The impact of student choice in shaping their bilingual education attitudes and perceptions

Diego Ardura
Inmaculada Senra-Silva
Universidad Nacional de Educación a Distancia, Spain

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ABSTRACT: Many studies have delved into different aspects of bilingual education examining perceptions within the educational community. However, none of them have explored the impact of offering bilingual programmes on a voluntary versus a mandatory basis on students' attitudes and perceptions. The aim of the present work was to investigate Spanish bilingual secondary school students' attitudes, motivation, perceived learning, anxiety, and satisfaction with bilingual education, establishing a comparison between schools where students can only join the bilingual strand and schools where students can choose whether to join the bilingual strand or the non-bilingual one. An ex post facto research design was used, involving 261 high school students. Descriptive, mean differences, and decision tree analyses were conducted. The results reveal better attitudes and perceptions in students from schools where bilingual education is not compulsory for all. Our findings may be of interest when planning this type of approach to education.
Keywords: secondary education, bilingual education, students' choice, students' perceptions, students' attitudes

Impacto de la elección del alumnado en sus actitudes y percepciones hacia la educación bilingüe

RESUMEN: Numerosos estudios han profundizado en diferentes aspectos de la educación bilingüe examinando las percepciones dentro de la comunidad educativa. Sin embargo, ninguno ha investigado el impacto de ofrecer el programa de manera voluntaria u obligatoria sobre las actitudes y las percepciones del alumnado hacia dicho programa. El objetivo del presente trabajo fue investigar las actitudes, la motivación, el rendimiento percibido, la satisfacción y la ansiedad de los alumnos españoles de secundaria bilingüe con la enseñanza bilingüe, estableciendo una comparación entre los centros en los que el alumnado sólo puede incorporarse a la modalidad bilingüe y los centros en los que los alumnos pueden elegir entre incorporarse a la modalidad bilingüe o a la no bilingüe. Se utilizó un diseño de investigación ex post facto, en el que participaron 261 estudiantes de secundaria. Se realizaron análisis descriptivos, de diferencias de medias y de árbol de decisión. Los resultados revelan mejores actitudes y percepciones en los alumnos de centros en los que la enseñanza bilingüe no es obligatoria para todos. Nuestras conclusiones pueden ser de interés a la hora de planificar este tipo de enfoque educativo.
Palabras clave: educación secundaria, educación bilingüe, elección del estudiantado, percepciones del alumnado, actitudes del alumando

1. Introduction

Bilingual education programmes (BEP) emphasizing English as a second language have become widespread globally, including Spain where bilingual education (BE) has been developing in the education system for decades. In Spain, the bilingual high school enrollment process varies depending on the region, with some students being required to enroll in their school's mandatory bilingual programme, while students in other schools have the choice to opt for the bilingual or the monolingual strand. At this point, it is important to explain that Spain's education system is characterized by a substantial level of decentralization, particularly within its self-governing regions. The governance of BEP, including the choice of disciplines taught in a foreign language and the language proficiency requirements for teachers, is largely determined by regional authorities and based on legislation. Spain's diverse linguistic and cultural landscape has resulted in seventeen regions, some monolingual and some bilingual, implementing various models of bilingualism and multilingualism. This is why, overall, there is a great degree of heterogeneity in the design and implementation of bilingual programmes in Spain.

The legislative development of the Spanish Autonomous Communities in relation to BE in compulsory secondary education allow schools in various territories to offer BE on a voluntary basis within the same high school. For instance, in the Resolution of June 4, 2015, the Ministry of Education, Culture and Sports of Asturias regulates the bilingual programme in non-university educational centers. In secondary education, in baccalaureate and vocational training, the number of bilingual groups offered will depend on the resources available to the center. In the event that the school cannot meet all the demand, a public draw will be held. So, secondary schools can have a bilingual and a non-bilingual strand in that community. However, in other regions all students enrolled in a particular school are forced into this type of education (Senra-Silva & Ardura, 2024). According to article 5.2. of the Order of June 28, 2011, in Andalusia all schools authorized after the publication of this Order must be bilingual throughout the educational stage, that is, there will be no non-bilingual groups in those schools (Andalucía, Consejería de Educación, 2011). The rest of the schools, that is, those authorized before the publication of the Order, must progressively increase their bilingual groups until the school is completely bilingual. In the remaining Spanish Autonomous Communities, there are similar disparities in relation to the possibility of choosing bilingual or monolingual education for students at the same school.

Recent studies have predominantly concentrated on delineating the advantages and investigating the methodological challenges associated with the integration of BE in primary and secondary education. Most have focused on language learning outcomes, the development of the first language (L1), the subject matter competence (Lorenzo et al. 2010), the impact on students' mother tongues (Pérez Cañado, 2018), or the impact on the contents of subjects taught in the foreign language (Hunt, 2011), neglecting other important variables related to student experiences in BE.

There is still a paucity of research on student perspectives of BEP, particularly in monolingual communities. There is a need for empirical research in this area as well as a closer examination of various factors related to the students' perspectives in BEP, in order to improve their implementation. For example, there is little research on the obligation to opt for a bilingual strand in certain high schools and/or regions and, therefore, much more

to explore and understand in the field of BE. In this vein, Senra-Silva and Ardura (2024) carried out a study to explore secondary school teachers' attitudes, self-efficacy, and perceptions regarding students' achievements. The focus was on comparing teachers in high schools where BE was mandatory for all students and high schools where students had the choice to participate in the bilingual programme. Results indicate that teachers in high schools where BE is not compulsory for all students exhibit more positive attitudes, particularly instrumental attitudes, higher self-efficacy, and better perceptions of student outcomes and engagement in the classroom. The findings suggest the need for educational officials to engage in discussions with teachers about whether BE should be a choice for all students in bilingual high schools.

BEP have faced some criticism for appearing to benefit only highly motivated and academically proficient students, and this criticism is attributed to the circumstances under which these programmes were initially developed. In Andalusia (Spain), all bilingual programmes were initially voluntary in schools with both bilingual and non-bilingual groups. According to Bruton (2011), students who chose voluntary bilingual strands were often encouraged to join these programs. They were highly motivated, and their parents typically belonged to higher socio-economic classes. Therefore, there was an implicit selection process. Moreover, Murillo et al. (2021) conducted interviews with parent association representatives and identified bilingual programmes as a significant factor in families' school choices. For some, they serve as a "pull" factor because they prioritize their children's English language improvement, while for others, they act as a "push" factor due to concerns that these programmes contribute to educational inequality.

1.1. Students' attitudes towards bilingual education

Gardner and Lambert (1972) suggested that achieving fluency in a second language is not solely determined by cognitive abilities or language aptitude. Attitudes and perceptions toward the target language are equally influential. Victori and Lockhart (1995) strengthened this notion, highlighting that negative beliefs can induce classroom anxiety, impede cognitive progress, and cultivate adverse attitudes. This can also be applied to BE, and it emphasizes the significance of cultivating positive attitudes and perceptions within language learning settings, as they can significantly influence students' academic achievement and overall welfare.

According to Gardner (2001), attitudes regarding any element of the environment in which language learning occurs are categorized as Attitudes Toward the Learning Situation (ATLS). Within a school setting, for instance, these attitudes might pertain to the teacher, the curriculum, peers, instructional materials, and related aspects.

In this vein, people's attitudes towards learning a language have been proven to be one of the key factors for successful language learning in bi/multilingual programmes in different contexts, including bi/multilingual education (Artamonova, 2020; Rubio-Alcalá et al., 2019; Salmon & Menjívar, 2019). Attitudes encompass a set of beliefs, feelings, and behaviours towards different language varieties (Li & Wei, 2022a), and play a crucial role both in students' self-perceived language proficiency and language performance (Li & Wei, 2022a, 2022b). Additionally, positive attitudes towards learning a second language boosts learners' motivation (Merisuo-Storm, 2006).

1.2. Students' motivation for bilingual education

In foreign language learning, Gardner (2001) formulated a conceptual model of motivation that distinguishes between two types: instrumental and integrative motivation. The former pertains to learning a foreign language for utilitarian purposes, such as enhancing job prospects, while the latter involves a desire to connect with the culture associated with the foreign language. Another construct of Gardner's socio-educational model is instrumental motivation, that is, learning a language to facilitate immersion into a culture, or to obtain a degree or have access to a better job with a better salary. Identifying differences in underlying motivational traits will help in creating targeted policies for foreign language learning and teaching.

Motivation and its connection with BE have been the subject of numerous investigations. A few studies have explored learner attitudes towards BEP in bilingual settings, revealing varying levels of enthusiasm among different age groups. In general, students' attitudes towards BE are positive (Calderón Jurado & Morilla García, 2018; Lasagabaster, 2019; San Isidro & Lasagabaster, 2022), especially those related to instrumentality (Lasagabaster, 2019; Moratinos-Johnston et al., 2019). BEP have also been found to contribute to the development of better attitudes towards second language learning in vocational studies in the Netherlands (Denman et al., 2018) and in secondary school students in Spain (San Isidro & Lasagabaster, 2022; Oxbrow, 2018). Fewer studies have compared the effect of BE on students' attitudes towards learning a second language. Merisuo-Storm (2006), for example, carried out a study to discover if there was a difference between pupils' attitudes towards reading, writing and second language learning in bilingual and monolingual classes. On average, students in the bilingual classes had more positive attitudes and motivation. Other studies have warned about the difficulties of diversity outreach that BE brings, with the corresponding impact on students' attitudes (Calderón Jurado & Morilla García, 2018).

1.3. Students' perceptions of their learning

Previous studies have showed high levels of student satisfaction with their English language competence and development (Chaieberras & Rascón-Moreno, 2018), pointing to the bilingual strand as the reason for these improvements. Another study found that students in bilingual programmes in Spain reported higher levels of self-perceived intercultural competence and greater international mobility compared to their peers in monolingual programmes (Palacios-Hidalgo et al., 2021). Spanish students' self-perception of their own learning in the bilingual strand has been linked to their proficiency level at university (Aguilar & Rodriguez, 2012; Mañoso-Pachecho & Sánchez-Cabrero, 2022) and to their parents' educational level. Those students whose parents achieved lower levels of education perceived a negative impact on their performance in content subjects taught in English (Anghel et al., 2016). At university level, students in BEP reported improvements in their use of technical vocabulary and in their listening and speaking skills (Aguilar & Rodriguez, 2012).

1.4. Students' satisfaction with teaching and learning in the bilingual classroom

Spanish students appreciate the competence of their teachers and the methodology they use in bilingual classrooms (Barrios & Acosta-Manzano, 2022; Chaieberras & Rascón-Moreno, 2018). However, they also express some concerns about these issues. For example, in the study by Barrios and Acosta-Manzano (2022), students were concerned about the training of their teachers and the assessment methods they used. In the same vein, Álcaraz-Mármol (2018) reported higher satisfaction among students whose teachers had received specific training in Content and Language Integrated Learning (CLIL). In addition, the socio-economic status of their families, as well as the perceived difficulty of the subjects, modulated Spanish primary students' satisfaction with BE (Barrios & Acosta-Manzano, 2022).

1.5. Anxiety about bilingual education

The fact that students value BE does not prevent the prevalence of some anxiety due to the additional language demands (Chaieberras & Rascón-Moreno, 2018; López-Medina & Casado, 2024), which is common in language learning environments. This issue has implications for proficiency, as anxiety in the language classroom has been inversely related to academic performance in French learning (Jarie et al., 2019). The role of the teacher has been shown to be key in helping students to reduce anxiety (Dewaele et al., 2019).

2. Purpose of the study

In this study, data were collected from bilingual high school students in monolingual regions of Spain to explore how the optional or compulsory nature of the BEP at their school can have an effect on their attitudes towards BE. By focusing on one of the primary bilingual beneficiaries, the aim was to gain deeper insights into the research problem under investigation. The distinction between obligatory and optional participation is presented as a contextual factor that may significantly impact the success or failure of bilingual programmes. The manner in which students enter a BEP (that is, if they have opted for the bilingual strand or if they have been forced to join the bilingual group) could be crucial for both the students' individual success and the overall effectiveness of the programme, given the apparent relevance of self-selection (Bruton, 2011). As a result, the purpose of this study was to look into this issue on several relevant constructs such as students' attitudes, self-perceived learning outcomes, motivation, anxiety, and satisfaction with BE. Three research questions guided this study:

RQ1. What are the general levels of the traits of Spanish bilingual secondary school students included in this research?
RQ2. To what extent are there significant differences in the constructs studied between students who can choose whether or not to join BE at their school and those for whom BE is compulsory?
RQ3. Among all the variables considered, which variables best classify students into the two types of schools, that is, those schools where there are bilingual and non-bilingual groups, and those with only bilingual strands?

3. Method

3.1. Research design, sampling and participants

A cross-sectional, ex post facto research design was used in this study. A total of 261 secondary school students enrolled in BE were selected through a convenience sample based on school accessibility. Of these, 39.8% (n=104) studied in schools where joining the bilingual strand is compulsory for all students and the rest, 60.2% (n=139), studied in schools where it is voluntary. The average age of the students in the sample was 14.34 years and 43.3% were boys, 53.3% were girls and 3.4% preferred not to answer about their gender. Data were gathered using an online survey.

3.2. Instruments and variables

3.2.1. Students' attitudes towards bilingual education

To measure students' attitudes towards BE the semantic scale proposed by Gardner (1985), which has been used previously in the context of BE studies (see, for example, Lasagabaster & Sierra, 2009), was employed. This scale presents a series of antonyms: unnecessary/necessary, awful/nice, unappealing/appealing, unpleasant/pleasant, insignificant/important, useless/useful, boring/interesting, difficult/easy, and stressful/relaxing. Students were asked to place themselves at one point at either end of their attitudes on a 6-point Likert scale from 1 to 6, with 1 being "totally disagree" and 6 being "totally agree".

3.2.2. Students' motivation

A 15-item questionnaire was used to measure students' motivation towards BE. This instrument was an adaptation of a questionnaire used in a previous study by Doiz et al., (2014) and was proven to be valid and reliable for the sample of students (see Appendix). It measures three motivational traits: intrinsic motivation, extrinsic motivation, and self-efficacy. A 5-point Likert scale was used, ranging from "strongly disagree" (1) to "strongly agree" (5) (see Appendix for the psychometric details).

3.2.3. Students' self-assessment of their learning in bilingual education

To assess students' perceptions of their own learning, they were asked to rate, on a 6-point Likert scale from "no improvement at all" (1) to "a great improvement" (6), their improvements in the different aspects of language learning (grammar, reading, writing, vocabulary, pronunciation, listening and speaking) as a result of their work in the content subjects taught in a second language. This instrument was designed ad hoc for this investigation.

3.2.4. Students' satisfaction with bilingual education

Students' satisfaction with learning in bilingual schools was primarily measured using four items of the questionnaire proposed by Barrios and Acosta-Manzano (2020). Moreover,

four additional ad hoc items were designed to assess students' satisfaction with teachers in the bilingual programme. A 5-point Likert scale, from "strongly disagree" (1) to "strongly agree" (5), was used to collect students' answers. The scale was found to be valid and reliable, yielding two dimensions: satisfaction with teachers and satisfaction with learning (see Appendix for the psychometric details).

3.2.5. Anxiety about bilingual education

Anxiety can have adverse effects on learning. Students' anxiety about BE was measured using the adaptation of Doiz et al., (2014). This scale consisted of four items, and was answered by the students on a 5-point Likert scale from "strongly disagree" (1) to "strongly agree" (5) (see Appendix for the psychometric details).

3.3. Procedure

The researchers contacted the schools and explained the aims of the study to the management team, who granted permission to access the students. The families of the students were also contacted to obtain their informed consent. The online survey served as the primary data collection instrument, with designated teachers from each school present to assist students in completing it. The survey incorporated items designed to gather demographic information and to evaluate the previously mentioned constructs using the instruments outlined above. Students were informed of the research objectives and guaranteed anonymity. They were given the option to withdraw from the data collection if they felt uncomfortable.

3.4. Statistical analysis

The validity of the instruments was assessed through an exploratory factor analysis (EFA) using Principal Axis Factorization (PAF) for factor extraction. An oblimin rotation was employed to aid factor interpretation. The number of factors extracted was determined by applying the Kaiser-Guttman rule. Reliability was evaluated using McDonald's omega statistics.

Descriptive, correlational, and mean difference analyses were conducted after defining the latent variables. Mean comparison analyses of the investigated traits were performed on the complete sample using a Repeated Measures Analysis of Variance (RM-ANOVA). When the sphericity assumption was not met, degrees of freedom were corrected using Greenhouse-Geiner. Multivariate Analysis of Variance (MANOVA) was used to compare the mean values of the different variables included in the study across the two groups of students. These groups consisted of students attending schools where the only option was to join the bilingual strand and students attending schools where BE is voluntary. Post hoc analyses, using the Bonferroni correction, were applied to study pairwise mean comparisons. Student's t-tests were used to compare mean values across groups for students' anxiety, as this is a one-dimensional construct. The effect size was estimated using eta-squared (h^2), for the ANOVA, being the cut-off values for its interpretation > 0.01 very small, 0.01-0.05 small, 0.06-0.13 moderate, > 0.14 large and Cohen's d for the Student's t-tests (< 0.20 very small, 0.20-0.49 small, 0.50-0.79 moderate, > 0.80 large) (López-Martín & Ardura, 2023).

To identify the variables that best classify students between schools with compulsory and optional BE, the CHAID (Chi-squared Automatic Interaction Detection) segmentation technique was used. The criterion variable for this study was the type of school. The predictor variables included in the analysis were those that showed statistically significant differences between the two types of students in the study. All computations were carried out using SPSS (IBM Corp., 2020).

4. Results

Table 1 presents the mean values and standard deviations of the students' attitudes for the complete sample, as well as the results disaggregated by the type of school in which they are enrolled. The mean values for the positive attitudes were compared using a RM-ANOVA, which showed statistically significant differences, $F(4.77, 1235.78)=70.62$, $p<.01$, $h^2=0.21$. Post hoc analyses showed that the mean scores for the instrumental attitudes (necessity, importance, and usefulness) were significantly higher than the mean scores found in the intrinsic attitudes (niceness, appealingness, pleasantness, and interest) (see Table 1). No significant differences were found between the mean scores of the negative attitudes for the complete sample, $F(1, 259)=2.07$, $p=.15$, $h^2=0.01$.

A MANOVA showed non-significant mean differences between students' positive attitudes across the two types of schools ($V=0.04$, $F(7,253)=1.66$, $p=.12$, $h^2=0.044$). In fact, follow-up ANOVA rendered only a small effect of the type of school in pleasantness, as students attending schools where BE is not compulsory present a higher mean score in this attitude (4.35) than those attending a school where the only option is the bilingual strand (4.02). Regarding the negative attitudes towards BE, MANOVA found significant mean differences in students' attitudes across the two types of schools ($V=0.04$, $F(2,258)=5.11$, $p<.01$, $h^2=0.038$). Follow-up ANOVA showed that students enrolled in schools where BE is the only choice are more stressed regarding BE (4.35) than those who can opt voluntarily for this type of education (3.82). However, no statistically significant mean differences were found in the students' perceived difficulty of BE.

Table 1. *Descriptive and inferential results for the attitudes towards BE group comparison*

Attitudes	Total		Compulsory		Non-compulsory		p	h^2
	M	SD	M	SD	M	SD		
Positive attitudes								
Necessity	5.07	1.22	5.13	1.20	4.97	1.24	.31	.004
Importance	5.15	1.20	5.18	1.18	5.11	1.24	.64	.001
Usefulness	5.28	1.26	5.37	1.16	5.16	1.40	.19	.007
Niceness	4.49	1.21	4.45	1.25	4.55	1.15	.53	.002
Appealingness	4.09	1.33	4.04	1.38	4.16	1.24	.51	.002
Pleasantness	4.15	1.27	4.02	1.28	4.35	1.22	.04	.016
Interest	4.26	1.29	4.21	1.28	4.33	1.31	.45	.002
Negative attitudes								
Stressfulness	4.24	1.33	4.35	1.25	3.82	1.42	>.01	.038
Difficulty	4.14	1.34	4.28	1.32	4.24	1.33	.57	.001

The students were asked to self-assess the impact of BE in their command of the main dimensions of language learning. Table 2 shows the mean scores and standard deviations of each dimension for the complete sample of students. RM-ANOVA rendered statistically significant differences between the mean scores, $F(5.383, 1399.66)=8.70$, $p<.01$, $h^2=0.032$. Post hoc analyses indicated that what they valued most was learning vocabulary and reading, compared to the rest of the skills. In particular, significant mean differences were found between vocabulary and grammar-perceived learning, and the rest of the variables (pronunciation, writing, listening, and speaking). Additionally, students' self-perceptions about learning reading was statistically higher than in learning writing, listening, and speaking.

Group comparisons of mean scores were carried out using MANOVA, which revealed significant differences ($V=0.06$, $F(7,253)=2.14$, $p=.04$, $h^2=0.056$) across the two types of schools. Follow-up ANOVA found statistically significant mean differences in students' learning perceptions in listening and writing. As shown in Table 2, students in schools with voluntary bilingual strands perceived more learning in writing (4.73) and listening (4.76) than their counterparts studying in schools where joining the bilingual group is compulsory for all students and whose mean score was respectively 4.38, and 4.20. The highest effect size was found in learning listening ($h^2=0.043$).

Table 2. *Descriptive and inferential results for students' self-assessment of their learning*

Attitudes	Total		Compulsory		Non-compulsory		p	h^2
	M	SD	M	SD	M	SD		
Vocabulary	4.84	1.09	4.74	1.14	4.98	1.00	.081	0.012
Reading	4.71	1.10	4.62	1.11	4.85	1.09	.112	0.010
Grammar	4.58	1.11	4.52	1.15	4.66	1.05	.316	0.004
Pronunciation	4.56	1.24	4.46	1.23	4.69	1.24	.146	0.008
Writing	4.52	1.18	4.38	1.24	4.73	1.05	.017	0.022
Listening	4.43	1.33	4.20	1.35	4.76	1.22	.001	0.043
Speaking	4.42	1.32	4.32	1.34	4.61	1.27	.084	0.011

Table 3. *Descriptive and inferential results of students' motivational traits, students' satisfaction and anxiety associated to BE*

Variable	Total		Compulsory		Non-compulsory		p	Effect-size
	M	SD	M	SD	M	SD		
Extrinsic motivation	4.22	0.70	4.19	0.69	4.27	0.70	.384	$h^2<0.01$
Intrinsic motivation	3.49	0.82	3.39	0.86	3.65	0.74	.011	$h^2=0.03$
Self-efficacy	3.70	0.88	3.53	0.64	3.97	0.86	<.001	$h^2=0.06$
Satisfaction Learning	3.25	0.84	3.14	0.83	3.42	0.84	.007	$h^2=0.03$
Satisfaction Teaching	3.82	0.83	3.65	0.82	4.08	0.79	<.001	$h^2=0.06$
Anxiety	3.31	0.85	3.44	0.84	3.11	0.85	.003	d=0.39

RM-ANOVA rendered significant differences in the comparison of the students' mean scores in the three motivational traits (intrinsic motivation, extrinsic motivation, and self-efficacy) for the complete sample ($F(1.874, 487.18)=123.61$, $p<.01$, $h^2=0.32$). Post hoc analyses

revealed that extrinsic motivation (4.22) was significantly higher than self-efficacy (3.70) and intrinsic motivation (3.49). The comparison between the two types of schools rendered statistically significant differences by means of a MANOVA (V=0.065, F(3,257)=5.94, p <.01, h^2=0.065). Subsequent follow-up ANOVA found statistically significant mean differences across the two types of schools in intrinsic motivation and self-efficacy (see Table 3), being higher in the case of students who were able to opt for the bilingual strand.

The RM-ANOVA revealed that the mean satisfaction with learning (3.24) was significantly lower than satisfaction with teachers (3.82), F(1, 260)=113.31, p<.01, h^2=0.30). Additionally, the MANOVA found significant mean differences across the two types of schools regarding students' satisfaction (V=0.067, F(2,258)=9.33, p <.01, h^2=0.067). Satisfaction with both learning (4.08) and teachers (4.08) was higher among students who were able to choose the bilingual group compared to those who did not have a choice, scoring 3.14 and 3.65 respectively. Additionally, students attending schools with voluntary bilingual groups exhibited lower anxiety (3.11) than their peers attending schools where BE is compulsory for all students, averaging 3.44.

Figure 1 shows the CHAID decision tree to investigate which variables of those included in this investigation significantly classify the students in both types of schools. The decision tree correctly classifies 71.6 % of the students. The variable that better predicts the type of school which students are attending is self-efficacy, with students with high scores in the variable more likely to be enrolled in schools with voluntary BE (Node 0).

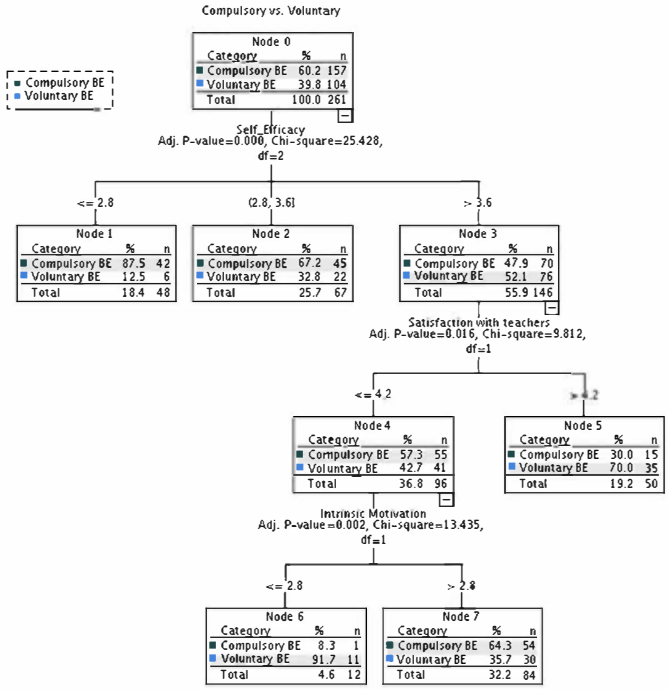

Figure 1. *Decision tree*

Among the rest of the variables, satisfaction with teachers is also significant in classifying students (Node 3), as very high satisfaction would associate them with a school where BE is voluntary. For students in this category who exhibit medium or low teacher satisfaction (Node 6), intrinsic motivation is relevant for classifying students according to the decision tree since, for these cases, students with an intrinsic motivation higher than 2.8 are also more likely to be in a school where BE is voluntary.

5. Discussion and conclusions

This study encompasses data collected from secondary school students enrolled in a bilingual school. It affords an opportunity to delve into students' beliefs regarding motivational factors, anxiety levels, or overall satisfaction with the BEP, fostering a more nuanced comprehension of pertinent issues. By elucidating students' beliefs, the aim is to acquire a comprehensive understanding of their perceptions on BE. Furthermore, it is imperative to investigate the potential differences between students depending on the elective or mandatory nature of BEP in secondary education.

In relation to RQ1, and taking the whole sample of students into account, the results build on the findings of previous studies, as positive attitudes are medium-high, with instrumental attitudes being significantly higher than intrinsic attitudes. Moreover, the results on the motivational traits of students point in the same direction, as students' extrinsic motivation was significantly higher than students' intrinsic motivation (Calderón Jurado & Morilla García, 2018; Lasagabaster, 2019; San Isidro & Lasagabaster, 2020). These findings are echoed among teachers (Senra-Silva & Ardura, 2024), suggesting that BE is pursued primarily for its perceived importance and is driven by utility rather than for an interest or enjoyment in learning. These results may be of interest, as intrinsic motivation has been linked to academic performance in language learning (Shan, 2020). As indicated by Gardner (1985), intrinsic motivation holds greater significance in learning than extrinsic motivation. This is because highly motivated learners derive greater enjoyment from the learning process, exhibit increased willingness to learn, and demonstrate greater effort compared to those with lower motivational levels. It is worth noticing that negative attitudes are also somehow present among BE students, with the corresponding adverse impact on their academic achievement (Jarie et al., 2019).

The results in relation to students' self-perceptions of their own learning may provide insights into the areas of focus for BE in Spain. Contrary to expectations, the most positive perceptions of learning are evident across the entire sample in vocabulary and reading, while the least favourable perceptions are associated with pronunciation, writing, listening, and speaking. This observation is intriguing concerning the focus (or lack thereof) within BEP. In line with these findings, vocabulary acquisition has been a previously valued learning aspect by Spanish BE students (Feixas, et al., 2009; Jimenez-Catalán & Ruiz de Zarobe, 2009). However, in contrast with these results, other studies have found that BE students reported doing well in listening skills and oral production (Lasagabaster & Ruiz de Zarobe, 2010).

Regarding RQ2, the study finds that students' attitudes towards BE exhibit minimal variance across the two types of high schools. However, it is noteworthy that intrinsic attitudes are slightly more pronounced in compulsory bilingual schools, while those related to

extrinsic positive attitudes show a higher tendency in secondary schools offering voluntary BE, although only pleasantness shows statistically significant differences in the population. Moreover, BE is reported to be less burdensome for students in schools with both bilingual and non-bilingual strands than for students in schools where participation in the BEP is obligatory, as stressfulness is higher in the latter.

The analysis of students' perceptions concerning their own learning endeavours reveals a preference towards schools with voluntary BEP across all assessed attributes. Although statistically significant differences are only evident in writing and listening, a consistently favourable inclination is evident. These findings appear to contrast with those observed in younger students, who tend to develop oral language and narrative skills more effectively in bilingual settings (Ucelli & Paez, 2007).

Regarding motivational factors, students who possess the autonomy to choose their participation in BEP exhibit heightened levels of intrinsic motivation and self-efficacy. Interestingly, previous studies found higher levels of both intrinsic and extrinsic motivation in bilingual students compared to their monolingual peers (Greenwald et al., 2023). It is important to note that successful language learners require intrinsic motivation (Shan, 2020). Consequently, students in voluntary bilingual schools seem to possess a motivational advantage geared towards achievement.

Furthermore, within these educational settings, high satisfaction levels pertaining to both learning experiences and teaching staff are reported. Additionally, reduced anxiety levels are observed among students who can opt for the bilingual or the non-bilingual strand at their school.

As for RQ3, in both types of schools, self-efficacy emerges as the primary classifier among students. Particularly among individuals exhibiting high levels of self-efficacy, satisfaction with teachers emerges as a significant factor. It must be pointed out that self-efficacy has been linked to students' satisfaction (Doménech-Betoret et al., 2017), and academic achievement in the context of language learning (Zysberg & Schwabsky, 2020). Conversely, among students with moderate or low satisfaction levels with teachers, intrinsic motivation becomes a notable distinguishing variable. Thus, intrinsic motivation seems to overcome perceived dissatisfaction with teachers.

Overall, this study has relevant implications at policy level for the planning of BE. The results imply a need to consider these variables when structuring and executing BEP, with the aim of cultivating a favourable learning environment for students. It cannot be ignored that students' learning success is greatly influenced by their motivation and attitude.

6. Limitations and prospective research

Several limitations arising from the approach used in this investigation must be highlighted. First, the non-experimental nature of the research design precludes making cause and effect implications from the results. Second, since self-reported instruments were used to gather data, social desirability could bias these results. However, the sample size is expected to minimise these possible effects. In conducting this research, it became evident that a good number of specific traits justify further investigation. Examples of possible topics include investigating learner variables such as sex, socio-economic status, first language (if different from Spanish) and geographical location (monolingual vs bilingual regions).

7. References

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8. Appendix

8.1. Evidence for the validity and reliability of the motivation questionnaire

The validity of the instrument was examined using exploratory factor analysis (EFA). Barlett's sphericity test confirmed sufficient correlation between items ($c^2(105) = 2180.10$, $p<0.001$) and the sample was adequate for factorial analysis (KMO=.918). The procedure yielded a three-factor solution for dimension reduction. The solution found by EFA explained 57.84% of the total variance. These three factors correspond to intrinsic motivation, extrinsic motivation, and self-efficacy in terms of the items assigned to each of them (see Table 4). The McDonald's omega of each dimension was .81, .83 and .92 respectively, which indicates for a good reliability for each scale.

Table 4. *Items in each scale and factor loadings from the EFA*

ITEMS	Factor loadings		
	Intrinsic	Extrinsic	Self-efficacy
I really enjoy learning a subject in a second language.	.777		
Learning a subject using a second language is fun.	.760		
Learning a subject using a second language makes studying more meaningful.	.434		
I like learning a second language at the same time I am learning a subject.	.641		
I'll need learning a subject using a second language for my future studies.		.766	
Learning a subject using a second language will help me get a job.		.830	
Learning a subject using a second language will help me understand films, music, games, etc.		.432	
Learning a subject using a second language helps me meet people from other countries and talk to them.		.815	
Learning a subject using a second language helps me learn different aspects of other cultures.		.411	
Learning a subject using a second language helps me when I travel abroad.		.478	
I believe I can master a subject that is taught in a second language.			.760
I am confident I will do well on the test when I study a subject in a second language.			.882
I believe I can get a top score in the subjects taught in a second language.			.851
I am sure I can understand a subject that is taught in a second language.			.745
I feel my language skills are good enough to follow a subject that is taught in a second language.			.808

8.2. Evidence for the validity and reliability of the satisfaction questionnaire

The sample (KMO=.855) and the degree of correlation between items ($c^2(28) = 915.27$, $p<0.001$) were adequate to proceed with an EFA that yielded two factors that measure: students' satisfaction (i) with learning, and (ii) with teachers. The total variance explained by the factor model was 58.00% and the McDonald's omega was 0.79 and 0.87 for both subscales, respectively (see Table 5).

Table 5. *Items in each scale and factor loadings from the EFA*

ITEMS	Loadings	
	Teachers	Learning
I'm glad we learn some subjects in a second language in my school.		.511
Learning the contents of the subjects in a second language is easy.		.832
It is a good idea that we learn some subjects in a second language.		.597
I would prefer all subjects to be taught in a second language.		.715
My teachers who teach a subject in a second language are good at teaching.	.836	
My teachers who teach a subject in a second language have a good command of the second language.	.769	
My teachers who teach a subject in a second language use good teaching materials in class.	.815	
My teachers who teach a subject in a second language make their lessons interesting.	.667	

8.3. Evidence for the validity and reliability of the anxiety scale

Both Barlett's test ($c^2(6) = 206.13$, $p<0.001$) and KMO (.756) confirmed the adequacy of the sample for factorial analyses, explaining 50.8% of the item variance with a single factor solution. The reliability of the scale was 0.70 using the McDonald's omega statistic (see Table 6).

Table 6. *Items in each scale and factor loadings from the EFA*

ITEMS	Loadings
I feel nervous when I have to speak in a second language.	.710
I don't worry about making mistakes when speaking in a second language in front of my class.	.437
I feel more tense and nervous when a subject is taught in a second language.	.677
I always feel that the other students speak the second language better than I do.	.722