

The Interplay between Basic Psychological Needs and Emotions in the Foreign Language Learning Context: Pedagogical Implications

La interacción entre las necesidades psicológicas básicas y las emociones en el contexto de aprendizaje de lenguas extranjeras: Implicaciones pedagógicas

Fernando D. Rubio-Alcalá
Universidad de Huelva
fernando.rubio@dfing.uhu.es

Natalia Velázquez-Ahumada
Universidad de Huelva
nataliavelazquezahumada@gmail.com

Francisco Javier Ávila-López
Universidad de Córdoba
ff1avlof@uco.es

Abstract

Emotions play a major role in the process of learning. The purpose of the present study is to examine whether autonomy, competence, relatedness, and novelty (basic psychological needs) affect the emotions of pride, enjoyment, boredom, hopelessness, anger, and anxiety in the context of foreign language learning. We first studied

whether the Basic Psychological Needs Scale (BPNS) would be reliable, adding novelty to the original scale, and then administered the BPNS and the Achievement Emotions Questionnaire (AEQ) to 194 students to investigate whether BPN predicts certain emotions (RQ1). We further performed multiple regression analyses to study the specific predictions of BPN factors with AEQ factors (RQ2). The findings affirm the necessity of incorporating the basic psychological need for novelty into the theoretical framework. Among the basic psychological need variables, competence emerged as the highest value. Additionally, the emotion of enjoyment was identified as the most influential factor. Furthermore, the study yielded additional results and highlighted pedagogical implications.

Keywords: Basic psychological needs, emotions, language learning, novelty.

Resumen

Las emociones desempeñan un papel fundamental en el proceso de aprendizaje. El propósito del presente estudio ha sido examinar si la autonomía, la competencia, la relación con los demás y la novedad (necesidades psicológicas básicas) influyen en las emociones de orgullo, disfrute, aburrimiento, desesperanza, ira y ansiedad en el contexto del aprendizaje de una lengua extranjera. En primer lugar, analizamos si la Escala de Necesidades Psicológicas Básicas (BPNS) resultaría fiable al añadir la novedad a la escala original. Posteriormente, administramos la BPNS y el Cuestionario de Emociones de Logro (AEQ) a 194 estudiantes para investigar si las necesidades psicológicas básicas son predictores de ciertas emociones (RQ1). Además, realizamos análisis de regresión múltiple para estudiar las predicciones específicas de los factores de la BPNS con los factores del AEQ (RQ2). Los hallazgos confirman la necesidad de incorporar la necesidad psicológica básica de novedad en el marco teórico. Entre las variables de necesidades psicológicas básicas, la competencia emergió con el valor más alto. Además, la

emoción de disfrute se identificó como el factor más influyente. Asimismo, el estudio ha arrojado resultados adicionales y ha puesto de relieve implicaciones pedagógicas.

Palabras clave: necesidades psicológicas básicas, emociones, aprendizaje de idiomas, novedad.

1. Introduction

Since Arnold's (1999) work on emotions in language learning, the affective domain has gained increasing recognition. Language teachers, who are typically focused on academic goals, increasingly consider students' emotional well-being as part of their educational process. However, many learners remain demotivated, anxious, or passive, negatively impacting the classroom climate. Although emotions are known to play a significant role in learning, many studies have examined them isolated from cognitive factors, leaving a gap in understanding how these elements interact to affect educational outcomes. Furthermore, this study focuses on pride, enjoyment, boredom, hopelessness, anger, and anxiety because these emotions are among the most salient in FL classrooms, as they strongly influence learners' motivation, engagement, and overall classroom climate. Pride and enjoyment reflect positive experiences that promote active participation, whereas boredom, hopelessness, anger, and anxiety represent negative emotions frequently reported by students and linked to demotivation and passivity. Examining these emotions in relation to basic psychological needs allows for a more integrated understanding of the interaction between motivational and affective factors in language learning.

Self-Determination Theory (SDT) is a theoretical approach that addresses the interplay between emotional and motivational factors in learning (Deci & Ryan, 1985). Central to SDT are Basic Psychological Needs (BPN), which include autonomy, competence, and relatedness. Fulfilling these needs promotes optimal functioning and personal growth inside and outside the classroom. Autonomy refers to a sense of control, competence refers to a sense

of capability, and relatedness to feeling connected to others (Ryan & Deci, 2017). Research has revealed that supporting BPNs enhances student motivation, engagement, and academic success (Kanat-Maymon et al., 2015, Niemiec & Ryan, 2009; Zhen et al., 2017).

Recent studies, including Vansteenkiste et al. (2020), have suggested that novelty should be considered an additional BPN alongside autonomy, competence, and relatedness. Bagheri and Milyavskaya (2020) incorporated novelty into their theoretical framework, noting that it meets Ryan and Deci's (2017) criteria. González-Cutre et al. (2016) also supported novelty as a distinct need, showing that its frustration reduces well-being. Birdsell (2018) found that satisfying novelty, along with the other three needs, positively impacts engagement in language learning, whereas frustration leads to negative outcomes. Therefore, incorporating novelty into the BPN framework is justified.

Despite the increased focus on the affective domain, much research on language learning emotions remains fragmented, with limited focus on how emotional and cognitive factors interact. This study explores the relationship between BSN and various emotional experiences within the context of language learning. According to the SDT, autonomy, competence, and relatedness are critical for fostering intrinsic motivation and well-being (Ryan & Deci, 2000). When these needs are met, students experience greater engagement and personal growth. Conversely, frustrated needs lead to disengagement and negative emotional experiences (Noels et al., 1999). Fostering autonomy in the language classroom allows learners to feel in control of their learning process, competence boosts their confidence in mastering the language, and relatedness fosters a sense of community and support from peers and instructors. Language learning often induces strong emotional responses. Pekrun et al. (2007) classified emotions based on their valence (positive or negative) and activation (activating or deactivating). Positive emotions, such as pride and enjoyment, can enhance motivation and learning outcomes, whereas negative emotions, such as anxiety, boredom, and hopelessness, can hinder academic success.

Pride, defined as a sense of accomplishment and satisfaction (Stoeber et al., 2013), is a positive, self-conscious emotion that requires self-evaluation (Lewis, 2008; Tangney, 2002). This study focuses on authentic pride (achievement-based) rather than hubristic pride (identity-based), with the latter being linked to narcissism (Tracy & Robins, 2007). Authentic pride is typically moderate (Ross & Stracke, 2016) and emerges when students overcome challenges in foreign language learning, fostering motivation and confidence. Pride can differ based on context: in classrooms, it arises from external validation, whereas it is more profound in real-world communication (Dewaele & MacIntyre, 2014; Ross & Stracke, 2016). Additionally, cultural background may influence pride experiences (Kitayama et al., 2000). Foreign Language Enjoyment (FLE) also plays a crucial role in language acquisition, as emphasized by positive psychology (MacIntyre & Gregersen, 2012). FLE reflects students' efforts to overcome challenges and enhance proficiency. This aligns with Fredrickson's (2001) broaden-and-build theory, which suggests that positive emotions expand awareness and foster creativity, thus building practical skills and psychological resources. FLE is also linked to Pekrun's (2006) control value theory of achievement emotions. Dewaele and Dewaele (2017) identified three FLE dimensions: social, private, and classroom atmosphere. FLE directly influences achievement and indirectly impacts it through teacher and student support (Dewaele & MacIntyre, 2019; Zhang et al., 2020). Promoting FLE in classrooms increases motivation, engagement, and long-term success (Zeng, 2021).

Conversely, boredom is a negative emotion linked to low arousal, cognitive stimulation, and altered perceptions of time (Goetz & Hall, 2014). It is considered a highly deactivating and unpleasant experience (Pawlak et al., 2020). Various theories explain boredom in education, such as the forced-effort model (Perkins & Hill, 1985), under-stimulation paradigm (Larson & Richards, 1991), and Harris' attentional hypothesis (2000). Boredom is associated with stress, lower risk-taking, and lower motivation (Daschmann et al.,

2011; Pekrun et al., 2010; Thackray, 1981). Pekrun's (2006) control value theory describes it as a multidimensional construct driven by perceived low controllability, negatively impacting language performance (Dewaele et al., 2023; Li et al., 2023). Specifically, Foreign Language Learning Boredom (FLLB) has been increasingly studied in the context of language learning emotions (Li et al., 2023). Factors such as tasks, teachers, and class organization contribute to boredom (Kruk et al., 2022; Zawodniak et al., 2021). Teacher-student relationships are key predictors of boredom (Chapman, 2013), with students feeling disengaged and trapped in slow-moving classes (Shernoff et al., 2003; Weinerman & Kenner, 2016).

Similarly, hopelessness occurs when learners feel that success is unattainable, leading to a lack of effort and motivation (Pekrun et al., 2007). During language learning, hopelessness can stem from repeated failure or unrealistic expectations. Although less studied in this context, anger can arise from frustration, for example, when learners face obstacles or feel unfairly treated by teachers. Both emotions can negatively impact engagement and should be addressed through supportive teaching practices. Likewise, anxiety, particularly Foreign Language Classroom Anxiety (FLCA), is among the most researched emotions in language learning. Horwitz et al. (1986) defined it as a complex of self-perceptions, beliefs, feelings, and behaviors related to language learning, driven by factors such as communication apprehension, test anxiety, and fear of negative evaluation. Horwitz (2017) attributed FLCA to learners' discomfort when they cannot communicate authentically. Botes et al. (2020) conducted a meta-analysis and revealed a negative relationship between FLCA and academic achievement. Personality traits such as neuroticism and perfectionism are strongly linked to FLCA, with introversion, emotional intelligence, and self-esteem also playing roles (Dewaele, 2013; Dewaele & Al-Saraj, 2015). FLCA is negatively correlated with various personal domains such as self-esteem (Rubio-Alcalá, 2017) and intrinsic motivation (Liu & Zhang, 2013).

The relationship between BPN and emotions in language

learning is dynamic. For instance, when students feel autonomous, they are more likely to experience positive emotions, such as enjoyment and pride, which reinforces their sense of competence and relatedness. Conversely, when these needs are unmet, learners are more likely to experience negative emotions, such as boredom, anxiety, and hopelessness, which diminish their motivation and performance. Understanding the interplay between BPN and emotions is essential for fostering an effective and supportive language learning environment. Emotions play a significant role in shaping learners' motivation and academic outcomes. By addressing students' needs for autonomy, competence, novelty, and relatedness, teachers can create a positive emotional climate in the classroom, reducing negative emotions such as anxiety and boredom while promoting enjoyment, pride, and engagement. This approach can lead to more successful language learning experiences for all students.

2. Method

2.1. Research questions

This study addresses two research questions (RQs).

- RQ1: Is the Basic Psychological Needs Scale (BPNS), with the added dimension of novelty, a reliable instrument, and to what extent do basic psychological needs predict emotions as measured by the Achievement Emotions Questionnaire (AEQ) among foreign language learners?
- RQ2: To what extent do the basic psychological needs of autonomy, competence, relatedness, and novelty influence the emotions of pride, enjoyment, boredom, hopelessness, anger, and anxiety in the context of foreign language learning?

2.2. Participants

Participants in the study were 194 secondary school students (45.5% males, 46.5 females, and 8% who did not wish to provide information) from the south of Spain. All participants spoke Spanish as their first language. The average age of the participants was between 12 and 18 years ($M = 15.6$, $SD = 1.15$). Of the participants, 71 attended extracurricular English lessons. Participants were selected using a non-probabilistic convenience method, and participation was voluntary.

2.3. Measures

The AEQ-PA Adolescent Achievement Emotions Questionnaire (Peixoto et al., 2015), adapted for the English class by Barabadi and Khajavy (2020), was used. This scale consists of 24 items measuring six emotions: boredom ("English class seems quite monotonous to me"), anxiety ("I feel nervous before English class"), hopelessness ("There is no point in preparing for English class because I'm bad at it anyway"), anger ("I feel angry after English class"), pride ("I'm proud of my participation in English class"), and enjoyment ("I enjoy being in English class"). Each emotion was measured using four items. These items were answered on a five-point Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree."

The scale adapted to the English class proposed by Carreira (2012) was also used, based on the principles of Self-Determination Theory. This instrument consists of 12 items divided into 3 dimensions that measure autonomy ("I speak voluntarily in the English class"), competence ("I consider myself good at English"), and relationship ("I learn cooperatively with my classmates in English class"). The five items measuring novelty were added to this scale (e.g. "I feel that new situations arise for me") adapted from González-Cutre et al. (2016). The scale included 17 items with a Likert-type response format ranging from 1 to 5 (1 = not at all true and 5 = completely true).

2.4. Procedure

First, a literature review was conducted to identify previous research on satisfaction with NBP and emotions among secondary school students. Specifically, in the context of English as a subject. The header of the questionnaire to be completed indicates that the questionnaire was voluntary and anonymous. In addition, sociodemographic data on the students were collected (date of birth, age, grade, gender, name of the center, city, whether they attended English classes outside of school hours, and the grade of the last quarter in the subject). Before the students filled out the questionnaire, a text informed them that they had to be sincere in their responses and that they had the option to stop participating at any time. In addition, participants were required to provide consent to continue the survey.

After the centers and guardians gave their consent, the questionnaire was presented to the various teachers at the secondary centers, and it was decided that it would be best for the students to complete it online. The estimated time taken to complete the entire questionnaire was approximately 20 minutes.

2.5. Analysis of the data

First, the psychometric properties of the adapted version of the Basic Psychological Needs Scale, including novelty, were calculated using the maximum likelihood estimation through confirmatory factor analysis. To check the fit of the scale, the main fit indices were evaluated: χ^2/df , CFI (Comparative Fit Index), TLI (Tucker–Lewis Index), RMSEA (Root Mean Square Error of Approximation), and SRMR (Standardized Root Mean Square Residual). The following values were used as reference values: χ^2/df less than 5, CFI and TLI greater than .90, and RMSEA and SRMR equal to or less than .08 (Hu & Bentler, 1999; Schermelleh-Engel et al., 2003).

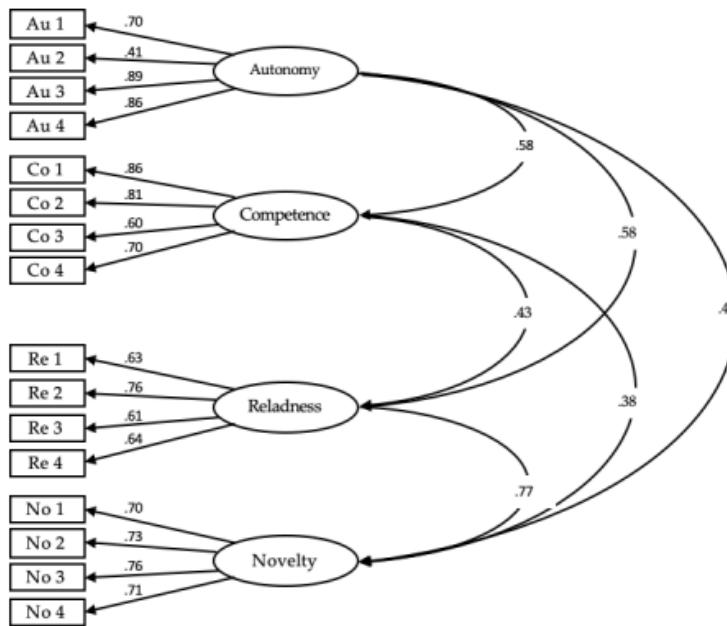
Next, the internal consistency of all variables in the study was examined using Cronbach's alpha. Finally, correlation and regression analyses were performed to determine the relationship between the study variables. The statistical program SPSS version 23.0 (IBM, Armonk, NY, USA) was used to analyze the data.

3. Results

3.1. Confirmatory Factor Analysis (CFA)

The CFA developed with a 4-factor structure (one factor for each BPN including novelty) showed adequate fit indices: $\chi^2 (98) = 172.29$, $p < 0.001$, $\chi^2/df = 1.76$, CFI = .94, TLI = .93, RMSEA = 0.06, SRMR = .04. The factor loadings ranged from .41 to .89 (Figure 1).

Fig. 1. BPN confirmatory factor analysis



3.2. Internal consistency, descriptive statistics, and correlations

The internal consistency results for the scales were acceptable (Table 1). The BSN with the highest value was the need for competence ($M = 3.94$), and the BSN with the lowest value was the need for relationship ($M = 2.67$). The emotions with the highest values were positive emotions ($M_{\text{pride}} = 3.78$ and $M_{\text{enjoyment}} = 3.45$), and the emotions with the lowest values were negative emotions, especially hopelessness ($M = 1.63$) and anger ($M = 1.70$). The correlations showed that BPN were positively and negatively associated with positive and negative emotions, respectively. Similarly, emotions with opposite valence showed negative relationships.

Table 1: *Descriptive statistics, internal consistency, and bivariate correlations between study variables*

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8	9	10
1. Autonomy	3.25	0.64	.81	-	.46	.46	.38	.57	.48	-	-	-	-
2. Competence	3.94	0.84	.71		-	.43	.42	.54	.46	-	-	-	-
3. Relatedness	2.67	0.52	.76			-	.62	.48	.62	-	-	-	-
4. Novelty	3.13	0.92	.85				-	.48	.64	-	-	-	-
5. Pride	3.78	0.94	.81					-	.74	-	-	-	-
6. Enjoyment	3.44	0.98	.85						-	-	.31	-	-
7. Anger	1.70	0.96	.86							-	.44	.67	.62
8. Anxiety	2.42	1.066	.78								-	.54	.30
9. Hopelessness	1.64	0.93	.88								-	-	.47
10. Boredom	2.43	1.06	.87										-

Notes: α , Cronbach's alpha; *M*, mean; *SD*, standard deviation. All correlations were significant at $p < 0.001$.

3.3. Regression analysis

The regression analysis revealed that BPN had predictive power for the emotions experienced by the students (Table 2). The emotion with the highest explained variance was enjoyment (53%), followed by pride (47%), and boredom (39%). Each BPN plays a differential role in predicting each emotion, with competence playing the most constant role across all emotions. For example, in the case of boredom, the need for relatedness and novelty received the greatest regression weight, and in the case of anxiety, it was autonomy and competence, as shown in Table 2.

Table 2: *Regression analysis*

	R ²	B	P
Pride	.47		
Autonomy		.33	.00
Competence		.27	.00
Relatedness		.10	.17
Novelty		.18	.01
Enjoyment	.53		
Autonomy		.16	.01
Competence		.13	.04
Relatedness		.26	.00
Novelty		.37	.00
Anger	.31		
Autonomy		-.17	.02
Competence		-.15	.05
Relatedness		-.34	.00
Novelty		-.03	.71
Anxiety	.27		
Autonomy		-.38	.00
Competence		-.26	.00
Relatedness		-.04	.64
Novelty		-.14	.09
Hopelessness	.37		
Autonomy		-.29	.00
Competence		-.39	.00
Relatedness		-.04	.62
Novelty		-.03	.73
Boredom	.39		
Autonomy		-.03	.67
Competence		-.05	.47
Relatedness		-.44	.00
Novelty		-.20	.00

4. Discussion

Our first endeavor has been to determine the role of novelty in the theoretical framework of SDT (Deci & Ryan, 1985) and whether it should be part of the BSN model along with the other factors, namely, autonomy, competence, and relatedness. The results indicate this trend. González-Cutre (2016) found that novelty is an independent construct and that when the need for novelty is feigned, well-being decreases, which is directly related to emotion impairment. We conducted a confirmatory factor analysis for the

four factors and obtained the same results as those of other studies conducted in other contexts and disciplines (e.g., Bagheri & Milyavskaya, 2020; Vansteenkiste et al., 2020). We also concur with the findings of Birdsell (2018), who argued for the inclusion of novelty in the context of language learning to obtain a broader but more accurate view of the influence of BSN on emotions.

The introduction of novelty into the model of basic psychological needs, alongside autonomy, competence, and relatedness, bears significant methodological implications for research in the language classroom and beyond. Previous studies, primarily centered on the established trio, may require reevaluation to accommodate the nuanced impact of novelty on language acquisition and learner motivation. Educators and researchers must now employ more comprehensive assessment tools and experimental designs to capture the multifaceted nature of these needs within language learning contexts. Additionally, this expansion prompts a broader consideration of teaching strategies and approaches that target the psychological well-being of learners, demanding a more holistic pedagogical approach.

In addition, the integration of novelty represents a key advancement in language education research. Despite its significance, novelty remains a largely underexplored variable in the existing literature, highlighting a critical gap in our understanding of language acquisition processes. Its potential as a powerful motivator in classroom settings has been notably overlooked. Introducing innovative classroom strategies—such as diverse methods, original activities, and different learning environments—can foster positive emotions and significantly enhance student engagement. The findings of this study demonstrate a strong negative correlation between novelty and boredom. Many traditional learning environments still rely heavily on repetitive grammar exercises and routine writing tasks, which can demotivate learners and cultivate negative attitudes toward foreign language acquisition. In contrast, incorporating novelty into the learning experience offers a pathway to more dynamic, enjoyable,

and effective language learning.

Once the four variables were included in the theoretical framework of BPN and correlation analyses were performed with emotions, the need for competence received the highest value among the BPN variables. Relatedness, or the need for relationship, novelty, and autonomy, received a lower value. Competence is generally accepted as the cornerstone of effective learning. It comprises the mastery of skills, knowledge, and understanding of a given subject or field. Specifically, the perception of competence is paramount in the learning process. The definition encompasses an individual's belief in their ability to effectively apply acquired knowledge and skills (Bandura, 1993). This perception acts as a powerful motivator, influencing the level of effort and persistence one invests in learning endeavors. A positive self-perception bolsters confidence and resilience even when setbacks occur. The perception of competence is a central component of the self that determines the level of self-esteem and worthiness (Mruk, 2013). A positive perception of competence affects intrinsic motivation (Reeve & Deci, 1996), instilling a sense of accomplishment and reinforcing motivation and the desire for further learning. To provide an environment conducive to academic excellence, Reasoner (1983) included the sense of competence (with the senses of security, identity, purpose and belonging) in his model of self-esteem. In the field of language learning, the perception of competence is also regarded as a key factor that promotes motivation (Dörnyei & Ushioda, 2021). In sum, our results confirm that competence plays a pivotal role in fulfilling students' basic psychological needs in language learning. This encapsulates their ability to grasp, apply, and master linguistic skills. Feeling proficient in a language empowers students to engage with peers and the material, thus fostering a sense of belonging and achievement. Therefore, competence emerges as a cornerstone that is intricately linked to fulfilling fundamental psychological needs in the pursuit of language proficiency.

Similarly, autonomy and relatedness are vital psychological
ELIA 25, 2025, pp. 107-140 DOI: <http://dx.doi.org/10.12795/elia.2025.i25.4>

needs in language classrooms. The values obtained in our study were lower than the competence level but still above the mean. On the one hand, autonomy empowers learners to take ownership of their learning journey, make choices, and set goals. This fosters a sense of responsibility and self-motivation (Hospel & Galand, 2016). Relatedness, on the other hand, cultivates a supportive, inclusive environment where students feel connected to their peers and teachers. This sense of belonging enhances motivation and engagement (King, 2015). Consequently, together, autonomy and relatedness create a nurturing learning atmosphere, encouraging students to explore and excel in their language acquisition endeavors.

The results revealed a striking correlation between BSN and emotions in language learning. The literature on multiple factors has generally revealed profound effects on language learning. Inspired by positive psychology, Oxford (2016) provided an overview of the factors involved in successful FL learning and teaching, which interact in complex and dynamic ways. She proposed the acronym EMPATHICS: (a) emotions and empathy, (b) meaning and motivation, (c) perseverance, (d) agency and autonomy, (e) time, (f) hardiness and habits of mind, (g) intelligences, (h) character strengths, and (i) the self-factors of self-efficacy, self-concept, self-esteem, and self-verification (p. 71).

Positive emotions such as pride and enjoyment are highly associated with fulfilling these needs. In our study, enjoyment was positively correlated with novelty and relatedness, and pride with autonomy and competence. When students feel competent in their language skills, a sense of accomplishment or fulfillment naturally emerges. Conversely, negative emotions, such as hopelessness, anger, anxiety, and boredom, may come to the fore when BSN are not met. These emotions reflect a lack of autonomy, competence, novelty, and relatedness, signifying the pivotal role BSN play in shaping the emotional landscape of language learners. We found specific links between boredom and relatedness and novelty, between hopelessness and anxiety and competence and autonomy,

and between anger with relatedness.

On the one hand, we should clarify that BSN does not directly predict L2 achievement (Karbakhsh & Ahmadi Safa, 2020), as it is indirectly related to it via goal orientation (i.e., purpose, according to the model of Reasoner, 1983). On the other hand, L2 achievement, that is, proficiency, may increase when the focus is on the enjoyment of learning (Jin & Zhang, 2021; Tsang & Dewaele, 2024). Furthermore, Tsang and Dewaele (2024) found that enjoyment promoted engagement, although engagement was not directly related to proficiency. More specifically, the results of Alamer's (2022) study showed that BPN were only directly related to the attainment of vocabulary. However, the literature on this topic is sparse, and further work is needed to investigate the different skills and knowledge involved in the development of communicative competence.

The emotional spectrum of language learning reflects the interplay between BSN and the experiences of learners. Our results suggest that pride and enjoyment imply a harmonious interplay of competence, relatedness, novelty, and autonomy, in which learners feel empowered and fulfilled. Conversely, our results confirm that emotions, such as hopelessness and anger, arise when BSN are unmet, highlighting the harmful effects of unmet needs. The presence of anxiety and boredom further underscores this link and serves as indicators of the crucial role of BSN in maintaining a positive and conducive learning environment. Likewise, understanding the intricate relationship between BSN and emotions is paramount when optimizing language learning environments. Positive emotions naturally develop when students experience fulfillment in competence, autonomy, novelty, and relatedness. In contrast, negative emotions signal a disconnect between these psychological needs and learning experiences. This insight underscores the importance of nurturing an environment that prioritizes the fulfillment of BSN, ultimately fostering a more positive, engaged, and effective language learning journey for students.

After the descriptive analysis, we performed regression analysis to examine the relationship between the dependent (emotion) and independent variables (BSN) and to predict and understand the causal relationships in the data. We concur with Fredrickson (2001) in identifying enjoyment as the most influential factor when gauging the predictive power of students' emotions. The extent to which students experience enjoyment and satisfaction profoundly shapes their emotional world in the classroom. However, the dynamicity of the enjoyment construct, as it fluctuates across time, depends on different situational learner-internal and learner-external factors (Dewaele & Dewaele, 2017; Elahi Shirvan & Talebzadeh, 2018; Li et al., 2018). Our results show that emotions of enjoyment and pride emerge when BNS are fulfilled, suggesting that teachers should encourage students to recognize their own efforts in achieving their goals (Tiedens et al., 2000). Pride, in particular, exerts a remarkable influence by contributing to positive emotional experiences during optimal experiences of autonomy and competence. Consequently, we agree with Ross and Stracke (2016) in highlighting the crucial role that pride may exert in fostering positive emotions during language learning.

In contrast, our results revealed that boredom emerged as a significant predictor of less favorable emotions. Recognizing these influential elements underscores the critical role of creating an environment that maximizes enjoyment and pride while minimizing instances of boredom. This insight may equip educators with powerful tools to enhance the emotional well-being of students and bolster their engagement in the learning process, ultimately fostering a more productive and fulfilling educational experience. The multifaceted nature of the affective side of human behavior may explain why our results show that each of the BSN plays a differential role in predicting each emotion. As indicated in the descriptive analysis, competence stands out as the most influential factor for all emotions and, together with novelty, is the best factor for avoiding boredom. Again, competence may play an important role in the interaction between BSN and emotions, as controllability

(i.e., autonomy) is largely dependent on the degree of self-efficacy, which is linked to the fulfillment of the activity/outcome (Pekrun, 2006).

In this study, enjoyment was negatively correlated with anxiety. Dewaele and MacIntyre (2019) found that teacher-centered variables mainly predicted FLE, whereas FLCA was mainly predicted by the personality trait emotional stability. In other words, the source of FLE experiences was the teacher, whereas FLCA experiences were the students. Specifically, our regression analysis revealed that the activation of anxiety was minimized when the senses of autonomy and competence were satisfied. In the case of enjoyment and boredom, we found that both were strongly influenced by novelty and relatedness. This finding expands the results of Li (2022), who reported a strong negative correlation between FLE and FLLB. Specifically, FLE was negatively correlated with learner age and initial age of FL learning but positively correlated with a number of learner-internal variables, including self-perceived FL proficiency, relative standing among peers, attitudes toward FL, teacher, and FL-related culture, as well as teacher-related variables, including classroom FL use, enthusiasm, predictability, and friendliness.

Results also show that anxiety is more correlated to competence, and enjoyment and boredom to aspects of teaching methodology that offer novelty and relatedness. On the one hand, Dewaele et al. (2023) found that FLCA had the strongest (negative) effect on English test scores, whereas FLB had a significant but somewhat weaker negative effect and FLE had a significant but even weaker positive effect. On the other hand, Dewaele and Alfawzan (2018) found that the positive effects of FLE on performance outweigh the harmful effects of FLCA. In addition, Dewaele and Dewaele (2020) found that FLE was more dependent on the teacher than FLCA, as the higher FLE score was explained by the teacher's ability to create a pleasant and emotional environment in the classroom. In this sense, students' views of enjoyment events in FL courses highlighted the importance of professional and emotional qualities of teachers and supportive peer groups (Dewaele &

MacIntyre, 2014). In spite of this, multiple factors influenced both FLE and FLCA: participants' perception of their relative level of proficiency within the FL classroom, number of languages spoken, educational level, number of FLs under study, age group and general level of the FL, and cultural background (Dewaele & MacIntyre, 2014).

5. Pedagogical implications

Fulfillment of BPN (autonomy, competence, relatedness, and novelty) leads to various emotions that influence language learning quality. This study revealed the critical role that teachers play in fulfilling BPN in the language classroom. Assor et al. (2002) examined classroom behaviors that promote autonomy, specifically promoting relevance and suppressing criticism. In other words, a teacher should not only give students some freedom to choose but also create learning experiences in which one's actions are critical for achieving goals. In addition, initiatives to promote autonomy should accommodate the needs, interests, and preferences of students in a less controlling or coercive framework (Reeve et al., 2004).

The perception of feeling competent also influenced positive emotions, such as pride, and negative emotions, such as hopelessness and anxiety. Accordingly, teachers should strategically provide opportunities for students to cope with tasks at a moderate level of difficulty to meet challenges and difficulties. In addition, Ross and Stracke (2016) noted that a positive sense of pride can be fostered by introducing shorter, more feasible activities in which learners more clearly recognize task and goal completion. In this sense, multilevel tasks could be deployed in the classroom, which in turn could create states of flow (Csikszentmihalyi, 1990) and reduce FLA (Rubio-Alcalá, 2024). Teachers could also educate students about the actual difficulty of English language learning, especially for native speakers of unrelated languages such as Spanish, Italian, French,

and Arabic, and focus on fluency rather than accuracy to avoid targeting the idealized native speaker.

Hope is a positive, outcome-oriented emotion, while hopelessness represents its negative counterpart (Elliot & Pekrun, 2007). Therefore, language instructors should emphasize not only the final product but also the learning process itself. When teaching focuses exclusively on outcomes, students' performances are judged solely by results, which can foster either optimism or pessimism depending on success or failure.

Relatedness to language and the people who speak it is another need that learners must fulfill. Teachers could focus less on language structures and more on real-life tasks to make lessons more practical. Moreover, contact with L2 speakers in the community, such as tourists in a class project or tandem partners in an online project, could increase pride (Ross & Stracke, 2016). Additionally, the use of networks and digitized social spaces, such as e-pals, could help learners engage in interactions and real-life use of the language. Finally, novelty can be promoted by introducing creative tasks and multimodal activities (Birdsell, 2017). Time for discovery and exploration, such as through webquests or treasure hunts, can also contribute to autonomy and novelty satisfaction.

Due to the multidimensional and bidirectional nature of BPN and emotions, several emotional elements can be favored in the FLC. For example, establishing a relationship between in-class and out-of-class situations and allowing students to take pride in how they communicated as part of a project or assignment. These types of projects can instill pride in students who do not perceive the educational atmosphere as real (Ross & Stracke, 2016). Research suggests that teachers can use these emotions to their advantage and enhance student development (Dewaele, 2005; Dewaele, 2015; Oxford, 2016). For example, the best teacher-related predictor of FLE and FLLB is teacher friendliness (Li, 2022). Nevertheless, teachers may have difficulty dealing with these emotions, most likely because they lack expertise in educational psychology. Teachers often

confuse boredom with laziness, anxiety, or depression or simply attribute it to their personality traits (Macklem, 2015). Moreover, they neglect boredom and find it uncomfortable to discuss it with students (Weinerman & Kenner, 2016). These findings suggest that BPN and emotions should be incorporated into curricula to enable teachers to master the classroom and create appropriate settings.

Finally, further research is needed to investigate other emotions, such as frustration. For example, Alamer et al. (2023) showed that students were frustrated because their basic psychological needs were not met, and enjoyment and L2 acquisition were hindered. Other self-conscious emotions, such as embarrassment, regret, shame, guilt, jealousy, empathy, and envy, should also be investigated to provide a more comprehensive picture of the role of emotions and BPN in language learning.

6. Conclusions

This study investigates the relationship between Basic Psychological Needs (BPN) and emotions in language learning, proposing the addition of novelty to the traditional trio of autonomy, competence, and relatedness. The inclusion of novelty has methodological implications, requiring a reevaluation of its role in motivation and language acquisition.

Competence is highlighted as a key factor in learning success, influencing motivation, effort, and persistence. Autonomy and relatedness are also vital in fostering a sense of control and belonging. Positive emotions, such as pride and enjoyment, are tied to the satisfaction of these needs, whereas negative emotions, such as anxiety and boredom, arise when BPN are unmet. This study emphasizes that competence is the most influential BPN in predicting emotions, particularly enjoyment and pride, which serve as strong motivators. Conversely, anxiety, which is closely related to competence and autonomy, negatively affects performance. Novelty and relatedness help reduce boredom, which is a significant factor

in language learning. Thus, the findings highlight that creating a language learning environment that maximizes enjoyment and pride while minimizing boredom is essential. The addition of novelty to the BPN framework is a significant advancement, thus shedding light on its potential as a classroom motivator.

Our results should be interpreted with caution because regression analysis alone cannot establish causal relationships between the variables under study. The analysis explored the associations between these variables and provided preliminary evidence of potential relationships. However, we agree that further studies, such as controlled experiments or longitudinal studies, are necessary to establish causality. In future research, we plan to explore this relationship in greater depth, considering the potential confounding and interaction variables and using more appropriate statistical methods, such as SEM, for inferring causality.

7. Funding and acknowledgments

This study was funded by the research project 'In search of well-being and academic performance through motivation and emotions', Programa Operativo FEDER Andalucía 2014-2020 (UHU-1259909. Ref: PID2019-106918GBI00). The ReALL group (Research in Affective Language Learning; Ref. HUM657) and the Centro de Investigación en Pensamiento Contemporáneo e Innovación para el Desarrollo Social (COIDESO), of the Universidad de Huelva (Spain) also supported this work.

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First version received: March, 2025
Final version accepted: September, 2025