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Foreign Language Anxiety Experiences of Engineering Students in English for Specific Purposes (ESP) Courses at a Polytechnic College in Rwanda

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Abstract. Foreign Language Anxiety (FLA) is one of the affective factors that interfere significantly with second/foreign language learning. However, FLA has attracted little or no attention in the research on the teaching of English as a Foreign Language (EFL) in Rwanda. Thus, this study aimed to investigate the FLA experiences of engineering students in their ESP courses at a polytechnic college in Rwanda. Using an explanatory mixed methods design, data was collected in two phases by means of a survey and an interview. In the first phase, a Foreign Language Classroom Anxiety Scale (FLCAS) was administered to 99 engineering students who were enrolled in an ESP course at Amahoro College (pseudonymised). Thereafter, a follow-up semi-structured interview was conducted with 8 students to get more information about their responses in the survey. The findings of the study indicate that engineering students experience language anxiety at varying levels from low to high level of anxiety. It was also found that students' anxiety originates from several situations associated with communication apprehension, fear of mistakes and negative evaluation, test anxiety, and beliefs about English language learning. Given the impact of FLA on foreign language learning, it is very important for teachers to find strategies to make EFL classes less stressful.

Keywords: FLA, ESP, EFL, Polytechnic college, FLCAS, SLA

Introduction

Affective factors play a significant role in the process of second language acquisition (SLA). However, as Kębłowska (2012) points out, modern linguists often focus more on learners' cognitive abilities and forget that in many circumstances, emotions, rather than intellect, contribute to the challenges students might encounter when they are learning a foreign language. Ortega (2009) also emphasizes that, "our understanding of why people differ so greatly in how fast, how well and by what means they learn a second language would be incomplete if we did not consider affect and the multiple roles it plays in L2 learning" (p. 192). Therefore, in order to help students to learn a foreign language effectively, language teachers need to consider all the factors involved in the process including the affective ones.

One of the affective factors influencing foreign language learning is foreign language anxiety. Foreign language anxiety has attracted researchers in the last few decades and numerous studies have confirmed its detrimental impact on foreign language learning. For instance, MacIntyre & Gardner (1991) point out that language anxiety inhibits the learning, production, and retention of the target language. It can also demotivate learners to participate in classroom activities (Gkonou et al., 2017) and in case of extreme language anxiety, learners may abandon language classes (Horwitz, et al., 1986). Given the impact of foreign language anxiety on L2 learning, it is important to investigate it further in different contexts to understand the issue better and come up with strategies to mitigate it. It is in this regard that I was motivated to conduct the present study on Rwandan students' foreign language anxiety in their English for Specific Purposes (ESP) courses.

Since English has become an international language which is used as a communication tool for various purposes, it is not surprising that many non-English speaking countries encourage the teaching of English in schools (Quinto & Macayan, 2019). In Rwanda, given the importance of English for Rwandans in relation to the regional and global community, the government has encouraged the teaching of English as a subject from the primary education

level to university. This language is also used as a medium of instruction at all levels of education. The motivation behind this is to use English for regional and global integration, job opportunities, business, further studies, among other purposes (Tabaro, 2015). At the university level, all students including those in non-linguistic fields, such as science and engineering, are encouraged to develop English language skills because as Clement & Murugavel (2018) point out, many employers expect graduates to have an intermediate level of language proficiency to carry out their responsibilities at work.

However, organisations in Rwanda have been until recently showing their concern about university graduates' low level of English proficiency, which hampers their performance at the workplace (Mugirase & Ndimurugero, 2020). Although many factors might have contributed to this problem, studies carried out place the reasons mainly on policy, organisational and teaching aspects, including lack of competent English language teachers (Dushimumuremyi & Sibomana, 2018; Mugirase & Ndimurugero, 2020; Girimbabazi et al., 2021), exposure to very limited language input (Sibomana, 2014), and recurring shifts of language of instruction (Mugirase & Ndimurugero, 2020). No studies have been found on possible reasons pointing up the part of the learners or learning. A few studies that have been conducted to investigate factors such as learners' motivation to learn English (Tabaro, 2015) and attitudes towards English (Tabaro, 2019) have found that students are motivated to learn English and have positive attitudes towards this language. Thus, other foreign language influential factors including foreign language anxiety need investigation.

There are no studies found in the literature that address foreign language anxiety in Rwanda. However, from my experience as a teacher of English, I have observed students' behaviours that could be linked to language anxiety. For instance, some students prefer to sit at the back of the classroom to avoid being called upon to speak. Others show unusual behaviours when they are speaking in front of the class. These include among others, trembling, uncontrolled movements, and self-touching. To understand the problem more, I decided to conduct a study to explore engineering students' anxiety experiences in their ESP courses. The study involved engineering students who were enrolled in an ESP course at Amahoro College (pseudonymised) in Rwanda in the academic year 2022.

Rationale for the Study

According to Piechurska-Kuciel (2012), "a foreign language student experiencing elevated levels of language anxiety assesses the language-learning situation as dangerous" (p. 73). This kind of judgement impacts negatively on how the student learns the target language. Since foreign language anxiety has been proved to be detrimental to foreign language learning, it was considered important to examine how the situation looks like in the Rwandan context, where English is taught as a foreign language. Thus, the present study was intended to explore foreign language anxiety experiences among engineering students. This study is important to students, English language teachers and researchers in many ways. First, it shed light to the extent to which the students experience foreign language anxiety. Second, it highlighted the most anxiety-provoking situations they encounter. The research also contributed to filling the gap existing in the literature of language anxiety in Rwanda.

Aim and Objectives of the Study

This study aimed at investigating foreign language anxiety of engineering students in their ESP classes at a polytechnic college in Rwanda. The objectives of the study are as follows:

- 1) Determine the extent to which the engineering students experience foreign language anxiety in the ESP classroom.
- 2) Identify the main sources of the students' anxiety in the ESP classroom.

Literature Review

This section discusses the literature of foreign language anxiety. It focuses on the definition of language anxiety, sources of language anxiety, and the effects of anxiety on language learning.

Definition of Language Anxiety

Language anxiety is described by Gregersen and MacIntyre (2014) as reflecting "the worry and the emotional reaction when learning and using a second language and is especially relevant in a classroom where self-expression takes place" (p. 3). Likewise, Horwitz et al. (1986) define foreign language anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (p.128). In a few words, language anxiety can be defined as discomfort which is uniquely associated with some specific situations of second/foreign language learning. Language anxiety was categorised as a situation-specific anxiety (MacIntyre, 2017) because it can occur at a particular time and in particular situations in a language class. For example, a generally non-anxious learner can experience some degree of anxiety when he/she is asked to use the target language to talk in front of the classroom.

Although language anxiety is a distinct construct, Horwitz et al. (1986) point out three performance anxieties related to it. These are communication apprehension, test anxiety, and fear of negative evaluation. They define these types of anxieties as follows:

Communication apprehension: This is a kind of shyness indicated by fear of communicating with other people. Individuals experiencing communication apprehension find it difficult to speak in public (stage fright) or listen/learn a spoken message. For example, as Szyszka (2017) points out, a learner's inaccurate pronunciation of foreign language may give rise to his/her communication apprehension.

Test anxiety: This is a type of performance anxiety which is rooted in the fear of failing. Learners who are test-anxious often set unrealistic goals and always think that they have failed if they could not achieve perfect performance. In a classroom situation, less competent learners may experience higher level of anxiety due to constant evaluation by their peers and teachers.

Fear of negative evaluation: This is apprehension about how others perceive one's performance. It is characterised by avoidance of situations that may provoke negative evaluation from peers. For instance, in a study by Gregersen and Horwitz (2002), a student reported being bothered by his/her errors because of thinking that others may criticise his/her speaking performance.

Sources of Language Anxiety

This section discussed different sources of language anxiety as indicated in the literature. The sources of language anxiety stem from several factors which include among others, learners' personal worries, their beliefs about language learning, teachers' beliefs about language teaching, and teachers' classroom practices.

In their review of the literature on foreign language anxiety, Oteir, & Al-Otaibi (2019) mention that learners reported teachers as one of the main sources of classroom language anxiety, and this concurs with a study by Price (1991) in which students confirmed that teachers played a notable role in increasing students' anxiety whereby they would for example, criticise students' accents, and frequently shouted at them if they were distracted in any way in the classroom. In another study by Kebłowska (2012), students indicate that their teachers set too high expectations for them and focus on error-free language use, which contributes to classroom stress. MacIntyre (2017) also mentioned that teachers' harsh and embarrassing correction of students' errors in the presence of their peers increased their anxiety. These instances from various studies show that some of the teachers' classroom practices and their

interactions with learners may result in increased students' anxiety. Thus, it is very critical for teachers to find strategies to make language classrooms less stressful.

Other sources of language anxiety are fear of negative evaluation and social comparison. According to Szyszka, (2017), learners who feel anxious during performance in other social contexts are likely to be uncomfortable in the classroom as well. For instance, in the study by Price (1991) some students report being concerned about making pronunciation errors while others felt ashamed of their accents, and fear being laughed at by their peers. These examples from Szyszka and Price indicate that thinking constantly about how others perceive your language performance can increase language anxiety. As I used the Foreign Language Anxiety Scale in the present study, participants responses to the statements reflective of fear of negative evaluation and social comparison gave information about how the situation is in my research context.

Furthermore, beliefs about language learning, personality traits such as perfectionism and fear of speaking in public may also be linked to foreign language anxiety. For example, all the anxious learners interviewed by Price (1991) believed that it requires special aptitude to learn a language. Several others believed that they were very anxious about speaking in public. Additionally, in their study, Gregersen and Horwitz (2002) confirmed that there is a relationship between language anxiety and perfectionism. The study indicated that the most anxious students were also the ones who tended to be perfectionists. As Yan and Horwitz (2008) point out, language anxiety may also be associated with the motivation to learn a language. In their study, they found that a high degree of language anxiety was reported among students with less motivation and interest in learning the target language.

It is important to note that language anxiety results from different sources (teachers, learners themselves, society at large), some of which are beyond language teachers' control. Therefore, teachers could do their best to make the classroom more comfortable for learners and provide advice on strategies for language learning where possible.

Impact of Language Anxiety on Foreign Language Learning

Among the factors that affect language learning, language anxiety ranks high (Oxford, 1999). In other words, language anxiety considerably interferes with second language learning. As Gkonou et al. (2017) point out, language anxiety can hamper the learning of a target language. Gregersen and MacIntyre (2014) also stress that language anxiety can be an obstacle to learner interaction and impedes the production and retention of the target language. Horwitz, et al. (1986) argue that language anxiety may contribute to the well-known Krashen's 'affective filter' which hinders the individual's reception of language input. As a result, a learner fails to understand the available messages in the target language and language acquisition doesn't advance. MacIntyre (1999) gives an example of anxious students who may fail to take in spoken dialogue in language class because anxiety obstructs their capacity to process information. Less anxious students would find it easier to grasp information because they do not face this obstacle.

Additionally, language anxiety affects academic work habits. Learners who are overly worried about their performance may experience high level of anxiety when they make mistakes in a language class. This may lead them to overstudying with the intention to fill the gap caused by anxiety (Horwitz et al., 1986). However, the effort made may not lead to positive results and this may increase frustration. Anxious students may also delay doing their homework while others may show reduced enthusiasm to communicate. As He (2018) points out, a student with low speaking confidence prefers answering with few words to avoid errors. However, it could be argued that being more concerned about one's speaking performance does not reduce anxiety. Instead, it may worsen it and lead to poorer performance.

Furthermore, language anxiety may lead learners to loathe the target language and its culture and inhibits learners' self-confidence (Gkonou et al., 2017). Additionally, severe language anxiety can make learners abandon their language classes (Horwitz et al., 1986). In addition, language anxiety can decrease learners' likelihood to achieve high level of language proficiency (Oxford, 1999). Given numerous effects of language anxiety discussed in this section, it is noticeable that anxious language learners may find it hard to cope with the task of language learning. To this end, language teachers need to be aware of anxiety-inducing situations that learners may encounter so that they can provide adequate support. I thought that it was possible that students in my research context had also undergone these effects of language anxiety. Therefore, it was useful to conduct this research to examine the problem, identify its sources.

Methodology

This section discusses the methodology which was used for the present study. It starts with highlighting the aim of the study and the research questions and continues with the description of the research design adopted for this study. Finally, it describes the ethical considerations for the study and data analysis procedures.

Research Questions

This study aimed at exploring the foreign language anxiety of engineering students at a polytechnic college in Rwanda. To understand the problem under investigation, the study sought to answer the following research questions.

- 1) To what extent do the engineering students experience anxiety in the ESP classroom?
- 2) What are the main sources of the students' anxiety in the ESP classroom?

Research Design

The present study employed mixed methods design. Bearing in mind the idea by Creswell and Creswell (2018) that both quantitative and qualitative approaches have strengths and weaknesses, I thought it would be useful to combine the two methods in this study. As they suggest, this gives the researcher deeper understanding of the problem under investigation and overcomes the weaknesses of each of these methods. Similarly, Dörnyei (2007) argues that the use of both quantitative and qualitative approaches increases the strengths and eliminates the weaknesses of both approaches.

Among the different types of mixed methods designs, I used explanatory sequential mixed methods design. This involves collecting data in two phases. In the first phase, a researcher collects quantitative data, analyses the findings, then builds on the findings to decide on how to collect qualitative data in the second phase (Creswell, & Creswell, 2018). The main purpose of this design is to use qualitative data to gain deeper understanding of the quantitative results. That is, as Dörnyei (2007) mentions, "adding flesh to the bones" (p.171). For this study, I used a questionnaire to collect quantitative data in the first phase and a follow-up interview to collect qualitative data in the second phase. Thus, the findings from the quantitative data gave me a general understanding of the problem. That is, an overview of the extent to which engineering students experience anxiety in their ESP classes and the possible sources of their language anxiety. On the other hand, the qualitative findings helped me to explain the quantitative ones in more details. In other words, they provided me with deeper information about the sources of anxiety students encounter.

Using quantitative data and qualitative data together gives stronger understanding of a complex issue. As Dörnyei puts it, "words can be used to add meaning to numbers and numbers can be used to add precision to words" (p. 45). Thus, the two sources of information

complemented each other because the interview was conducted with reference to the results from the survey.

Population and Context of the Study

The population of the study consisted of 171 engineering students who were enrolled in an English for Specific Purposes (ESP) course at Amahoro College (pseudonymised) in the academic year 2022. Amahoro College is a polytechnic college which offers Technical and Vocational Education and Training (TVET) to equip students with hands-on skills that enable them to compete at the labour market at national, regional and international level. The current study involved male and female students aged eighteen and above, who joined the college to study in engineering programmes, namely Mechanical Engineering (Automobile Technology and Manufacturing Technology) and Civil Engineering (Construction Technology and Land Surveying). As their programmes are offered in English, students take a compulsory ESP course. The course aims to equip students with English skills they can use in their engineering studies as well as in their future workplace. They also have used English as a Medium of Instruction (EMI) and studied it as a subject in their previous studies. Despite having studied English and used EMI for quite long time, it was noticed that most of them still have a low level of English proficiency.

As the present study sought to explore foreign language anxiety among engineering students, responses from these participants through a survey and interviews provided me with sufficiently rich information to understand the problem under investigation. The following table highlights the breakdown of the participants of the study by gender and subject major.

Table 1: Population of the study

Department	Subject major	Males	Females	Total
Mechanical	Automobile technology	40	0	40
engineering	Manufacturing technology	12	4	16
Civil	Construction technology	40	5	45
engineering	Land surveying	66	4	70
TOTAL		158	13	171

Source: Primary data

Sampling Strategy

For quantitative data collection, I invited all engineering students enrolled in an ESP course at Amahoro College in the year 2022 to participate in the study. As Fraenkel, et al. (2012) point out, researchers would like to involve the whole population of their interest whenever this is possible. Additionally, Cohen, et al. (2007) argue that it is better to use a larger sample to ensure great reliability. Thus, as the number of the participants I was interested in was not very big (171 students), I decided to invite all of them to take part in my study.

Unlike the quantitative data collection, qualitative data collection involved a smaller number of students who participated in a follow-up interview. As Creswell & Creswell (2018) highlight, apart from the small number of participants which characterises qualitative studies, there is no precise number of participants that these kinds of studies should have. For the present study, I invited eight participants. According to MacDougall & Fudge (2001) sampling for interviews is usually purposive and the intention is to recruit participants who will provide rich data. Thus, the participants were chosen considering their answers in the questionnaire to determine whether they would provide reliable information regarding their experiences with foreign language anxiety. All the participants were selected from those who had provided their email address to show their willingness to participate in a follow-up interview.

Recruiting Participants

After obtaining permission to conduct research at Amahoro College (pseudonymised), I sent the participants an invitation email to request them to take part in the study. The invitation email contained a Participant's Information Leaflet giving details about the study and my contact details for them to ask any questions they might have about the study. The email also included a link to the questionnaire which was used to collect quantitative data. In the last section of the survey, I provided an option for those who were willing to participate in a follow-up interview to provide their e-mail address so that I could contact them for an interview to get further details about their responses in the survey.

Data Collection

As the present study was conducted overseas, data was collected online, and this was done in two phases. The first phase was dedicated to quantitative data collection using a questionnaire which was administered by means of Qualtrics. In the second phase, I collected qualitative data, and this was done through a semi-structured interview which was conducted using Microsoft Teams.

The Questionnaire

According to Dörnyei (2007), questionnaires have been the most popular instrument used in social sciences research. Questionnaires are mainly used in surveys to describe the characteristics of a population by studying a sample from that group. The present study used a self-report questionnaire which contained the participants' demographic information and a Foreign Language Classroom Anxiety Scale (FLCAS) which was developed by Horwitz et al. (1986) to measure foreign language anxiety among second language learners. The scale was initially tested for reliability, and it achieved an alpha coefficient of .93, which indicates excellent internal consistency. In addition, test-retest reliability over eight weeks resulted in r=.83, (N=78) which makes it satisfactorily reliable to measure foreign language classroom anxiety. As highlighted by Horwitz (1991), excellent reliability results were consistent in subsequent studies which used the FLCAS.

The instrument contains 33 items and a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. This questionnaire comprises affirmative or negative statements which are reflective of foreign language anxiety (e.g. "I never feel quite sure of myself when I am speaking in my English language class"; "I feel confident when I speak in English language class"). Thus, the participants' ratings to this questionnaire indicated the extent to which they experience language anxiety in their English class and the possible situations that provoke their anxiety. For the present study, minor change was made on the FLCAS to match it with the study. The change made is simply to replace the phrase 'foreign language' with 'English language'. To help respondents clearly understand the statements on the FLCAS, these were translated into their first language (Kinyarwanda). However, the English version was also maintained.

Although the survey was administered to 171 participants, only 110 responded to the questionnaire. However, only responses from 99 participants were considered for the analysis because 11 of the participants submitted incomplete responses. According to Creswell (2012), the response rate of 50% is regarded as sufficient for most surveys. Therefore, I also believe that the current survey response rate is sufficient because it reached 57.89% of those who were invited to take part in the survey.

The Interview

To get further information about the survey responses, I conducted a one-to-one semistructured interview with eight students who were drawn from those who showed interest to participate in the interview by providing their email address. Despite having some guiding questions and prompts, a semi-structured interview is usually of open-ended format. In other words, it gives the interviewee space to elaborate as much as he/she can on issues being discussed (Dörnyei, 2007). Thus, for this study, I asked some guiding questions and let the interviewees give further details on their experiences with foreign language anxiety. The interview covered topics related to foreign language anxiety. These included the students' feelings about speaking English in the classroom, their feelings about tests, teachers' correction of mistakes, their peers' negative evaluation, among others. The interview was conducted using Microsoft Teams and the data was video recorded in Teams. As some respondents had difficulty expressing themselves in English, I allowed them to use Kinyarwanda when necessary. Some preferred to use Kinyarwanda throughout the interview. Thus, I translated their views into English while transcribing the interview data. The following table gives demographic information of students who participated in the interview for the present study. Pseudonyms were used in the place of participants' names to protect their identity.

Table 2: Demographic information of interview respondents

Pseudonyms	Gender	Subject major	Anxiety level
1. Pablo	Male	Land Surveying	High
2. Kenneth	Male	Automobile Technology	High
3. Melinda	Female	Manufacturing Technology	High
4. Kendrick	Male	Construction Technology	High
5. Liz	Female	Land Surveying	High
6. Godwin	Male	Automobile Technology	Low
7. Brad	Male	Construction Technology	Average
8. Craig	Male	Land Surveying	Low

Based on their score on the FLCAS, five participants who had shown high level of anxiety were purposively selected for the interview so that they could provide more information about their experiences with foreign language anxiety. Additionally, the only two low anxiety students and the only one average anxiety student who had provided their email were also selected for the interview to share their experiences with learning English.

Ethical Considerations

There are numerous ethical considerations that researchers need to address before undertaking a study. These include among others, gaining permission to access the research setting, getting informed consent, issues of anonymity, privacy, confidentiality and other related matters (Cohen et al., 2007). Therefore, before starting this research, I wrote a letter to the Principal of Amahoro College to request permission to conduct research at this college. Quantitative data was collected directly from participants by means of online survey using Qualtrics. The only way I could distribute the questionnaire was to request the college to give me the participants e-mail addresses to which I sent an invitation to participate in the study. This is because there is no system in place that the college could use to send the invitation to all the participants on my behalf. The invitation contained a Participant Information Leaflet which provided all the details about the purpose of the study, the benefits of being involved, and the rights of the participants.

Regarding the participants' consent, a consent form was also included on the first page of the questionnaire so that the participants could provide their consent if they wished to proceed to answer the questions. The responses to the questionnaire were anonymous. In other words, there was no connection between the respondents and their responses. However, in the last section of the survey, I provided an option for those who were willing to participate in a

follow-up interview to provide their e-mail address so that I could contact them for a further conversation about their responses to the survey. All the collected personal details I received were permanently deleted from my email after analysing the data.

For the interview, I used an e-mail to invite some of the participants in the interview which was conducted using Microsoft Teams. This invitation e-mail was sent to participants who were selected from those who had shown their interest to participate in the interview. The participants in the interview were also requested to provide their consent before the interview took place. The conversations were video recorded in Teams and the collected data was pseudonymised during data transcription. Neither the participants' names nor the college's name were identified in the research report.

Data Analysis

As I used explanatory sequential mixed methods design, I started by analysing quantitative data, and this was done by means of descriptive statistics. First, I calculated the participants' scores on the FLCAS to determine their level of anxiety. The calculations were done using DataFrame package in Python by summing every participant's ratings of the 33 statements on the FLCAS, whereby 'strongly agree' = 5; 'agree' = 4; 'neither agree nor disagree' = 3; 'disagree' = 2; 'strongly disagree' = 1. Then I grouped the participants into low anxiety, average anxiety, and high anxiety categories with reference to their scores on the FLCAS. In addition, the number of occurrences of the participants' ratings on the FLCAS items were calculated using Microsoft Excel. The results were then presented on bar charts showing the percentages of their responses, which helped me to determine the main sources of anxiety the students encounter in their ESP classes. The quantitative findings formed the basis for a follow-up interview whose main intent was to get in-depth understanding of the quantitative findings.

To analyse qualitative data, I first transcribed the recorded interview data. Thereafter, I did thematic analysis starting by the coding of the transcribed data. However, as I wanted to use the interview data to explain the quantitative findings, the themes did not depend on the interview data. Instead, as suggested by Braun and Clarke (2006) I had pre-determined questions in mind that I wanted to code around based on the quantitative findings. Quantitative and qualitative results were integrated using the weaving approach (Fetters et al., 2013). That is, "writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis" (p. 2142). Some direct quotations from the interview data were used to complement the results of the survey.

Findings and Discussion

This section presents the findings from both the quantitative and qualitative data sets. As this study employed explanatory mixed method design, the findings were presented in a way the participants' responses in the interview helped to explain the results from the survey. It also discusses the findings in light of the existing literature of foreign language anxiety.

Levels of Engineering Students' FLA

The first research question sought to show the extent to which the studied engineering students experience foreign language anxiety in their ESP course. Therefore, this section is intended to answer this research question. To determine the level of students' foreign language anxiety, all the participants' anxiety scores were calculated by summing their ratings of the 33 statements on the FLCAS, whereby 'strongly agree' = 5; 'agree'= 4; 'neither agree nor disagree' = 3; 'disagree' = 2; 'strongly disagree' = 1. The statements that are worded in way that suggests non-existence of anxiety were reversed so that the higher score would indicate the higher level of anxiety in all instances (Toth, 2010). The participants' total score ranged

from 62 to 118. Based on their scores, the participants were grouped into different categories to determine their level anxiety. Thus, those who scored between 62 and 80 were considered as low anxiety students, those who scored between 81 and 99 were considered as average anxiety students, and those who scored between 100 and 118 were considered as high anxiety students.

The following figure summarises the findings regarding the level of foreign language anxiety of the studied students.

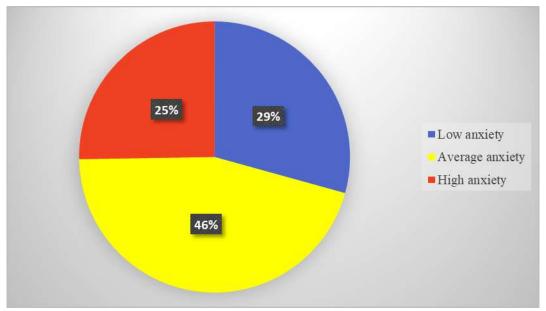


Figure 1: Students' level of anxiety

This chart indicates that all the participants in the study experienced foreign language anxiety at varying levels. 46% of the students experienced moderate level of anxiety, 29% of them encountered low level of anxiety while 25% of them suffered high level of anxiety. The results of this study revealed that all the engineering students surveyed suffered foreign language anxiety at varying levels from low to high level of anxiety. These results are consistent in previous studies by Amengual-Pizarro (2018) and Ayuningtyas (2020) in which ESP students also encountered low to high level of anxiety with the majority of them suffering average level of anxiety. Similar results were also found in another study by Arnaiz and Guillén (2012) whereby two thirds of university students experienced average level of anxiety. Although these studies were conducted in different contexts, the results suggest that language anxiety is common in foreign language classes, and particularly non-linguistic major classes. In the case of Rwanda, the differences in the students' levels of anxiety may have resulted from different past experiences they had in learning English.

After getting the above results, I wanted to understand the problem more from the background of the participants concerning their journey of learning English. Therefore, the participants were asked to describe their past experiences of learning English. Those who were identified as high anxiety students reported to have encountered the challenge of not getting opportunities to practice this language in real life situations. For example, Melinda mentioned this as one of her biggest challenges in learning English as shown in the following extract.

The first challenge I had was speaking in public. Having conversations with people in English, being able to respond to their questions, constructing sentences, all these have been challenging to me. For example, in speaking, I didn't get sufficient time to hold discussions in English, speaking in front of people or having interviews in English. So, it was not easy to improve my English language.

On the other hand, less anxious students reported to have had chances to interact with other people in English throughout their journey of learning English. For example, Craig mentioned that getting opportunities to interact with other people in English has helped him to develop confidence to communicate in this language.

It became easy for me to use English because we even use it at home sometimes. Some of my brothers don't use Kinyarwanda. They used to study in the Cambridge school, so they don't let you ask questions in Kinyarwanda. So that's how I experienced English. I think I'm able to express myself to talk to anybody who I can meet with.

The participants' responses in the above extracts indicate that the students had different past experiences in English language learning and use. It was even noticed in the interview because some felt uncomfortable to be interviewed in English while a few were confident to use English. Gkonou (2017) highlights that one's past language learning experiences might exert a significant influence on language anxiety he/she experiences in current language learning. This could explain the students' interview responses in the present study which indicated that those who had opportunities to use English in the past fell in the low-level anxiety category while those who did not have those opportunities were in the category of higher level of language anxiety.

Given the fact that language anxiety can interfere with foreign/second language learning in many ways (Gkonou et al., 2017; Gregersen, & MacIntyre, 2014), it is worrying that a big number the engineering students at Amahoro College were found with average and high levels of anxiety. As Basavanthappa (2007, cited in Aldarasi, 2020) points out, individuals experiencing average level of anxiety encounter difficulties in learning, processing information, and solving problems. Those experiencing high level of anxiety often use flight to respond to the situation. This means that engineering students at Amahoro College may have experienced problems in their ESP classes because of foreign language anxiety. Thus, there must be negative consequences resulting from these experiences. For example, students may not be able to achieve appropriate level of the target language proficiency. In addition, some may develop avoidance behaviour towards the learning of English. That is the reason why it is important that some strategies should be put in place to help the students overcome language anxiety. However, before addressing the problem, it is important to know its sources. The following section discussed the most anxiety-provoking situations that the students have encountered.

Main Sources of Engineering Students' FLA

The purpose of the second research question was to highlight the main sources of anxiety that engineering students encounter in their ESP course. Previous studies, for instance, Horwitz et al. (1986); Aida (1994) and He (2018) indicated that students' foreign language anxiety was often linked to factors such as: communication, apprehension, fear of negative evaluation, test anxiety and students' beliefs about foreign language learning. For the present study, the students' responses on the survey were also organised referring to these foreign language anxiety-related factors found in the literature.

As this section sought to answer the question about the students' main sources of anxiety, the FLCAS items with higher agreement or disagreement responses were mainly considered for the analysis of the findings. As suggested by Cohen et al. (2007), quantitative data were interpreted by combining the percentages of the agreement (strongly agree and agree) and disagreement (strongly disagree and disagree) categories to indicate the respondents' general tendencies in the results. Data in the charts were rounded to the closest whole number. Therefore, the total of some percentages may not reach a hundred due to the error encountered in rounding.

Language anxiety induced by communication apprehension

The students' responses on the FLCAS indicated that most students experienced communication apprehension in their ESP course. The following bar chart shows the students' ratings to the FLCAS items reflective of communication apprehension.

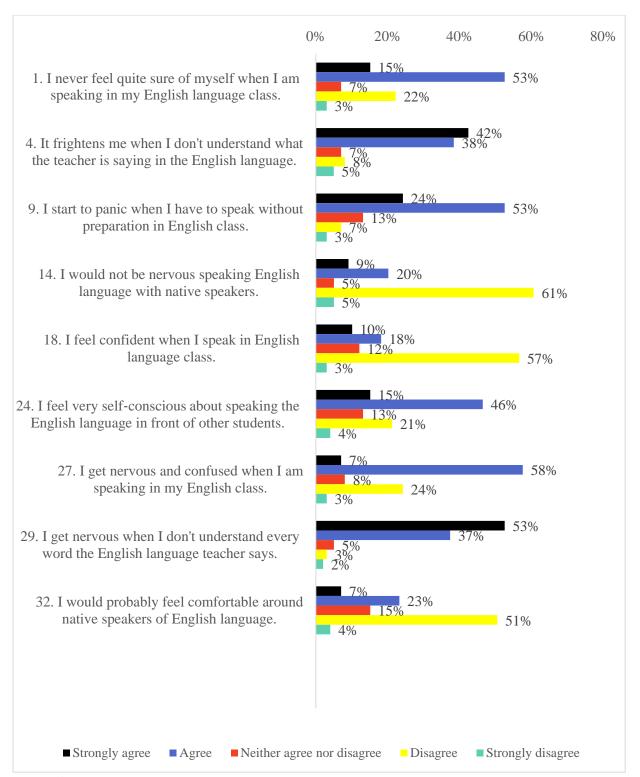


Figure 2: Students' experiences of communication apprehension

This bar chart indicates that the most anxiety-inducing classroom situations the students have encountered in relation to communication apprehension include the inability to

understand the teacher's instructions in English. For instance, they affirmed the FLCAS statements such as: "I get nervous when I don't understand every word the English language teacher says" (90%); "It frightens me when I don't understand what the teacher is saying in the English language" (80%). They also felt uncomfortable speaking without preparation as shown in the statement: "I start to panic when I have to speak without preparation in English class" (77%). These results show that students were concerned by the fact they were unable to understand what their teacher said in the classroom. This is perhaps because they thought that they would subsequently be requested to provide feedback to what is said and lack of preparation for this may make them more nervous. As a result, they felt nervous about it. As highlighted by Williams & Andrade (2008), anxious communicators get frustrated if they don't understand what their interlocutor says because this makes them think that communication becomes impossible without understanding what the other person says. Horwitz et al. (1986) also asserts that students believed that to be able to grasp a message conveyed in the target language, one needs to understand every word another person says. In the context of the present study, it seems that engineering students also believe that to be able to communicate in English in the classroom, they should understand every word spoken by the teacher. If they don't, then this could increase their language learning anxiety because of their inability to communicate with their teacher.

The students' manifestation of communication apprehension was also consistent in the interview responses. For example, Kendrick reported feeling uncomfortable in the English class because of not understanding what the teacher says.

What makes me uncomfortable most is when a teacher speaks in English, and I am not able to understand what he says. Again, I feel nervous when I am not able to build a good sentence and speak. It makes me feel embarrassed.

Pablo and Kenneth also talked about how to speak unprepared makes them anxious.

When I understand the topic very well, I can try to speak. But when a teacher asks me something I am not prepared for, I feel embarrassed because I am not sure of whether what I am saying is right or wrong (Pablo).

One thing that makes me most uncomfortable, is when a teacher asks me to answer a question without prior preparation. Because of low level of confidence, you feel very uncomfortable as you think about what others are going to say if you get it wrong (Kenneth).

The above extracts demonstrate the students' low level of confidence in communicating in the target language. It seems that the students don't believe in themselves and they can't communicate in English if they are not given time to get prepared. Like in the present study, lack of preparedness and speaking in front of others were found among the main sources of anxiety in previous studies. For example, in a study by Debreli and Demirkan (2015) Turkish and Turkish Cypriot university students mentioned feeling so nervous when their teacher asked them to speak without prior preparation in their EFL class.

In addition, the respondents indicated their feelings of anxiety resulting from speaking in public. They endorsed the following statements reflective of speaking anxiety. "I never feel quite sure of myself when I am speaking in my English language class" (68%); "I feel very self-conscious about speaking the English language in front of other students" (61%). Furthermore, they showed disagreement with the statement "I feel confident when I speak in English language class" (60%). The interview participants also reiterated the students' worry about speaking English in the class. For instance, Pablo explained his concern about speaking in front of others.

In my case, I always feel uncomfortable in my English class, especially when the teacher asks me to explain something in front of others. I might know how to explain it in

Kinyarwanda, but when I am to say it in English, it is very difficult for me because of lack of appropriate vocabulary.

Moreover, Melinda reported her fear of speaking in public.

I feel a lot of fear, I feel shy because I am not used to speaking in public. If you didn't have opportunities to practice speaking before a large audience, you always have that fear of many people looking at you while speaking. As you are constantly thinking about what you are saying, and how the audience will perceive it, all these increase stress.

These two extracts show that anxious learners find it difficult to speak in front of others. As it was also pointed out by Williams & Andrade (2008), students feel troubled by being stared at by their peers and this often makes their mind go blank while speaking. In another study by Gregersen & Horwitz (2002) university students in Chile reported their nervousness of speaking before a large group of their peers. As a result, they might prefer not to participate in speaking activities, and this might affect their communication performance. In addition, the fear of speaking in public could hinder the improvement of their speaking proficiency because of lack of practice.

Language anxiety provoked by fear of mistakes and negative evaluation

The participants' responses on the FLCAS indicate that engineering students have also suffered foreign language anxiety associated with the fear of making mistakes and negative evaluation by their peers and their teachers. The following chart indicates the results of the students' ratings on the FLCAS items indicative of fear of mistakes and negative evaluation.

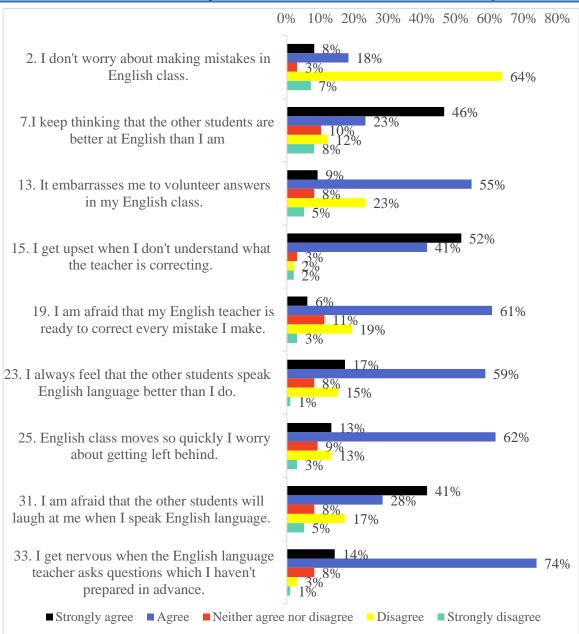


Figure 3: Students' experiences of the fear of mistakes and negative evaluation

As demonstrated in this chart, most students were worried about making mistakes in their ESP class. Many of them showed agreement with the statements such as, "I get upset when I don't understand what the teacher is correcting" (93%); "I am afraid that my English teacher is ready to correct every mistake I make" (67%). They also rejected the statement, "I don't worry about making mistakes in English class" (71%). Anxious students often felt worried about making mistakes mostly because they were concerned about how their teachers and peers would react to their mistakes. As stressed by Gkonou (2017), the fear of negative evaluation by classmates and teachers triggers students' speaking anxiety.

In the interview, the respondents also highlighted the worry about making mistakes as one of the main sources of their anxiety in their ESP class as in the following extracts.

Yes, most of the time you feel shy because you think that your classmates will laugh at you when you speak and make mistakes. Therefore, you just keep quiet (Liz).

Making mistakes makes you feel uncomfortable, it is disappointing. Given the time you have spent studying English, you feel like you shouldn't be making mistakes. In addition, your classmates laugh at you, and this makes you feel bad and lose confidence (Kenneth).

As shown in these extracts, most of the students who were interviewed mentioned their worry of making mistakes for the fear of being ridiculed by their peers. Some of them also felt ashamed that they are still making mistakes despite many years they have spent learning English. As a result, they often tend to keep quiet in the classroom. Most students were concerned about their mistakes and negative evaluation because they thought that mistakes make them lose face in front of their classmates and their teachers. Consistent with the findings of Quinto and Macayan (2019), Gregersen and Horwitz (2002) and Price (1991), anxious students tended to worry much about their errors and negative judgements because they didn't want to look foolish before their peers and teachers.

Further to the participants' ratings on the FLCAS, they affirmed the statements which indicate peer comparison and fear of negative evaluation: "I always feel that the other students speak English language better than I do" (76%); "I get nervous when the English language teacher asks questions which I haven't prepared in advance" (88%); "I am afraid that the other students will laugh at me when I speak English language" (69%). These data show that the students constantly self-compared with their peers in speaking English in the classroom. This self-comparison may lead to competition because everyone might wish to excel compared to others. However, as Luo (2012) indicates, if a student finds himself/herself unable to compete with others, competitiveness can cause anxiety. In other words, if students find themselves less proficient than others, they can get disappointed and become more anxious.

The students' tendency of competitiveness was also consistent in the interview as indicated in the following extracts.

What makes me most anxious is feeling that my English level is very low compared to other students, especially in speaking and writing, and when I think of failing tests, I feel more stressed. I feel like I cannot compete with other students in the use of English (Kendrick).

If I see some students who speak English better than me, I am afraid to speak because I think they will laugh at me because I am not speaking well and sometimes our lecturers may use complicated vocabulary and I am afraid to ask them what they mean. Instead, I search google to see what that word means (Brad).

Anxious students consistently expressed their worry of being less proficient in using English than their peers. Most of them felt that they cannot speak English as well as their peers do. Gkonou (2017) also found that students' constant comparison with their peers led to competitiveness, and this would make them more anxious if they perceived themselves less capable than their classmates. Fear of mistakes and negative evaluation makes students refrain from classroom activities and this hinders their learning progress. In our present study, the students also reported that they sometimes prefer to keep quiet if they notice that they cannot speak English as well as their peers. Similarly, Gadner and MacIntyre (1993) found that learners tended to underestimate their ability to use the target language. In the present study, it seems that students' feelings of low self-esteem can make them more nervous to the level that they even fear to ask questions in the classroom.

Furthermore, the students' responses in the interview indicated that they also suffered anxiety resulting from peer discouragement in their interactions with each other and teacher-student interactions. For example, in the following extract Pablo talked about how students discourage their peers when they try to speak English.

Your classmates' behaviours can make you uncomfortable. For instance, a teacher can ask a question and you try to answer it feeling confident. However, Other students discourage you showing that what you have said is totally wrong. In my opinion, I feel

that my classmates should be supporting me by correcting me when I get things wrong. However, they just make fun of me indicating that by trying to answer the question, I just wanted to show off to the class. This discourages me to speak next time, and it especially makes me anxious when I am to speak in the classroom.

Pablo went on to talk about how a teacher's unfavourable classroom interactions can also cause students' discomfort in English class.

I feel uncomfortable when a teacher doesn't want to answer the question I am asking. For example, you can ask a teacher a question, and instead of answering, he/she responds harshly saying that the question is not related to the topic being discussed. That can make me feel uncomfortable with that teacher because when I ask a question, I really need to understand what I am asking. And I believe that a teacher should be flexible and let students ask questions freely.

Students felt concerned about the way their peers react scornfully to them when they try to speak English in the classroom, which makes them discouraged and feel reluctant to speak English again. In addition, students feel uncomfortable with the way some teachers interact with them in the classroom. Pablo gives an example of how he feels anxious when a teacher does not attend to his questions in English class. In a study by Quinto & Macayan (2019) students also reported being discouraged by what they referred to as 'insulting opinions' (p.66) from their classmates in reaction to their effort to speak English. They also talked about how teachers' unfavourable reactions to their speaking made them anxious and hampered their speaking practice. Students in a study by Price (1991) were also uncomfortable with teachers yelling at them in the classroom. Therefore, classroom interactions among peers and between teachers and students can also increase students' anxiety if these are not dealt with adequately.

Language anxiety caused by tests

Many of the participants in the study reported their concern about failing in English class and their nervousness when they are preparing and doing English tests. The following chart shows their ratings on the FLCAS items indicative of test anxiety.

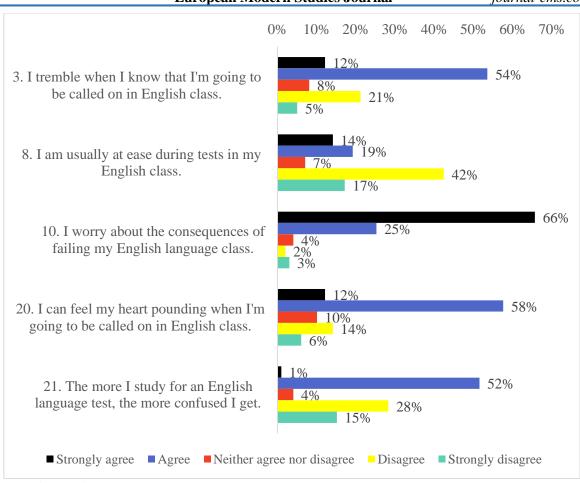


Figure 4: Students' experiences of test anxiety

The data from this chart indicate that the students felt concerned about failing in the English class. Most of them (91%) endorsed the statement, "I worry about the consequences of failing my English language class". They also reported that they experience fear when they are called on in English class as in this statement: "I can feel my heart pounding when I'm going to be called on in English class" (70%). In addition, a significant number of the students affirmed the following statement which indicates their anxiety felt while preparing and doing English tests: "The more I study for an English language test, the more confused I get" (53%). They also reject the statement, "I am usually at ease during tests in my English class" (59%). These results show that students felt anxious about English language tests. Even when they were sufficiently prepared for tests, their anxiety did not diminish. This could be attributed to the fear of failing. As Szyszka (2017) states, in a test situation "an individual experiences a feeling of apprehension and worry while being under pressure of evaluation because of potential failure" (p. 68). A classroom setting where teachers and other students judge an individual's use of the target language may be uncomfortable for students who are not confident.

The interview responses also stressed the students' fear of failing. For example, Kendrick reported being interested in learning English, but he gets very nervous about tests.

When I am in the English class with the teacher, I feel excited about learning English, but I feel nervous about doing tests because I am always not sure if I will be able to answer the questions asked. This affects me negatively because when I fail, I lose confidence and feel discouraged to learn.

Likewise, Brad enjoys speaking English, but he doesn't like doing tests.

When the teacher announces a test, I feel a bit worried. To be honest, I like to speak English and learn how to use it, but I don't like doing tests in the class at all.

Many students reported being uncomfortable with English language tests despite being motivated to learn the language. Consistent with the findings of Aldarasi (2020) and Lababidi (2015) students reported to experience anxiety caused by tests, yet testing was a recurring practice in their foreign language classes. He (2018) also emphasises that quizzes and tests are unavoidable in language learning. As Aldarasi stresses, test anxiety is one of considerable factors that negatively impacts foreign/second language learning. For instance, as Horwitz et al. (1986) highlight, "Test-anxious students often put unrealistic demands on themselves and feel that anything less than a perfect test performance is a failure" (p.127). Sometimes students overstudy because of test anxiety. However, overstudying may not help them to reduce anxiety. Instead, it might worsen it.

In the context of our present study, testing is frequent because students are supposed to do regular quizzes and examinations for the purposes of formative and summative assessment, and these are administered both in oral and written formats. Therefore, it is understandable that most of the students experience difficulties in their learning of English because as Aida (1994) points out, test-anxious learners have difficulty focusing on assigned tasks. Aida also stresses that, "since daily evaluations of skills in foreign language classrooms are quite common, and making mistakes is a normal phenomenon, students may suffer stress and anxiety frequently, which may pose a problem for their performance and future improvement" (p. 157). Therefore, it is important for teachers to find strategies to help students cope with anxiety caused by tests.

Language anxiety associated with students' beliefs about learning English

The findings of the study show that many of the engineering students surveyed tend to consider English language learning to be a difficult task. The following chart presents the students' ratings on the FLCAS statements reflective of their beliefs about English language learning.

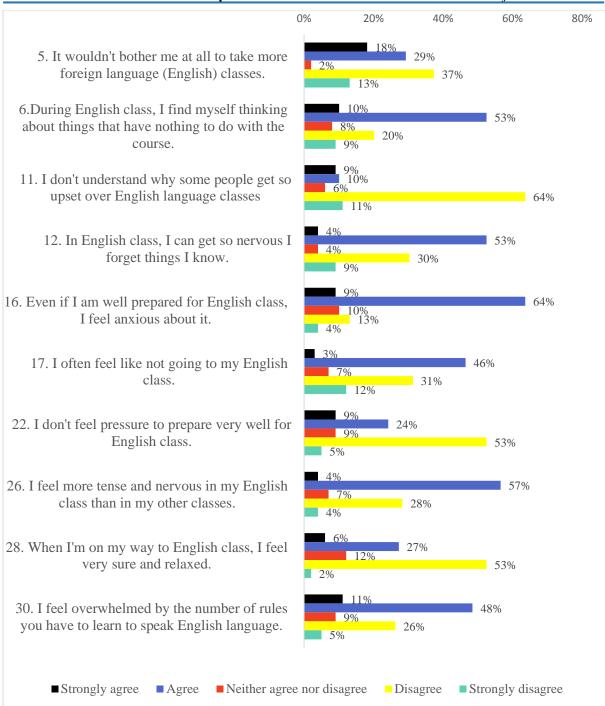


Figure 5: Students' beliefs about learning English

As indicated in the above chart, students seem to experience foreign language anxiety because they believe that learning English is difficult. Many of them reported: "Even if I am well prepared for English class, I feel anxious about it" (73%); "I feel more tense and nervous in my English class than in my other classes" (61%); "I feel overwhelmed by the number of rules you have to learn to speak English language" (59%). Furthermore, a significant number of students disagreed with the statements such as, "I don't understand why some people get so upset over English language classes" (75%); I don't feel pressure to prepare very well for English class (58%). Some students also agreed with the statements such as, "During English class, I find myself thinking about things that have nothing to do with the course" (63%); "I often feel like not going to my English class" (49%). The results from the survey show that

many students find English classes stressful and their effort to prepare for the classes does not ease their stress. Students also seem to be afraid of the rules they need to learn to use English, yet rules are common even in other languages.

In the interview, anxious students emphasised that English is more difficult than other subjects they study in their programme. For example, Melinda believes that what makes English learning difficult is that students are sometimes required to speak the language.

Other subjects are not very difficult because you don't need to speak a lot. For example, in Mathematics, you just get a piece of paper and write. Sometimes people are not aware of what you have been doing. You make mistakes, you redo the work, and nobody will know what you went through. But for English, sometimes you start speaking and when they laugh at you, you forget everything you wanted to say.

Anxious students are also convinced that English has many rules (e.g., Grammar rules) that one needs to know to be able to use it. They also think that they need to learn a lot of vocabulary to be able to speak English. For example, when asked what they think makes English difficult, Pablo and Kenneth replied in these words:

English has a lot of rules, especially in speaking it... those rules that you need to learn to speak it. It is also not easy to find the right vocabulary to use while speaking English (Pablo).

I feel uncomfortable to use English because it is difficult for me to use verb tenses and constructing sentences using passive voice and other grammatical structures. So, I get nervous in speaking because I make many mistakes in grammar (Kenneth).

Those who were identified as average and high anxiety students tend to believe that English is a difficult language to learn. They think that to be able to speak English effectively, they need to have achieved grammatical competence and have learnt plenty of English vocabulary. Their beliefs could lead to reluctance to practice speaking English if they think they haven't got what it requires to be good speakers of English, and this may increase their language anxiety. Similar results were found in previous studies. For example, Horwitz (1988) and Horwitz et al. (1986) found that students laid great emphasis on accuracy in speaking and aimed to achieve a native-like accent. They also believed that one can achieve the target language fluency in just two years. Horwitz points out that such preconceived beliefs about language learning can greatly impact the effectiveness of students' learning. Similarly, Young (1991), Aldarasi (2020) and Luo (2012) stress that these students' beliefs are untrue and can lead to increased language anxiety, especially when what they believe clashes with the reality.

Conclusion

The findings of the present study indicate that engineering students suffered foreign language anxiety at differing levels from low to high anxiety, with the majority suffering average anxiety. The students' anxiety is rooted in different factors such as communication apprehension, fear of mistakes and negative apprehension, test anxiety and students' beliefs about language learning. Given the findings of the study about students' experiences of foreign language anxiety, it worth concluding that engineering students at Amahoro College have experienced a range of difficulties in their ESP classes. For this reason, it is important for language teachers to find strategies to reduce the students' language anxiety. Several strategies to reduce students' foreign language anxiety have been suggested by different scholars in various studies carried out in different contexts. For example, to reduce the fear of making mistakes, He (2018) suggests that teachers should remind students that mistakes make part of learning so that they don't feel ashamed of mistakes. Teachers should also advise students on strategies for language learning so that they can change their irrational beliefs about language learning. For instance, teachers should help students understand that speaking English

effectively does not necessarily require one to master grammar rules and learn a lot of vocabulary.

Additionally, teachers should avoid classroom practices which embarrass students in front of their peers such as direct, frequent, and harsh correction of errors. Instead of correcting errors directly, Phillips (1999) suggests that teachers can instead model the correct form or vocabulary and a student can recognise a mistake made without being frustrated in front of his/her peers. To reduce students' test anxiety Young (1991) reminds that teachers should test what they taught and in the context of how they taught it. Finally, teachers can have direct discussions with students about language anxiety and give them space to say what they think about the problem and express their fears about English language learning. From these discussions, teachers can understand better how to help students. Using these suggested strategies can help students cope with language anxiety and hopefully become successful in English language learning. However, it can be argued that each context is different, and this means that some strategies can work in one context and not in another. Therefore, as Oxford (1999) suggests, teachers can take actions to alleviate students' anxiety in accordance with their needs.

Given the scope of the study, it involved students in only one polytechnic college in Rwanda. Thus, the results cannot be generalised to other polytechnic colleges in Rwanda. However, generalisation was not the main aim of this study. The main interest was to understand the issue of foreign language anxiety among students and make teachers and students aware of the existence of the issue so that we can try to find strategies to mitigate it. Moreover, there are some aspects in relation to the study that have not been explored. Therefore, interested researchers may conduct further studies to investigate the issue in more details and in different contexts. First, researchers may wish to explore the problem in other polytechnic colleges and other higher learning institutions to examine how the situation of language anxiety looks like in other contexts. Second, EFL teachers may wish to carry out action research to apply the anxiety-reducing strategies suggested by the literature to find out how they work in their contexts. Third, further research could be done to examine in more details the interplay between language anxiety and other students' individual differences such as personality, learning strategies, motivation to learn English, and attitudes towards the language. Finally, as suggested by the dynamic approach to language anxiety research (MacIntryre, 2017), researchers may wish to conduct a longitudinal study to examine how several interacting factors contribute to students' language anxiety and how their anxieties might change over a given period of time.

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