

# Study of the satisfaction by age and gender of secondary school students with the integrated learning of Basketball and English language through a Non-linear Pedagogy

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Received: 19/03/2023 / Accepted: 23/05/2023

DOI: <https://doi.org/10.30827/portalin.viVII.29171>

ISSN paper edition: 1697-7467, ISSN digital edition: 2695-8244

**ABSTRACT:** Content and Language Integrated Learning (CLIL) is increasingly being researched and developed in Spain. This system is based on combining the four language skills (listening, speaking, reading and writing) in a realistic context, which makes the use of language functional, with numerous studies showing the benefits of this type of content combination. The aim of the study is to analyze the differences in the effect of this type of learning in relation to the gender or ages of the students participating in such programs. The sample selected for the study was 46 students, with an average age of 13.39 years, corresponding to the 2nd and 4th years of secondary education. The SSI-BPE (Sport Satisfaction Instrument in Bilingual Physical Education) questionnaire was used to record the degree of student satisfaction. The results indicate that the bilingual teaching modality in PE classes for the development of content related to the sport of basketball is associated with an increase in satisfaction and enjoyment of the classes. However, it appears that this motivation decreases with age.

**Key words:** bilingual physical education, satisfaction, CLIL methodology, SSI-BPE questionnaire, basketball.

## **Estudio de la satisfacción por edad y género del alumnado de Educación Secundaria hacia el aprendizaje integrado de Baloncesto y Lengua Inglesa a través de una Pedagogía No-Lineal**

**RESUMEN:** El Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE) se está investigando y desarrollando en España cada vez más. Este sistema se basa en combinar las cuatro habilidades del lenguaje (escucha, habla, lectura y escritura) en un contexto realista, lo que hace que el uso del lenguaje sea funcional, siendo numerosos los estudios que muestran los beneficios de este tipo de combinación de contenidos. El objetivo del estudio es analizar las diferencias del efecto de este tipo de aprendizaje en relación al género o las edades de los estudiantes que participan en dichos programas. La muestra seleccionada para el estudio fue de 46 estudiantes, con una edad media de 13,39 años, correspondiente a los cursos 2º y 4º de educación secundaria. Para el registro del grado de satisfacción del alumnado se utilizó el cuestionario SSI-BPE (Sport Satisfaction Instrument in Bilingual Physical Education). Los resultados indican que la modalidad de enseñanza bilingüe en las clases de EF para el desarrollo de contenido relacionado con el deporte del baloncesto se asocia con un incremento de la satisfacción y disfrute hacia las clases. No obstante, parece ser que esta motivación decrece con la edad.

**Palabras clave:** educación física bilingüe, satisfacción, metodología AICLE, cuestionario SSI-BPE, baloncesto.

## 1. INTRODUCTION

### 1.1. Towards bilingual Physical Education

Currently, foreign language learning is very popular, and is even considered essential in the education of our students. This is why Content and Language Integrated Learning (CLIL) is increasingly being researched and developed in Spain (Gil-López et al., 2019), becoming a necessity in educational systems worldwide (Trujillo & Salvadores, 2019). CLIL is based on combining the four language skills (listening, speaking, reading and writing) in a realistic context, making language use functional.

However, implementing changes in education can be difficult, despite being a simple task. Language learning through other curricular content is a common trend in language teaching, so it is important for educational research to examine the strengths, weaknesses, and limitations of this trend (Hargreaves & Fink, 2006).

But the development of metalinguistic skills is essential for the acquisition of communicative competences in different languages, both formally and informally. Although education is on the right track to promote this approach, there is still a lot of research to be done, especially from the perspective of the different subjects that apply it, as in our case in Physical Education (PE) classes through the practice of basketball. Although this approach can be used in other areas of the curriculum, PE is an excellent opportunity, due to the special characteristics of the subject, which make it an ideal environment for linguistic development (Andrés et al., 2014).

The subject of EF is distinguished from the others by several aspects that are important for understanding it as a whole. One of the distinctive features of PE is that it is based on physical practice and uses an active pedagogy to educate (Lavega, 2007). Therefore, it can be stated that the motor task is the basic unit on which most of the activities of the subject are based (Alonso et al., 2015). PE offers a complete motor experience that involves the activation of cognitive, affective and relational dimensions. It is important to take into account these particular characteristics of EF to better understand how it can be successfully integrated into CLIL (Fernández-Sanjurjo et al., 2017).

### 1.2. Basic principles of content and foreign language integrated learning

In Spain, the Organic Law of the basic curriculum of Primary Education establishes the competence in communication in the mother tongue and in foreign languages as a single key competence: linguistic communication. In addition, the objectives of this stage establish that the acquisition of basic communicative competence in a foreign language should enable the student to express him/herself and understand simple messages in everyday situations (Trujillo & Salvadores, 2019). On the other hand, in recent years the Content and Language Integrated Learning (CLIL) methodology, which involves teaching curriculum subjects in a foreign language in order to learn both the content and the foreign language simultaneously, has gained popularity.

In this sense, it is currently evident that educational authorities are committed to learning English through content, and a methodology that adapts to this demand, Content and Foreign Language Integrated Learning (CLIL), specifically applied to the subject of EF, is

presented (García et al., 2016). The main objective pursued is for students to acquire basic communicative competence in at least one foreign language to be able to express themselves and understand simple messages in everyday situations.

When implementing a CLIL practice, it is important to keep in mind four key principles: Content, Communication, Cognition and Culture, as established by Marsh (2015). Being competent means using knowledge, skills and attitudes effectively in different contexts and in a cross-cutting manner. Basic competencies are especially relevant in the current Spanish educational context and the CLIL approach is gaining acceptance in this area. It is recognized that PE contributes to the acquisition of basic competencies, particularly in knowledge of and interaction with the physical world and social and civic competence. However, the contribution of PE to communicative competence has not been as highlighted by authors, but the CLIL approach offers new possibilities in this area (Coyle et al., 2010; Pérez-Cañado, 2018; Gil-López et al., 2021).

### **1.3. TPR Method (Total Physical Response) and the Non-linear Pedagogy**

In relation to the TPR method, Content and Language Integrated Learning (CLIL) proposes a different methodology to traditional language teaching, focusing on grammar. Instead, it focuses on content, making the whole learning process revolve around the non-linguistic subject matter. This is in line with current theories of language learning, which emphasize both meaning and form. Essential skills for communication in native and foreign languages include comprehension of oral messages, the ability to initiate, maintain, and conclude conversations, and the ability to read, understand, and produce texts appropriate to one's needs. In addition, it is important that students develop metalinguistic skills for learning the formal aspects of language and reading, and also have the ability to continuously learn other languages in informal or non-formal contexts.

The methodology to implement CLIL together with critical pedagogy should include teaching styles that cognitively involve the student and encourage their participation, promoting both the development of the 4cs framework and the emancipatory goal of the learning process. These styles are classified as search- and discovery-based learning, in which a relationship is established between physical and cognitive activity, facilitating student emancipation and decision-making capacity (Chiva-Bartoll et al., 2015).

The CLIL EF involves the motor, linguistic, cognitive and social domains. The EF task in CLIL is defined as a basic unit of activities, exercises and problem-situations with an established objective, processes and steps through which the learner must use various motor, communicative/linguistic, cognitive and volitional procedures that result in a defined end product, according to Coral (2012). When planning a bilingual EF class, it is important to maintain the main curricular elements without significant changes, but some aspects must be adapted to allow the effective implementation of Content and Language Integrated Learning (CLIL). These aspects include objectives, methodology, assessment and grading.

The CLIL approach involves using a non-linguistic area to develop language. To achieve this, it is necessary to adapt the EF sessions to give adequate importance to language, generate meaningful and real communicative situations in which the 4Cs are used, and adjust the level of cognitive and linguistic demand to the needs of the learners (Alonso et al., 2015). The TPR (Total Physical Response) method is a teaching approach that uses movement for

foreign language learning and cognitive development. According to Canga (2012), Asher (2003) suggests that the most appropriate model for language teaching should be similar to that used for native language learning, which underpins Total Physical Response.

This method combines verbal and motor skills in language teaching. According to Sanchez (2014), students learn more fluently when the activities are every day, observing how their peers use the language. In addition, they focus on the meaning of the sentence rather than on grammar. Rottmann (2006) identified four types of tasks that combine English language learning and EF subject content. The first task is the imitation and reproduction task, where learners imitate previously taught movements and language. For example, a student performs a volleyball serve and his partner indicates “serve” in English. The second task is movement reproduction and language creation, where students are taught a motor action and spontaneous language production is encouraged. For example, a student performs a serve and his partner gives him instructions in English to improve his serve. The third task is the experimentation of movements and repetition of learned phrases and words, where students experiment with different movements and repeat the instructions in English. For example, the teacher gives directions in English to the observer student while the other student experiments with different serves. The fourth task is movement experimentation and language use, where while one student experiments with different movements, the other gives feedback in English.

In relation to Non-linear Pedagogy (NLP), focuses on the learner and their ability to create their own learning path, rather than following a traditional, structured approach. It does not teach content in a linear fashion, from the most basic to the most advanced, but focuses on designing an environment in which students can explore and discover the content for themselves.

NLP is based on the idea that every student learns differently. Therefore, rather than imposing a set curriculum, teachers who adopt this methodology can allow students to choose their own learning path. For example, instead of teaching a mathematics lesson in a specific order, a teacher following a non-linear pedagogy might present several mathematics problems and allow students to solve them in any order they wish. This methodology is based on the belief that students learn best when they are motivated and engaged with the learning material. Rather than simply memorising information, students can create their own connections and understand the material better when they are allowed to explore it in a freer and more personalised way.

However, NLP does not mean that there is no defined structure in the classroom during the session, as teachers are responsible for setting clear expectations and providing guidance and support to students throughout the learning process. In this case, rather than imposing a rigid curriculum, teachers allow students to have more control and responsibility for their own learning, and thus develop their capacity for autonomy to a greater extent.

In short, NLP focuses on the learner and their ability to create their own learning path. Teachers who adopt this methodology allow students to explore and discover content on their own, which fosters motivation, engagement and deep understanding of the learning material.

#### **1.4. Motivation towards learning. Key to success**

In bilingual PE, it is as important to consider content and linguistic objectives as it is to consider student satisfaction with learning. Sánchez-Bañuelos (1992) indicates that

the inclusion of a foreign language in the teaching of EF could lead to a loss of content and, consequently, could affect the integrity of the subject. However, there are currently several research studies that show that teaching EF in English through CLIL can have positive effects on language learning, as well as on students' motivation and verbal and expressive skills. González-Villora et al. (2013) demonstrated that the playful component of EF helps English language learning, while Coral (2010) concluded that EF offers an innovative opportunity for learning a foreign language. Alías (2011) also highlighted that students have a positive perception of this methodology and that the process of teaching and learning English through EF is motivating. In addition, critical pedagogy uses Bloom's taxonomy to motivate students to develop their own values and emotions, evolving from the passive reception of affective stimuli to the organization of their own values and attitudes. Chiva-Bartoll et al., 2015).

It has been observed in several research studies that learning progress is greater when the contents worked on can be used outside the school. To achieve this, interaction is essential in the teaching-learning process, where activities that offer real and meaningful communicative situations are carried out, allowing the learner to be the active protagonist of his or her own learning. In this sense, Coral (2010) conducted a study in which it was shown that students' intrinsic motivation to perform physical movements has a positive impact on their learning of English. In addition, the application of the TPR method to EF classes also significantly improves students' comprehension of English, as suggested by Asher (2003). Halbach (2008) highlights the area of EF as an excellent way of developing and learning English, due to the involvement of movement, gestures and other practical and playful expressions, which make the teaching-learning process more fluid and dynamic.

The purpose of this study was to compare between genders and different ages the effects on the motivation to learn English as a foreign language through the use of CLIL methodology in the subject of EF during the development of basketball-related content through a non-linear pedagogy.

## **2. METODOLOGY**

### **2.1. Design and participants**

The study is conducted in an educational center of Secondary Education in the province of Seville, where a programming is developed in BPE-CLIL, following a 4Cs template in Physical Education (García-Calvo, 2018). The sample selected for this (Table 1) was a total of 46 students, with an average age of 14.39 years. There were 2 groups, group 1 of 22 students (12 female students and 10 male students), corresponding to the 2nd year, and group 2 of 24 students (13 female students and 11 male students), corresponding to the 4th year. Both groups used a non-linear teaching pedagogy for the integrated learning of basketball and English language.

**Table 1.** *Participants*

Course	Students			Average age
	Man	Women	Total	
2°	10	12	22	13,31
4°	11	13	24	15,48
Total	21	25	46	14,39

## 2.2. Materials and instruments

The SSI-BPE (Sport Satisfaction Instrument in Bilingual Physical Education) questionnaire was used. The instrument was validated in Spanish (Baena-Extremera & Granero-Gallegos, 2015) based on the Sport Satisfaction Instrument in Physical Education (Baena-Extremera et al., 2012). It is composed of an 8-item scale, which records intrinsic satisfaction through a Likert-type psychometric scale (1, strongly disagree; 2 somewhat disagree; 3, neutral; 4, somewhat agree; and 5, strongly agree) in relation to two subscales: fun and boredom. In this study, the internal consistency of the scale was high.

## 2.3. Procedure

The necessary permissions were obtained to carry out the study, on the one hand the authorization of the different educational centers, and on the other the informed consent of the families of the participating students. Parents, guardians and students were informed of the protocol and the purpose of the study. The research was conducted in accordance with the ethical guidelines of the Declaration of Helsinki. The SSI-BPE questionnaire was applied before and after (pre-test/post-test) developing the basketball Didactic Unit by the Physical Education teacher. A total of 8 sessions of 45 minutes each were carried out. Confidentiality and anonymity of the answers were guaranteed at all times.

## 2.4. Data analysis

The SPSS 25 statistical package was used to analyze the data obtained. A descriptive analysis of the data recorded through the SSI-BPE questionnaire was performed. The validity of the instrument was tested. In relation to reliability, the descriptive statistics were carried out in a two-dimensional way, on the one hand the items related to fun (1, 5, 6, 7 and 8), whose correlation analyzed showed a Cronbach's Alpha reliability index ( $\alpha$ ) = ,87 and on the other hand the items related to boredom (2, 3 and 4), whose correlation analyzed was  $\alpha$  = ,81, indicating the robustness and reliability of the instrument used.

### 3. RESULTS AND DISCUSSION

Once the didactic unit was developed, where basketball and English language contents were introduced in an integrated way through a non-linear pedagogy, the results obtained from the different variables of the study indicate a greater satisfaction of secondary school students towards the teaching of integrated basketball and English language contents.

The following table (Table 2) shows the pretest and posttest descriptive analysis of the study variables fun/satisfaction and boredom through the mean, standard deviation and significance, indicating a significant difference in the satisfaction/fun variable, and no significant difference in the boredom variable.

**Table 2.** *Descriptive analysis*

Variables	M		DT		p-value
	Pre	Post	Pre	Post	
Fun	3.47	4.64	.89	.605	.00**
Boredom	1.48	1.41	.70	.794	.02

$p < .001^{**}$

For the variable “fun”, a significant increase in the mean was observed after the intervention ( $M = 4.64$ ) compared to before the intervention ( $M = 3.47$ ), suggesting that the intervention has been effective and positive in relation to fun. In addition, the standard deviation of the variable decreased after treatment ( $SD = 0.605$ ) compared to before treatment ( $SD = 0.89$ ), indicating that the distribution of scores has become more homogeneous. The  $p$  value  $< 0.001^{**}$  indicates that the difference between means before and after treatment is highly significant.

Regarding the variable “Boredom”, a non-significant decrease in the mean of the variable was observed after treatment ( $M = 1.41$ ) compared to before treatment ( $M = 1.48$ ). However, the standard deviation of the variable increased after treatment ( $SD = 0.794$ ) compared to before treatment ( $SD = 0.70$ ), indicating that the distribution of scores has become more dispersed. The  $p$  value = 0.02 indicates that the difference between the means before and after treatment is significant at the 0.05 level, but not at the 0.01 level.

In summary, the results suggest that the treatment has been effective in relation to the increase in the variable fun, but has not had a significant effect in relation to the decrease in boredom. It is important to keep in mind that the descriptive analysis provides useful information about the distribution and central tendency of the data, but does not allow causal inferences about the effect of the treatment, for which Student’s  $t$ -test was then performed.

In relation to the satisfaction results, the following table (Table 3) shows the results taking into account the students’ grade (2nd or 4th).

**Table 3.** *Satisfaction results in relation to the course*

Course	N	M/DT	t-Student	p-value
2nd	22	3.98/1.4	.026	0.59
4th	24	2.34/1.3	0.48	0.47
			2° y 4° .000**	

$p < .001^{**}$

The “Course” column indicates the grade to which each group belongs, the “N” column shows the number of participants in each group, the “M/DT” column shows the mean (M) and standard deviation (SD) of the satisfaction of the participants in each group, and the “t-Student” column shows the values of the t-Student statistical test, used to compare the means of both groups. In this case, the t-Student value for the 2nd grade group is 0.026 and the t-Student value for the 4th grade is 0.48. Finally, the “p-value” column shows the p-value corresponding to the t-Student test. For the 2nd course, the p-value is 0.59, indicating that there is no significant difference in satisfaction among the participants in this course. For grade 4, the p-value is 0.47, which also indicates that there is no significant difference in satisfaction among participants in this grade.

A summary of the results of the comparison between the two groups is presented at the bottom of the table. It indicates that there is a statistically significant difference between the two groups, with a value of  $p < .001^{**}$ . This means that the observed difference between the satisfaction means of the two groups is unlikely to have been due to chance. The double asterisk indicates that this difference is statistically highly significant.

Overall, the results suggest that students in Year 2 are more satisfied than participants in Year 4. However, it is important to keep in mind that although this difference is statistically significant, the sample size is relatively small, so the results may not be generalizable to the entire population.

In relation to the satisfaction results taking into account gender (male or female), the table 4 shows that the t-Student value for the male gender is 3.43, and the t-Student value for the female gender is 4.54. The “p-value” column shows the p-value corresponding to the Student t-test. For the male gender, the p-value is 0.001, indicating that there is a significant difference in satisfaction among students of this gender. For the female gender, the p-value is less than 0.001, which also indicates that there is a significant difference in satisfaction among students of this gender. The difference between the means of satisfaction between male and female gender participants is statistically significant, indicating that participants’ satisfaction varies significantly by gender.

**Table 4.** *Satisfaction results in relation to gender*

Gender	N	M/DT	t-Student	p-value
Male	21	3.43/1.1		Male/female
Female	25	4.54/1.3		.001**

$p < .001^{**}$

Overall, the results suggest that female participants are more satisfied with the course than male participants. The statistically highly significant p-value indicates that the observed difference between the means of satisfaction of the two genders is very unlikely to be due to chance. However, it is important to keep in mind that these results refer only to the sample that participated in our study, and therefore generalization to the total population should be approached with caution.

In view of the results obtained, it seems that the combined teaching of basketball-related content in physical education and English classes has a positive satisfaction effect on secondary school students, as indicated in their studies by Coral et al. (2017) and García-Calvo and Salaberri (2018). Furthermore, it seems that satisfaction with combined physical activity and English classes decreases with age, as also suggested by García Calvo et al. (2019), whose study also found significant differences between sexes.

#### 4. CONCLUSIONS

The main objective of this study was to know the differences in relation to gender and age of the effect of a combined application of contents related to physical activity and English language in secondary school students through a non-linear pedagogy. After the development of this research and the results obtained, which showed high average satisfaction scores in an integrated learning environment of content and language, it can be concluded that the bilingual teaching modality in PE classes for the development of content related to the sport of basketball is associated with an increase in satisfaction and enjoyment of the classes. As limitations of the study and proposals for improvement, we recommend conducting research along the same lines with a larger sample, as well as with longitudinal designs (as opposed to the cross-sectional design used in our study), thus allowing us to observe the evolutionary development of the variables analyzed, and with it a possible greater generalization of the results. In addition, it would be necessary to broaden the age range of the samples selected for the studies, in order to know the effect of this type of learning environment in each of the developmental stages of the students, as well as to analyze gender differences in relation to satisfaction at different educational levels, through the use of mixed methodologies that allow us to record relevant information for this purpose.

## 5. LIMITATIONS

The following are some of the main limitations of integrated learning of English language and physical education, in our case, basketball-related content.

First, the language barrier, caused by those students who do not have a sufficient level of proficiency in English, thus presenting difficulties to understand and communicate in this language during the activities developed during the session. This may limit their participation and understanding of the instructions and objectives of the class. On the other hand, the equitable evaluation of students' learning in both areas can fall in some cases into subjectivity, being extremely difficult to evaluate them in a fair and objective manner. In addition, integrating English language learning into physical education may require specific resources and materials, such as textbooks or activities designed to teach basketball-related vocabulary. The lack of these resources may limit the effectiveness of such integration. And finally, mention the limited time available for the development of these programs, which hinders the proper implementation of this approach, thereby limiting opportunities for student practice and participation.

Despite the limitations mentioned above, we believe that integrated English language and basketball learning offers numerous benefits, such as improving students' language skills through hands-on activities and promoting a more holistic approach to education in general.

## 6. PROSPECTS

The development of an integrated curriculum for teaching English and physical education is proposed, examining the different components of the curriculum, including learning objectives, practical activities and assessment strategies, in order to implement and evaluate it in a real educational environment. In addition, it is proposed to study and analyze the most effective methods for training teachers in the integrated teaching of English and physical education, identifying the best training practices and evaluating their effect on the implementation of such an educational approach. It would also be interesting to analyze the effect of integrated teaching of English and physical education on the promotion of intercultural competence among students. Finally, an analysis of interdisciplinary collaboration is proposed, exploring the collaboration between English and physical education teachers, in order to strengthen in an integrated way students' learning in both fields.

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