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University students' emotions about learning subjects through English as a medium of instruction

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Learning academic subjects in English can evoke a range of emotions among university students. For some students, learning a new language represents a valuable opportunity to expand their perspectives and communicate with people from diverse cultural backgrounds. For others, the language barrier can be an obstacle to understanding and expressing themselves, which can lead to feelings of lack of confidence. In this study, we are interested in the emotions that students may experience when they are in class learning subjects through English Medium Instruction (EMI). For this purpose, an Achievement Emotions Questionnaire with Likert-type questions was used. It includes items about their degree of confidence, anxiety, motivation or emotions when learning through EMI. The sample consisted of 231 students in the bilingual Primary Education program and in the Foreign Languages Approach Program of the University of Extremadura (PALEx). The results show significant differences between men and women in the case of shame, emotion experienced more by women than by men. However, the average number of women who feel positive emotions such as hope, enjoyment and pride is higher than that of men although the fact that they are unable to meet their expectations leads them to suffer from anxiety or disappointment to a greater extent than men. Nevertheless, men present a higher average in the emotions of anger and boredom. The results also show that the self-perceived level of English is relevant for experiencing positive emotions: the higher the level, the more enjoyable the English classes are and the more hope for success.

KEYWORDS

emotions, foreign languages, university students, English medium instruction, English proficiency

1 Introduction

The Common European Framework of Reference for Languages: Learning, Teaching and Assessment ([European Union for Council of Europe, 2001](https://www.cerl.eu/)), in section 5.1.3, includes, among the general competences of the user or learner, the 'existential' competence (knowing how to be), which states that users' communicative activity is influenced not only by their knowledge, understanding and skills, but also by 'individual personality-related factors characterized by attitudes, motivations, values, beliefs, cognitive styles and personality types which contribute to their personal identity'. These factors have a major impact on the roles of language users or learners.

[Morgan \(2015, p. 15\)](#) points out the importance of interest and motivation in the learning process and stresses the value of reducing learners' anxiety, making them feel comfortable and increasing their confidence and self-esteem to create a good group dynamic in the classroom. He therefore considers essential to take care of affective factors to foster foreign language learning.

In this sense, [Lizarte et al. \(2024a\)](#) point out that challenging stressors are related to positive behaviors, improving team performance, increasing motivation and enhancing effort. In contrast, both challenging and obstructive stressors influence learning, affecting the level of development of professional competencies during studies. If stress is severe and prolonged in students, it can reduce academic performance, decrease academic and social integration, and even increase the probability of dropping out of school ([Lizarte and Gijón, 2022](#)).

The widespread use of English has given rise to a significant number of universities that include English-medium instruction (EMI) into their internationalization strategies ([Block and Khan, 2021](#); [De Costa et al., 2021a, 2021b](#); [Ellison, 2021](#); [Sahan et al., 2021](#)). In this study we consider the most-cited definition of EMI by [Macaro et al.'s \(2018, p. 19\)](#) as “the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English”. [Akhtar et al. \(2021\)](#) point to globalization and internationalization as the reasons for the recent increase in the adoption of EMI policies in higher education. EMI not only includes classroom instruction, but also has an effect on the whole university and local community ecosystems ([Hopkyns and Gkonou, 2023](#); [Liyange, 2023](#)). [Moncada-Comas \(2022\)](#) states that over time, EMI has increasingly come to be seen as a way for students to improve their language skills. This approach assumes that language learning occurs naturally through exposure to English content, taking advantage of the immersive environment of EMI. Consequently, EMI is used not only to deliver academic content, but also as a tool to help students improve their English proficiency.

Research on emotions in language learning has increased considerably in the last two decades, particularly on language teachers' emotions ([Prior, 2019](#); [White, 2018](#)). Much of the research has explored emotions regarding affective factors such as anxiety and motivation ([Chou, 2018](#); [Miller, 2023](#); [White, 2018](#)). [Pavlenko \(2006\)](#) describes how emotions have often been examined as an individual state and categorized into either positive or negative, frequently in terms of whether they facilitate or hinder an individual's language learning process ([White, 2018](#)). Many studies have centered on the experience of EMI students and teachers in dealing with classroom language policy and with the emotions that come up from that experience such as fear, frustration, determination, anger, apathy, resilience, stress and optimism (e.g., [Block and Khan, 2021](#); [Sah and Fang, 2023](#); [Yuan et al., 2021](#)). Surprisingly, “such emotions have been largely overlooked as a central focus” ([Hillman et al., 2023](#)) and furthermore, it has not been taken into account that EMI offers sometimes a context that “is likely to generate more intense emotions than others” ([Gkonou et al., 2020, p. 1](#)). [Sah \(2022\)](#) calls for EMI studies that examine “the academic and emotional challenges that both teachers and students face over time” and the long-term emotional impact of EMI (p. 133). Moreover, not much research has yet been done focusing on students' emotions in higher education EMI.

In our universities, there are many students who, year after year, show a lack of enthusiasm for the study of a foreign language. According to [Arnold \(2021\)](#), p. 3, language teaching can be more effective if we pay attention to affective factors. Affective factors are not easy to define when we refer to language learning and are basically those related to “aspects of emotion, feeling, mood or attitude that condition behavior”. We share the theories of [Guillén et al. \(2013\)](#) that unmotivated people are not used to trying to carry out a certain activity and, in fact, tend to

abandon it as soon as they can. The aim of this study is to assess how emotions influence the process of teaching and learning subjects taught in a language other than the mother tongue of our participants and to find out what factors facilitate or hinder such study in a foreign language.

1.1 Research context and questions

The study is part of a large study that investigated the beliefs of teachers and students about plurilingualism in Extremadura. This article focuses solely on the importance of learners' emotions in the process of learning academic subjects through the English language (EMI). Our main objective is therefore the analysis of the emotions toward the English language of university students studying in the different programs of the University of Extremadura in which instruction is carried out in that foreign language.

The Foreign Language Outreach Program (PALEx) of the University of Extremadura offers the option of enrolling in two foreign languages: English (PALEx-I) and Portuguese (PALEx-P). This program is divided into Basic, Intermediate and Advanced levels, although our research only involves students studying English at the Intermediate and Advanced levels. In the Basic level, resources, class presentations and evaluations are available in English, alongside office hours with the professor, but all classes are delivered in Spanish only, and therefore students studying at this level have not been the subject of our study. At the PALEx Intermediate level, subjects are partially offered in English, but the students have in English or Portuguese, the material necessary to follow the lessons, tutoring services (on demand) and the possibility to perform key tasks. Among them, we can highlight seminars, laboratory practices, field practices or debates on certain topics. As a prerequisite for the subject to be eligible for registration in the Intermediate PALEx, a minimum of 5 h of the activity in English or Portuguese must be scheduled during the semester in which the activity is to be taught. Regarding the Advanced level of the PALEx subjects are taught entirely in English and/or Portuguese, at least in one activity group. Only students taking subjects in English participated in our study.

We contacted all teaching staff in the UNEX intermediate and advanced PALEX and bilingual programs to ask them to allow us to carry out our study in the different faculties, and we received a response from most of the faculties where subjects were taught in English.

In addition to this foreign language outreach program, the university offers a bilingual program in which 50% of subjects are taught in English.

In this environment, we intend to answer the following questions:

RQ1: What are the emotions of the students at the University of Extremadura who are studying PALEx and the bilingual modality and who receive instruction through EMI?

RQ2: Are there gender differences in the emotions experienced by participants?

RQ3: Does the level of English affect the academic emotions of the students?

RQ4: What are the differences between the PALEx Intermediate and Advanced programs compared to the bilingual modality?

1.2 Importance of emotions in the teaching and learning process

Gardner (1983) explains that emotional intelligence (EQ) reflects a person's ability to understand others, recognize their motivations and collaborate effectively with them. In many cases, EQ plays a more important role than traditional intelligence (IQ) in achieving personal and professional success. Our ability to interpret others' signals and respond appropriately is crucial to individual success and career advancement. Therefore, developing emotional intelligence skills - such as understanding, empathy and negotiation - is essential. Without these skills, achieving success in life and work becomes much more difficult. He suggests an approach focused on identifying the strengths of each learner, understanding their preferred learning strategies for various types of content and supporting them to further develop their dominant intelligence. In this regard, Bisquerra (2003) states that of all the intelligences, interpersonal and intrapersonal intelligence are particularly relevant, as they are directly related to emotional intelligence. According to him, emotional competence can be defined as the set of knowledge, skills, abilities and attitudes essential to understand, express and manage emotional processes adequately. According to him, the purpose of education is to achieve the full and integral development of everyone's personality. This development encompasses at least two fundamental dimensions: cognitive and emotional development. The fundamental objectives of emotional education are to achieve a better understanding of one's own emotions, recognize the emotions of others, strengthen the ability to manage personal emotions, avoid the harmful effects of negative emotions, promote the generation of positive emotions, improve the capacity for self-motivation, maintain a positive attitude toward life and learn to experience states of fluidity, among others. In this regard, Lizarte Simón et al. (2024b) state that higher levels of pre-university success, psychological well-being, and self-efficacy in students are associated with greater academic achievement. Conversely, increased anxiety tends to reduce self-efficacy, psychological well-being, and academic engagement. They emphasize the importance of psychological well-being as a key factor in maintaining a positive balance between anxiety and academic engagement.

The significance of emotions in education has gained momentum in recent years, with studies highlighting their profound impact on the learning process. Hernik and Jaworska (2018) assert that students who attend joyful classes are happier and remember more information. Extensive evidence (MacIntyre and Gregersen, 2012; Méndez López and Peña Aguilar, 2013; Pulido Acosta and Herrera Clavero, 2017) suggests that negative deactivating emotions exhibited by teachers detrimentally affect the classroom environment, whereas positive activating emotions have a beneficial impact on student learning and motivation. In line with this, Martínez (2018), p. 1 points out that in recent decades there has been a growing interest in emotions in education, an interest that has been partly motivated by the conception of teaching as "an emotional practice" and of the classroom as "an emotional place".

Building upon these insights, Elizondo et al. (2018) note the importance of emotion as a guide to learning, as it marks experiences as either positive, and therefore attractive for learning or negative and therefore likely to be avoided. Similarly, González-Peiteado and Rodríguez-López (2017) state that the emotional dimension plays a significant role in how we absorb information. Research shows that

motivated people tend to succeed in their studies and maintain a positive attitude toward education.

Young (1999), p. 18 delves into the evolution of cognitive research in the 1980s, taking up the ideas of Joseph LeDoux, author of *The Ledoux* (1996) when he points that minds that lack emotions are soulless, inert beings, devoid of desire, fear, pain or pleasure. This sentiment is echoed by Diert Boté (2022) who argued in favor of recognizing the relevance of emotions and their connection to thinking and the learning process, a perspective supported by studies from various disciplines such as neuroscience (Barrett, 2017). In this regard they state that "despite being investigated as different phenomena, research has shown that beliefs and emotions appear to be highly interconnected" (Diert Boté, 2022, p. 145).

Like Elizondo et al. (2018), Acosta-Manzano (2021) also points out the importance of emotions in the teaching and learning process and like them admits that positive emotional states increase the efficiency of the cognitive process and the opposite effect on the cognitive process occurs in negative environments.

Cifuentes and Fenollar-Cortés (2017), p. 76 point out that emotions can be regulated in five stages of the emotional process: (1) choosing the situation, (2) altering the situation, (3) focusing attention, (4) adjusting beliefs and (5) controlling emotional, behavioral or psychological responses. Nowadays, emotions are gaining increasing relevance in our society, evidencing the need to integrate the emotional dimension both in educational research and in the development of the teaching-learning process. In this respect, Ramírez-Orduña et al. (2020) affirm that it is important to bear in mind that the learning process results from the interaction between cognitive and emotional factors.

Cifuentes and Fenollar-Cortés (2017), p. 77 indicate that recent research in the fields of psychology and neuroscience has shown that emotions play a fundamental role in students' motivation, interpersonal relationships and learning processes. The exploration of emotions and their effect on academic performance has mainly focused on negative emotions, revealing adverse associations between anxiety and school performance. However, research indicates that the impact of emotions varies according to the type of task and the context in which it is performed. In the same vein, Ramírez-Orduña et al. (2020) state that fortunately, multiple research projects indicate that it is possible to transform students' emotions from negative to positive through various strategies. These include employing innovative pedagogical methods and considering the social context in which students develop, to build meaningful teaching-learning processes. Therefore, several authors highlight the crucial importance of providing adequate emotional education to both trainee and active teachers, as they will be the ones who provide emotional support and guidance to students.

1.3 Emotions in foreign language learning

Authors like MacIntyre and Gregersen (2012), Li et al. (2020) or Lei and Lei (2022) point out the importance of emotions in learning a foreign language by stating that studies have demonstrated that emotions play a pivotal role in the success of Foreign Language Learning (FLL). Positive emotions can enhance the readiness of foreign language (FL) learners to assimilate new language knowledge, while negative emotions can diminish their focus and attention to

engage with language input. Moreover, authors such as [Dewaele and Alfawzan \(2018\)](#) or [Lei and Lei \(2022\)](#) state that, learners who feel more positive tend to excel in FLL because they are more attentive and aware of language input during class.

[Diert Boté \(2022\)](#) takes up the opinion of experts ([Dewaele, 2002](#); [Gregersen and Horwitz, 2002](#); [Horwitz et al., 1986](#)) who stated that traditionally, research on emotions in Second Language Acquisition (SLA) had been reduced to the study of negative emotions such as anxiety. He claims that it was authors such as [MacIntyre and Gregersen \(2012\)](#) that introduced the principles of Positive Psychology (PP) in SLA and who argued that, due to the amplification effect of positive emotions, students who experience positive emotions are more likely to be attentive to everything that happens in the classroom. In contrast, negative emotions limit the learner's perspective and thus restrict the scope of possible linguistic contributions. In this sense, [Dewaele and MacIntyre \(2014\)](#) state that positive emotions encourage curiosity and enjoyment, fostering opportunities for new encounters and enhanced learning. Both authors take up the theory of [Csikszentmihalyi \(1990\)](#) about experiencing enjoyment entails the opportunity to accomplish a task with focus, defined objectives, and prompt feedback.

Various authors ([Diert Boté, 2022](#); [MacIntyre and Gregersen, 2012](#)) point out the important role of the teacher in influencing students' emotions and in creating a safe environment where negative emotions are reduced. In the same sense, and following the advances reported by several authors ([MacIntyre and Gregersen, 2012](#); [Dewaele and MacIntyre, 2014, 2016](#); [Acosta-Manzano, 2021](#)) in the application of Positive Psychology to the field of FLL, learners who experience positive emotions have a greater capacity to acquire a foreign language, whereas negative emotions limit the learner's affective response to linguistic input. [Acosta-Manzano \(2021\)](#) talks about the need to attend to the affective reactions of students in everything related to methodology and classroom climate. According to her research, students react emotionally positively to playful, active, innovative and collaborative methodologies that involve interaction with peers, which gives them some control and autonomy. In the same vein, [González-Peiteado and Rodríguez-López \(2017\)](#) state that what makes people successful when faced with learning a foreign language is a psychological component. They collect research that concludes that students who have a high degree of motivation learn earlier and achieve better results when learning a foreign language. They also echo the claims of [Guillén et al. \(2013\)](#) when, on the contrary, they state that more unmotivated learners show greater pessimism, which affects intrinsic knowledge-oriented motivation. From our perspective, [Young \(1999\)](#), p. 5 aligns closely with the viewpoint of numerous experts who assert that language learning is very different from other subjects because we put learners in a very vulnerable situation, "you are asking them to reveal themselves in a way which is very threatening because when they do not know the language very well (...), they are unsure of what kind of expression they are giving and they feel threatened." Sometimes they feel that their peers might laugh at them and that is the reason why the atmosphere in the classroom should be one of acceptance and mutual respect, where the students know how to appreciate each other, the teacher values the students, and the students value the teacher.

In a research study carried out by [Diert Boté \(2022\)](#), the elements that learners indicate as most important for having positive experiences in the English classroom are analyzed, speaking activities

are highly valued by students, although some experience negative emotions due to lack of practice and unfavorable beliefs about speaking tasks and their own abilities. According to him, the relationship between beliefs and emotions is manifested in that emotions such as anxiety or embarrassment are often associated with beliefs that students have developed about themselves (self-beliefs) and their environment. For example, the feeling of embarrassment when speaking in public may arise from the belief that a peer will make fun of their performance or from the perception that the classroom is a place of judgment, which generates fear of criticism and leads the student to avoid speaking in class. On the other hand, in the studies carried out by [Young \(1999\)](#), pupils' testimonies show that their frustrations and anxieties may be due to interaction with teachers and peers, as well as unstimulating language activities, ineffective teaching methods and poor foreign language materials.

1.4 Feelings associated with language learning

[Acosta-Manzano \(2021\)](#) claims that most often, studies indicate that the positive feelings associated with learning a foreign language include a relaxed and motivating atmosphere, cultural and intellectual enrichment, personal satisfaction, increased self-esteem due to good results, and the enthusiasm and motivation with which learners come to class. Among these feelings, the relaxed and motivating atmosphere promoted by classmates and teachers is highlighted by most students. Moreover, the result of this positive context is that everyone attends class for pleasure, which encourages active participation and generates a very positive atmosphere in the classroom. According to [Hernik and Jaworska \(2018\)](#), in the realm of foreign language instruction, the role of the teacher extends beyond imparting knowledge to ensuring that students acquire understanding. Consequently, effective teaching necessitates an interactive dynamic between teacher and student. [Acosta-Manzano \(2021\)](#) points out that as far as personal satisfaction is concerned, students find pleasure both in seeing their results after previous effort and in realizing that, they have made progress and are able to communicate spontaneously without conscious preparation. Interaction with peers and the positive atmosphere created in the classroom, together with a dynamic, open and fun teacher, are effective in counteracting boredom in foreign language classes. Students also enjoy it when the teacher considers the emotional state of the class and encourages participation by adopting a motivating rather than a punitive approach to mistakes. Conversely, if the teacher generates negative feelings, students lose interest and simply wait for the lesson to end.

[Acosta-Manzano \(2021\)](#) highlights that the freedom to choose topics of interest is an additional source of enjoyment for students, as it motivates them to become more personally involved in the learning process. Situations in which students had to perform in real contexts, such as acting, giving speeches, improvising or making presentations in front of the whole class, are most frequently highlighted.

1.5 Students' emotions in an EMI context

[Yuan et al. \(2023\)](#) investigate the emotions experienced by preservice Chinese teacher students in an EMI teacher education

program in Macau. Their emotions were excitement and hope at the beginning of the program but during the first semester emotions such as disappointment, anger and boredom arose which resulted in states of confusion and marginalization due to their teachers' ineffective pedagogical practices. However, in the second semester, changes in the way various EMI courses were taught, caused positive emotions such as, appreciation, excitement and satisfaction revealing the importance of EMI teachers' work in molding students' emotions.

Hopkyns and Gkonou (2023) study analyses teachers and undergraduate students' emotions in an EMI institution in the United Arab Emirates. The authors describe EMI discourses as "sticky objects" as learners often attach emotions of pride and hope to EMI. The results of their study show the effects of variables such as linguistic background and language proficiency on the participants' emotions. Particularly, many of the students felt anxiety, shame, frustration and disappointment in relation to their English level but on the other hand, emotion of pride was associated with their attending an EMI university.

Different authors describe EMI environment as emotionally charged, Ellison (2021), p. 196 states that "EMI triggers many, often negative, emotions" that are linked to teachers' work. In the same way Kuteeva (2023) depicts EMI settings as being "surrounded by tensions" (p. 1). In this regards, Moncada-Comas (2022), p. 266 states that "some students perceive English as a barrier to disciplinary content learning, presuming a potential loss in content because of the language shift.

Hillman (2022) and Hopkyns (2020) found that EMI higher education students feel emotions of both shame and pride as they go through EMI institutions and their local communities where English is less appreciated.

Sahan and Sahan's (2023) study explore the emotional experiences of four graduates from EMI engineering program. The students felt anxiety and frustration about their English language proficiency and about the EMI training. Like in Hillman (2022) study, they also experienced pride at their accomplishment in English. The study suggests that every EMI student experiences different emotional responses according to their personal backgrounds.

2 Methods

The research was carried out among students at the University of Extremadura who were studying in English some subject of the different Degrees of the Program of Approach to Foreign Languages (PALEx) and the bilingual modality (Spanish-English) of the Degree in Primary Education offered in the Faculty of Teacher Training. The research design used is cross-sectional, descriptive, and non-correlational. The sampling carried out was not probabilistic.

2.1 Participants

The final sample of the present research was composed of 231 students from the bilingual specializations of the Bachelor's Degree in Primary Education, the Bachelor's Degrees in Business Administration, Economics, Labor Relations and Human Resources, the Bachelor's Degree in Business Administration and Law, and the Bachelor's Degrees in Physics and Veterinary Medicine at the University of

Extremadura on the Badajoz and Cáceres campuses. Of all participants 150 were women, 77 men and 4 persons did not answer this question.

The age range of the participants is between 18 and 44 years old, with the largest number of students between 18 and 20 years old (63,9%).

Regarding the enrolment of subjects in English in the different bachelor's degrees, most of the sample (93,5%) are students who are enrolling in these subjects for the first time, but only 58% of the participants are studying a subject in English for the first time.

Regarding the programs in which the participants are enrolled, we must emphasize that the highest number (55,4%) are enrolled in the bilingual mode of the Bachelor's Degree in Primary Education at the Faculty of Teacher Development; The next group is made up of students studying in the programs of Advanced PALEx (29,9%) and finally, Intermediate PALEx (14,7%).

2.2 Research instrument

The main objective of our study is to evaluate the emotions experienced by students when taking academic subjects in English in various university degrees, regardless of their content, since they are taught in a language other than Spanish. The short version of the Achievement Emotions Questionnaire -AEQ-S (Pekrun et al., 2002; 2005), developed and validated by Bieleke et al. (2021), is used for this purpose. This version assesses nine academic emotions: four positive (fun, hope, pride and relief) and five negative (rage, anxiety, despair, embarrassment and boredom), relating to class, learning and test settings. In our case we have focused exclusively on the class-related settings items. According to Bieleke et al. (2021), the reliabilities of the AEQ-S scales were satisfactory, ranging from $\alpha = 0.64$ to $\alpha = 0.88$ ($M\alpha = 0.76$) in the reanalysis of the Pekrun (2011) dataset and from $\alpha = 0.63$ to $\alpha = 0.84$ ($M\alpha = 0.77$) in the validation study. Thus, Cronbach's α of the AEQ-S scales was on average $M\Delta = 0.09$. This finding was robust across class-related, learning-related, and test-related emotions ($M\Delta = 0.09/0.09/0.09$ in the reanalysis and $M\Delta = 0.09/0.09/0.08$ in the validation study).

Each questionnaire consists of 16 questions on personal data, academic background, place and number of years of study of foreign languages and the skills related to their learning; 32 items on an increasing Likert scale on the emotions experienced in the classroom during the process of learning English language subjects. In addition, there are 13 questions to express whether they have positive or negative emotions in relation to aspects such as classroom pedagogy, the attitude of the teacher teaching the subject, the evaluation system, the motivation with respect to learning the subject or the classroom climate. Finally, two open questions and four multiple-choice questions on issues such as degree of satisfaction with the subjects taken in English.

2.3 Procedure and data analysis

Data were collected in the second semester of the academic year 2022–23 and in the first semester of the academic year 23–24.

The questionnaire was completed online, on a form designed for this purpose, requesting the teachers who taught the subjects in English, both in the programs Intermediate and Advanced PALEx, as

in the bilingual modality, to upload them to the Virtual Campus to allow access to them. In all cases, after contacting with the teaching staff involved, the research team made themselves present in the participating classrooms to inform about the study and to resolve any doubts that might arise among the collaborating students.

Prior to the passing of the questionnaires, the Bioethics Committee of the University of Extremadura approved the study under number 30/2023, designing an informed consent form that participants were required to sign before completing. Participation was therefore voluntary and anonymous.

Once the data was collected and processed, they were analyzed with the IBM SPSS statistical package, version 23, developing descriptive and inferential analyses, once it had been determined what type of parametric or non-parametric tests of comparison of means should be carried out.

3 Results

RQ1: What are the emotions of the students at the University of Extremadura who are studying PALEx and the bilingual modality and who receive instruction through EMI?

Only 58% of the participants are studying a subject in English for the first time. We asked 42% of the remaining students who had taken another subject in English at university whether their emotions had evolved with respect to the fact that they are taught in English and whether this evolution has been positive or negative. In this case, these emotions have evolved for 35.5% of the participants and not for 13.9%. A high percentage (85.4%) consider that this evolution has been positive, while only 12.2% believe that it has been negative.

In addition to the personal data questions, students were asked to rate 32 statements on a 1 (strongly disagree) to 5 (strongly agree) Likert scale. Subsequently, they had to choose between positive or negative emotions toward 13 items always related to feelings arising from taking subjects in English and open-ended questions about their satisfaction with the subject.

The following sections begin by presenting the results in a general descriptive manner and then, the results in relation to the variables analyzed: gender, program and self-perceived level of English.

3.1 Overall results on emotions

Table 1 gathers the descriptive statistics of the different emotions.

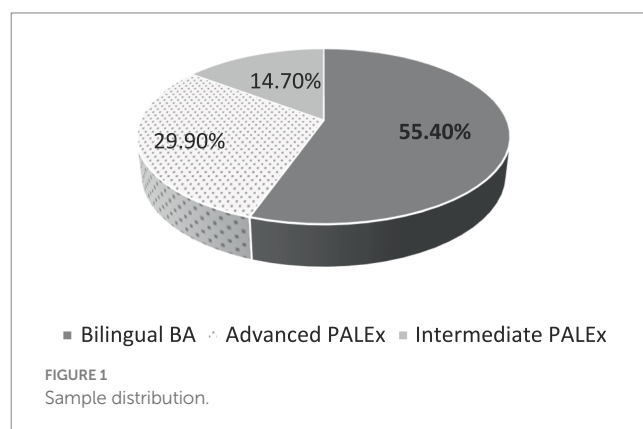
As can be observed in Figure 1, globally *pride* is the emotion that is most experienced by students (3.65 ± 0.72) followed by *Hope* (3.47 ± 0.77) and *enjoyment* (3.07 ± 0.79). The most experienced negative emotion among the participating students is *boredom* (2.82 ± 1.12) closely followed by *shame* (2.46 ± 1.07) and *anxiety* (3.65 ± 0.89). At the bottom of the list of emotions felt least by participants are *anger* (2.10 ± 0.82) and *hopelessness* (1.8 ± 0.83).

3.2 Results on emotions according to the variable of gender

RQ2: Are there gender differences in the emotions experienced by participants?

TABLE 1 Descriptive statistics of emotions.

EMOTION	MIN	MAX	MEAN	SD
Enjoyment	1	5	3,07	,796
Hope	1	5	3,47	,779
Pride	1	5	3,65	,725
Anger	1	5	2,10	,829
Anxiety	1	5	2,25	,897
Shame	1	5	2,46	1,072
Hopelessness	1	5	1,80	,832
Boredom	1	5	2,82	1,122



As already mentioned, when presenting the sample data, this study was made up of 150 women and 77 men, plus 4 people who did not answer this question. Table 2 shows the descriptive values of global emotions according to this variable.

Thus, we observe that the mean of *enjoyment* in the case of women is 3.28 to 3.17 in men; in the case of *hope* the average among women is 3.65 compared to 3.62 in men. The values of *pride*, the last positive variable analyzed, are also greater in women (3.79 versus 3.64) in relation to men.

In terms of emotions that we might consider negative for learning subjects in English, greater values in male participants are highlighted in the case of *anger* (1.94 in contrast to 1.89 in women) and of *boredom* (2.66 to 2.47). Yet, for women the emotions of *anxiety* (2.05 vs. 1.96), *shame* (2.31 to 1.97) and *hopelessness* (1.69 against 1.62) are greater than those of men.

To find out whether these differences between men and women about emotions are significant, we have developed comparisons of means using non-parametric tests, as the assumption of normality of the data is not met. Analyzing the results by means of the Mann–Whitney U test, there are only differences between men and women in the case of the emotion of *shame* ($Z = -2.555$, $p = 0.011$), which women experience significantly more than men.

3.3 Results on emotions according to the variable of self-perceived level of English

RQ3: Does the level of English affect the academic emotions of the students?

TABLE 2 Descriptive statistics of emotions by gender.

Emotion	Gender	Min	Max	Mean	SD
Enjoyment	Men	1	5	3,17	,78
	Women	1	5	3,28	1,36
Hope	Men	1	5	3,62	,79
	Women	1	5	3,65	,83
Pride	Men	1	5	3,64	,72
	Women	1	5	3,79	,71
Anger	Men	1	5	1,94	,80
	Women	1	5	1,89	,86
Anxiety	Men	1	5	1,96	,84
	Women	1	5	2,05	,88
Shame	Men	1	5	1,97	,91
	Women	1	5	2,31	1,01
Hopelessness	Men	1	5	1,62	,77
	Women	1	5	1,69	,86
Boredom	Men	1	5	2,66	1,05
	Women	1	5	2,47	1,13

Regarding foreign language proficiency, nearly half of the participating students (48.5%) claim to know two foreign languages, followed by a 33.8% who knows only one. This percentage drops to 15.2% in the case of proficiency in a third language. Nevertheless, when asked about the accredited level of language proficiency, there is a very high percentage of students (86.6%) who are not officially accredited at any level.

Due to this circumstance, we wanted to know what their self-perceived level of English proficiency was; therefore, they were asked to relate their level of competence to the levels of proficiency set out in the *Common European Framework of reference for Languages* (CEFR. European Union for Council of Europe, 2001). Figure 2 shows the distribution of the sample by level.

This figure shows that the highest number of participants (39.4%) consider themselves to have a B1; followed by those who consider themselves to have achieved a B2 level. (35.1%). Meanwhile, 1.3% consider themselves to have an A1 level; 10% believe they have an A2 level of English and 7.4% believe they have a C1 level. Only 2 students state that they believe they have a C2 level.

Table 3 presents the means of the different emotions considering this variable.

When analyzing the variable of self-perceived level of English in positive emotions we observe that in the case of *enjoyment* the average is higher at the level of the participants who believe they have the levels A1 and C2, although in the latter case it only involves 2 students. When we refer to *hope* and *pride* the upper average is that of B2 and C2 students.

In the case of negative emotions such as *anger*, *anxiety* and *shame* the upper average is that of A2 and C2 pupils. In the case of *hopelessness*, it is the A1 and C2 students who have the highest average and A1 and C1 when it comes to boredom. In the case of *hopelessness*, it is A1 and C2 students who have the highest average and A1 and C1 when it comes to *boredom*.

With the aim of testing whether the self-perceived level of English determines differences in the mean scores of the different emotions, we again conducted inferential analyses.

For the emotions of pride and boredom, a 1-factor ANOVA has been developed, which indicates that there are no differences in these emotions taking into consideration the self-perceived level of English. For the rest of the emotions, the Kruskal Wallis test reports that there are differences in the emotions of *enjoyment* ($-2.361, p=0.018$; hope: $-3.556, p=0.000$; shame: $-2.256, p=0.024$), between the levels A2 & C1 and A2 & C2, respectively, for hope (A2-C1: $-2.422, p=0.015$; A2-C2: $-1.967, p=0.040$); between levels B1 & B2, again, for the three emotions [*enjoyment*: $-2.654, p=0.008$; hope: $-2.383, p=0.017$; shame: $-2.433, p=0.015$] and, finally, between levels B2 & C1 to hope ($-2.170, p=0.030$).

3.4 Results on emotions according to the type of program attended

RQ4: What are the differences with respect to the emotions of students in the PALEx Intermediate and Advanced programs compared to the bilingual modality?

Regarding the programs in which the participants are enrolled, bilingual and PALEx programs, we should point out that the highest number of students (55.4%) are enrolled in the bilingual mode of the Bachelor's Degree in Elementary Education at the Faculty of Teacher Training; then there would be the students studying in the Advanced PALEx programs (29.9%) and finally, Intermediate PALEx (14.7%).

As our study focuses on the analysis of emotions in programs in which English language is used for teaching other academic subjects (EMI), we have analyzed *enjoyment*, *hope*, *pride*, *anger*, *anxiety*, *shame* y *boredom*, taking into account as a variable of analysis the program studied by the participants, i.e., bilingual grade and intermediate and advanced PALEx, considering these two together for the descriptive and inferential analyses. Table 4 presents the mean scores for the different emotions considering this variable.

In the case of positive emotions, we observe that the average for intermediate and advanced PALEx is higher than that of the bilingual modality of Elementary Education. Thus, in the case of *enjoyment* is of (3.44) in PALEx versus (3.08) in the bilingual modality, the same is true for the emotions of hope (3.81 to 3.48) and pride (3.82 to 3.65). In contrast, when it comes to negative emotions, the average is higher in the bilingual mode. This is the case with the emotions of *anger* (2.10 in bilingual versus 1.73 in PALEx); *anxiety* (2.25 to 1.79); *shame* (2.47 facing 1.91), *hopelessness* (1.80 against 1.57) and finally, *boredom* (2.82 compared to an average of 2.21),

Non-parametric tests are appropriate for this variable, as again the assumption of normality is not met for any of the emotions. Mann-Whitney U test performed indicates that there are significant differences between the two programs with respect to all emotions. (*enjoyment*: $Z = -3,311, p=0.001$; *hope*: $Z = -3,432, p=0.001$; *anger*: $Z = -4,371, p=0.000$; *anxiety*: $Z = -4,469, p=0.000$; *shame*: $Z = -4,163, p=0.000$ y *hopelessness*: $Z = -2,744, p=0.006$), except for *Pride* ($Z = -1,898, p=0.058$), where no differences are recorded. In the case of *enjoyment* and *hope*, both positive emotions, the differences are in favor of the PALEX Group, whereas in *anger*, *anxiety*, *shame*, *hopelessness* and *boredom*, all of them negative

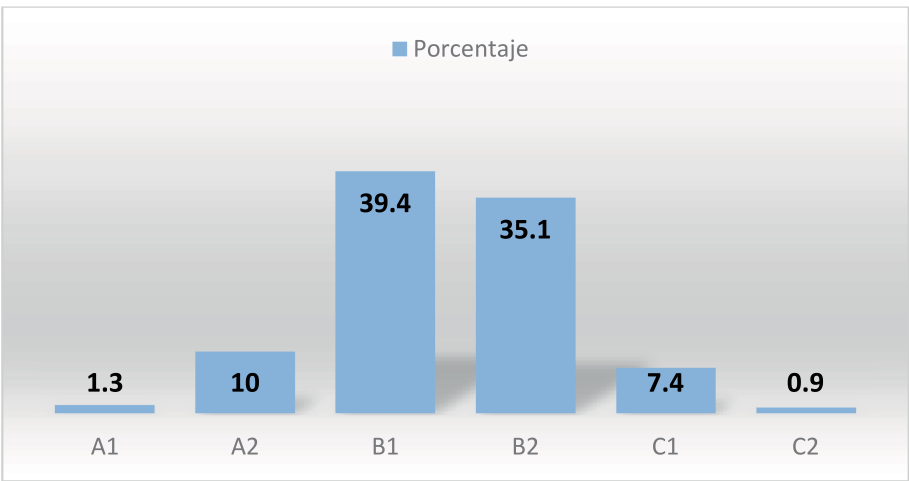


FIGURE 2
Participants' self-perceived level of English according to the CEFR.

TABLE 3 Mean of emotions according to self-perceived level of English.

Level of English/ Emotion	A1	A2	B1	B2	C1	C2
Enjoyment	3,67	2,95	3,11	3,45	3,21	4
Hope	3,67	3,18	3,54	3,86	3,74	4,5
Pride	3,83	3,64	3,65	3,87	3,72	3,88
Anger	1,83	2,11	1,95	1,82	2,09	2,25
Anxiety	2,08	2,37	2,12	1,83	2,01	2,5
Shame	2,08	2,63	2,26	1,99	2,5	2,88
Hopelessness	2	1,98	1,71	1,53	1,79	2,88
Boredom	2,75	2,58	2,57	2,52	2,68	2,63

emotions, it is the students in the bilingual program who experience significantly more of these emotions than their peers in the PALEX program do.

4 Discussion

In the same way as we have expounded throughout our work, the analysis of emotions is fundamental for analyzing motivation to learn a foreign language, as well as for understanding the barriers that hinder this educational experience. Research on EMI, in which English is used as a means of instruction, is a relatively recent field, but its extension in higher education worldwide makes it necessary to look more deeply into the aspects that may condition the learning of the students.

In this sense, research is needed to help us understand the positive and negative emotions experienced by students in EMI contexts, how they relate to each other and what their value is in the learning of subjects in English. In this regard, Dewaele and MacIntyre (2016), p. 215 state that both teachers and learners refer to the concept of *enjoyment* and consider it relevant to language learning and a fundamental part of the learning and communication process. Dewaele

TABLE 4 Mean of emotions depending on the programs.

Emotion	Bilingual degree	PALEX
Enjoyment	3,08	3,44
Hope	3,48	3,81
Pride	3,65	3,82
Anger	2,10	1,73
Anxiety	2,25	1,79
Shame	2,47	1,91
Hopelessness	1,80	1,57
Boredom	2,82	2,21

and MacIntyre (2014) pointed out that participants who were proficient in many languages and who had achieved a high level of proficiency in a foreign language had more FLE (Foreign Language Enjoyment) and lower levels of FLCA (Foreign Language Classroom Anxiety). However, what is certain is that, as Dewaele and MacIntyre (2016), p. 233 point out, FLE is in a different dimension to FLCA; although there is a negative correlation between them, the fact is that “the absence of FLCA does not automatically mean that FLE is present”.

Many authors use the definitions of *enjoyment* and *boredom* as the most representative definitions of positive and negative emotions (Obergrösser and Stoeger, 2020; Pekrun, 2006; Pekrun, 2011; Pekrun, 2018; Linnenbrink, 2007). To them *enjoyment* is characterized as a constructive, energizing emotion and falls under the category of activity emotions. On the other hand, *boredom* is identified as an adverse, disengaging emotion and is categorized as an activity emotion. It occurs when there is a mismatch between an individual's personal objectives and the assigned task, or when there is a lack of specific objectives.

In relation to our first question, the results above, which offer the general description of the emotions felt by students taking subjects in English, appear *pride*, *hope* and *enjoyment*. All of them positive emotions, which would imply enthusiasm and willingness to study in this language. In this sense, Hernik and Jaworska (2018), p. 0513 state that “joy can bring positive experiences and outcomes. It can bring

even enthusiasm, if there is feeling of challenge, cooperation, excitement and success”.

Various studies (Block and Khan, 2021; Hopkyns and Gkonou, 2023; Sah and Fang, 2023; Yuan et al., 2021; Şahan and Sahan, 2023) show that it's not all positive when it comes to EMI, since *boredom*, *shame* and *anxiety* are experienced largely by the participating students. All of them related to each other and to the fact that the pupil who is not able to understand a foreign language gets bored in class; to the embarrassment or fear of making a fool of oneself by having to speak in a foreign language in front of one's classmates and finally to the anxiety that this process can produce in the pupil. In this regard, and according to Obergriesser and Stoeger (2020), p. 2 “boredom might also be experienced when there is a lack of control over the activity because demands exceed individual capabilities (i.e., in over-challenging situations)”.

The fact that *anger* and *hopelessness* are the emotions experienced to a lesser extent indicates that the learner does not lose hope in learning a subject in English and that this process does not involve *anger*.

Regarding the gender variable, Cifuentes and Fenollar-Cortés (2017) indicate that there is a disparity in emotional expression between men and women, with men being generally less expressive than women are. Those with a high level of emotional expressiveness tend to have higher self-esteem, experience greater happiness, are less likely to experience loneliness, and show better performance in social situations. Furthermore, there is evidence to suggest that those who express their emotions tend to have better cognitive functioning, while those who repress their emotions may face difficulties in cognitive tasks.

In our research, and regarding the gender variable, the subject of our second research variable, it should be noted that, although 4 participants do not answer this question, the number of female participants (150) in our study is almost double the number of male participants (77). Just as we pointed out above, and in relation to the learning of subjects in English, significant differences between men and women were only observed in the case of *shame*, emotion experienced more by women than by men. The average number of women who feel positive emotions such as *hope*, *enjoyment* and *pride* is higher than that of men. The same applies to emotions that we could call negative for learning a foreign language, such as *anxiety* and *hopelessness*. However, in the case of men, their average is higher in the emotions of *anger* and *boredom*, which could indicate a lower degree of patience among male participants when working on different subjects in English. These results are therefore in line with the assertion of Dewaele and MacIntyre (2016), p. 217, in which they emphasized that “women experienced both higher FLE and higher FLCA”.

In response to our RQ2, we could point out that women enjoy more learning subjects through the English language, but at the same time, *shame* and the fact that they are unable to meet their expectations leads them to suffer from anxiety or disappointment to a greater extent than men.

As in previous studies, in our research (Hopkyns and Gkonou, 2023; Hillman, 2022; Hopkyns, 2020) students have experienced emotions of pride and hope, being globally the most experienced emotions. The fact that *anger* and *hopelessness* are the emotions experienced to a lesser extent indicates that the learner does not lose hope in learning a subject in English and that this process does not involve anger.

In response to our RQs 3 and in relation to the self-perceived level of English, it is very important to remark that, according to the results obtained, the self-perceived level of English is relevant for experiencing positive emotions. Thus, with respect to *enjoyment* and *hope*, the higher the level, the more enjoyable the English classes are and the more hope for success. In relation to the negative emotion of *shame*, this is experienced significantly more by students with lower levels of English.

Regarding the influence of the type of program studied, aspect covered by our RQ4, the positive emotions of *enjoyment*, *hope* and *pride* are higher in PALEx programs above the values of the bilingual modality. The latter has higher values of *anger*, *anxiety*, *shame*, *hopelessness* and *boredom*. This could be explained by the fact that the bilingual program has a higher number of subjects taught in English and therefore the demands on them are higher, hence they experience more negative emotions.

Given the variability of individual students' emotional responses in both programs, we agree with Şahan and Sahan (2023) that “EMI students' emotional experiences are unique, and there is *no one-size-fits-all* experience of EMI”.

In further research, individual interviews could explore to what extent the students' responses to the questionnaire were underreported to present themselves in socially acceptable terms, as negative emotions can be considered undesirable.

Before coming to the conclusions, we would like to point out as a limitation of our research that there are a higher number of participants in the bilingual Primary Education program than in the intermediate and advanced PALEx programs. This is because the number of PALEx students in each group is smaller and is very much divided between the different grades and districts of the university. On the other hand, the bilingual modality is more numerous and is concentrated in the Elementary Education degree at the Faculty of Teacher Training in Cáceres.

5 Conclusion

Emotions play a crucial role in motivating and overcoming barriers in subject teaching through English language instruction (EMI). Positive emotions, such as *enjoyment*, *pride* and *hope*, foster enthusiasm and willingness to learn, while negative emotions, such as *boredom*, *shame* and *anxiety*, often stem from language comprehension problems and fear of public speaking. Although *anger* and *hopelessness* are less frequent, the absence of *anxiety* does not guarantee *enjoyment*, highlighting the complexity of emotional dynamics in EMI. Gender differences reveal that women report higher levels of positive and negative emotions, while men experience more *boredom* and *anger*, suggesting different emotional responses to challenges. Higher self-perceived English proficiency correlates with greater *enjoyment* and *hope*, while lower proficiency is associated with *shame*. Program type also influences emotions: PALEx students report more *enjoyment*, *hope* and *pride*, while students in Bilingual programs experience higher levels of *anxiety*, *shame*, *hopelessness* and *boredom*, probably due to greater academic demands. This fact is particularly relevant if we assume that students in the bilingual program have a special relationship with the English language as they freely choose to study 50% of their subjects in English rather than in their mother tongue. Despite limitations in the distribution of participants across programs,

these results highlight the need to address both emotional and pedagogical factors in EMI to improve students' learning experiences.

Future studies should explore how specific teaching strategies can mitigate negative emotions such as *anxiety*, *shame* and *boredom* in EMI settings, while fostering positive emotions such as *enjoyment*, *pride* and *hope*. Research could also delve into how gender differences influence emotional experiences over time and whether specific interventions can reduce emotional disparities between male and female students. In addition, investigating the long-term emotional and academic outcomes of students in PALEx versus bilingual programs would provide further insight into how program structure affects emotional well-being. Another important alternative is to examine the role of teacher training in emotional awareness and management within EMI classrooms and whether emotionally intelligent teaching practices can improve learning outcomes.

Upcoming educational interventions should explore how specific teaching strategies can mitigate negative emotions such as *anxiety*, *shame* and *boredom* in EMI settings, while fostering positive emotions such as *enjoyment*, *pride* and *hope*. Research could also delve deeper into how gender differences influence emotional experiences over time and whether specific interventions can reduce emotional disparities between male and female students. In addition, investigating the long-term emotional and academic outcomes of students in PALEx versus Bilingual programs would provide further insight into how program structure affects emotional well-being. Another important aspect to investigate is the role of teacher training in emotional awareness and management within EMI classrooms and whether emotionally intelligent teaching practices can improve learning outcomes.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Bioethics and Biosafety Committee of the University of Extremadura 37/2022.17th March 2022. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

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MCGM: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing, Data curation, Resources, Software. MIMB: Conceptualization, Formal analysis, Validation, Visualization, Writing – review & editing.

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Appendix 1

Achievement Emotions Questionnaire (Short version) -AEQ-S

Class-related emotion
Attending classes at university can induce different feelings. The following questions refer to emotions you may experience when being in class at university. Before answering the questions, please recall some typical situations of being in class which you have experienced during the course of your studies. Please indicate how you feel, typically, when being in class. Please read each statement carefully and respond using the scale provided.
Enjoyment
I enjoy being in class.
I am looking forward to learning a lot in this class.
I am motivated to go to this class because it's exciting.
I enjoy participating so much that I get energized.
Hope
I am confident when I go to class.
I am full of hope.
I am confident because I understand the material.
Being confident that I will understand the material motivates me.
Pride
I am proud of myself.
I think that I can be proud of what I know about this subject.
Because I take pride in my accomplishments in this course, I am motivated to continue.
When I do well in class, my heart throbs with pride.
Anger
I am angry.
When I think of the time I waste in class I get aggravated.
I wish I did not have to attend class because it makes me angry.
I feel anger welling up in me.
Anxiety
I feel nervous in class.
Even before class, I worry whether I will be able to understand the material.
Because I'm so nervous I would rather skip the class.
I get tense in class.
Shame
I get embarrassed.
When I say anything in class I feel like I am making a fool of myself.
After I have said something in class I wish I could crawl into a hole and hide.
Because I get embarrassed, I become tense and inhibited.
Hopelessness
I feel hopeless.
I have lost all hope in understanding this class.
Because I've given up, I do not have energy to go to class.
I feel so hopeless all my energy is depleted.
Boredom
I get bored.
The lecture bores me.
I think about what else I might be doing rather than sitting in this boring class.
I get restless because I cannot wait for the class to end.