

GENDER INTERACTION BETWEEN COVARIATES IN MANAGING ANXIETY VIA VLOGS

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ABSTRACT

Background and Purpose: ESL learners found themselves engulfed with extreme anxiety when it comes to speaking in public. This study investigated the use of vlogs in managing anxiety between male and female undergraduate students and examined whether there is an interaction exists between both genders during the intervention that may influence the outcomes.

Methodology: This study employed a quasi-experimental design with a total of N=53 (15 males, 38 females) ESL participants from one public university in Malaysia. Before and after the intervention, a set of 'Personal Report of Public Speaking Anxiety (PRPSA) questionnaires were administered. A 2x2 between subjects factorial ANCOVA (or two-way ANCOVA) was computed by controlling the pre-test scores. After controlling for the pre-test as covariate, the two-way ANCOVA was performed to see if there was an interaction impact between gender (male vs female) and treatments (with and without vlogs) in terms of anxiety level scores.

Findings: In comparison to the control group, the experimental group performed better with $F(1, 48)=6.695, p<.05$, which showed that undergraduate students in the experimental group displayed less anxiety when using vlogs as compared to the treatment group. However, there was no significant difference of gender influence on the effectiveness of vlogs on learners' anxiety with $F(1, 48)=1.552, p>.05$, Eta-squared = .03 when using vlogs. Nonetheless, there was a significant interaction between

treatment groups and gender with $F(1,48)=5.22$, $p<.05$ which indicated that the relationship between the covariate and the dependent variable is different for each treatment group.

Contributions: This study is hoped not only to encourage ESL educators to make use of vlogs in their teaching and learning, but also to inform researchers with similar interest to consider the existence of covariates of the participants that might have impacted the research outcomes.

Keywords: Speaking, anxiety, covariates interaction, gender differences, vlogs.

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1.0 INTRODUCTION

English language has been used as a medium of instruction at tertiary level of public and private universities in Malaysia since over a decade ago. Almost all university students are required to submit their assignments in English, conduct presentations in English and even answer examination questions in English. However, the quality of English language among tertiary education students seems to be deteriorating despite many years of exposure to English language learning (Melor & Rashidah, 2011; Nor et al., 2019). The Ministry of Education of Malaysia has instructed the National Union of Teaching Profession (NUTP) to investigate the factors that have caused the decline of English Proficiency of Malaysian students (Mohamed Radhi, 2019) and why it is far from the expected competence level (David, Thang, & Azman, 2015). One of the main issues is the inability to speak fluently and accurately in the target language because very often speakers are found to be speaking to a large crowd in a non-familiar language that often results to anxiety, paralysing fear, and panic among them. These students have self-confidence issue and become very anxious when they are called to speak in public.

Anxiety is often related to changes in emotions that can be transpired through intangible features such as feelings and thoughts and even tangible feature such as blood pressure. Meanwhile, anxiety in public speaking context can be referred to as apprehension experienced when speaking in public where the speaker is not competent in the second language. In short, it is a feeling of being evaluative towards their speech (Daly, Vangelisti, Neel, & Cavanaugh, 1989). This is a common scenario not only among Malaysian graduates but also other graduates which English is not their first language. These graduates are afraid of the idea of standing and

speaking in front of others. Many candidates struggle to reply fluently in the target language and very often stutter when being asked to speak in front of public, which has raised attention to the quality that Malaysian universities have produced. Consequently, a more severe impact from the inability to speak fluently let alone accurately, among our graduates can be seen with a low employability after graduation. According to Graduates Statistics (2020), the unemployment rate is on the rise with 4.4 percent that represents a total number of 202, 400 people in the year of 2020.

In recent years, researchers have conducted studies on public speaking anxiety. Many have focused on the levels of students' anxiety (Grieve, Woodley, Hunt, & McKay, 2021; LeFebvre, LeFebvre, Allen, Buckner, & Griffin, 2020; Prentis, 2021), correlation between anxiety and proficiency, motivation, gender, and the time students begin to learn English (Alamer & Almulhim, 2021; Tan & Xie, 2021). Most of the literature show that females have the tendency to feel more anxious as compared to males (Rahmawati, Ariffudin, & Mulawarman, 2018; Karatas, Alci, Bademcioglu, & Ergin, 2016; Öztürk & Gürbüz, 2013; Paola, Lombardo, Valeria, & Vincenzo, 2020). Only a small number shows that males have a higher level of anxiety (Levitt, 1980) whilst some imply that gender does not impose any effect on anxiety level (Matsuda & Gobel, 2004; Wang, 2010). There are, however, little studies conducted using statistical analysis that investigate students' anxiety level particularly whether there is interaction between the two variables, male and female students. Due to the limited information, it is intriguing to conduct a quantitative study that provides concrete analysis of the main effects and 2x2 interactions.

Thriving in the middle of the digital age with vast technological advancement, innovations have turned to become sources of solution to many possible issues and concerns related to public speaking anxiety. Developments in digital video innovation for instance, have contributed to video-enhanced learning. The use of video, whether streaming via computer or portable devices such as smartphone or laptop, has made digital video access a commonplace (Fill & Ottewill, 2006). Mulac (1974, as cited in Leeds & Maurer, 2009) reported that a significant difference in terms of oral communication was found among students who used videotape replay in comparison to those who did not. With plenty of practice using the replay function, students may gain more confidence to speak in front of others, which in turn can help lower their anxiety level prior to any event.

Over the past years, trends in video have redefined the existing televised news sources. Facebook and YouTube have invested significantly in video in recent years as it has the potential to transform how information is shared on a day-to-day basis. An eight-year-old boy

making fortune up to 11 million dollars a year, has set the video trend worldwide as an easy money generating and influence inducing method. Experts predict a similar trend will follow in the education sector since millennials make up 92 per cent of the digital video audience (Mraz, 2016). The use of video can boost understanding of abstract concepts that are difficult to teach and learn. Studies have also shown that the use of short clips allows better information processing and memory recall. Although there are pedagogical benefits a video has in enhancing communication (Hallmark, Hanson, Padwick, Abel, & Stewart, 1993), there is a scarce number of studies that use video as a part of a skill-based treatment to deal with anxiety in public speaking setting.

The use of video in a form of blogging, which replaces written blogging, is known as ‘vlogs’. Vlogging is an act of recording videos candidly and sharing the materials with audience online. Besides YouTube and Facebook, other platforms such as Instagram, Snapchat, Twitter, DailyMotion, TikTok, Vimeo - just to name a few; are among the most effective media for content sharing. Vlogging is popular for it is easy to do, fun, and it allows both synchronous and asynchronous interactions with the audience, in which it is seen as a huge perk in language learning facilitation. Alm (2009) elucidates that students are willing to speak in vlogs due to the conducive environment it provides for self-expression and peer interaction. However, there is limited empirical evidence that statistically proves how vlogging helps students in overcoming their language anxiety. Therefore, this quantitative study examines the effectiveness of vlogs in managing university students’ anxiety. There are three research questions aimed to be addressed:

- i. Is there an effect of treatments (with and without vlogs) on reducing students’ anxiety?
- ii. Does gender influence the effectiveness of treatments (with and without vlogs) on reducing students’ anxiety?
- iii. Is there an interaction between gender and treatments (with and without vlogs) on students’ anxiety?

2.0 LITERATURE REVIEW

2.1 Public Speaking Anxiety

Anxiety is a term coined from a Greek word ‘γλῶσσα glōssa, which means tongue and phobos, anxiety or dread. Public speaking anxiety is described as the fear of being evaluated by others. In the field of communication and language, the conundrum has been a long-standing problem.

Most students avoid public speaking due to the anxiety of embarrassment and the incompetent feeling to convey the subject matter in the target language. Anxiety in public speaking can be identified through shaky voice, rapid heartbeat, light-headedness and discomfort, inferiority complex, low self-respect (Clements & Turpin, 1996), muscle tension, gastrointestinal discomfort, sweating, diarrhoea, and confusion (North & Rives, 2001).

Aida (1994) summarises the cause of anxiety into three factors: i) implications for poor performance by the examiner or teacher, ii) fear of negative audience judgements and evaluations; and iii) fear of repeating previous failures. The degree of anxiety differs according to context. Speaking in a social group is perceived as less intimidating as compared to speaking in classroom context (Arafah, Yassi, & Imran, 2016). A study by Mohtasham and Farnia (2017) reveals that female students are more anxious to speak as compared to male students. Similar findings were also obtained by Dellah, Zabidin, Nordin, Amanah, and Atan (2020).

On the other hand, anxiety has a similar connotation across different contexts; showing different health-related symptoms and consisting of different factors. The need to introduce solutions that could help reduce anxiety when speaking in public among students with the technological advancement is further warrant. Without proper intervention, these factors can lead to worsen and intensify anxiety among students in the language learning classrooms and this may indirectly contribute to the poor communication skill. In keeping abreast with today's technology, the current research proposes a different learning environment which has become so 'in trend' these days, to see whether students may potentially have their public speaking anxiety reduced, which is a 'virtual setting' environment. This aligns with what Cakir (2006) has proposed; to use a platform that is close to students' daily lifestyle. This study attempts to use vlogs on one of the most popular online platforms, YouTube, to a group of millennial students as an alternative platform to practice their public speaking skills and, at the same time, investigate the impact of this technique on their anxiety level.

2.2 Technology in Second Language Setting

Technology has changed the way people communicate. Digital archives make archival documents more accessible, interactive multimedia makes participation more engaging, and a larger social network allows for more widespread reach. The proliferation of technology in the second language context has sparked considerable interest among scholars and educators. Technology enthusiasts such as Prensky (2001) perceives technology as appealing to millennials in a positive way. Technology allows the integration of five different elements such as text, image, video, audio, and animation at a single click. Listening, reading, writing, and

speaking are all sensory modes that these multimedia integrations can appeal to. Students are provided many possibilities to initiate and continue their own learning outside of classroom hours thanks to ubiquitous reach, which has never been easier (Chen, Lambert, & Guidry, 2010; Harasim, 2000; Hakkarainen, Paavola, Kangas, & Seitamaa-Hakkarainen, 2013; Lee, McLoughlin, & Chan, 2008). Visible positive impacts of technology on language learning performance have also been constantly proven by many studies (Abdul Rahman, 2018; Madzlan, Goh, & Kesevan, 2020; Shukor & Noordin, 2014; Zhao, 2005).

2.3 Use of Video Blogs in Second Language Classroom

A vlog is defined as a video component that allows anyone to create and share material, resulting in a series of internet broadcasts. Sun (2009) identifies four positive impacts on the use of vlogs in second language classroom: i) students' encouragement in speaking; ii) self-presentation; iii) more talk time; and iv) autonomous learning. In a common classroom, students usually have insufficient time to engage in a speaking-inducing activity. However, by vlogging, students have the opportunity to engage in speaking activities that can be extended to out of classroom hours. Hence, students will have more time to practice at their own time and pace. As a result, the quality of their presentation will also increase. Gorturk (2018) found that EFL students improved their oral skills during spoken conversation after using digital video recordings. In addition, there are also other researchers whose research interest revolve around the use of videos to aid the processing of linguistic information and facilitate language comprehension (Seidi & Ahmadi, 2016) as well as vocabulary acquisition (Yawiloeng, 2020).

2.4 Theoretical Underpinning: Affective Filter Hypothesis and Connectivism

In the language learning context, it is crucial to create a safe and welcoming environment for students to learn. It is also a need to feel that they can make mistakes without feeling inferior from making these mistakes. This condition is well explained by Krashen's (1982) Affective Filter Hypothesis theory. The key idea of this theory is explainable through different spectrums of affection which include motivation, attitude, and anxiety. Krashen (1982) further elucidates that if any of these affective elements are not properly filtered, students will struggle to acquire the target language. Students with high motivation and self-esteem, when paired together with low anxiety level are found to have a higher probability of successfully acquiring the second language. When input is delivered to students, some of the affections will be filtered depending on the conditions of their affective domains. For instance, in this present study, students learned better when they feel less anxious in the classroom. A study by Hung (2011) exemplifies that

vlogging helps students feel comfortable to speak in front of the video due to the conducive ambience it creates.

Connectivism explains a phenomenon in relation to online sharing and learning. Moving towards the shift of digital transformation, people can now be ubiquitously connected, without concerning about the geographical barrier. This connectivity, according to Siemens (2005), has shown the evolution of knowledge due to the technological development. This concept is transferable in the context of this study whereby students recorded their act of speaking via video and uploaded the recording to the selected social media platform, YouTube, and then shared the link on Padlet. In the past, knowledge sharing through public speaking was mostly done via face-to-face in front of an audience. With the technological advancement, learning can now be found in different forms and no longer limited to face-to-face or printed copies. This is where connectivism comes into play. The underlying principles of connectivism emphasise on learning and knowledge that are built on diverse opinions. In essence, vlogs allow students to experience other people's experiences, hence become the surrogate for knowledge. Information that was shared in video form allows other students to store their knowledge in their friends that acts as an axiom for collecting knowledge through collecting people. In this era, learning is changing continuously, and knowledge is no longer bound to a specific person, place or time. Thanks to technology, the learning theory in this era is best explained through connectivism which helps explain the pivotal part of this study.

3.0 RESEARCH DESIGN

In measuring the effectiveness of the types of treatment (with and without vlogs) between gender (male and female), a quasi-experimental design was conducted. Two intact groups of English language students, from one public university in Malaysia, were selected using a purposive sampling method. A total of N=53 participants were delegated to the control and experimental groups at random using the fishbowl draw method where students name slips were put in a bowl and random draw were conducted for the group's assignment.

In the control group, the total number of male participants was n=6 while the total number of female participants was n=17. On the other hand, the experimental group consisted of n=9 male participants and n=21 female participants. The low number of male students at public higher institutions steadily decreased since 2016, which depicts the worldwide trend of more female students entering tertiary education level than male students (Hirschmann, 2022).

The duration of the whole study was four weeks. The research process began with participants who were assigned in the experimental group to produce three vlog entries per

week. They were provided with a title and a theme as listed in the Listening and Speaking Workbook by Oxford Press (Earle-Carlin, Snow, Zwier, & Zimmerman, 2011) and they had the freedom to choose any other topics of their interest. In addition to that, the participants were required to jot down their experiences in a written journal to record their self-reflection and experience in doing the vlogs.

A set of Personal Report of Public Speaking Anxiety (PRPSA) was distributed to both groups in order to gauge the participants' anxiety level prior to the intervention. The PRPSA was developed by McCroskey (2013). A total of 34 items, with 22 negative constructs (reverse coded) and 12 positive constructs were adopted. A Cronbach's Alpha reliability analysis test was used to measure its internal consistency and the result displayed was $\alpha = 0.92$, which suggested a high internal consistency.

This criterion was used to create the PRPSA score method: [PRPSA=72 – Positive Items + Negative Items]. The overall score ranged from 34 to 170 points. The scoring method is displayed in Table 1:

Table 1: PRPSA Scoring Method

Anxiety Level	Score
High	>131
Moderate	98 - 131
Low	<98

After the intervention, at the end of week 4, the same set of questionnaires was administered to all participants for post-measure. Data gathered were then analysed using IBM Statistics SPSS 26 in calculating the difference between the mean of each treatment group and between gender groups. Data were analysed for descriptive and inferential statistics. Descriptive analysis was run to calculate the mean scores and standard deviation of the students' anxiety level. With regards to the inferential statistics, a 2x2 between subjects factorial ANCOVA (or two-way ANCOVA) was computed by controlling the pre-test scores. The two-way ANCOVA was used to determine whether there was an interaction effect between gender (male vs female) and treatments (with and without vlogs) in terms of anxiety level scores, after adjusting the pre-test as a covariate.

In this study, the independent variables were the types of treatment (with and without vlogs) and gender (male vs female). The dependent variable was the anxiety level scores. Within each treatment group, an assumption of different variations was formed due to

uncontrollable variable, such as the difference in vlogs ability. Some participants might be familiar with vlogs than others. By taking this variation into consideration, it was therefore, pivotal to control other possible variations so that the actual effects from the types of treatment could be measured accurately. Hence, the pre-test scores, another continuous independent variable, was chosen as the covariate so that the actual effects of the intervention could be gauged solely.

4.0 ANALYSIS AND DISCUSSION

A 2x2 between subjects factorial ANCOVA was conducted to determine a statistically significant difference between treatment and gender on students' public speaking anxiety level controlling for pre-test scores. ANCOVA was chosen to improve extraneous sources of variation from this study by including a covariate. Before running the analysis, a normality test was performed using Kolmogorov-Smirnov and Shapiro-Wilk tests to determine the normal probability distribution. Results are illustrated in Table 2 below:

Table 2: Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statisti			Statisti		
	Treatment	c	df	Sig.	c	df	Sig.
Pre-test	Control	.115	23	.200*	.970	23	.701
	Experimental	.149	30	.089	.950	30	.169
Post-test	Control	.107	23	.200*	.958	23	.423
	Experimental	.094	30	.200*	.970	30	.538

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The results of the Shapiro-Wilk test for the pre-test of control and experimental groups indicate that the data was normally distributed in reference to the Sig. values; $p=0.701$ (Control group) and $p=0.169$ (Experimental group). The null hypothesis would be rejected if the p-value was below 0.05 but the data showed that the values were greater than 0.05. Similar findings were observed for the post-test of the control and experimental groups with $p=0.423$ and $p=0.538$ respectively.

Following on a normal tabulation, a parametric test was performed, and descriptive statistics of the data are presented in Table 3.

Table 3: Descriptive Statistics

Dependent Variables:		Pre-test		Post-test	
Treatment	Gender	Mean	SD	Mean	SD
Control	Male	119.667	17.060	114.67	16.765
	Female	121.176	20.224	119.88	21.630
Experimental	Male	116.77	14.998	110.89	17.453
	Female	116.90	16.828	97.90	20.221
Total	Male	117.93	15.318	112.40	16.677
	Female	118.82	18.292	107.74	23.366

Table 3 presents the average scores of pre- and post-test anxiety levels for control and experimental groups. Looking at the pre-test data, the control group for male and female participants fall under the category of moderate level of anxiety between 98-131 scores. After the treatment, male participants in the experimental and control groups are still categorised under the moderate level of anxiety level but both displayed a slight improvement from the interventions for both groups. However, there is a significant score reduction from intermediate to low anxiety level for female participants in the experimental group, from 116.90 to 97.90 which has moved this group to a low anxiety level category. Meanwhile, female participants in the control group indicated a slight reduction score from 121.176 to 119.88.

To determine whether there is a significant difference of the means between the control and experimental groups for both male and female participants, an extensive analysis of two-way ANCOVA was further computed by including estimated effect size data, to measure the magnitude of the experimenter effect. To answer the three research questions, the following set of hypotheses testing were established:

Null Hypothesis (H₀) 1: there is no significant difference of types of treatment (with and without vlogs) on students' public speaking anxiety level

Alternative Hypothesis (H₁) 1: there is a significant difference of types of treatment (with and without vlogs) on students' public speaking anxiety level

Null Hypothesis (H₀) 2: there is no significant difference of gender (male and female) influence on the effectiveness of treatment (with and without vlogs) on students' public speaking anxiety level

Alternative Hypothesis (H₁) 2: there is a significant difference of gender (male and female) influence on the effectiveness of treatment (with and without vlogs) on students' public speaking anxiety level

Null Hypothesis (H₀) 3: there is no significant interaction between gender (male and female) and treatment (with and without vlogs) on students' public speaking anxiety level

Alternative Hypothesis (H₁) 3: there is a significant interaction between gender (male and female) and treatment (with and without vlogs) on students' public speaking anxiety level

After ensuring the data had met all assumptions, a 2 (Gender) x 2 (Treatment) analysis of covariance was conducted to determine the effects of gender and treatment groups on the post-test scores of public speaking anxiety level. Table 4 and Figure 1 are presented below to answer the research questions.

Table 4: Tests of Between-Subjects Effects

Dependent Variable: Post-test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	17448.158 ^a	4	4362.039	30.430	.000	.717	121.719	1.000
Intercept	14.201	1	14.201	.099	.754	.002	.099	.061
Pre-test	12625.124	1	12625.124	88.074	.000	.647	88.074	1.000
Treatment	959.698	1	959.698	6.695	.013	.122	6.695	.718
Gender	222.467	1	222.467	1.552	.219	.031	1.552	.231
Treatment* Gender	747.542	1	747.542	5.215	.027	.098	5.215	.609
Error	6880.672	48	143.347					
Total	654676.000	53						
Corrected Total	24328.830	52						

a. R Squared = .717 (Adjusted R Squared = .694)

b. Computed using alpha = .05

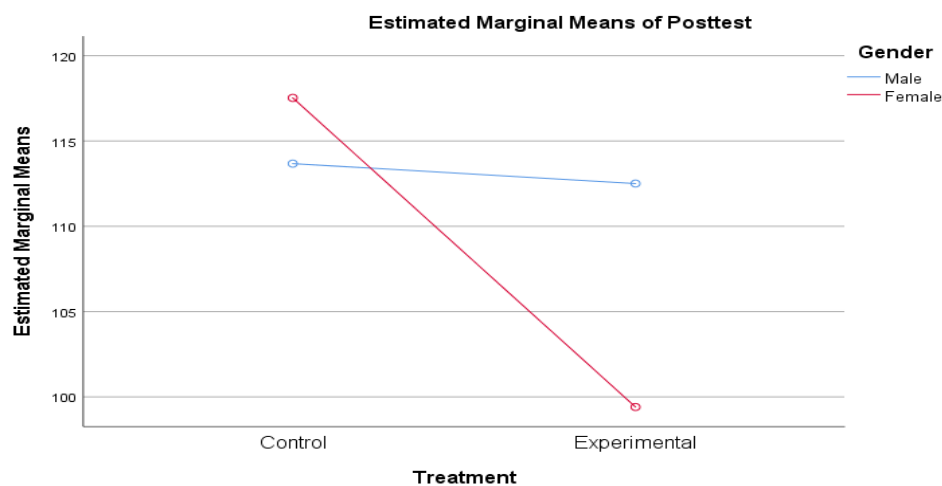
From Table 4, it can be seen that there was a significant main effect for treatment (with or without vlogs) obtained with $F(1, 48)=6.695, p<.05$, though this was a weak effect (Eta-squared =.122). Therefore, the null hypothesis that there is no significant difference of treatment (with and without vlogs) on students' public speaking anxiety level is rejected and the alternative

hypothesis is accepted. In addressing the first research question, these results indicate that the use of treatment (with or without vlogs) has a positive impact in reducing students' anxiety level. However, this analysis did not tell which method is better and this will be explained in the next analysis in Table 5 to Table 7.

In addressing the second research question, the main effect for gender was found as not significant with $F(1, 48)=1.552, p>.05$, Eta-squared = .03. This implies that there was no overall difference in the anxiety scores of male participants ($M=112.40$) compared to female participants ($M=107.74$). Thus, the null hypothesis that there is no significant difference of gender (male and female) influence on the effectiveness of treatment (with and without vlogs) on students' public speaking anxiety level could not be rejected. This implies that neither males nor females were better than each other in relation to the treatment received.

To answer the third research question, a significant interaction between Treatment*Gender was obtained with $F(1,48)=5.22, p<.05$, though this was a weak effect (Eta-squared=.098). Figure 1 further supports this finding by showing a statistically significant interaction plot between gender and treatment groups, whilst controlling for pre-test anxiety scores. Hence, the hypothesis that there is no significant interaction between gender and vlogs on students' public speaking anxiety level is rejected, thus the null hypothesis is accepted. This analysis tells that the two-way interaction between gender and treatment existed. Hence, it is worth to note that during the intervention, the participants both in the control and experiment groups (both males and females) might have interacted with each other, which was out of the researchers' control. The existence of this interaction might act as a third variable that had influenced the impact of the reduction of the anxiety scores prior to the intervention.

Figure 1: Estimated Marginal Means of Post-test



Covariates appearing in the model are evaluated at the following values: Pretest = 118.57

4.1 Estimated Marginal Means

The estimated marginal means section of the output gives the adjusted means (controlling for the covariate ‘pre-test scores’) for each gender. This means the effects of ‘pre-test anxiety scores’ had been statistically removed. Further analysis of the data is presented in Table 5-7 as follows:

Table 5: Treatment Groups

Dependent Variable: Post-test

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Control	115.598 ^a	2.848	109.871	121.325
Experimental	105.955 ^a	2.391	101.148	110.762

a. Covariates appearing in the model are evaluated at the following values: Pretest = 118.57.

Table 6: Gender

Dependent Variable: Post-test

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	113.088 ^a	3.155	106.744	119.433
Female	108.465 ^a	1.954	104.537	112.393

a. Covariates appearing in the model are evaluated at the following values: Pretest = 118.57.

Table 7: Gender Treatment

Dependent Variable: Post-test

Gender	Treatment	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	Control	113.672 ^a	4.889	103.842	123.502
	Experimental	112.505 ^a	3.995	104.473	120.536
Female	Control	117.524 ^a	2.915	111.663	123.384
	Experimental	99.406 ^a	2.618	94.143	104.669

a. Covariates appearing in the model are evaluated at the following values: Pretest = 118.57.

Table 7 presents the marginal anxiety level post-test scores between control and experimental groups of each gender, male and female. For male participants, the score in the control group

($M=113.67$) was slightly higher than the experimental group ($M=112.51$). With regards to the female participants, a similar trend as the male participants was observed. The anxiety level post-test score for the control group ($M=117.52$) was significantly higher than the experimental group with ($M=99.41$). Conversely, a slight reduction for male participants was obtained in the control group with ($M=113.67$) to ($M=112.51$) of the experimental group. This significant reduction is parallel with the findings from Table 4 and Figure 1 has confirmed the findings.

Overall, from the controlled means of pre-test scores, data showed a significant interaction between gender and treatment variables. Male and female participants were found to respond differently to the types of treatment, with or without vlogs. It can be concluded that the experimental group shows better intervention than the control group and this is particularly true for the female participants in the experimental group. This finding is consistent with data presented in Table 3. In addition, to ensure whether the effect of chosen covariate was accurate, from Table 4, the pre-test scores with $F(1,48)=88.07$, $p<.05$ has shown a statistically significant effect on the post-test scores. This indicates that the pre-test is a good covariate and has a strong effect on the post-test.

To summarise, findings revealed that the treatment has a significant difference between the types of treatment (with or without vlogs), but there was no significant difference in the speaking anxiety between genders. This indicates that being male or female does not constitute to students having lower anxiety despite receiving treatments. Similar studies by Matsuda and Gobel (2004), Wang (2010), and Özkan (2019) reveal that gender does not have a significant effect on the overall anxiety and Putra, Saukah, Basthomi, and Irawati (2020) strengthen this finding in their study that gender difference does not influence the students' use of technology.

The explanation behind this is most likely because the students are dependent on teacher's instruction to initiate the use of technology for their learning (Kasuma, 2017). This might be the case for this study, whereby the participants might need extra prompts given by the teacher during the vlogging sessions in order to get more language input and be able to produce more language output. Due to the cultural factors, most Asian students perceived their teachers as the main guiding authorities and therefore the tendency of being dependent on teacher's instruction when using technology for autonomous learning is apparent (Kasuma, 2017). Teachers' encouragement has an influence on student's self-directed learning when it comes to the use of technology (Lai, 2015). This may result to meaningful interaction that could lead to a better learning outcome.

A student's situational interest in the vlogs' topics, on the other hand, could help to characterise the students-vlogs interaction that leads to engagement or re-engagement, is

another element that could influence the results. The participants were provided with a list of topics by the instructor although they had the freedom to select any topics from the list. Participants' situational interest may be triggered by the limited selection of topics, which may reduce their sense of value and engagement with an epistemic orientation toward the learning object (Knogler, Harackiewicz, Gegenfurtner, & Lewalter, 2015).

On one hand, in each gender group for both control and experimental groups, the participants' differences in terms of proficiency level might have also influenced on the overall effect as well. This suggests that the relationship between the covariate (list of topics or students' proficiency level) and the dependent variable is different for each treatment group which had impacted on the outcomes of the participants' anxiety level. As a result, the effect of vlogs as a treatment would depend on the value of the covariate prior to the treatment and the universal statement about the effect of the treatment are not appropriate (Engqvist, 2005).

Using video instead of standing physically in front of a large audience has significantly reduced the participants' anxiety. Krashen's (1982) notion of affective filter explains that the imaginary wall that was created due to the public speaking anxiety has been broken, thus allowing input and cognition to happen which was significant in this study. Learning happens when the participants actively produced the knowledge themselves when recording their videos based on the topics they had selected. Watching their friends' videos also enables them to experience and reflect upon what they had watched, thus helping them to build their own representations and integrate what they had experienced into their pre-existing knowledge.

5.0 CONCLUSION

In a nutshell, types of treatments (with or without vlogs) do have a significant impact and good potential in managing students' anxiety. However, genders on the other hand, do not have a significant role in determining the effectiveness of the treatment on anxiety level when it comes to the use of technology, specifically vlogs. Nonetheless, the interaction of gender and treatment had shown a significant relationship in influencing the outcome of the anxiety level. It is hoped that the outcome of this study will shed some light on the alternative solutions to reduce students' anxiety level with the use of technology that is essentially a part and parcel of our life. With low anxiety level, language learners could potentially increase their confidence level and help manage their anxiety thus could indirectly make them a better speaker. If vlogs are given more space in classrooms with proper guidelines given by the instructors to both groups of gender, students would become better in expressing themselves, thus fluency may be acquired simultaneously. The limitation of this study is imbalanced number of male and female

students due to purposive sampling technique. This study could also be improvised by conducting an in-depth analysis of the process on how male and female undergraduates approach technology in getting a comprehensive and clear understanding of gender differences in language learning via the use of technology, particularly vlogs.

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