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Evaluating Psycho-Pedagogical Strategies to Reduce Foreign Language Anxiety Among Bukavu Secondary School Learners

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Abstract

Foreign Language Anxiety (FLA) can hinder learners' participation and engagement in English as a Foreign Language (EFL) classrooms. Although previous studies have examined FLA and anxiety-reduction strategies in Bukavu, empirical evidence on the effectiveness of structured interventions among secondary-school learners remains limited. This study evaluated a psycho-pedagogical intervention conducted at EDAP/ISP Bukavu, Democratic Republic of the Congo, from February to May 2025. A quasi-experimental pretest–posttest design involving experimental and control groups was employed. The control group comprised 48 pupils, while the experimental group included 42 pupils at pre-test and 46 at post-test. The findings revealed a descriptive reduction in mean FLA scores in the experimental group, from 3.08 to 2.86, compared with a slight decrease in the control group, from 3.19 to 3.17. However, the reduction in the experimental group was not statistically significant (p = .259). Descriptive analyses also revealed decreases in communication apprehension, fear of negative evaluation, test anxiety, and English classroom anxiety in the experimental group, with the largest reductions observed in communication apprehension and English classroom anxiety. These findings provide context-specific evidence on psycho-pedagogical approaches to FLA in secondary education, while highlighting the need for further research using robust comparative analyses to establish intervention effectiveness.

Keywords: Foreign Language Anxiety; psycho-pedagogical strategies; secondary education; Bukavu

1. Introduction

English has become a major medium of international communication in education, business, science, and technology. Proficiency in English is therefore increasingly important for secondary-school learners seeking access to further education, academic resources, and future professional opportunities. At the secondary-school level in DR Congo, learning English should enable learners to develop communicative competence and participate in an increasingly interconnected world. However, despite its importance, many learners experience difficulties when learning and using English, particularly in classroom situations that require oral participation, interaction, and public performance. These difficulties may be associated with instructional practices, limited learning resources, linguistic challenges, and individual learner characteristics. In addition to these factors, affective variables influence learners' experiences and outcomes. Among these variables, Foreign Language Anxiety (FLA) has attracted considerable attention in second and foreign language acquisition research.

Foreign Language Anxiety refers to the feelings of apprehension, tension, and worry associated with learning or using a language other than one's first language. Since the pioneering work of Horwitz, Horwitz, and Cope (1986), FLA has been conceptualized as a situation-specific construct arising from the particular demands of foreign language learning. It is traditionally associated with three interrelated dimensions: communication apprehension, fear of negative evaluation, and test anxiety (Horwitz et al., 1986). Subsequent research has linked FLA to learners' willingness to communicate, classroom participation, language performance, and academic achievement (MacIntyre & Gardner, 1991; Gardner et al., 1992). Recent scholarship continues to emphasize the complex relationship between anxiety, learners' emotional experiences, and language-learning performance. In a critical review published in 2026, Luo examined research on FLA-reduction interventions and identified emotional regulation, cognitive restructuring, skill development, and improvement of the classroom environment as major approaches to addressing anxiety. The review also emphasized the need for a more coherent theoretical foundation for designing and evaluating interventions.

Learners who fear making mistakes, being negatively evaluated by teachers or classmates, or failing language assessments may become reluctant to speak, avoid classroom interaction, and experience reduced confidence in their linguistic abilities. These reactions may restrict opportunities for language practice and hinder the development of communicative competence. Consequently, addressing FLA requires attention not only to learners' linguistic difficulties but also to the psychological and pedagogical conditions under which language learning takes place.

In response to these concerns, researchers have increasingly investigated interventions intended to reduce anxiety in foreign language classrooms. Toyama and Yamazaki (2021), in a systematic review of 40 intervention studies, identified several approaches, including student–student interaction, supportive student–teacher interaction, self-management strategies, and activities designed to improve learners' emotional experiences. Their review showed that interventions differed in their approaches, duration, measurement instruments, and implementation, making it important to evaluate their effectiveness empirically. More recently, Xiong et al. (2024), in a systematic review and meta-analysis of 37 studies, reported an overall statistically significant reduction in FLA following interventions (effect size = −0.61, $p = .03$). They also identified age as a significant moderator, suggesting that intervention outcomes may vary according to learner characteristics.

These findings provide a strong rationale for evaluating structured interventions rather than assuming that strategies shown to be promising in one setting will produce the same outcomes

elsewhere. They also indicate that intervention research should clearly describe the strategies employed, assess anxiety using appropriate instruments, and compare outcomes across relevant measurement points and study groups.

Importantly, research on FLA and its reduction has already been conducted in Bukavu, Democratic Republic of Congo. Kamalebo Kighogho (2018), in a study entitled The Effectiveness of the "Academic English Program" towards the Reduction of Foreign Language Speaking Anxiety at U.C.B.: Case of Fresh Students, examined the effectiveness of the Academic English Program in reducing foreign language speaking anxiety among students from the Faculties of Law, Medicine, and Economics at the Université Catholique de Bukavu (UCB). Using a pre-test/post-test design, two questionnaires adapted from the Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz et al. (1986), and a paired-samples t-test, the study found that the program reduced students' speaking anxiety and improved their English proficiency. The findings suggest that reducing speaking anxiety may contribute to better language performance. Although this work provides relevant local evidence concerning intervention-based anxiety reduction, its focus on university students distinguishes it from research involving secondary-school learners. Furthermore, in a previous study entitled "Levels and Sources of Bukavu Foreign Language Learners' Anxiety," Kamalebo (2022) examined foreign language anxiety (FLA) among secondary school English learners in Bukavu, Democratic Republic of the Congo. Using a quantitative approach, the study collected data from 2,002 pupils (from Grades 3 and 4) through a French-translated version of the Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz et al., 1986). The findings revealed that most learners experienced anxiety when learning and using English. Female pupils reported higher anxiety levels than males, while no significant difference emerged between Grade 3 and Grade 4 pupils. Four major sources of anxiety were identified: communication apprehension, test anxiety, fear of negative evaluation, and English classroom anxiety. The study highlighted the need for effective pedagogical strategies to help learners manage anxiety and improve English language learning.

In addition, Kamalebo (2023), in Factors Connected with Foreign Language Anxiety and Strategies Used to Reduce It: A Qualitative Analysis of EFL Learners in Bukavu/DR Congo, investigated factors associated with FLA and possible reduction strategies through interviews with secondary-school learners and English teachers. The study identified contextual factors associated with anxiety, including fear of making mistakes, negative peer reactions, teacher correction practices, and low self-confidence. These studies establish an important foundation for understanding FLA in the local educational context and demonstrate that the phenomenon should not be treated as an entirely unexplored problem in Bukavu.

Nevertheless, identifying factors associated with FLA and proposing strategies to address it are distinct from experimentally evaluating the effectiveness of a structured intervention. The previous Bukavu studies provide useful evidence concerning the local experience of anxiety and possible ways of addressing it, but they do not, on the basis of the information available here, establish the effectiveness of the particular intervention evaluated in the present study among secondary-school learners. International reviews likewise indicate that interventions differ in their design and outcomes and that their effectiveness should be examined in relation to the populations and educational conditions in which they are implemented (Toyama & Yamazaki, 2021; Xiong et al., 2024). Accordingly, the relevant research gap is not an absence of research on FLA in Bukavu, but the need for further empirical evidence on the effectiveness of a structured psycho-pedagogical intervention for reducing anxiety among secondary-school learners in this setting. Investigating changes in overall FLA and its measured dimensions may also provide a more detailed understanding of the intervention's outcomes.

To address this gap, the present study evaluates the effectiveness of a psycho-pedagogical intervention designed to reduce Foreign Language Anxiety among secondary-school learners in Bukavu. The intervention was conducted from February 27 to May 31, 2025, using a quasi-experimental design involving experimental and control groups. Anxiety was assessed at pre-test and post-test, with attention to overall FLA and its measured dimensions. By comparing anxiety outcomes across the two groups and measurement points, the study seeks to contribute empirical evidence on the effectiveness of the intervention in a local secondary-school context. Its contribution lies in the experimental evaluation of an intervention among secondary-school learners, complementing earlier Bukavu research that examined the sources of anxiety and the use of strategies to address it.

The general objective of the study is to evaluate the effectiveness of the psycho-pedagogical intervention in reducing Foreign Language Anxiety among secondary-school learners in Bukavu. Specifically, the study addresses the following research questions:

1. To what extent did overall Foreign Language Anxiety change between pre-test and post-test in the experimental and control groups?

2. Was there a statistically significant difference between the experimental and control groups in the change in overall Foreign Language Anxiety?

3. How did learners' anxiety levels and the dimensions of Foreign Language Anxiety change following the intervention?

By answering these questions, the study seeks to extend the existing literature on FLA reduction by providing context-specific evidence on the outcomes of a completed quasi-experimental intervention. Its findings may inform English language teaching practices and future intervention research in Bukavu and comparable educational settings.

2. Literature Review

2.1. Conceptualising Foreign Language Anxiety

Foreign Language Anxiety (FLA) has attracted considerable attention in second and foreign language acquisition research because of its potential implications for learners' participation, language processing, and performance. MacIntyre and Gardner (1994) conceptualize language anxiety as tension and apprehension associated with second-language contexts, including speaking, listening, and learning. Young (1991) similarly emphasizes the situation-specific nature of anxiety in language classrooms. These perspectives distinguish FLA from general anxiety by locating it within the particular demands of language learning and communication. Nevertheless, conceptualizing anxiety as situation-specific does not imply that all learners experience it in the same way; its manifestations may vary according to individual characteristics, classroom practices, and learning contexts.

Horwitz et al. (1986) made a major contribution by conceptualizing foreign language classroom anxiety as a distinct construct and developing the Foreign Language Classroom Anxiety Scale (FLCAS) to measure it. Their framework identifies three interrelated dimensions: communication apprehension, test anxiety, and fear of negative evaluation. Subsequent research by MacIntyre and Gardner (1991) and Gardner et al. (1992) examined relationships between language anxiety, cognitive processing, and language performance, extending understanding beyond the initial conceptualization of the construct. These studies collectively suggest that FLA is relevant not only to learners' emotional experiences but also to their engagement with language-learning tasks. However, evidence concerning associations between anxiety and performance does not, by itself,

establish that anxiety is the sole cause of poor performance, since linguistic proficiency, previous learning experiences, and instructional conditions may also contribute.

The FLCAS provides an established framework for investigating classroom anxiety, but its application requires attention to the linguistic and educational context in which it is used. In the present study, the questionnaire was translated into French for administration to secondary-school learners in Bukavu. The use of a translated instrument makes it important to consider whether the items were understandable and appropriate for the target population. Furthermore, the identification of distinct anxiety dimensions depends partly on how the questionnaire items are grouped and analysed.

In the present study, English Classroom Anxiety (ECA) was examined alongside communication apprehension, fear of negative evaluation, and test anxiety. ECA concerns anxiety associated with learners' experiences of English lessons, including classroom participation, interaction, and perceived instructional demands. Although the original framework of Horwitz et al. (1986) provides the conceptual foundation for this investigation, ECA should be understood as a context-sensitive dimension identified in the present research rather than as an established fourth dimension of the original FLCAS. This distinction is important because it allows the study to investigate locally relevant manifestations of anxiety without assuming that its dimensional structure is universally identical across educational settings.

FLA may manifest through emotional, cognitive, physiological, and behavioural responses, including worry, nervousness, difficulty concentrating, hesitation, and avoidance of oral communication (Horwitz et al., 1986; MacIntyre & Gardner, 1994; Young, 1991). Gregersen (2003) also examined the relationship between anxiety and learners' classroom behaviour. These manifestations help explain why anxiety is educationally relevant, although they are not necessarily exclusive to FLA. Taken together, the literature provides a basis for examining anxiety as a multifaceted phenomenon while leaving room for further investigation of how its dimensions manifest themselves among secondary-school learners in particular contexts.

2.2. Sources and Consequences of Foreign Language Anxiety

Research on FLA has identified several potential sources, including learner beliefs, interpersonal relationships, teacher behaviour, classroom procedures, and language assessment. Krashen's (1985) Affective Filter Hypothesis offers a theoretical explanation for how anxiety and other affective factors may interfere with language acquisition. However, this hypothesis provides a conceptual account rather than direct experimental evidence that a particular classroom intervention will reduce anxiety.

Young (1991) proposed six major sources of language anxiety: personal and interpersonal anxieties, learner beliefs about language learning, instructor beliefs about language teaching, instructor–learner interactions, classroom procedures, and language testing. This framework is broader than an explanation centred exclusively on individual learners because it incorporates the social and instructional environment. Similarly, Bailey (1983) and Price (1991) highlighted the relevance of competitiveness, self-perception, and fear of negative evaluation, while Horwitz (1988) examined how learners' beliefs about language learning may contribute to anxiety. These perspectives suggest that anxiety cannot be adequately understood by considering learners' personal characteristics alone.

Nevertheless, the studies differ in their emphasis and evidential contribution. Research identifying learners' reported fears can reveal how anxiety is experienced, but it does not necessarily determine which factors have the greatest causal influence. Moreover, findings from one classroom or educational context may not apply uniformly to another. This limitation supports the need to

investigate anxiety within specific learning environments rather than assuming that the same factors operate with equal intensity everywhere.

Teacher behaviour and classroom interaction constitute another important area of investigation. Young (1991) and Horwitz (1988) discussed how error correction, teacher expectations, and classroom practices may contribute to learners' apprehension. These perspectives suggest that the manner in which teachers respond to mistakes may be as important as the mistakes themselves. For example, correction perceived as humiliating may discourage participation, whereas respectful feedback may allow learners to recognize errors without excessive fear of judgment. However, the relationship between teacher behaviour and anxiety should not be interpreted as uniformly causal: learners' prior experiences, proficiency, and confidence may also shape how they perceive corrective feedback.

The consequences of FLA have been examined in relation to cognitive processing, classroom participation, and language performance. MacIntyre and Gardner (1994) investigated the relationship between anxiety and cognitive processes involved in language learning, while Gregersen (2003) examined behavioural manifestations of anxiety. Horwitz et al. (1986) also highlighted the particular difficulties that anxious learners may experience in foreign language classrooms. Collectively, this research suggests that anxiety may interfere with learners' ability or willingness to participate fully in language-learning activities. Nevertheless, the relationship may be reciprocal: anxiety can impede performance, while repeated experiences of difficulty or perceived failure may intensify anxiety.

The distinction between the sources and consequences of FLA has direct implications for intervention research. If anxiety is associated with learner-related factors and classroom conditions, effective interventions may need to address emotional regulation, confidence, teacher–learner interaction, classroom participation, and assessment practices. Identifying these potential influences is an important first step, but determining whether particular changes actually reduce anxiety requires empirical evaluation.

2.3. Psycho-Pedagogical Approaches to Reducing Foreign Language Anxiety

Psycho-pedagogical approaches to FLA aim to create learning conditions that support participation, confidence, and the development of communicative competence. Communicative Language Teaching (CLT), cooperative learning, constructive feedback, positive reinforcement, and gradual exposure to oral communication are among the approaches that may address specific sources of anxiety. However, the plausibility of a strategy is not equivalent to evidence of its effectiveness.

Communicative approaches emphasize meaningful language use rather than grammatical accuracy alone. Horwitz et al. (1986) and Young (1991) provide a basis for understanding why classroom communication and the fear of making mistakes matter in anxious learners' experiences. Nevertheless, communicative activities may have different effects depending on their implementation. Pair work and small-group interaction may reduce the pressure associated with speaking before the whole class, whereas spontaneous public speaking may intensify anxiety among learners who lack confidence. Consequently, the potential value of communicative teaching depends partly on the degree of support, preparation, and participation expected of learners.

Cooperative learning and supportive peer interaction may offer additional opportunities for practising English in a less threatening environment. Similarly, constructive correction, encouragement, and positive feedback may help learners respond to mistakes without interpreting them as evidence of personal inadequacy. These strategies are consistent with research highlighting the relevance of classroom relationships and fear of negative evaluation (Horwitz, 1988; Young,

1991). However, the studies cited above primarily provide conceptual explanations and evidence concerning sources of anxiety; they should not be treated as direct demonstrations that every strategy will produce a statistically significant reduction in FLA.

Other practices, including role-plays, language games, task-based activities, preparation before oral performance, and structured peer interaction, may provide opportunities for learners to develop confidence progressively. Their effectiveness may depend on factors such as the learners' proficiency, the difficulty of the tasks, the teacher's implementation, and the duration of the intervention. The strategic use of learners' first language may also offer support when English-language demands become overwhelming, although its appropriateness depends on instructional objectives and the specific classroom context.

More direct evidence concerning intervention effectiveness is provided by systematic reviews. Toyama & Yamazaki (2021), in a systematic review of 40 intervention studies, examined approaches including student–student interaction, supportive student–teacher interaction, self-management strategies, and activities intended to improve learners' emotional experiences. Their review provides a broader synthesis than individual studies because it brings together different intervention approaches. However, the diversity of interventions, durations, measurement instruments, and implementation procedures complicates direct comparisons and makes it difficult to assume that one approach will be equally effective across settings.

Similarly, Xiong et al. (2024), in a systematic review and meta-analysis of 37 studies, reported an overall statistically significant reduction in FLA following interventions (effect size = −0.61, p = .03). They also identified age as a significant moderator, suggesting that intervention outcomes may vary according to learner characteristics. Whereas Toyama & Yamazaki (2021) mapped the range of intervention approaches, the meta-analysis by Xiong et al. (2024) provided a quantitative estimate of the overall intervention effect. Nevertheless, an overall meta-analytic effect does not establish that every intervention is effective, nor does it guarantee comparable results in educational contexts that differ from those represented in the included studies. Differences in participants, intervention design, and classroom conditions remain important when interpreting the findings.

Taken together, these studies support investigating psycho-pedagogical interventions while highlighting the need for context-sensitive evaluation. For the present study, the relevant question is not simply whether supportive classroom practices are theoretically desirable, but whether their implementation is associated with measurable changes in FLA among secondary-school learners in Bukavu.

2.4. Previous Intervention Research and Research Gap

Previous research has contributed to understanding the sources of FLA and the strategies learners and teachers use to manage it. Aydın (2008), studying 112 Turkish EFL learners, identified several factors associated with anxiety, including inadequate preparation, communication apprehension, teacher questioning and correction, test anxiety, fear of failure, and negative attitudes towards English. The study provides context-specific evidence about learners' experiences and identifies potential areas for pedagogical intervention. However, findings concerning the sources of anxiety and recommendations for reducing it do not establish whether particular strategies produce measurable improvements when implemented.

Kondo & Yang (2004) examined strategies used by learners to cope with language anxiety, identifying preparation, relaxation, positive thinking, peer seeking, and resignation as major categories. Their work complements research focused on classroom conditions by highlighting the role of learners' own coping behaviours. However, the identification of coping strategies is analytically different from an experimental evaluation of their effectiveness. A strategy may be

commonly used by anxious learners without necessarily being effective in reducing their anxiety. This distinction reinforces the importance of examining both learners' experiences and the outcomes of structured interventions.

More recent research has continued to broaden the evidence base. Yu (2024) reviewed developments in FLA research and highlighted the need to investigate underexplored contexts. Xiong et al. (2024) synthesized intervention research quantitatively, reporting an overall statistically significant reduction in FLA, while Attia & Algazo (2025) emphasized the importance of teachers and classroom practices in addressing language anxiety. These studies contribute in different ways: reviews synthesize existing research, meta-analyses estimate overall effects, and research centred on teachers' perceptions can identify pedagogically relevant practices. However, their findings should not be treated as interchangeable. Evidence based primarily on teachers' perceptions, for example, cannot establish intervention effectiveness in the same way as a well-designed comparative evaluation.

Longitudinal research also suggests that FLA may change over time. Such findings are relevant because they indicate that anxiety is not necessarily a fixed learner characteristic. Nevertheless, changes observed across time may reflect several influences, including learners' growing proficiency, changing classroom experiences, or external circumstances. Without an appropriate comparison group or other means of addressing alternative explanations, longitudinal observations alone cannot establish that a deliberate pedagogical intervention caused the change.

Research conducted in Bukavu provides a particularly important foundation for the present study. Kamalebo (2018), in The Effectiveness of the "Academic English Program" towards the Reduction of Foreign Language Speaking Anxiety at U.C.B.: Case of Fresh Students, examined the effectiveness of the Academic English Program among university students at the Université Catholique de Bukavu. Using a pre-test/post-test design and questionnaires adapted from the FLCAS, the study reported a reduction in speaking anxiety and an improvement in English proficiency. Its intervention-based approach is directly relevant to research on anxiety reduction, although its focus on university students limits the extent to which its findings can be transferred to secondary-school learners.

Kamalebo (2022), in Levels and Sources of Bukavu Foreign Language Learners' Anxiety, investigated FLA among 2,002 secondary-school learners in Bukavu using a French-translated version of the FLCAS. The study found that most learners experienced anxiety when learning and using English, with female learners reporting higher anxiety than male learners. It also identified communication apprehension, test anxiety, fear of negative evaluation, and English classroom anxiety as major sources or dimensions of concern. Compared with the 2018 study, this research provides broader evidence about the extent and distribution of anxiety among secondary-school learners, but its primary focus was diagnostic rather than the evaluation of a specific intervention.

Kamalebo (2023), in Factors Connected with Foreign Language Anxiety and Strategies Used to Reduce It: A Qualitative Analysis of EFL Learners in Bukavu/DR Congo, investigated factors associated with FLA and possible reduction strategies through interviews with secondary-school learners and English teachers. The study identified issues such as fear of making mistakes, negative peer reactions, teacher correction practices, and low self-confidence. Its qualitative approach provides contextual insight into learners' and teachers' experiences that questionnaire-based research may not fully capture. However, qualitative accounts of anxiety and suggested coping strategies do not, on their own, establish whether implementing those strategies leads to measurable reductions in anxiety.

Considered together, these three Bukavu studies provide complementary evidence. The 2018 study examined intervention-related outcomes in a university setting; the 2022 study documented anxiety levels and their distribution among secondary-school learners; and the 2023 study explored factors associated with anxiety and possible strategies for addressing it. Their different populations and methodological approaches are valuable because they illuminate distinct aspects of FLA. At the same time, they leave room for further investigation of the outcomes of structured psycho-pedagogical interventions among secondary-school learners.

The research gap, therefore, is not an absence of FLA research in Bukavu. Rather, it concerns the need for additional empirical evaluation of structured interventions among secondary-school learners under local educational conditions. International reviews support the potential of intervention-based approaches, but variation in study designs, populations, and implementation means that their findings cannot simply be assumed to apply to every context. Similarly, previous local research has identified relevant anxiety factors and possible strategies, but these contributions address different questions from the comparative evaluation undertaken in the present study.

To address this gap, the present study evaluates a psycho-pedagogical intervention among Grade 3 scientific learners at EDAP/ISP Bukavu using a quasi-experimental pre-test/post-test design involving experimental and control groups. It examines changes in overall FLA and in four measured dimensions: communication apprehension, fear of negative evaluation, test anxiety, and English classroom anxiety. By evaluating observed changes in a secondary-school setting, the study complements previous local research and contributes context-specific evidence concerning the potential outcomes of anxiety-sensitive classroom practices. Given the non-randomized selection of existing classes and the limitations of matching individual observations across measurement points, the findings must nevertheless be interpreted cautiously when drawing conclusions about intervention effectiveness.

3. Research Method

3.1. Research Design

This study adopted a quasi-experimental pre-test–post-test design involving an experimental group and a control group to evaluate the effectiveness of a psycho-pedagogical intervention in reducing Foreign Language Anxiety (FLA) among secondary-school learners at EDAP/ISP Bukavu, Democratic Republic of the Congo. This design enabled changes in learners' anxiety levels to be examined before and after the intervention and compared descriptively across the two groups.

EDAP/ISP Bukavu was selected because it was the only identified school in which two Grade 3 science classes, Classes A and B, were taught by different teachers while following the same school-prescribed programme. Class B was designated as the experimental group, while Class A served as the control group. This arrangement provided an opportunity to examine the intervention within the existing school structure without disrupting the normal organization of classes. The classes were designated before the learners' pre-test anxiety scores were known; therefore, their selection was not based on initial anxiety levels. However, the learners were not randomly assigned to the groups.

The intervention was conducted from February 27 to May 31, 2025. The teacher of Class B implemented the psycho-pedagogical strategies, while the teacher of Class A continued regular English language instruction. Learners' anxiety was assessed before and after the intervention using a French-translated version of the Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz et al., 1986).

The experimental group comprised 42 learners at pre-test and 46 at post-test, while the control group comprised 48 learners. The difference in the experimental group's sample sizes resulted

from absenteeism during the pre-test administration. Because individual pre-test and post-test records could not be matched, the observed changes were interpreted cautiously. Furthermore, no statistical test of baseline equivalence was conducted. Although the initial mean anxiety scores were relatively close in the experimental group (M = 3.08, SD = 0.41) and the control group (M = 3.19, SD = 0.66), these descriptive statistics alone do not establish statistical equivalence.

The use of different teachers in the two groups is also a methodological consideration, as teacher-related differences may have influenced the observed outcomes independently of the intervention. Consequently, the findings were interpreted with caution when assessing the extent to which changes in anxiety could be attributed to the psycho-pedagogical strategies.

3.2. Study setting, Target population, and sampling procedure

The target population consisted of secondary-school learners studying English as a Foreign Language in Bukavu, Democratic Republic of the Congo. The study involved two Grade 3 science classes at EDAP/ISP Bukavu: Class A (control group) and Class B (experimental group). A purposive sampling procedure was used to select the study setting and classes.

All pupils enrolled in the two classes who were present on the day of questionnaire administration were eligible to participate. The control group comprised 48 pupils, while the experimental group included 42 pupils at pre-test and 46 at post-test. This difference resulted from the absence of four pupils during the pre-test who were present at the post-test. Although the post-test sample included all 42 pupils assessed at pre-test, their individual questionnaire records could not be matched across the two measurement points. This limitation was considered when interpreting the findings.

3.3. Research instrument and scoring procedure

Data were collected using a French-translated version of the Foreign Language Classroom Anxiety Scale (FLCAS), developed by Horwitz, Horwitz, and Cope (1986). The original instrument consists of 33 items designed to assess anxiety in foreign language classroom settings. The questionnaire was translated into French by the researcher and submitted to two professors for review and validation. It was subsequently administered to a group of pupils to assess the clarity and comprehensibility of the items.

For the purposes of this study, the 33 items were analysed across four dimensions. Eight items (1, 9, 14, 18, 24, 27, 29, and 32) were assigned to communication apprehension; nine items (3, 7, 13, 15, 20, 23, 25, 31, and 33) to fear of negative evaluation; and five items (2, 8, 10, 19, and 21) to test anxiety. These three dimensions reflect the principal anxiety-related concerns addressed in the framework proposed by Horwitz et al. (1986). The remaining eleven items (4, 5, 6, 11, 12, 16, 17, 22, 26, 28, and 30) were grouped into a fourth analytical category labelled English classroom anxiety. This category was developed specifically for the present study to capture anxiety associated with classroom practices, teacher–learner interactions, peer reactions, classroom atmosphere, and participation demands. It represents a context-specific analytical category rather than an original dimension proposed by Horwitz et al. (1986).

For data analysis, responses of Agree (A) and Strongly Agree (SA) were combined to calculate the percentage of affirmative responses for each item. These percentages were then summarised across the items assigned to each dimension to describe the frequency of affirmative responses within each analytical category. The resulting percentages were treated as descriptive indicators of agreement rather than conventional FLCAS total or subscale scores. Individual items were interpreted in light of their wording, since agreement does not necessarily indicate higher anxiety for every statement.

3.4. Intervention Procedures and Psycho-pedagogical Strategies

The psycho-pedagogical intervention was conducted over one academic semester, from February 27 to May 31, 2025, with five 50-minute English lessons per week. It aimed to address the four main dimensions of Foreign Language Anxiety (FLA) identified through the Foreign Language Classroom Anxiety Scale (FLCAS): communication apprehension, fear of negative evaluation, test anxiety, and English classroom anxiety. The intervention incorporated supportive error correction, positive feedback, collaborative learning, communicative activities, gradual progression in task difficulty, preparation before oral activities, and the pedagogical use of translanguaging where appropriate.

The intervention was implemented by the English teacher assigned to the experimental group, who received prior training on the recommended strategies. The researcher conducted three classroom observation visits to monitor their implementation. The experimental group received instruction incorporating these strategies, whereas the control group continued with regular English instruction. The two groups were taught by a different teacher, which constitutes a potential confounding factor in interpreting differences between them.

At the pre-test and post-test stages, the FLCAS was administered to learners who were present on the respective testing days. The control group (Class A) comprised 48 learners at both administrations, while the number of learners present in the experimental group increased from 42 at pre-test to 46 at post-test. These figures reflect attendance at the time of data collection rather than necessarily representing total class enrolment. This variation should be considered when interpreting the results, particularly when comparing pre-test and post-test scores.

3.5 Summary of Psycho-Pedagogical Strategies

This section provides the strategies that must be applied to reduce ELLA in Bukavu English classrooms, since it is known that ELLA has more debilitating effects than facilitating ones. In this short presentation of the dissertation, the researchers only give a summary of the strategies proposed by the study.

Table 1: Summary of strategies for reducing FLA in Bukavu English classrooms

Category / Sources of FLA	Key strategies for teachers	Key strategies for pupils	Aim / pedagogical purpose	Expected effect on anxiety
Communication Apprehension	Encourage more English practice; announce activities in advance; use pair/group work; assign speaking/listening homework; provide good language models; create a friendly classroom; reduce teacher–pupil social distance; organize English clubs.	Be aware of anxiety; identify its causes; adopt a positive mindset; use positive self-talk; prepare well; rehearse; relax before speaking; speak confidently; accept mistakes as normal.	To increase pupils' willingness to communicate, build confidence, and provide low-pressure opportunities for oral practice.	Reduces fear of speaking, increases confidence, and improves willingness to communicate in English.
Fear of Negative Evaluation (FNE)	Give positive encouragement; correct errors tactfully and after presentations when possible; emphasize communication over perfection; discourage classmates from laughing at mistakes; promote confidence and self-esteem; allow time for preparation and rehearsal.	Prepare presentations thoroughly; rehearse before speaking; focus on communicating rather than fearing mistakes.	To reduce pupils' sensitivity to criticism and create a respectful atmosphere where mistakes are viewed as part of learning.	Reduces fear of judgment, embarrassment, and teacher/peer criticism.
Test Anxiety	Test only what was taught; use objective scoring/testing when possible; explain aims, content, format, and number of questions in advance; communicate before and after tests; avoid using tests as punishment; emphasize formative assessment and feedback; avoid stressing time pressure; avoid telling pupils English is difficult.	Prepare regularly and view tests as part of learning rather than punishment.	To make testing more predictable, fair, and supportive, while reducing pressure associated with grades and failure.	Lowers stress related to tests, low grades, and fear of poor performance.
English Classroom Anxiety (In-class Anxiety)	Encourage motivation and engagement; avoid ridicule and judgmental attitudes; consider different learning styles; avoid harsh correction and over-monitoring; give clear instructions; use translanguaging when needed; use familiar tasks; be relaxed, warm, supportive, and humanistic; act as facilitator; avoid excessive authority; differentiate tasks; focus on learning rather than showing off difficult language; hold private talks with anxious pupils; use humour.	Participate actively; seek clarification when needed; engage in classroom tasks without fear.	To create a psychologically safe, learner-centred, and inclusive classroom environment that encourages participation and reduces tension.	Reduces anxiety caused by teacher behaviour, peer influence, unclear tasks, and classroom procedures.
Cross-Cutting Classroom Climate Strategies	Build a friendly, non-threatening atmosphere; normalize anxiety as common in language learning; establish respectful classroom norms; scaffold oral tasks from low-stakes to high-stakes; encourage peer support; use anonymous/low-pressure participation when possible; reflect on one's own anxiety-inducing behaviours.	Accept anxiety as normal; participate progressively in low-risk speaking activities; support peers rather than ridicule them.	To sustain a long-term classroom culture of emotional safety, gradual confidence-building, and mutual respect.	Promotes durable reduction of ELLA by making the classroom safer, more predictable, and more supportive.

3.6. Data Analysis Techniques

Data were analysed using Stata 15. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize learners' Foreign Language Anxiety (FLA) scores, changes across the four anxiety dimensions, and the distribution of anxiety levels at pre-test and post-test. Student's t-tests were used to examine changes in mean anxiety scores. A paired-samples t-test was applied to the control group, whereas an independent-samples t-test was used for the experimental group because individual pre-test and post-test records could not be matched. Cohen's d was used to estimate the magnitude of change in overall anxiety scores. Changes in the four anxiety dimensions and the distribution of anxiety levels were analysed descriptively, without inferential testing. The results were interpreted cautiously, distinguishing observed changes from statistically established intervention effects.

4. Results

4.1 Evaluation of the Psycho-pedagogical Intervention

The quasi-experimental phase examined whether the proposed psycho-pedagogical strategies could reduce FLA among learners in the experimental group.

Table 2. Pre-test and post-test anxiety scores

Group	N	Pre-test M (SD)	Post-test M (SD)	Mean change	p	Cohen's *d*
Control	48	3.19 (0.66)	3.17 (1.38)	−0.018	.9365	−0.01
Experimental	42 pre-test/ 46 post-test	3.08 (0.41)	2.86 (1.23)	**−0.219**	**.259**	**0.23**

Table 2 presents the pre-test and post-test anxiety scores for the control and experimental groups. In the control group, the mean anxiety score decreased only slightly, from 3.19 (*SD* = 0.66) at pre-test to 3.17 (*SD* = 1.38) at post-test, representing a mean change of −0.018 points. This change was not statistically significant (p = .9365), and the corresponding effect size was negligible (Cohen's d = −0.01). These results indicate that the anxiety level of learners in the control group remained relatively stable over the study period.

In the experimental group, the mean anxiety score decreased from 3.08 (*SD* = 0.41) at pre-test to 2.86 (*SD* = 1.23) at post-test, corresponding to a mean reduction of approximately 0.22 points. The pre-test and post-test samples were treated as independent because individual learners could not be matched across the two datasets. This change was not statistically significant (p = .259), and the corresponding effect size was negligible (Cohen's d = 0.23). The experimental group showed a greater descriptive reduction in anxiety than the control group. The mean FLCAS score decreased by 0.219 points in the experimental group, compared with only 0.018 points in the control group, resulting in an approximately 0.201-point greater reduction in the experimental group. However, because the pre-test and post-test datasets could not be individually matched, and the available aggregated data did not permit a robust inferential test of the difference in change between groups, this pattern cannot be interpreted as conclusive evidence of an intervention effect.

A comparison of the mean changes across the two groups shows that the experimental group experienced a greater descriptive reduction in anxiety (−0.219) than the control group (−0.018). Thus, the reduction observed in the experimental group was approximately 0.20 points greater than that observed in the control group. However, the available analyses do not provide sufficient

statistical evidence to establish that this difference was attributable to the psycho-pedagogical intervention.

Overall, the results suggest a descriptive reduction in foreign language anxiety in the experimental group, whereas anxiety levels remained largely stable in the control group. Nevertheless, the reduction observed in the experimental group was not statistically significant, and its effect size was small. Therefore, the findings do not provide sufficient statistical evidence to conclude that the psycho-pedagogical intervention significantly reduced learners' foreign language anxiety. The results may nevertheless indicate a potentially positive trend that warrants further investigation using larger samples and individually matched pre-test and post-test data.

A more detailed examination of the four quantitative dimensions nevertheless revealed more pronounced descriptive reductions in the experimental group than in the control group.

It is worth noting that the difference in sample size between the pre-test and post-test in the experimental group resulted from learner absenteeism during the administration of the pre-test.

Table3. Changes in the Four Quantitative Dimensions of FLA

Dimension	Control 3A (pp)	Experimental 3B (pp)
Communication apprehension	−4.17	−26.71
Fear of negative evaluation	−2.08	−6.11
Test anxiety	+2.08	−8.08
English classroom anxiety	+4.17	−16.98

Note. Changes are expressed in percentage points (pp) and are presented descriptively; no inferential tests were conducted for individual dimensions.

The experimental group showed descriptive reductions across all four dimensions, with the largest decreases observed in communication apprehension (−26.71 percentage points) and English classroom anxiety (−16.98 percentage points). Fear of negative evaluation and test anxiety also decreased by 6.11 and 8.08 percentage points, respectively. In contrast, the control group showed only modest decreases in communication apprehension and fear of negative evaluation, while test anxiety and English classroom anxiety increased slightly.

The distribution of learners across the different anxiety levels also showed a more favorable descriptive pattern in the experimental group.

Table4. Pre-test–Post-test Distribution of Anxiety Levels

Anxiety level	3A Pre (%)	3A Post (%)	Change	3B Pre (%)	3B Post (%)	Change
Very high	2.08	2.08	0.00	16.67	0.00	−16.67
High	45.83	43.75	−2.08	30.95	30.43	−0.52
Low to moderate	52.08	54.17	+2.09	52.38	69.57	+17.19

In the experimental group, the proportion of learners classified as having very high anxiety decreased from **16.67% at pre-test to 0% at post-test**, while the proportion in the low-to-moderate anxiety category increased from **52.38% to 69.57%**. The proportion of learners with high anxiety remained relatively stable, decreasing slightly from 30.95% to 30.43%. By comparison, the control group showed only marginal changes across the three anxiety categories.

Taken together, these descriptive findings indicate a more favorable shift in the experimental group across several anxiety dimensions and in the distribution of overall anxiety levels. The most pronounced changes were observed in communication apprehension and English classroom anxiety, while the proportion of learners in the low-to-moderate anxiety category increased

substantially. However, these findings should be interpreted cautiously. Because the pre-test and post-test samples could not be individually matched and the overall pre-test–post-test reduction in the experimental group was not statistically significant, the observed changes cannot be considered conclusive evidence of intervention effectiveness. Rather, they provide encouraging but preliminary descriptive evidence of potentially beneficial changes associated with the intervention.

4.2. Answers to the research questions

Research question 1: To what extent did overall Foreign Language Anxiety change between pre-test and post-test in the experimental and control groups?

The findings revealed a descriptive reduction in overall Foreign Language Anxiety (FLA) in both groups, although the magnitude of change differed. In the experimental group, the mean anxiety score decreased from 3.08 at pre-test to 2.86 at post-test, representing a reduction of 0.219 points. In the control group, the mean score decreased only slightly, from 3.19 to 3.17, corresponding to a reduction of 0.018 points. These findings indicate a more favorable descriptive change in the experimental group. However, the reduction observed in that group was not statistically significant ($p = .259$).

Research question 2: Was there a statistically significant difference between the experimental and control groups in the change in overall Foreign Language Anxiety?

The available results do not establish whether the difference in overall FLA change between the experimental and control groups was statistically significant. Although the experimental group demonstrated a greater descriptive reduction in anxiety than the control group, the pre-test and post-test datasets could not be matched at the individual level, and no robust inferential test of the difference in change was available. Therefore, the findings do not provide sufficient statistical evidence to conclude that the psycho-pedagogical intervention significantly reduced overall FLA compared with the control condition.

Research question 3: How did learners' anxiety levels and the dimensions of Foreign Language Anxiety change following the intervention?

The descriptive findings revealed more favorable changes across all four measured dimensions of FLA in the experimental group. The largest reductions were observed in communication apprehension (−26.71 percentage points) and English classroom anxiety (−16.98 percentage points). Fear of negative evaluation and test anxiety also decreased by 6.11 and 8.08 percentage points, respectively. Furthermore, the proportion of experimental-group learners classified as having very high anxiety decreased from 16.67% at pre-test to 0% at post-test, while the proportion classified as having low-to-moderate anxiety increased from 52.38% to 69.57%. These findings suggest potentially favorable changes in learners' anxiety profiles, although the dimension-specific changes were not subjected to inferential testing and should therefore be interpreted descriptively.

5. Discussion

5.1. Changes in overall Foreign Language Anxiety

The findings revealed a more favourable descriptive change in overall Foreign Language Anxiety (FLA) in the experimental group than in the control group. The mean anxiety score decreased from 3.08 at pre-test to 2.86 at post-test in the experimental group, compared with a slight decrease from 3.19 to 3.17 in the control group. However, the reduction in the experimental group was not statistically significant ($p = .259$), and the effect size was small (Cohen's $d = 0.23$). Consequently, the findings do not provide sufficient statistical evidence to conclude that the intervention significantly reduced overall FLA.

These findings should be considered alongside previous intervention research. Toyama and Yamazaki (2021) reviewed 40 intervention studies and identified several approaches to anxiety reduction, including supportive teacher–learner interaction, peer interaction, and self-management strategies. Similarly, Xiong et al. (2024) reported an overall statistically significant reduction in FLA across the interventions included in their meta-analysis. The difference between these findings and the present results may reflect variations in intervention design, duration, implementation, learner characteristics, and educational contexts. However, the available evidence does not establish which factors account for the non-significant result in the present study. The findings therefore reinforce the importance of evaluating interventions within the specific contexts in which they are implemented rather than assuming that approaches found effective elsewhere will produce similar outcomes.

5.2. Changes in the dimensions and distribution of FLA

Although the reduction in overall FLA was not statistically significant, the descriptive analysis revealed decreases across all four dimensions in the experimental group. The largest reductions occurred in communication apprehension (−26.71 percentage points) and English classroom anxiety (−16.98 percentage points), followed by test anxiety (−8.08 percentage points) and fear of negative evaluation (−6.11 percentage points).

The relatively large reduction in communication apprehension is noteworthy because anxiety about speaking and interacting in the target language is central to the framework proposed by Horwitz et al. (1986). Similarly, Young (1991) emphasized the relevance of classroom procedures and teacher–learner interactions to language anxiety. The observed changes are therefore consistent with the intended aims of the intervention, which sought to promote supportive classroom interaction and encourage participation. Nevertheless, because no inferential tests were conducted for the individual dimensions, these changes should be interpreted as descriptive patterns rather than statistically established improvements.

The distribution of anxiety levels also shifted favourably in the experimental group. The proportion of learners classified as having very high anxiety decreased from 16.67% to 0%, while the proportion with low-to-moderate anxiety increased from 52.38% to 69.57%. The control group showed only marginal changes. Although this pattern complements the dimensional findings, the unmatched pre-test and post-test records mean that individual transitions between anxiety categories cannot be established. Taken together, these results suggest potentially favourable changes in the experimental group but do not conclusively demonstrate intervention effectiveness.

5.3. Relationship with previous research in Bukavu

The present findings extend previous research on FLA in Bukavu. Kamalebo (2018) reported reductions in speaking anxiety following the Academic English Program among university students at the Université Catholique de Bukavu. Kamalebo (2022) subsequently documented anxiety levels and identified major sources of FLA among secondary-school learners, while Kamalebo (2023) explored factors associated with anxiety and strategies used to address it. These studies provide complementary evidence concerning the nature of FLA and possible approaches to its reduction in the local educational context.

Unlike the 2022 and 2023 Kamalebo studies, which primarily examined anxiety levels, associated factors, and potential strategies, the present study evaluated pre-test and post-test changes following a structured intervention among secondary-school learners. However, its non-significant overall result distinguishes it from intervention research reporting statistically significant reductions. The present findings should therefore be understood as adding preliminary, context-specific evidence

rather than establishing that the intervention was effective. They also highlight the need to investigate whether the more favourable descriptive changes can be reproduced in subsequent studies with stronger comparative analyses.

5.4. Pedagogical implications and limitations

The more favourable descriptive changes in communication apprehension and English classroom anxiety suggest that these dimensions deserve particular attention in anxiety-sensitive English language teaching. Teachers may consider providing structured opportunities for pair and group interaction, offering constructive feedback, encouraging participation without humiliation, and helping learners prepare for oral activities and assessments. However, the present findings do not establish the effectiveness of any individual strategy.

Several limitations should be considered when interpreting the results. The intervention lasted approximately three months, and implementation was not entirely consistent. The study also took place during a period of socio-political instability in Bukavu, which may have affected learners' experiences, although its specific influence was not measured. Furthermore, the study used existing classes without statistical assessment of baseline equivalence, and individual pre-test and post-test records could not be matched. These limitations restrict the conclusions that can be drawn about the intervention's effects.

Future research should consider longer interventions, systematic monitoring of implementation, individually matched observations, and stronger procedures for comparing experimental and control groups. Further investigation of the four anxiety dimensions could also clarify whether particular aspects of FLA respond differently to psycho-pedagogical approaches.

In conclusion, the study documented more favourable descriptive changes in the experimental group, particularly in communication apprehension and English classroom anxiety. Nevertheless, the absence of a statistically significant reduction in overall FLA means that the intervention's effectiveness remains unconfirmed. The findings provide a basis for further context-sensitive research into anxiety-reduction practices among secondary-school learners in Bukavu.

6. Conclusion

This study evaluated the outcomes of a psycho-pedagogical intervention designed to reduce Foreign Language Anxiety (FLA) among secondary-school learners at EDAP/ISP Bukavu, Democratic Republic of the Congo. Using a quasi-experimental pre-test–post-test design involving experimental and control groups, the study examined changes in overall anxiety, its four measured dimensions, and the distribution of learners across different anxiety levels. The findings provide context-specific evidence on the outcomes of implementing anxiety-sensitive teaching practices in a secondary-school English classroom.

The results revealed a greater descriptive reduction in overall FLA in the experimental group than in the control group. The experimental group's mean anxiety score decreased from 3.08 at pre-test to 2.86 at post-test, whereas the control group's mean score changed from 3.19 to 3.17. However, the reduction observed in the experimental group was not statistically significant ($p = .259$). Consequently, the available evidence does not establish that the intervention significantly reduced overall FLA. Nevertheless, the descriptive findings showed decreases across all four measured dimensions, with the largest reductions occurring in communication apprehension (−26.71 percentage points) and English classroom anxiety (−16.98 percentage points). The proportion of learners classified as having very high anxiety also decreased from 16.67% to 0%, while the proportion with low-to-moderate anxiety increased from 52.38% to 69.57%. These patterns suggest

potentially favourable changes in learners' anxiety profiles, although the dimension-specific results remain descriptive rather than statistically confirmed.

The study contributes to research on FLA by extending the investigation of anxiety-reduction approaches to a secondary-school setting in Bukavu. Its findings highlight the pedagogical relevance of supportive error correction, positive feedback, collaborative learning, gradual participation in oral activities, adequate preparation, and a classroom atmosphere that discourages ridicule and negative evaluation. However, the study does not establish the independent effectiveness of any particular strategy. The non-randomized selection of existing classes, the use of different teachers in the experimental and control groups, the unmatched pre-test and post-test records, and variations in intervention implementation limit the strength of causal conclusions.

Future research should therefore employ larger samples, longer intervention periods, systematic monitoring of implementation, and individually matched pre-test and post-test observations. Where feasible, stronger comparative designs and appropriate statistical tests of differences in change between experimental and control groups should be used. Further studies could also investigate whether specific psycho-pedagogical strategies produce different outcomes across the dimensions of FLA and under varying classroom conditions.

In conclusion, the intervention was associated with more favourable descriptive changes in foreign language anxiety among learners in the experimental group, particularly in communication apprehension and English classroom anxiety. Nevertheless, its effectiveness in significantly reducing overall FLA remains unconfirmed. The findings should therefore be interpreted as preliminary, context-specific evidence that warrants further investigation rather than as proof of intervention effectiveness. Continued research into supportive and context-sensitive English language teaching practices is needed to determine which approaches can reliably help secondary-school learners in Bukavu manage anxiety and participate more confidently in classroom learning.

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