Lopez and Snyder 2009). Self-efficacy is an important aspect of human motivation and behavior and influences actions that can affect one's life. Several studies examined how FL affects learners' self-efficacy (Hsiao, Hung, and Huang 2021; Nourinezhad, Hadipourfard, and Bavali 2021). Hsiao,

Hung, and Huang (2021) reported that the experimental group with an 18-week semester-long flipped approach attained significantly higher self-efficacy in a university ESP class in Taiwan. Nourinezhad, Hadipourfard, and Bavali (2021) also revealed that flipped instruction had a more positive effect on improving writing self-efficacy. In contrast, a few studies reported that FL didn't bring any difference between pre-FL and post-FL (Missildine et al. 2013; Croy et al. 2020). Missildine et al. (2013) demonstrated that FL did not improve student satisfaction. Croy et al. (2020) contended that even in anxiety-provoking circumstances, in the FL applied setting, the self-efficacy level of the learners from nursing school was preserved in the context of an Australian university. This implies that their self-efficacy level has not increased even after applying FL.

FLCA (Foreign Language Classroom Anxiety) was defined as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom learning, arising from the uniqueness of the language learning process" (Horwitz, Horwitz, and Cope 1986: 128). As researchers grew excited in initiating research on the relationship between anxiety and language skills, they paid the most attention to speaking skills. With this trend, a new terminology, foreign language speaking anxiety was introduced (Öztürk and Gürbüz 2014). Several research highlighted that speaking brought about the highest level of anxiety (Young 1999; Tanveer 2007; Aydın 2008; Hashemi 2011; Yaikhong and Usaha 2012). Second-language speaking anxiety was believed to be a significant predictor of oral performance. The results indicated that the most frequent source of anxiety was interacting with native speakers. The reasons that students may experience anxiety are skills deficit or retrieval interference (Woodrow 2006). Anxiety is one of the psychological factors that contributes significantly to creating the 'mind set' which determines learners' performance, mainly speaking performance. It is the essential cause of hindering EFL learners' speaking performance (Juhana 2012). Many studies have examined how FL brought about a positive impact on learners' anxiety (Chen and Hwang 2019; Abdullah, Hussin, and Ismail 2021; Gök, Bozoğlan, and Bozoğlan 2021). Chen and Hwang (2019) demonstrated that concept mapping-based flipped learning had a significant influence on decreasing learners' speaking anxiety. Abdullah, Hussin, and Ismail (2021) verified that FL influences decreasing EFL learners' anxiety in English speaking performance. Gök, Bozoğlan, and Bozoğlan (2021) investigated the effect of the flipped classroom model on pre-service English language teachers' FLCA (Foreign Language Classroom Anxiety) and FLRA (Foreign Language

Reading Anxiety). A significant change was found in the flipped group whereas it wasn't in the non-flipped group. Dalkılıç (2001) revealed a significant relationship between the student's anxiety levels and their performance in speaking classes. Djiginovic (2006) found that learners who held a high level of speaking anxiety produced less amounts of continuous speech in L2. This indicates that speaking anxiety obstructs the development of learners' fluency. Overall, FL produced good results in reducing anxiety.

This study aimed to find empirical evidence of whether PLP has empirical effects on Thai KFL learners' emotional dimensions (speaking efficacy and speaking anxiety) as well as academic performance (speaking test and written test) depending on the learner's PLP. The research questions were set likewise.

1) Is there any significant difference in academic performance in pre-intervention and post-intervention between the group with an adequate PLP level and the group with an inadequate PLP level on the condition that in-class learning and post-learning are identical? 2) Is there any significant difference in speaking self-efficacy and speaking anxiety in pre-intervention and post-intervention between the group with an adequate PLP level and the group with an inadequate PLP level on the condition that in-class learning and post-learning are identical?

### **3. Research methodology**

#### **3.1 Participants**

In order to investigate the effect of PLP on two different groups, the participants were recruited from four sections of a K1 (Korean 1, beginner course) course at a university in Thailand. The participants were recruited based on convenience sampling on Sept 18 and 19, 2023, by sharing information about the current research in on-site classes. The current study was approved by the ethics committee of Mae Fah Luang University on August 15th, 2023. Out of 137 students who registered for K1, 76 students (55.5%) voluntarily consented to participate in this research. 37 students (48.7%) were in their 2nd year, 29 students (38.2%) were in their 3rd year, and 10 students (13.1%) were in their 4th year. 22 students (28.9%) were from language-relevant majors, and 54 students (71.1%) were from non-language-relevant



majors. 63 students (82.9%) were female, and 13 students (17.1%) were male. 56 students (73.7%) didn't hold any foundation of Korean language, whereas 20 students (26.3%) had experience of studying Korean as a self-study. Primarily they were motivated to study Korean by K-pops and K-dramas before taking this course. Their average learning time appeared to be 32 hours.

Table 1. The composition of the participants

Year	N	%	Major	N	%	Gender	N	%
2nd year	37	48.7	Non-language major (Management IT, etc.)	54	71.1	Female	63	82.9
3rd year	29	38.2	Language major (Chinese, English)	22	28.9	Male	13	17.1
4th year	10	13.1	Total	76	100	Total	76	100
Total	76	100						

### 3.2 Research procedure

76 learners from the K1 course learned the contents from the setting of conventional learning (on-site, non-FL learning) for 5 weeks. On week 7, the learners answered the questionnaire about their speaking self-efficacy and speaking anxiety in on-site class (pre-test). The speaking test 1 designed by the researcher and co-workers and the written test 1 were conducted on the weeks 8 and 9 respectively.

From week 10 through week 14, FL was implemented. In the phase of pre-class learning of FL, the learners were assigned to watch a video clip made by the instructor, which embodied questions regarding the contents they watched. Each video contained 5 questions for the learners to answer to determine the quality of pre-class learning. Answering was allowed for only one time. After the FL implementation for 5 weeks, on week 14, the survey on speaking self-efficacy and speaking anxiety (post-test) was implemented again. The speaking test 2 and the written test 2 were undertaken on the weeks 15 and 16 respectively. The results of pre and post FL were analyzed to find out whether there was a significant difference between the groups: a group with an adequate PLP level and the other group with an inadequate PLP level.

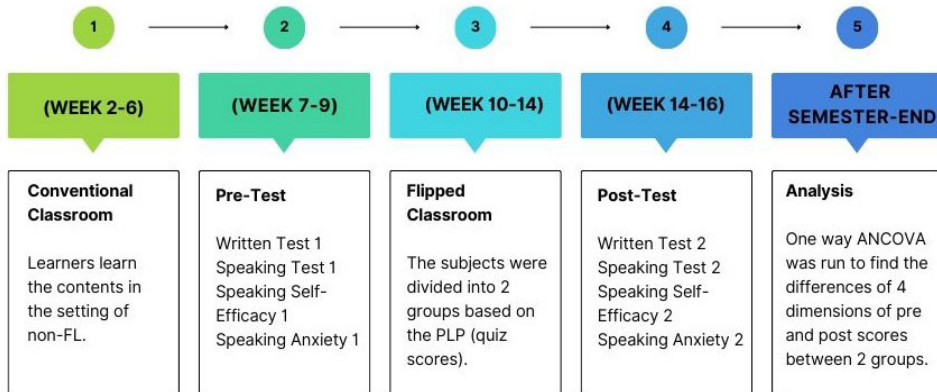


Figure 1. Research procedure

### 3.3 Research tools

#### 3.3.1 Evaluation of PLP

To assess the students' PLP in the pre-class phase, five video clips were shared in the Google Classroom, a week ahead of the class time every week from September 20th to November 7th, 2023. The contents of the videos were 1) how to tell phone numbers, price, and dates 2) time-relevant words 3) verb ending changes depending on the tense 4) time-relevant expressions and 5) location words. The average running time was 13.8 minutes. 5 multiple-choice questions per unit were embodied in the video on the Edpuzzle platform. The grade report of the quizzes was automatically generated by the Edpuzzle. The example of a question is below.

- (1) 1. Listen to the audio clip carefully and choose the correct price.  
 ① 97,534원 ② 97,543원 ③ 970,543원 ④ 970,534원

#### 3.3.2 Evaluation of academic performance

The speaking tests were part of the academic evaluation category, which accounts for 10% each. The researcher designed the speaking test based on the contents of the textbook of K1. The speaking test 1 and speaking test 2 were comprised of 5

questions. The speaking tests were recorded in the type of video clip by using the recording function, in Google Meet, throughout the test. The questions were randomly chosen by the evaluator. The learners looked at the ppt slide, understood the questions, and answered in Korean.

The written tests were also parts of the academic evaluation category, which accounts for 30% each. The researcher and fellow teachers created exams based on the contents of the textbooks of K1. There are 40 questions in multiple choice and 10 short-answer questions. Multiple-choice questions are all about pronunciation rules, vocabulary, grammar, completing conversations, and reading comprehension. Short answers are about how to complete sentences by rearranging the given words and writing the most appropriate Korean word equivalent to the English meaning.

### **3.3.3 Evaluation of speaking self-efficacy and speaking anxiety**

The speaking self-efficacy was measured through the questionnaire modified from Saeidi and Farshchi (2012), which was composed of 29 items, as this tool was regarded as suitable for learners who study Korean as a foreign language. The speaking anxiety was surveyed through the questionnaire adapted from Öztürk and Gürbüz (2014) since these 18 items are directly related to foreign language speaking anxiety from 33 items of FLCAS (Foreign Language Classroom Anxiety Scale) (Horwitz, Horwitz, and Cope 1986). 5 points Likert scale (1: Strongly disagree. 2: Disagree. 3: Not sure. 4: Agree. 5: Strongly agree) was used for both questionnaires. The questions were presented in English and Thai to help the learners clearly understand the meaning of the statements. The learners were asked to read each statement and to choose the number which appealed to them most. Cronbach  $\alpha$  coefficients of speaking self-efficacy was .944 for pre-intervention and .956 for post-intervention. Cronbach  $\alpha$  coefficients of speaking anxiety was .953 for pre-intervention and .949 for post-intervention. This implies that the questionnaires were highly reliable (Cortina 1993).

### **3.3.4 The data analysis**

The pre and post scores of academic performance (written test and speaking test) and speaking self-efficacy and speaking anxiety were analyzed through descriptive statistics in SPSS (Statistical Package for the Social Sciences) version 26. Three reverse

questions in the speaking self-efficacy questionnaire (item numbers: 5, 7, and 9) were processed with reverse-coding prior to data analysis. The collected data was analyzed by correlation between PLP and post-test results of 4 realms. Then one-way ANCOVA was run to determine whether the 2 groups' post-tests/surveys were statistically significant or not when the pre-tests/surveys were controlled.

## **4. Findings**

### **4.1 The results of PLP**

The mean score of quizzes of PLP for 76 learners was 72.32/100 (SD: 19.72). The group whose mean score is more than 72.32/100, was arbitrarily named Group A. 44 learners belonged to it, with a mean score of 85.55/100 (SD: 6.69). The group with a less-than-mean score was arbitrarily named Group B. 32 learners belonged to it, with a mean score of 54.13/100 (SD: 17.00). If the answers were submitted before the class time, they were admitted as normal scores. If the learners submitted later than the class time, their scores were nullified. The learners were informed that even though the score of PLP didn't bear on their academic grade, it mattered to complete K1 course successfully.

### **4.2 The result of academic performance**

The speaking test 1 (Oct. 2 and 3, 2023) and test 2 (Nov. 20 and 21, 2023) were implemented in an on-site and real-time mode. The mean elapsed time per learner was 5-6 minutes. The mean scores on speaking tests were decreased for Group A (8.352→6.602) and Group B (7.359→4.938). The written test 1 (October 15, 2023) and written test 2 (December 2, 2023) were undertaken on-site. The mean score of the written test was also decreased for Group A (22.466→19.602) and Group B (21.141→16.188).

The results of descriptive statistics of academic performances demonstrated that even after FL was applied, the post-test mean scores did not increase. A possible explanation is that even though the format of mid-term and final exam were the same, the final exam demanded more accumulated and comprehensive knowledge,

which hindered the learners from obtaining higher scores than the midterm. Examined through several years of teaching experience, the final scores tend to be lower than midterm exam. It also implies that it's not easy to improve their language knowledge and performance skills in a short period because the contents of foreign language courses tend to get more extensive and complicated as the semester goes on.

Table 2. Descriptive statistics of speaking tests and written tests

		Max	Mean	SD	N
Group A	Speaking Test 1	10	8.352	1.5119	44
	Speaking Test 2	10	6.602	2.2088	
	Written Test 1	30	22.466	6.0236	
	Written Test 2	30	19.602	6.3021	
Group B	Speaking Test 1	10	7.359	1.7836	32
	Speaking Test 2	10	4.938	2.0191	
	Written Test 1	30	21.141	6.0137	
	Written Test 2	30	16.188	5.8692	

### 4.3 The result of speaking self-efficacy and speaking anxiety

The surveys were implemented on the platform of Google Forms. The learners answered 47 questions (29 items for speaking self-efficacy and 18 items for speaking anxiety) for 10-12 minutes. The first survey was implemented on September 18 and 19, 2023 before applying FL and the second survey was on November 13 and 14, 2023 after applying FL. The descriptive statistics found that after applying FL the mean score of speaking self-efficacy increased for Group A (95.614→102.818) and Group B (86.188→93.844). However, the speaking anxiety of Group B rather increased (49.750→53.469) while that of Group A diminished (48.045→46.250). However, this comparison was plain and superficial for pre-existing group differences were not controlled. Therefore, ANCOVA analysis was applied for a more accurate and deeper investigation.

Table 3. Descriptive statistics of speaking self-efficacy surveys and speaking anxiety surveys

		Max	Mean	SD	N
Group A	Speaking Self Efficacy 1	135	95.614	19.481	44
	Speaking Self Efficacy 2	140	102.818	17.925	
	Speaking Anxiety 1	83	48.045	15.571	
	Speaking Anxiety 2	81	46.250	13.940	
Group B	Speaking Self Efficacy 1	121	86.188	16.483	32
	Speaking Self Efficacy 2	131	93.844	21.044	
	Speaking Anxiety 1	80	49.750	16.064	
	Speaking Anxiety 2	82	53.469	15.515	

#### 4.4 The correlation analysis between PLP and post tests

To investigate the relationship between PLP and academic performance and speaking self-efficacy and speaking anxiety, correlation analysis was carried out. The result of the correlation analysis indicated that PLP had a slightly positive correlation with speaking test 2 ( $r=.354$   $p<.01$ ). Intriguingly, PLP and speaking self-efficacy found a negative relation ( $r=-.284$   $p<.05$ ), which means that even though the learners' PLP level was high, they still didn't hold proper confidence about their speaking ability.

Table 4. Correlation analysis between PLP and post tests/surveys (N=76)

	1	2	3	4	5
1. PLP (quiz scores)	1				
2. speaking test 2	<b>.354**</b>	1			
3. written test 2	.168	.622**	1		
4. speaking self-efficacy 2	<b>-.284*</b>	.007	.093	1	
5. speaking anxiety 2	-.100	-.370**	-.506**	-.109	1

\*\*Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

#### 4.5 The results of one-way ANCOVA

One-way between-groups analysis of covariance was conducted to compare the effect of PLP in two groups (Group A with an adequate level of PLP, Group B with an inadequate level of PLP) upon speaking test, written test, speaking self-efficacy, and speaking anxiety respectively. The independent variable was the PLP level, and the

dependent variables comprised the scores from the post-tests from 4 realms. The pre-test scores from each dimension were used as a covariant.

#### **4.5.1 Assumption was violated in the speaking test**

The Levene's test of equality of error variance showed that the assumption of homogeneity of variances was retained ( $p=.648$ ,  $p>.05$ ). The check for homogeneity of regression slopes indicated that the interaction effect between the group and the speaking test 1 was statistically significant ( $p=.009$ ,  $p<.05$ ), which means the groups were not homogeneous in their speaking test 1 score before FL. Since the assumption of homogeneity of regression slopes was not met, the analysis of the speaking test was not included in the interpretation of the analysis.

#### **4.5.2 A significant difference in the written test**

The Levene's test of equality of error variance showed that the assumption of homogeneity of variances was retained ( $p=.333$ ,  $p>.05$ ). The check for homogeneity of regression slopes indicated that the interaction effect between the group and written test 1 was not statistically significant ( $p=.879$ ,  $p>.05$ ), which means the groups were homogeneous in terms of their written test 1 score before the administration of FL. After adjusting for written test 1, there was a significant difference between the two groups' scores on the written test 2 [ $F(1,73)=6.900$ ,  $p=.010$ , partial eta squared=.086]. This result echoed the FL's fortes on improving academic performance in previous findings (Day and Foley 2006; Zappe et al. 2009; Deslauriers and Wieman 2011; McLaughlin et al. 2014; Hung 2015). There was a large effect of the written test 1 on written test 2, as indicated by a partial eta-squared value<sup>1</sup> of .611. It explained 61.1 percent of the variance in the dependent variable. Estimated marginal means revealed that the effect of written test 1 has been statically removed, the mean of written test 2 of Group A (19.158) was higher than that of Group B (16.798) by 2.360. This implies that the group with adequate PLP level outperformed the group with an inadequate PLP level.

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1 .01=small effect; .06 moderate effect; and .14=large effect (Pallant 2005: 201).

Table 5. Tests of between-subjects effects (Dependent variable: Written test 2)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1912.538a	2	956.269	64.687	.000	.639
Intercept	1.596	1	1.596	.108	.743	.001
Written Test 1	1696.509	1	1696.509	114.761	<b>.000</b>	<b>.611</b>
Group	101.999	1	101.999	6.900	<b>.010</b>	<b>.086</b>
Error	1079.156	73	14.783			
Total	28067.750	76				
Corrected Total	2991.694	75				

a. R Squared = .639 (Adjusted R Squared = .629)

#### 4.5.3 No difference in speaking self-efficacy

Preliminary checks were conducted to ensure no violation of the assumptions. The Levene's test of equality of error variance showed that the assumption of homogeneity of variances was retained ( $p=.186$ ,  $p>.05$ ). The check of homogeneity of regressions slopes indicated that the interaction effect between group and self-efficacy 1 was not statistically significant ( $p=.299$ ,  $p>.05$ ), which means the groups were homogeneous in their speaking self-efficacy 1 before FL. Inconsistent with previous findings (Hsiao, Hung, and Huang 2021; Nourinezhad, Hadipourfard, and Bavali 2021), after adjusting for scores of speaking self-efficacy 1, there was no significant difference between the two groups' scores on speaking self-efficacy 2 [F (1, 73)=.458,  $p=.501$ , partial eta squared=.006]. A possible reason is that the learners need a longer period to adjust their speaking efficacy level because Thai learners generally tend to humble themselves. Estimated marginal means revealed that the effect of speaking self-efficacy 1 has been statically removed, the mean of Group A (100.031) was slightly higher than Group B (97.676) by 2.355. However, there was a large effect of speaking self-efficacy 1 on speaking self-efficacy 2 as indicated by a partial eta-squared value of .443. It explained 44.3 percent of the variance in the dependent variable.



Table 6. Tests of between-subjects effects (Dependent variable: Speaking self-efficacy 2)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13692.384a	2	6846.192	32.570	.000	.472
Intercept	3425.259	1	3425.259	16.295	.000	.182
Speaking Self-Efficacy 1	12200.267	1	12200.267	58.042	<b>.000</b>	<b>.443</b>
Group	96.355	1	96.355	.458	<b>.501</b>	<b>.006</b>
Error	15344.497	73	210.199			
Total	774507.000	76				
Corrected Total	29036.882	75				

a. R Squared = .472 (Adjusted R Squared = .457)

#### 4.5.4 A significant difference in speaking anxiety

The Levene's test of equality of error variance showed that the assumption of homogeneity of variances was retained ( $p=.066$ ,  $p>.05$ ). The check for homogeneity of regression slopes indicated that the interaction effect between the group and speaking anxiety 1 was not statistically significant ( $p=.370$ ,  $p>.05$ ), which means the groups were homogeneous in their speaking anxiety before FL. After adjusting for the scores on speaking anxiety 1, there was a significant difference between the two groups' scores on speaking anxiety 2 [ $F(1,73)=4.776$ ,  $p=.032$ , partial eta squared=.061]. This result was consistent with previous studies (Chen and Hwang 2019; Abdullah, Hussin, and Ismail 2021; Gök, Bozođlan, and Bozođlan 2021). There was a large effect of speaking anxiety 1 on speaking anxiety 2 as indicated by a partial eta-squared value of .269. It explained 26.9 percent of the variance in the dependent variable. Estimated marginal means revealed that the effect of speaking anxiety 1 has been statically removed, the mean of speaking anxiety 2 of Group A (46.595) was lower than that of Group B (52.995) by 6.400. This demonstrates that the speaking anxiety of Group A was statistically diminished compared to Group B. This implies that the effect of PLP was more distinctive in diminishing speaking anxiety than increasing speaking efficacy for Thai KFL learners.

Table 7. Tests of between-subjects effects (Dependent variable: Speaking anxiety 2)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5220.169a	2	2610.084	16.477	.000	.311
Intercept	4851.277	1	4851.277	30.626	.000	.296
Speaking Anxiety 1	4254.756	1	4254.756	26.860	<b>.000</b>	<b>.269</b>
Group	756.547	1	756.547	4.776	<b>.032</b>	<b>.061</b>
Error	11563.463	73	158.404			
Total	201422.000	76				
Corrected Total	16783.632	75				

a. R Squared = .311 (Adjusted R Squared = .292)

## 5. Discussion and conclusion

The purpose of this study was to examine the effects of PLP level in two groups (Group A with an adequate PLP level and Group B with an inadequate PLP level) in the FL-applied beginner Korean classes. The scores of academic performances and speaking self-efficacy and speaking anxiety were collected in the phase of pre-FL and post-FL. According to the scores of quizzes embodied in the pre-learning videos, the learners were divided into 2 groups. The current study explored whether there were statistical differences between pre and post-test means of speaking test, written test, speaking self-efficacy, and speaking anxiety. It found that a significant difference between groups emerged in the written test [ $F(1,73)=6.900$ ,  $p=.010$ , partial eta squared=.086] and speaking anxiety [ $F(1,73)=4.776$ ,  $p=.032$ , partial eta squared=.061]. This result indicated that the effect of PLP appeared to be bigger in academic dimension (written test: partial eta squared=.086) than emotional dimension (speaking anxiety: partial eta squared=.061).

The positive impact of PLP on the written test implies that PLP contributes to the lower hierarchy of cognitive skills of remembering and understanding. PLP played a key role over a short period (5 weeks) in improving the cognitive skill of remembering and understanding (Bergmann and Sams 2012). This result resonated with the FL's impact on academic achievement in previous studies (Mason, Shuman, and Cook 2013; Yousefzadeh and Salimi 2015; Adnan 2017; Hung 2017; Chen and Hwang 2019; Nam 2019; Challob 2021; Hsiao, Hung, and Huang 2021; Nourinezhad,

Hadipourfard, and Bavali 2021; Öztürk and Çakıroğlu 2021). It should be noted that even though in a short period PLP made a significant difference, we may anticipate that there might be more distinctive differences when FL is applied throughout the semester.

The effect of PLP in terms of diminishing speaking anxiety also emerged significantly different within groups. This result was supported by previous research in terms of FL strategy's benefit on anxiety. (Chen and Hwang 2019; Abdullah, Hussin, and Ismail 2021; Gök, Bozoğlan, and Bozoğlan 2021). The effect of PLP in reducing speaking anxiety should be noted by educators. It indicates that if PLP is actively facilitated, learners' speaking anxiety will be considerably relented. It might also result in optimizing learning outcomes and shaping a desirable learning atmosphere.

As for speaking efficacy, cultural contexts and educational environment must be considered. In most Asian cultures, humility is regarded as an essential virtue, so there is a strong tendency to humble oneself and not to reveal one's abilities openly. Therefore, it's common for people to underestimate their abilities. This aspect was verified by the result of correlation analysis in this study, which demonstrates the relation between PLP scores and speaking self-efficacy 2 emerged as negative. This phenomenon was also echoed in Wang et al. (2013). Chinese students revealed a lower level of self-efficacy beliefs even though their English proficiency was not significantly different in comparison to German students. In a similar vein, a study revealed that FL with interactive classroom activities resulted in improved learning outcomes but not necessarily improved student satisfaction (Missildine et al. 2013).

Other than the cultural context of highly valuing of humility, Thai educational background should be taken into account. Siritaratn (2013) examined English self-efficacy beliefs of EFL low proficiency graduate students in Thailand. The results demonstrated that they held considerably low self-efficacy level. It was interpreted that this might be due to the unsuccessful educational experiences in a slightly rigid educational environment prior to the university level. As one's self-efficacy is a part of outcome produced by educational experience, it might be challenging for Thai learners to evaluate their speaking self-efficacy fairly. Apridayani and Teo (2021) also addressed that self-regulated learning (SRL) strategies brought a direct impact on Thai university learners' English proficiency levels yet did not on their self-efficacy.

This study has a limitation in generalizing the result due to convenience sampling, as the participants may not represent the entire student population. Additionally, it

should be noted that the results were derived from the Thai cultural and educational context, which means results might differ in another cultural background. Despite these limitations, the significant effect of PLP on the written test and speaking anxiety should be highlighted and enlightened based on empirical data by teachers and learners. Educators can be motivated and inspired to keep refining the design and implementation of pre-class learning so that it may give a great advantage in improving the learners' academic performance and decreasing their speaking anxiety in FL applied Korean classes. Another remarkable point is that before educators implement FL, it is preferable that educators should build a consensus to get involved in this approach and richly motivate the learners to do self-autonomous pre-class learning through a special introductory session.

Recommendations for further research include 3 key points. First, it is crucial to investigate the prolonged effect of PLP on academic performance and emotional dimensions to gain more valuable insights. Second, employing stratified random sampling methods is necessary to improve the representativeness and generalizability of the study's findings. Finally, it is essential to further examine the cultural and educational contexts affecting speaking self-efficacy and speaking anxiety in foreign language classes to understand their influence comprehensively.

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## **Appendix 1**

### **Korean language speaking self-efficacy questionnaire (adapted from Saeidi and Farshchi 2012)**

This questionnaire is prepared to collect information about the level of Korean language speaking self-efficacy that you experience in the classroom atmosphere. After reading each statement, please circle the number which appeals to you most. There are no right or wrong answers for the items in this questionnaire. Thanks for your contribution.

1: Strongly disagree. 2: Disagree. 3: Not sure. 4: Agree. 5: Strongly agree.

- 1) I have a special ability to improve my Korean speaking skills.
- 2) I believe that if I try hard enough, my proficiency in Korean speaking skills will improve very soon.
- 3) I am sure that if I practice listening to Korean more, I will get better at speaking as well.
- 4) I can speak Korean better than other students.
- 5) No one cares if I do well in speaking skills.
- 6) My teacher thinks that I am smart.
- 7) My classmates usually get better grades than I do in Korean courses.
- 8) Even if the Korean speaking task is difficult and I don't have the required vocabulary, I can find the strategy to get the message across.
- 9) I am so stressed during the Korean class.
- 10) I enjoy speaking Korean with a proficient partner.

- 11) I am one of the best students in this Korean course.
- 12) I enjoy meeting Korean tourists because I can speak Korean with them well.
- 13) The more difficult the speaking practice is, the more challenging and enjoyable it is.
- 14) When the teacher asks a question, I raise my hand to answer it even if I'm not sure about it.
- 15) If I can't find the right word to use in a conversation, I use a gesture.
- 16) I ask my interlocutor to tell me the right word if I cannot find the right word in a conversation.
- 17) I'm confident about my ability to interact with other Korean speakers.
- 18) While speaking Korean, I can deal efficiently with unexpected events.
- 19) While speaking Korean, I can remain calm when facing difficulties because I rely on my coping abilities.
- 20) While speaking Korean, I can usually handle whatever comes my way.
- 21) Thanks to my resourcefulness, I know how to handle unforeseen situations in speaking in Korean.
- 22) When I'm talking with fluent speakers, I let them know if I need help.
- 23) I'm confident I can communicate the major points of what I need to say in Korean.
- 24) I feel confident that I can master the Korean language.
- 25) I am confident about my ability to interact with other Korean speakers.
- 26) I know I'm able to participate actively in my Korean classes.
- 27) I'm sure I can use Korean outside the classroom.
- 28) I believe I am a good language learner.
- 29) I strongly believe that given enough time, I can achieve native-like fluency in Korean.

## **Appendix 2**

### **Korean language speaking anxiety questionnaire (adapted from Öztürk and Gürbüz 2014)**

This questionnaire is prepared to collect information about the level of Korean language speaking anxiety that you experience in the classroom atmosphere. After reading each statement, please circle the number which appeals to you most. There are no right or wrong answers for the items in this questionnaire. Thanks for your contribution.

1: Strongly disagree. 2: Disagree. 3: Not sure. 4: Agree. 5: Strongly agree.

- 1) I am never quite sure of myself when I am speaking in Korean.
- 2) I am afraid of making mistakes in Korean classes.
- 3) I tremble when I know that I am going to be called on in Korean classes.
- 4) I get frightened when I don't understand what the teacher is saying in Korean.
- 5) I start to panic when I have to speak without preparation in Korean classes.

- 6) I get embarrassed to volunteer answers in Korean classes.
- 7) I feel nervous while speaking Korean with native speakers.
- 8) I get upset when I don't understand what the teacher is correcting.
- 9) I don't feel confident when I speak Korean in classes.
- 10) I am afraid that my Korean teacher is ready to correct every mistake I make.
- 11) I can feel my heart pounding when I am going to be called on in Korean classes.
- 12) I always feel that the other students speak Korean better than I do.
- 13) I feel very self-conscious about speaking Korean in front of other students.
- 14) I get nervous and confused when I am speaking in Korean classes.
- 15) I get nervous when I don't understand every word my Korean teacher says.
- 16) I feel overwhelmed by the number of rules I have to learn to speak Korean.
- 17) I am afraid that the other students will laugh at me when I speak Korean.
- 18) I get nervous when the Korean teacher asks questions that I haven't prepared in advance.

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