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The Impact of Foreign Language Anxiety on the Utterance Fluency of International Students in the UK: Does the Presence of an Audience Matter?

Abstract

Foreign language anxiety (FLA) can have a detrimental impact on language production, which can have dire consequences for students completing a degree in a language other than their mother tongue. Studies have shown speakers to cope with FLA by using time-gaining mechanisms, manifesting in utterance disfluencies. Research exploring the mechanisms in which FLA impacts oral fluency measures is limited particularly among learners completing a degree abroad immersed in the target language, where FLA can impact life both inside and outside of the classroom. The current study investigated the impact of FLA on the English utterance fluency of international students undertaking a degree in the UK and examined how the presence of native-speaker listeners affected this relationship. After the completion of questionnaires regarding FLA, the participants took part in an online Zoom call and completed a monologue-style speaking task. They were randomly allocated to either a control condition or an experimental condition, which had four native-speaker listeners in the audience. Speech samples for the speaking task were then analyzed for utterance fluency variables. The results showed that the participants scoring higher on FLA produced a significantly higher percentage of utterance disfluencies while speaking. Contrary to expectations, the participants allocated to the control condition were no less anxious than participants in the experimental condition, indicating possibly high FLA merely due to the requirement of speaking. The findings of this study provide important implications for educators in understanding how FLA may impact students' utterance fluency when required to speak in class.

Keywords: foreign language anxiety, utterance fluency, international students, study abroad

Foreign language anxiety is a widely studied emotion in the second language acquisition literature. Converging research shows lower levels of FLA to be strongly associated with higher levels of second language performance as defined by course grades (Bekleyen, 2009; MacIntyre & Gardner, 1994b) essay writing (Woodrow, 2011), and listening tests (Zhang, 2013). The majority of FLA research has focused on students learning a foreign language in a classroom in their home country (MacIntyre & Gardner, 1991; Zhang, 2013), or students studying abroad with the purpose of learning the language of the host country (Dewey, Belnap, & Steffen, 2018; Liu, 2018; Thompson & Lee, 2014), but there is limited research examining the impact of FLA on students studying abroad long term undertaking a degree in their target language.

For international students from non-English speaking backgrounds undertaking a degree in an English-speaking country, English is not only used as the medium of study but is also necessary for the students to be able to express themselves, understand and cooperate with people on a daily basis, effectively navigate personal problems, and be self-determining on their own behalf (Sawir et al., 2012; Tran & Pham, 2016). International students with higher English abilities are more likely to have higher levels of academic achievement (Mamiseishvilli, 2012; Martirosyan, Hwang, & Wanjohi 2015; Neumann, Padden, & McDonough, 2019), lower levels of homesickness (Poyrazli & Lopez, 2007), and a greater sense of wellbeing (Basow & Gaugler, 2017). For international students who must communicate using their target language both in and outside of the classroom for an extended length of time, FLA may greatly impact their experience abroad and influence the degree to which they are able to successfully navigate not only their academics, but also everyday life. This study examines the impact of FLA on the English oral fluency of international students undertaking a degree in the UK in order to elucidate the effects it may have on students' ability to communicate.

Literature Review

Foreign language anxiety (FLA) is a situation-specific anxiety referring to worry, nervousness, and apprehension when communicating in one's second language (Horwitz, Horwitz, & Cope, 1986). FLA has been shown to have deleterious effects on language communication, as the speaker focuses on reasons for being anxious and is distracted from the main task at hand (Kormos, 2006). International students who experience FLA may use avoidance to cope with anxiety and segregate themselves to socialize and form groups with fellow nationals, which limits opportunities to practice the language (Brown, 2008;

Sawir et al., 2012). Despite meeting university language requirements, international students often report high levels of anxiety about their English communication abilities while studying in the UK (Brown, 2008; Sawir et al., 2012). As individuals experiencing FLA are more likely to have lower grades (Bekleyen, 2009; Ganschow & Sparks, 1996), take longer to complete tests (MacIntyre & Gardner, 1994b), and avoid attempting personal or difficult messages in their second language (Horwitz et al., 1986), international students undertaking a degree may struggle when completing coursework, exams, dissertations, or conducting meetings and discussions with classmates or supervisors.

As fear of negative evaluation is one of the main components of FLA (Horwitz et al., 1986), and students typically feel the most anxiety when speaking with strangers or speaking in front of others (Bekleyen, 2009; Birney et al., 2020; Dewaele, 2007), international students are likely to experience high levels of anxiety when required to partake in classroom activities and speak in front of classmates. Furthermore, research has suggested that non-native speakers tend to experience anxiety and fear of being ridiculed particularly by native speakers, even in an online environment (Lin, 2022; Russel, 2020). International students have also reported that feeling anxiety while speaking to locals leads them to pause mid-sentence, having to rephrase, or ask others to repeat sentences (Brown, 2008). International students undertaking a degree in the UK will not only have to use English in front of other learners, but also in front of native English speakers both in and outside of the classroom, increasing the likelihood of experiencing high levels of FLA in a variety of situations, and in turn experience barriers to oral communication and navigation of daily life.

Anxiety can impede one's ability to clearly communicate their ideas, as task irrelevant thoughts and ruminations about reasons for anxiety compete with thoughts relevant to the task demands (Kormos, 2006; Trebtis, 2014). When producing speech, the speaker is required to simultaneously plan their message and map their thoughts onto the appropriate language. This may be relatively automatic in one's mother tongue but require more effort in a non-native language (Kormos, 2006). Mutual communication requires quick listening comprehension and a relatively immediate response, so there are potentially high demands on international students who are asked to speak, answer questions, provide opinions, or participate in discussions in class when English is not their native language. These contexts may place students in a situation under pressure with limited opportunity to allocate extra time for comprehension and response. Strategies such as allocating more time to the task, reviewing material, and articulatory rehearsal, though effective and practical in reading or writing contexts (Bekleyen, 2009; Eysenck et al., 2007), may not be available in situations such as attending lectures, participating in discussions during seminars, or communication in daily life. Instead, anxiety may lead to the individual resorting to time-gaining mechanisms during speech such as pausing or repeating

a message (Castillejo, 2019; Gots, 2013). Furthermore, in Castillo's (2019) study, anxious participants paused even more frequently than low-proficiency learners during an oral exam, emphasizing the fact that anxiety may disadvantage even high-proficiency learners' ability to speak fluently. This highlights the potential that FLA may have on the speakers' ability to smoothly communicate their intended message regardless of their actual language knowledge.

In the same light, international students who are required to use English in the classroom and speak in front of the class may struggle due to their experiences with FLA. For example, when required to discuss classroom material and provide answers or opinions to questions in front of others, a student with high FLA juggles thoughts related to their reasons for anxiety and these thoughts may impede their ability to focus their attention on listening to others or preparing for a response, hindering their ability to smoothly communicate. These students eventually may decide to avoid participating and communicating in English all together (Brown, 2008; Sawir et al., 2012). For those who do persevere and participate, these struggles may manifest in the form of utterance disfluencies during speech. Utterance fluency refers to oral features that can be measured and focuses on how fluid one's speech is (Skehan, 2003; Tavakoli, 2005). This includes the extent to which the speech is interrupted, as well as the number of self-corrections and repetitions in speech. In addition to pausing (Castillejo, 2019), international students may have difficulty with word-finding while distracted by task-irrelevant thoughts, and therefore show a higher number of self-repairs when speaking (Zuniga & Simard, 2022). Utterance disfluencies such as these may act as coping mechanisms for speakers to bide time until they are able to retrieve the correct grammar or vocabulary required to complete their message.

Thus far, much of the FLA literature focuses on general outcome variables such as grades or tests (Bekleyen, 2009; Cheng, Horwitz, & Shallert, 1999; MacIntyre & Gardner, 1994b; Linck & Weiss, 2015; Liu, 2018; Saito, Horwitz, & Garza, 1999; Verhagen & Leseman, 2016), and there is limited research examining the impact of FLA on utterance fluency (Bielak, 2022, Castillejo, 2019, 2021), particularly among individuals who are immersed in the target language rather than inside the language classroom. Examining measurable fluency outcomes may provide a clearer picture as to how the effects of FLA manifest in speech. Furthermore, examining utterance fluencies in an ecologically valid context similar to situations international students typically experience may elucidate the way FLA impacts oral fluency in real life communication.

In addition, in order to understand how FLA impacts students' oral fluency in a real-life setting, it is important that the methodology used to investigate the impact of FLA is similar to what students would experience in an educational environment. Much of the previous research on FLA has used cross-sectional (Bekleyen, 2009; Bielak, 2022; Castillejo, 2019; Liu, 2018) or reflective inter-

view (Brown, 2008; Gregersen, Meza, & MacIntyre, 2014; Sawir et al., 2012) methods, which although provide a strong rationale for establishing the negative effects of FLA, they do not reveal the distinct ways FLA can impact students on a day-to-day basis. Some studies have, however, used experimental methods, such as the study by Rai et al. (2001), which showed how FLA can negatively impact reading comprehension by leading participants to require more time to process material. Furthermore, other studies have attempted to use ecologically valid settings to investigate how students' experience FLA while doing a presentation in the classroom (Gregersen, Meza, & MacIntyre, 2014).

Gregersen, Meza, and MacIntyre's (2014) study investigated the impact of anxiety on presentation performances among students learning Spanish. These performances were videorecorded, and the participants were able to re-watch the videos and indicate their levels of anxiety as the presentation went on, highlighting how students experience FLA during typical classroom assignments. The results showed that those with high FLA continued to be anxious throughout the entire presentation, while those with low FLA had decreasing anxiety over time, suggesting that those with high FLA struggle to cope with their anxiety during performance. However, it is unclear how this struggle influenced actual speech and utterance fluency during the presentation, and whether their performance had indeed been negatively affected. Considering the results of the aforementioned study combined with research strongly suggesting that FLA impacts performance in terms of grades and tests (Bekleyen, 2009; Ganschow & Sparks, 1996; MacIntyre & Gardner, 1994b), because international students are also required to communicate while living abroad, understanding how oral performance is affected by FLA and the negative impacts it can have on student classroom participation is vital.

The current study intends to combine both measurable fluency outcomes with ecologically valid settings to investigate how FLA impacts international students' ability to communicate their ideas within a classroom or small group setting, specifically when speaking in front of others. The study will use experimental methods to investigate the impact of FLA on utterance fluency in an online seminar style situation. As oral communication in English is unavoidable for international students undertaking a degree and living in the UK, examining the impact of FLA on utterance fluency variables may shed light on the impact FLA has on real-life communication events and how it may impact students' experience participating in classroom activities abroad.

Current Study

The aim of this study was to investigate the effect of FLA on international students' English oral fluency when they are required to speak in front of others as is often the case in a classroom situation. The study used experimental methods to examine the impact of international students' FLA on utterance fluency variables when speaking in front of native speakers through the use of an audience in an online Zoom call. As the COVID-19 pandemic led to a widespread increase of technology and online education (Burns, 2020; Moorhouse, 2023), and considering that students report experiencing FLA and fear of negative evaluation among native speakers (Lin, 2022) even in an online environment (Russel, 2020), speaking to others through Zoom can be considered an ecologically valid method of examining oral communication. Being aware of the impact of the COVID-19 pandemic and the possible ways it may have affected the international student participants, this study will not be an accurate reflection of typical international students studying in higher education but provide a unique understanding of the enduring impact the pandemic and societal situation has had on the international students experiencing it. In an attempt to fill a gap in research by examining the impact of FLA on the oral fluency of international students undertaking a degree abroad, the following research questions were raised:

1. How does foreign language anxiety affect international students' utterance fluency during a speaking task?
2. How does the presence of native English speakers impact international student anxiety and utterance fluency during a speaking task?

Regarding the first research question, it was expected that the participants with higher levels of anxiety would be correlated with a higher percentage of utterance disfluencies during speech, suggesting that anxiety leads to difficulty focusing on the task at hand and the use of time-gaining mechanisms. As for the second research question, it was expected that the participants required to speak in front of native English speakers would experience higher levels of anxiety, and in turn produce a higher percentage of utterance disfluencies in their speech compared to the participants who did not have a native English speaker audience.

Methods

In order to address the research questions, this project took an experimental between-participants design to examine differences in international students' English utterance fluency while partaking in an oral communication task among while either allocated to an experimental group, which contained an audience of four confederate listeners, or a control group without an audience. The experiment took place entirely online. The participants were recruited through online social media platforms and university mailing lists. They were offered a £10 voucher for participation. The participants for this study were international students currently attending higher education at a university in the UK. They were also required to have learned English as a second or additional language and not have had previous education in another English-speaking country.

A total of 72 undergraduate ($N = 10$) and postgraduate ($N = 62$) international students from multiple universities across the United Kingdom participated in this study. The participants were from 34 different countries, including China ($N = 14$), Hong Kong ($N = 6$), India ($N = 5$) Pakistan ($N = 4$), Italy ($N = 3$), Iran ($N = 3$), Chile ($N = 3$), Malaysia ($N = 2$), Germany ($N = 2$), Romania ($N = 2$), Indonesia ($N = 2$), Bangladesh ($N = 2$), Peru ($N = 2$), Colombia ($N = 2$), Brazil ($N = 2$), Denmark ($N = 1$), Russia ($N = 1$), Uruguay ($N = 1$), Costa Rica ($N = 1$), Japan ($N = 1$), Thailand ($N = 1$), Slovakia ($N = 1$), Kenya ($N = 1$), *N*orway ($N = 1$), Ethiopia ($N = 1$), Lithuania ($N = 1$), Taiwan ($N = 1$), Poland ($N = 1$), Greece ($N = 1$), Mexico ($N = 1$), Saudi Arabia ($N = 1$), Spain ($N = 1$), and Egypt ($N = 1$). Among these participants, there were 25 different native language backgrounds, including Chinese ($N = 22$), Spanish ($N = 11$), Hindi ($N = 5$), Urdu ($N = 4$) Italian ($N = 3$), Romanian ($N = 2$), German ($N = 2$), Persian ($N = 2$), Indonesian ($N = 2$), Arabic ($N = 2$), Bengali ($N = 2$), Portuguese ($N = 2$), Japanese ($N = 1$), *N*orwegian ($N = 1$), Farsi ($N = 1$), Russian ($N = 1$), Greek ($N = 1$), Lithuanian ($N = 1$), Malay ($N = 1$), Thai ($N = 1$), Danish ($N = 1$), Slovak ($N = 1$), Afaan Oromo ($N = 1$), Polish ($N = 1$), and Kiswahiki ($N = 1$). A full account of the demographic information about the participants can be found in Table 1 and Table 2.

Table 1

Descriptive Statistics

Variable	Min	Max	Mean	SD
Age	19	43	27.29	4.80
Age of acquisition	2	29	7.64	4.26
Self-rated English proficiency	2	7	4.68	1.46

Table 2

Descriptive Frequencies

Variable	Frequency	Percent
Gender		
Female	52	72.2
Male	20	27.8
Year in Uni		
Undergrad 1st	3	4.2
Undergrad 2nd	3	4.2
Undergrad 3rd	2	2.8
Undergrad 4th	2	2.8
Master's	34	47.2
PhD 1st	12	16.7
PhD 2nd	9	12.5
PhD 3rd	4	5.6
PhD 4th	3	4.2
Length in UK		
0–6 months	12	16.7
7–11 months	29	40.3
1–2 years	18	25.0
2–3 years	3	4.2
3–4 years	8	11.1
5+ years	2	2.8
Percentage of English used per day		
0%	0	0
10%	5	6.7
20%	5	6.7
30%	5	6.7

Table 2 continued

Variable	Frequency	Percent
40%	5	6.7
50%	16	21.3
60%	7	9.3
70%	9	12.0
80%	8	10.7
90%	11	14.7
100%	1	1.3

Measures

General Demographics

A general demographics questionnaire (See Appendix A) asked the participants about their current age, gender, first language, age at which they began learning English, name of university currently attending, year in university, length of time living in the UK, whether they had a history of speech disorders, and self-reported English proficiency. The respondents were asked to rate their English reading, writing, speaking, and listening proficiency on a seven-point Likert scale ranging from "poor" to "native like," a scale used in other studies investigating variables related to English proficiency (Kim & Cha, 2017; Thompson & Lee, 2014).

Anxiety

There were three separate measures used to address the participants' anxiety. The first two were questionnaires, one focusing on foreign language anxiety within the classroom, and the second one focused on foreign language anxiety outside of the classroom in day-to-day life. As research has shown that those communicating in a foreign language may experience anxiety both in and out of the classroom (Brown, 2008; Sawir et al., 2012), both measures were used in combination to get a grasp of international students' experience of foreign language anxiety. The final measure of anxiety was used as a manipulation check to make sure the experimental condition of the study did indeed induce anxiety compared to the control condition.

Foreign Language Classroom Anxiety Scale. The Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz et al. 1986; See Appendix B) was used to assess the participants' foreign language anxiety in the classroom and adapted to suit international students partaking in classes with English as a medium rather than learning English. The questions on the FLCAS are answered on a five-point Likert scale ranging from "strongly disagree" to "strongly agree." There are 33 items in total, with a minimum of 33 and maximum of 231. The questions ask the respondents about their feelings of nervousness, worry, and anxiety in a classroom where they are using English, or situations where the use of English is necessary.

Foreign Language Anxiety in Formal Contexts Scale. To investigate foreign language anxiety in situations where international students must communicate in English outside of the classroom, the Foreign Language Anxiety in Formal Contexts Scale (FLAFS) was used (Gargalianou et al., 2016; See Appendix C). These items reflect anxiety used in general contexts outside of the language classroom and can be applicable to multiple contexts where the foreign language must be used, including business settings, or communicating with friends. There are ten items in the scale, with two items measuring each the degree of anxiety, extent of understanding, fear of making mistakes, feeling of competence, and divergence from general communication apprehension. The items are on a 7-point Likert scale ranging from strongly disagree to strongly agree. The minimum score is ten while the maximum score is 70.

Anxiety Check. To check the effectiveness of the experimental condition of this study, a single item measure of anxiety was used. This item was presented after the participants were provided the instructions for the speaking task and directly before they were asked to partake in the task. They were then asked, "How anxious do you feel about the speaking task?" The participants were instructed to indicate their current level of anxiety on a scale from 1 (not at all) to 100 (extremely). The purpose of using a quick, one question anxiety check was to avoid any interference, alteration of anxiety levels, or distraction from to lengthy questionnaires, as manipulation checks which distract the participant from the experimental manipulation may affect the results of the experiment (Hauser, Ellsworth, & Gonzales, 2018).

Speaking Task

In an attempt to enhance the ecological validity of this study, the participants completing this task were asked a question in order to elicit free speech in the form of a monologue under conditions similar to situations in which students are asked to provide an answer to a question in a seminar.

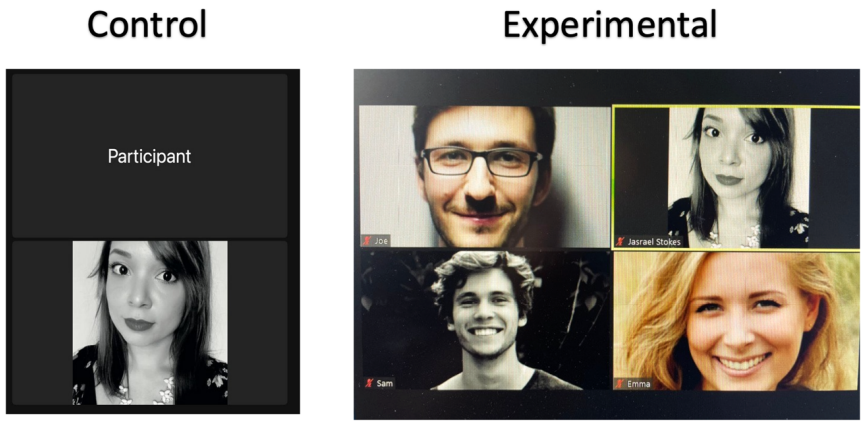
Monologues are useful as they avoid the variability of the interactions and the influence that the interlocutor introduces to the task (Segalowitz, 2016). Therefore, to avoid confounding variables from an interlocutor, interview style speaking tasks used by some researchers analyzing fluency (Cadena-Aguilar, Ortega-Cuellar, & Cadena-Aguilar, 2019; Gagne, French, & Hummell, 2022; Georgiadou & Roehr-Brakin, 2017) were avoided. Instead, the respondents were asked a question without visual prompts requiring spontaneous speech, as may be the case while participating in seminar activities. The question, "From the perspective of an international student, what advice would you give to future international students planning to study in the UK for a degree in higher education in your department?" was chosen as it was relevant to the university experience and was something that each international student could answer regardless of their background. During the time this study was conducted, students were familiar with online video platforms and the use of breakout rooms for participating in small group discussions due to the COVID-19 pandemic (Beason-Abmayr, Caprette, & Gopalan, 2021; Burns, 2020; Moorhouse, 2023).

Control Condition. In the control condition, the participants were merely provided with the question they were required to answer. The experimenter was the only other person in the Zoom call when the participant performed the speaking task. This condition was intended to allow the participants to perform the task naturally without any additional anxiety-inducing stressors.

Experimental Condition. The participants allocated to the experimental condition were told that there would be an audience listening to their response as they completed the speaking task in the Zoom call. For those in this condition, in addition to the researcher, there were three fake Zoom profiles created as the audience. The experimenter used multiple devices to log in to these three accounts and join the Zoom call for the speaking task. These fake listeners had profile photos taken from free stock image websites, and names were created for them that reflected common names of British native English speakers, such as Emma, Joe, and Sam (See Figure 1). This was intended to induce anxiety among the participants, as speaking to or performing in front of others, especially with strangers or native speakers, has been said to be the most anxiety provoking aspect of second language communication (Dewaele, 2007; Bekleyen, 2009; Lin, 2022).

Figure 1

Control and Experimental Conditions from the Participants' view on Zoom



Design and Procedure

The study was conducted entirely online through Qualtrics (Qualtrics, Provo, UT; https://www.qualtrics.com). It was conducted in two parts, which included the series of questionnaires, including the demographic and anxiety questionnaires, and an online speaking task through Zoom. The participants first completed the questionnaires. After completion, they were directed to a link which opened a calendar page where they were able to book a time to partake in the second part of the study, the speaking task. Ten minutes before their scheduled time, the participants received a link to a Qualtrics page explaining what would happen during the speaking task. The respondents were allocated to either the control or experimental group and read about whether they had an audience before completing anxiety check measure. Upon completion, they were directly sent to the Zoom call.

Once the participants entered the Zoom call, they were asked to keep their cameras off, but microphones on in order to protect their anonymity. Furthermore, the lack of camera use reflected typical behavior of students during the pandemic and would avoid additional anxieties due to concern about physical location or appearance, or weak internet connection (Castelli & Sarvary, 2020). When the participants were in the Zoom call, they were then reminded of the question they were required to answer. As oral performance may be affected by the amount of planning allocated (O'Loughlin, 1995), the respondents were given two minutes to plan their answer before they were required to speak (Tavakoli, 2011; Trebtis, 2016). Planning and thinking time

were also expected to reflect real-life situations during seminars. The content of the seminar and overview of what will be discussed is often provided before the actual seminars take place, giving students time to consider the subject matter before partaking in any activities. The two-minute planning time was provided as a substitute for this. When providing their answer, the participants were asked to speak for at least two minutes. Once the preparation time was over, the researcher then asked permission to begin the recording. After the recording started, the participants were asked to provide their response. This recording was then downloaded and transcribed for analysis. Once the participants completed the speaking task, they were debriefed and able to end the call and exit the experiment.

Tools for Transcription

The recordings of the narrative tasks were transcribed through Codes for the Human Analysis of Transcripts (CHAT) and analyzed through Computerized Language Analysis (CLAN) both of which are free downloadable software programs used for language analyses developed by (MacWinney, 2000). These softwares were used to assess the participants' speech sample for utterance fluency measures, including breakdown and repair fluencies. Breakdown fluencies indicate a lack of delay in speech and include filled or silent pauses. Repair fluencies include non-communicative words such as self-repetitions and self-corrections. These disfluencies have been shown to be valid indicators of assessing language fluency and have been widely used in fluency literature (Bosker et al., 2012; Castillejo, 2019; Cucciarini, Strik, & Boves, 2000; Kessler, 2010; Segalowitz, 2010, 2016; Tavakoli & Skehan, 2005; Zuniga & Simard, 2022).

Results

Quantitative analyses were conducted through IBM SPSS 29 to explore the demographic variables in the participant population and examine the relationships among the variables of interest in this study. First, an exploration of the demographic variables was conducted using correlation analyses. Then, differences in demographic variables and anxiety between participants in terms of their language background were examined using one-way ANOVA. For the main analyses, correlation analyses were conducted to examine relationships among the variables of interest, and t-tests were used to compare differences between the experimental and control groups.

Exploration of Participant Demographic Variables

Before beginning the main analysis, to investigate the general relationship between international student anxiety and their experience using English as an additional language, an analysis of the relationship between the FLAFS, FLCAS, and demographic variables was conducted. First, correlations between both anxiety measures and participant age, age of acquisition, percentage of English use per day, self-rated English proficiency, year in university, length living in the UK, and the anxiety check were explored. Correlations between participant age, age of acquisition, and the anxiety check were conducted using Pearson's correlation. However, as percentage of English use per day, self-rated English proficiency, year in university, and length living in the UK were ordinal variables, Spearman's Rho was a more appropriate analysis for conducting correlations for these variables.

Demographic Variables and the Foreign Language Anxiety in Formal Contexts Scale

A Pearson's correlation showed the FLAFS to be significantly correlated with participant age of acquisition ($r = .324$, $p = .006$), and the anxiety check measure ($r = .534$, $p < .001$). However, the FLAFS had no significant relationship with participant age ($r = .084$, $p = .485$). A Spearman's Rho correlation conducted for the ordinal variables showed a significant correlation with percentage of English use per day (rho = –.301, $p = .010$), self-rated English proficiency (rho = –.628, $p < .001$). There was no significant correlation between the FLAFS and year in university (rho = .143, $p = .231$), nor length the participant has lived in the UK (rho = –.038, $p = .754$). Those participants who scored higher in anxiety were more likely to have learned English later in life, use English less often per day, and rate themselves as having lower English proficiency. Those with high anxiety were also more likely to have higher anxiety about completing the speaking task as indicated on the anxiety check measure.

Demographic Variables and the Foreign Language Classroom Anxiety Scale

A Pearson's correlation indicated a significant correlation between the FLCAS and participant age of acquisition ($r = .373$, $p = .001$), and the anxiety check measure ($r = .627$, $p < .001$). The relationship between the FLCAS and participant age was non-significant ($r = .130$, $p = .275$). A Spearman's Rho correlation showed a significant relationship between percentage of English used per day (rho = –.394, $p < .001$), and self-rated English proficiency (rho = –.719, $p < .001$). The FLCAS was not significantly correlated with the participants' year in university (rho = .223, $p = .060$) nor the length they have lived in the

UK (rho = –.005, p = .967). Similar to the results of the FLCAS, those with high anxiety were more likely to have learned English later in life, use English less often per day, rate themselves as having lower English proficiency, and have higher anxiety before completing the speaking task.

Demographic Variables and the Utterance Fluency

A Pearson's correlation showed no significant correlations between the participants' percentage of utterance disfluencies in their speech samples, and participant age of acquisition (r = .218, p = .066), age (r = .145, p = .244), and the anxiety check measure (r = .173, p = .170). A Spearman's Rho correlation showed no significant relationships with length living in the UK (rho = .045, p = .704), but did, however, show significant correlations with year in university (rho = .288, p = .014), percentage of English used per day (rho = –.342, p = .003), and self-rated English proficiency (rho = –.440, p < .001). This indicates that the participants current age, age which they began learning English, the length they lived in the UK, nor their indication of how anxious they felt before the task has no relationship to the percentage of disfluencies during the speaking task. On the other hand, those participants who spoke a higher percentage of English per day, and those who self-rated their English proficiency higher had fewer disfluencies in speech. In addition, the respondents who were further along in their university career also had a higher percentage of disfluencies during the speaking task.

Foreign Language Anxiety and Utterance Disfluency by Participant Nationality

Considering the wide variety of nationalities and language backgrounds reported by the participants in this study, an exploration of how these differences in background related to scores on the FLAFS, FLCAS, and utterance fluency outcomes were examined using a series of one-way ANOVAs. The language groups were separated into four groups by continent: East Asia (N = 25), Europe (N = 16), and Central and South America (N = 11) West Asia and Africa (N = 20) (See Table 3 for a list of the countries in each group).

Table 3

Participant Nationality by Continent

East Asia	Europe	Central & South America	West Asia & Africa
Chinese	Italy	Chile	India
Hong Kong	Germany	Peru	Pakistan
Malaysia	Romania	Colombia	Iran
Indonesia	Denmark	Brazil	Bangladesh
Japan	Russia	Uruguay	Kenya
Thailand	Slovakia	Costa Rica	Ethiopia
Taiwan	Slovenia	Mexico	Bengali
	Norway		Farsi
	Lithuania		Saudi Arabia
	Poland		Egypt
	Spain		

Due to the group sizes being unequal, a Welch's ANOVA was conducted to examine differences in means between the participants from East Asia, Europe, Central and South America, and West Asia and Africa. There were no significant effects found between the participants' regional nationality and their scores on the FLAFS ($F(2,69) = 1.957$, $p = .149$), FLCAS ($F(2,69) = 1.163$, $p = .319$), nor was there a significant effect found in terms of regional nationality and percentage of utterance disfluencies during the speaking task ($F(2,69) = .108$, $p = .897$). This indicates that regardless of where the participants came from, there was no difference in their foreign language anxiety scores nor in their performance on the speaking task.

Research Question 1: How does foreign language anxiety affect international students' utterance fluency during a speaking task?

To answer the first research question examining the impact of FLA on utterance fluency, correlational analyses were conducted between the anxiety questionnaires and the utterance fluency variables examined within the international students' speech samples to determine whether general feelings of anxiety affected utterance fluency during speech. Due to the relatively short speech sample per participant, utterance fluency measures were combined into the percentage of total utterance disfluencies per speech sample, which included word repetitions, phrase repetitions, word revisions, phrase revisions, word fragments, and filled pauses.

The correlational analysis shows that participant scores on the FLCAS were correlated with total percentage of utterance disfluencies ($r = .260$, $p = .029$) in the speech sample during the speaking task, indicating that those with higher classroom anxiety scores were more likely to have a higher number of utter-

ance disfluencies while speaking. Similarly, participant scores on the FLAFS were also correlated with total percentage of utterance disfluencies (r = .255, p = .033) indicating that those with high FLA in general contexts were also more likely to have a higher percentage of total utterance disfluencies. Descriptives of both the FLCAS and FLAFS can be found in Table 4. Furthermore, those who experienced high FLA in the classroom as measured by the FLCAS also experienced high FLA outside of the classroom, as measured by the FLAFS (r = .921, p < .001), indicating that FLA is indeed not limited to the language classroom but pervades throughout the participants' daily lives. In addition, both the FLCAS (r = .525, p < .001), and the FLAFS (r = .620, p < .001), were correlated with the anxiety check measure, indicating that those with typically high FLA are more likely to find participating in an oral speaking task more anxiety provoking.

Table 4

Descriptive Statistics of the Scores on the FLCAS and FLAFS

Variable	Mean	SD	Min	Max
FLCAS	39.6	13.1	39	145
FLAFS	91.8	26.8	13	68

Research Question 2: How does the presence of native English speakers impact international student anxiety and utterance fluency during a speaking task?

To address the second research question, a series of correlational analyses and t-tests were conducted between the variables of interest. First, an examination of whether participant scores on the anxiety check measure was related to the total percentage of utterance disfluencies in the speech samples was conducted. A correlation analysis showed a non-significant relationship between the anxiety check measure and the total percentage of utterance fluencies (r = .202, p = .093), indicating that the anxiety the participants felt going into the task did not relate to the utterance disfluencies they produced during the speaking task. Next, an independent sample t-test was conducted between the anxiety check and the experimental conditions to investigate whether the participants speaking in front of an audience were more anxious about the speaking task than those without an audience. The t-test showed no difference in the anxiety check (t (69) = .059, p = .477), between the control and the experimental conditions (see Table 5 for descriptives of both conditions) indicating that there was no difference in anxiety during the speaking task regardless of whether there was a native-speaker audience.

Table 5

Descriptive Statistics of the Scores on the Anxiety Check Measure Separated by Experimental Condition

Variable	Mean	SD	Min	Max
Control	42.0	27.5	0	82
Experimental	41.6	29.8	0	91

A second independent samples t-test was conducted between the total percentage of utterance disfluencies and the experimental condition to investigate whether those speaking in front of a native-speaker audience produced more disfluencies in their speech sample. The analysis showed no difference in the percentage of utterance disfluencies (t (68) = .212, p = .137), between the control and the experimental conditions, indicating that the presence of an audience had no impact on the percentage of utterance disfluencies in participants' speech samples. Descriptives of the total percentage of utterance disfluency scores among both conditions can be found in Table 6.

Table 6

Descriptive Statistics of the Total Percentage of Utterance Disfluencies by Experimental Condition

Variable	Mean	SD	Min	Max
Control	7.8	4.3	1.95	18.5
Experimental	9.6	8.2	2.0	49

Discussion

The aim of the current study was to examine the effects of FLA on English utterance fluency among international students in the UK who have learned English as an additional language. Research has shown that FLA is strongly associated with second language proficiency (Ardasheva et al., 2018; Bekleyen, 2009; Woodrow, 2011; Zhang, 2013), especially in the oral domain (Bielak, 2022; Castillejo, 2019). The first research question attempted to examine how FLA affects international students' utterance fluency during a speaking task in order to identify the real-life effects of FLA on the way learners speak. It was expected that the participants who scored higher on the FLA measures would

have more utterance disfluencies in their speech sample during the speaking task. This hypothesis was supported. Both scores on the FLCAS and FLAFS were correlated with a higher percentage of utterance disfluencies during speech, suggesting that FLA impedes the fluency of the speaker. This is in line with other research that has found a relationship between anxiety and oral fluency (Bielak, 2022; Castillejo, 2019; Trebtis, 2014). As anxiety impedes retrieval, this can lead to "freezing up" moments, where the speaker requires more time to select the appropriate vocabulary due to the ease of access to target language knowledge being reduced (Zheng, 2008). These moments in turn lead anxious individuals to cope by using time-gaining mechanisms which may impede the fluency of their speech (Castillejo, 2019; Gotz, 2013). The results of the study suggest that international students undertaking a degree in the UK who experience high FLA may also produce more utterance disfluencies in their speech when partaking in classroom discussions and activities, as well as during life outside of the classroom. This may make it difficult for students to clearly communicate their ideas, be understood by others, fully engage in discussions, and navigate activities required in daily life (Brown, 2008; Isaacs & Trofimovich, 2012; Sawir et al., 2012).

The second research question attempted to further examine the relationship between FLA and utterance fluency and investigate how this relationship is affected by the presence of native speaker listeners. As research has shown speaking with strangers and in front of others is particularly anxiety-provoking (Bekleyen, 2009; Dewaele, 2007), it was expected that those in the experimental condition with native speakers in the audience would experience higher anxiety and therefore more disfluencies in their speech. Surprisingly, this hypothesis was not supported. Although those with higher anxiety scores on the FLFAS and FLCAS were more likely to feel anxious about the speaking task, the anxiety check for the speaking task had no relationship to the experimental condition nor the total percentage of utterance disfluencies. This was unexpected considering the results of previous literature reporting feelings of pressure and high anxiety among learners when they are required to speak in front of native speakers (Lin, 2022; Sato, 2007). It is possible that although research has found learners to be anxious in online situations (Russel, 2020) the lack of camera use in the current study may not have made the native speaker listeners salient enough to affect the participants' anxiety and lead to differences in fluency.

Interestingly, despite random allocation to the experimental conditions, the descriptive statistics showed that there were participants in the control condition who scored particularly highly on the anxiety check measure, indicating that some participants may have felt extremely anxious about the mere prospect of the requirement to speak. However, the anxiety check measure was not related to participants' total percentage of utterance disfluencies during the speaking task, meaning that the way the respondents felt going into the task

did not necessarily affect the outcome. It is possible that for some participants, high anxiety was only felt at the beginning of the task, but waned as time went by, similar to the results of the study by MacIntyre and Gardner (1994a). In their study examining induced anxiety through the use of video cameras, the highest level of anxiety was reported by participants immediately after the introduction of the camera, and it was at this point when they had reduced performance. Furthermore, in a similar study by Gregersen, MacIntyre, and Meza (2014), participants were videorecorded while giving a speech and were asked to review the video and rate their moment-to-moment anxiety throughout. The results indicated that although all participants felt high anxiety at some point, those who were typically low in anxiety had a reduction in anxiety over the course of their speech, while conversely, those typically high in anxiety experienced an increase in anxiety over time. Likewise, in the current study, although all participants may have felt anxious upon having to complete the speaking task on Zoom, those typically high in FLA may have experienced increases over time, while those with typically lower FLA may have had reduced anxiety as they continued speaking. Therefore, for international students who struggle with typically high FLA, feelings of anxiety during their interactions with others may not decrease as the interaction continues and they may suffer from increased anxiety as they continue speaking, which may further impede utterance fluency. On the other hand, international students with typically low FLA may experience high anxiety at the beginning of a conversation but are able to cope with the anxiety as the conversation goes on.

Limitations and Future Directions

There are a several limitations to the current study. The first limitation is regarding the anxiety check measure used as a manipulation check between the experiment and control conditions. Hauser, Ellsworth, and Gonzalez (2018) suggest that manipulation checks may change the experience of the participant and have an effect on the independent variable. Manipulation checks may cause participants to be wary, distract participants, or lead them to guess what the researcher is expecting. The timing of the manipulation check in this study may not have directly related to the anxiety the participants actually felt in the anxiety task. It is possible that despite the respondents reporting anxiety upon entering the speaking task, the effect of anxiety may have been temporary and did not last throughout the task. It may have been beneficial to have another anxiety check after the speaking task to see whether the participants' feelings of anxiety held through to the end of the experiment, or a series of anxiety

checks throughout. As manipulation checks may interfere with participant focus on the main task and interfere with the actual experimental manipulation (Hauser, Ellsworth, & Gonzales, 2018), rather than directly asking participants how they are feeling during the task, future research may also benefit from implementing alternative methods of assessing anxiety throughout the task, such as the use of reflective interviews or physiological measures. Physiological measures would allow for the possibility to track participants' biological indices of anxiety throughout the task, and reflective interviews may provide information regarding whether they subjectively felt anxiety along with their reasons for experiencing anxiety from the initiation of speech until the end.

Another limitation is related to the experimental condition itself. Although research has shown that interacting with native English speakers via technology may cause heightened anxiety among language learners (Kessler, 2010; Lee, 2004), the constraints of the experiment may have prevented this. In the current study, video cameras were not used for the confederate accounts nor by the participants. This may have given them the opportunity to cope with their anxiety, as they were not actually seeing and interacting with the native English speakers. Despite the lack of camera use being typical for students who attended online classes during the pandemic (Castelli & Sarvary, 2020) the anonymity provided by the lack of camera use may have been beneficial to those who struggle with anxiety. Studies have reported that some students with high language anxiety choose to enroll in online courses due to the ability to secure anonymity (Pichette, 2009). Students with high FLA may be better able to cope during online engagement, as they have more time to formulate responses in the L2 compared to face-to-face contexts (Garcia-Castro & O'Reilly, 2022). Furthermore, studies comparing the severity of social anxiety in online and real-life interactions have found decreased social anxiety in the online environment (Yen, Chen, & Wang, 2012). In the current study, as the participants were asked to answer a question with no verbal interruptions, responses, or follow-up questions from the researcher or confederates, the participants in this study may not have felt pressure to generate their response, especially considering they had the option of using up to two minutes to prepare their answer.

In addition to not being identified through video cameras, the respondents also did not have any identifiable information connecting them to the speaking task and had their profile names changed to a participant ID number, which may have further given them the security of anonymity (Shepherd & Edelmann, 2005; Weidman et al., 2012). This sense of anonymity may have taken away from the participants fear of being negatively evaluated by others, a major component of foreign language anxiety (Horwitz et al., 1986; Lin, 2022).

Conclusion

Despite these limitations, the results of this study provide noteworthy insights into the effects of FLA on the utterance fluency of international students who have participated in online education in the UK during the pandemic and provide a valuable contribution to the literature. This study fills a gap in literature by being one of the few studies to use experimental methods to examine how different online settings affect international students' ability to smoothly communicate in English, and to measure how the effects of FLA manifest during communication. Students who struggle with FLA may have difficulty clearly expressing their ideas, and this study provided evidence that FLA may not only affect students in general terms such as course grades (Bekleyen, 2009; Cheng, Horwitz, & Shallert, 1999; MacIntyre & Gardner, 1994b) but may also affect individuals attempting to communicate their ideas verbally, even in an online setting. The study also suggests that the presence of native speakers may not always exacerbate anxiety as found in previous literature (Lin, 2022; Russel, 2020). It is possible that if the salience of the individuals listening are reduced or unable to be seen by the speaker, they may not negatively affect the speakers' ability to communicate. This indicates that online settings where students are not required to use cameras may be beneficial for international students using English as an additional language and may lead to a higher likelihood of them feeling less pressure and better able to communicate smoothly.

The exploration of the background variables of the participants in this study suggests that FLA may negatively affect international students regardless of their nationality background. These negative effects may become particularly apparent when a student has been called upon to answer a question, has been asked to partake in a group discussion, or present in front of others. It may require patience on the listener side as the speaker requires extra time to retrieve necessary vocabulary and grammar for their message. This highlights the need for consideration on the part of educators that any delays an anxious international student makes when required to provide an answer or add their opinions to a discussion may not necessarily be due to a lack of knowledge, but rather a delay in being able to retrieve the language needed to respond. This may be especially true during oral exams, or assessments where a student is required to orally communicate in a second language, especially in the presence of others. Considering that in the current study, students who used a higher percentage of English per day had lower FLA and fewer disfluencies during the speaking task, it may be beneficial for educators to encourage students to use English more often and provide opportunities for students to practice their language abilities in low pressure situations where they do not feel judged.

The results of the current study show that FLA can indeed affect international student communication in an online setting, but it is possible that these negative effects may be more pronounced in a physical classroom. Providing students with sufficient time to speak and creating an environment with a lack of pressure to respond rapidly may help international students to cope with their anxious thoughts and fully participate in classroom activities.

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Appendix A

Demographics Questionnaire

1. Gender
2. □ Male □ Female □ Prefer not to say □ Other
3. Age
4. Nationality
5. What is your current year in university?
6. □ First year □ Second year □ Third year □ Fourth year □ Master's PhD
7. How old were you when you first began learning English?
8. What language(s) did you speak at home growing up?
9. How long total have you lived in an English-speaking country?
10. What percentage of time do you use English on a daily basis?
11. □ 0% □ 10% □ 20% □ 30% □ 40% □ 50% □ 60% □ 70% □ 80% □ 90% □ 100%
12. Please rate your English proficiency on these four aspects.

	Very poor	Poor	Ok	Good	Very good	Excellent	Native-like
Reading	○	○	○	○	○	○	○
Writing	○	○	○	○	○	○	○
Speaking	○	○	○	○	○	○	○
Listening	○	○	○	○	○	○	○

Appendix B

Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz, Horwitz & Cope, 1986)

Answer the following questions related to your experience and feelings of anxiety in foreign language communication on a 7-point Likert scale ranging from "strongly agree" to "strongly disagree."

1. I never feel quite sure of myself when I am speaking English in class.
2. I don't worry about making mistakes while speaking English in class.
3. I tremble when I know that I'm going to be called on and have to speak in English.
4. It frightens me when I don't understand what the teacher is saying in English.
5. It wouldn't bother me at all to take more classes in English.
6. During classes in which the subject is taught in English, I find myself thinking about things that have nothing to do with the unit.
7. I keep thinking that the other students are better at English than I am.
8. I am usually at ease when I have to use English for tests in class.
9. I start to panic when I have to speak English in class without preparation.
10. I worry about the consequences of failing my classes due to my English.
11. I don't understand why some people get so upset over having to use English in class.
12. In classes where I must use English, I can get so nervous I forget things I know.
13. It embarrasses me to volunteer answers using English in class.
14. I would not be nervous speaking English with native speakers.
15. I get upset when I don't understand what the teacher is correcting.
16. Even if I am well prepared for a class taught in English, I feel anxious about it.
17. I often feel like not going to my classes where the subject is taught in English.
18. I feel confident when I speak English in class.
19. I am afraid that lecturers are ready to correct every English mistake I make.
20. I can feel my heart pounding when I'm going to be called on in class and be forced to use English.
21. The more I study for a test in which I will have to use English, the more confused I get.
22. I don't feel pressure to prepare very well for classes taught in English.

Appendix B continued

23. I always feel that the other students speak English better than I do.
24. I feel very self-conscious about speaking English in front of other students.
25. Classes that are taught in English move so quickly I worry about getting left behind.
26. I feel more tense and nervous in classes taught in English than in classes taught in my native language.
27. I get nervous and confused when I am speaking English in class.
28. When I'm on my way to classes taught in English, I feel very sure and relaxed.
29. I get nervous when I don't understand every word the language teacher says in English.
30. I feel overwhelmed by the number of rules you have to learn to speak English.
31. I am afraid that the other students will laugh at me when I speak English.
32. I would probably feel comfortable around native speakers of English.
33. I get nervous when the language teacher asks questions that I haven't prepared for in advance.

Appendix C

Adapted Measure of Foreign Language Anxiety in Formal Contexts Scale (FLA-FS) – English Version

To answer the following questions, imagine you are participating in an important meeting/discussion that takes place in English. To communicate with the rest of the participants, you have to use English. Now, please evaluate the following items on a scale from 1 = "strongly disagree" to 7 = "strongly agree."

1. I feel overwhelmed by the number of rules you have to learn to speak English.
2. I can feel my heart pounding when I'm going to be called on in a meeting in English.
3. I am afraid that many people will laugh at me when I speak English.
4. I get nervous and confused when I am speaking English.
5. I get nervous when I don't understand every word people who have power over me say to me in English.
6. I get nervous when persons who have power on me ask questions in English which I haven't prepared in advance.
7. When interacting in English, I can get so nervous I forget things I know.
8. I am afraid that people above me are ready to correct every mistake I make when speaking English.
9. I don't worry about making mistakes when I interact in English.
10. I keep thinking that many other people are better in English than I am.