The impact of Content and Language Integrated Learning on students' motivation on second language learning: A study on academic motivation to second language learning

El impacto del aprendizaje integrado de contenidos y lenguas en la motivación de los estudiantes en el aprendizaje de una segunda lengua: un estudio sobre la motivación académica para el aprendizaje de una segunda lengua

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Abstract

Motivation of students and teachers is a key factor in ensuring students' success in learning a second language. Different research works show that academic motivation can significantly impact on students' knowledge, skill development, attitudes, and performance in learning a second language. The aim of the current article is to determine the impact Content and Language Integrated Learning can have on students' second language learning motivation. A study of students' academic motivation when comparing traditional English as a foreign language instruction and Content and Language Integrated instruction in the Latin American context is shown. A sample of two hundred and thirty high school students (eleven - thirteen years old), three English teachers, as well as three Science teachers enrolled in traditional English as a foreign language and Content and Language Integrated Learning programs respectively participated in the study. Different research methods were used such as survey and interview in addition to mathematical-statistical procedures to gather, organize and presentation of dataset by means of tables. The data were gathered and process by means of a quantitative questionnaire and the Academic Motivation Scale. The statistical analyses revealed that students enrolled in Content and Language Integrated Learning were more motivated in learning English as a second language than students enrolled in traditional English as a foreign language learning.

Resumen

La motivación de profesores y estudiantes es un elemento esencial para elevar los resultados docentes en el aprendizaje de una lengua extranjera. Diferentes investigaciones muestran que la motivación académica impacta significativamente en los conocimientos, el desarrollo de habilidades, las actitudes y los resultados docentes en el aprendizaje de una lengua extranjera. El objetivo del presente artículo es determinar el impacto que el aprendizaje integrado de contenidos e idioma puede tener en la motivación de los estudiantes para aprender una segunda lengua. Se exponen los resultados de un estudio de la motivación académica de los estudiantes, comparando la enseñanza tradicional del inglés como lengua extranjera y el aprendizaje integrado de contenidos e idioma en el contexto educativo latinoamericano. Una muestra de doscientos treinta estudiantes de secundaria básica (entre once y trece años), tres profesores de inglés y tres profesores de ciencias, con experiencia en la enseñanza tradicional del inglés como lengua extranjera y el aprendizaje integrado de contenidos e idiomas respectivamente, participaron en el estudio. Se utilizaron diferentes métodos de investigación, tales como la encuesta y la entrevista, así como los procedimientos matemáticos-estadísticos para la recopilación, organización y presentación de datos mediante tablas. Los datos se recolectaron y procesaron con la ayuda de un cuestionario cuantitativo y la Escala de Motivación Académica. El análisis estadístico reveló que los estudiantes involucrados en el aprendizaje integrado de contenidos e idioma experimentaron mayor motivación que los estudiantes involucrados en el aprendizaje tradicional del inglés como lengua extranjera.

Keywords: *Aprendizaje Integrado de Contenidos e Idioma, aprendizaje de segundo idioma, motivación.*

Introduction

Many students require or want their teachers to motivate, challenge, and engage them even while some appear to learn with a natural enthusiasm. Effective classroom learning environment is necessary for the teacher to maintain the pupils' initial interest in the subject (Davis, 1999). Therefore, if teachers want to see results in their classroom, they should understand the importance of motivation within the classroom. In this regard, students' motivation is essentially important when learning a second language (L2).

Motivation is defined as acting to do something. Consequently, with this definition, persons who want to participate vigorously or actively are described as motivated while persons who do not have a motive or inspiration to take an action are described as a motivated, (Deci & Ryan, 1991). Academic motivation is a more specific concept and is defined as "a process in which direct target activity is started and maintained." (Bozanoğlu, 2004, p. 3)

Individuals have different reasons and aims to act, that is why Ryan and Deci (2000) define three types of motivation: intrinsic motivation, extrinsic motivation and amotivation. Consistent with this classification, intrinsically motivated behaviors are driven by the satisfaction of individuals' pleasure doing something because of the fact that they intrinsically like and enjoy it, whereas extrinsically motivated behaviors represent individuals doing something for the outcomes and are considered a means to an end. On the other hand, amotivation is generally observed when

individuals feel that they are not self-sufficient to reach the desired goals and their actions are the result of forces that are beyond their control.

Numerous research works on the fields of Phycology, Sociology and Pedagogy state that the level of motivation influence on cognition development. Every cognitive process is determined by an individual need that is why a positive affective state favor memorization and other cognitive processes. To be exact "there exists a dynamic meaningful system that constitutes a unity of affective and intellectual processes." (Vygotsky, 2004, p. 41)

In educational researches, the term academic motivation is used to refer students' motivation towards academic activities and it is recognized as a key factor for academic success. Academic motivation is a more specific concept, which is related to cognitive, behavioral, and affective training factors (Vallerand et al. 1992). In this sense, academic motivation is assumed as "students' energy and drive to learn, work hard, and achieve at school." (Martin, 2001, p. 3)

Many instruments have been designed to measure student motivation. For example, Deci and Ryan (1991) and Vallerand, et al. (1992), designed an Academic Motivation Scale (AMS) based on the self-determination theory principles and the motivation types which are consistently used in many educational researches.

Motivation is determined by individual differences, situational differences, social and cultural factors and cognition. In this regard, language learning researches reveled that students' motivation play an important role in a L2 learning. As a result, the concept of L2 learning motivation has been studied from different dimensions and perspective. (Doiz, Lasagabaster, & Sierra, 2014)

A great volume of papers has been published regarding motivation in learning English as a Foreign Language (EFL), which have shown a clear correlation between motivation and language learning (Heras & Lasagabaster, 2015). However, English as a foreign language (EFL) has achieved unsatisfactory results in many formal education settings worldwide.

It is said that language skills are better developed and emerge naturally in a given context throughout interdisciplinary relationships. Nevertheless, curriculum subjects are taught separately and most of teachers face many challenges integrating contents and disregard integration to favor motivation and learning of students. (Miranda, Carballosa, & Arcia, 2017)

To overcome the above-mentioned challenge, it is necessary to generate adequate learning contexts to develop intrinsic motivation which foster learning autonomy and cooperative learning. Open and real situations need to be considered as well as the unit of affective and cognitive in the teaching and learning process. In this regards, Content and Language Integrated Learning (CLIL) has been stablished as an alternative to EFL learning where researchers state that "One of the most powerful findings of CLIL groups centers on increased motivation in both learners and teachers." (Coyle, 2006, p. 11)

The term CLIL was introduced at the beginning of nighty decade of XX century in Europe. It was introduced with both, political (European labor mobility) and educational (bilingual education)

purposes (Attard, Walter, Theodorou, & Chrysanthou, 2015). Currently, CLIL is stablished not only as form of bilingual education but as an innovative pedagogical approach which is applied to learn different subject content as well.

CLIL has been defined as:

> A dual-focused educational approach in which an additional language is used for learning and teaching of both content and language. There is a focus not only on content and not only on language. Each is interwoven – even if the emphasis is greater on one than the other at a given time. (Coyle, Hood, & Marsh, 2010, p. 1)

CLIL is globally spread in different regions and countries. Research works demonstrate that when a language is taught integrated with an academic content of different subjects such as Science, Physics, Mathematics, Chemistry or Biology learning is more effective than when the language is taught without subject content integration. In CLIL settings, students simultaneously learn the subject content and develop specialized vocabulary and effective communication skills by communicating more frequently in English during academic activities. (Vázquez Vargas & Gamboa Graus, 2021)

In addition to the above referred ideas, Miranda, Carballosa, and Arcia (2017), define different principles of CLIL such as: language knowledge is a mean to learn subject content; language is integrated with curriculum contents; learning effectiveness as a result of increasing motivation; contextualized language learning based on opened real life situations; flexible language learning; fluency is more important than accuracy and mistakes are part of natural language learning process. (p. 39)

Along with the above mention ideas, the main purpose of this paper is to study how CLIL improve L2 students' motivation, comparing traditional High School EFL program with High School CLIL program.

Materials and methods

Participants
The studied sample involved 230 high school students of grade eight (aged 11–13). The students of the sample were randomly selected from two high schools in an urban city. The students were grouped in six classes. Three classes were enrolled in traditional EFL learning program while three classes were enrolled in CLIL program. To implement CLIL activities, a school whose curriculum included science courses were identified in which CLIL activities were developed as part of the science curriculum. All participants of this study took EFL courses in their high schools.

Instruments
Academic motivation of the students was measured using the Academic Motivation Scale (AMS-HS 28) which consist of 28 Items and seven dimensions: amotivation, three types of extrinsic motivation (external, introjected and identified regulation) and three types of intrinsic motivation

(knowing, accomplishing and experiencing stimulation) (Vallerand et al., 1993). Table 1 displays acronyms used to identify different types of motivation or dimensions.

Table 1: *Acronyms used in the study. Source: Authors*

Symbol	Description of acronyms
IMK	Intrinsic motivation - to know
IMA	Intrinsic motivation - toward accomplishment
IMES	Intrinsic motivation - to experience stimulation
EMID	Extrinsic motivation – identified
EMIN	Extrinsic motivation – introjected
EMER	Extrinsic motivation - external regulation
AM	Amotivation

The data were gathered by means of the 28 items questionnaire. Each dimension or type of academic motivation is assessed with the aid of a seven-point Likert scale from 1 to 7. A minor change was made to the original questionnaire in accordance with the purpose of the study to assess students' academic motivation towards L2 learning (Table 2).

Table 2: *Academic motivation towards L2 learning Questionnaire. Source: (Vallerand, et al., 1993)*

Background: Dear student, using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you learn English as a Second Language (L2). You are encouraged to be frank and honest in your responses.							
Scale: Does not correspond at all (1), Corresponds a little (2), Corresponds a little (3), Corresponds moderately (4), Corresponds a lot (5), Corresponds a lot (6) and corresponds exactly (7).							
Why do you learn English as a second language (L2)?							
1. Because I need at least a L2 in order to find a high-paying job later on.	1	2	3	4	5	6	7
2. Because I experience pleasure and satisfaction while learning L2.	1	2	3	4	5	6	7
3. Because I think that learning L2 will help me better prepare for the career I have chosen.	1	2	3	4	5	6	7
4. Because I really like to learn L2.	1	2	3	4	5	6	7
5. Honestly, I don't know; I really feel that I am wasting my time learning L2.	1	2	3	4	5	6	7

6. For the pleasure I experience while surpassing myself in my L2 studies.	1	2	3	4	5	6	7
7. To prove to myself that I am capable of learning L2.	1	2	3	4	5	6	7
8. In order to obtain a more prestigious job later on.	1	2	3	4	5	6	7
9. For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5	6	7
10. Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5	6	7
11. Because for me, learning L2 is fun.	1	2	3	4	5	6	7
12. I once had good reasons for learning L2; however, now I wonder whether I should continue.	1	2	3	4	5	6	7
13. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments learning L2.	1	2	3	4	5	6	7
14. Because of the fact that when I succeed in learning L2, I feel important.	1	2	3	4	5	6	7
15. Because I want to have "the good life" later on.	1	2	3	4	5	6	7
16. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	1	2	3	4	5	6	7
17. Because this will help me make a better choice regarding my career orientation.	1	2	3	4	5	6	7
18. For the pleasure that I experience when I am taken by discussions with interesting teachers.	1	2	3	4	5	6	7
19. I can't see why I learn L2 and frankly, I couldn't care less.	1	2	3	4	5	6	7
20. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities in L2.	1	2	3	4	5	6	7
21. To show myself that I am an intelligent person.	1	2	3	4	5	6	7
22. In order to have a better salary later on.	1	2	3	4	5	6	7
23. Because my L2 studies allow me to continue to learn about many things that interest me.	1	2	3	4	5	6	7
24. Because I believe that learning L2 will improve my competence as a worker.	1	2	3	4	5	6	7
25. For the "high" feeling that I experience while reading in L2 about various interesting subjects.	1	2	3	4	5	6	7
26. I don't know; I can't understand what I am doing learning L2.	1	2	3	4	5	6	7
27. Because learning L2 allows me to experience a personal satisfaction in my quest for excellence in my studies.	1	2	3	4	5	6	7

28. Because I want to show myself that I can succeed in my L2 studies.	1	2	3	4	5	6	7

Procedure

The general procedure applied consisted of different phases. The first phase included the planning or preparation, in the phase step the information was gathered, organized, and processed, in third phase the information was analyzed, synthetized and interpreted and in the fourth or last phase the conclusions of the study were drawn. (Gamboa, 2021; Vázquez, 2023)

Three science teachers were asked to participate and allow their students to get involved in the research. As a pre-requisite for science teacher to participate in the study was stablished that those science teachers should have good English Language Communicative Competence as well as a good Cognitive Academic Language Proficiency (Cummins, 1983) in order to implement CLIL activities during science lessons. The selected students should be enrolled in English as L2 learning program. Students filled out the questionnaire in class.

The literature review shows that CLIL increased motivation in both learners and teachers. Then, an alternative hypothesis was formulated as: $H_a: \mu \neq H_o$, where H_o is the null hypothesis. The data were gathered by means of a quantitative questionnaire and the Academic Motivation Scale. The questionnaire was completed after a six-week period of completion of EFL and CLIL programs. Microsoft Office Excell was used to process dataset.

In view of only seven dimensions or academic motivation types were compared (less than 30), T-test was for statistical analysis used to compare the means of the two groups of students. In the completion of the referred statistical analysis different steps were executed. The first step was to organized the information appropriately, in the second step the alternative hypothesis was formulated, in the third step the statistical of t-test was calculated by the equation $t = \left[\bar{X}_{diferrence} \Big/ \left(SD_{diferrence} / \sqrt{n} \right) \right]$, where $\bar{X}_{diferrence}$ is said to be the mean of differences, $SD_{diferrence}$ is the standard deviation of difference and n is the pair number. In the last or four step the value of p was determine by means of an online calculator.

Results

Cronbach alpha was used to estimate the internal consistency of the AMS. Scales coefficient alphas, means and SD for each dimension are displayed in Table 3. Cronbach's coefficient ranged from 0.60 to 0.96 in all dimensions which are consistent with (Vallerand et al., 1992). This finding reveled that the results derived from this dataset had high reliability.

As mention above, 230 high school students were taken as a sample. All the students took English as a L2, but 115 students were enrolled in traditional EFL learning program while 115 were enrolled in CLIL program in order to explore if there is any difference in the seven dimensions of academic motivation comparing the mean and standard deviation.

Table 3: *Means, standard deviations, Cronbach alpha. Source: Authors*

Dimensions	EFL		Cronbach α	CLIL		Cronbach α	Difference
	Mean	SD		Mean	SD		
IMK	1,65	0,47	0,89	3,92	1,20	0,82	-2,27
IMA	1,72	0,83	0,92	3,85	1,19	0,80	-2,13
IMES	1,27	0,63	0,96	3,83	0,89	0,85	-2,57
EMID	1,49	0,39	0,78	3,84	1,37	0,91	-2,35
EMIN	1,48	0,63	0,89	3,88	1,49	0,84	-2,40
EMER	1,47	0,48	0,60	3,83	1,43	0,73	-2,35
AM	4,58	1,80	0,60	2,06	0,62	0,63	2,52

The analyses of results revealed significant differences between traditional EFL students and CLIL students in terms of academic motivation. Taking IMA as reference, the students enrolled in CLIL setting showed higher values of Mean and SD (Mean =3,85 and SD = 1.20) than the students enrolled in EFL setting (Mean= 1,72 and SD =0,83). In contrast, the students enrolled in EFL setting experience higher values of Mean and SD (Mean =4,58 and SD = 1.80) than the students enrolled in CLIL setting (Mean =2,06 and SD = 0.62).

Discussion

This study analyzed whether CLIL activities improve student's academic motivation towards L2 compared with traditional EFL learning in the Latin American context. As part of the research process a t-test was used as statistical hypothesis test to compare academic motivation average of two groups of students enrolled in EFL and CLIL programs. It was found that $p < \alpha = 0,05$, therefore, the null hypothesis is rejected. In other words, it was proved that there is a significant difference between the students enrolled in CLIL setting and the students enrolled in traditional EFL setting in terms of academic motivation.

The analysis of the results showed that the students in the CLIL program were more motivated than the traditional EFL program after six-week period, revealing the importance of the CLIL teaching approach to improve students' motivation towards L2 learning. In particular, students' academic motivation means of six dimensions (IMK, IMA, IMES, EMIN, EMID and EMER) are higher in CLIL program (For example, IMK mean was 3,92) than AM means in traditional EFL program (For example, IMK mean was 1,65). Oppositely, AM was lower in in CLIL program (For example, AM mean was 2,06) than AM means in traditional EFL program (For example, AM mean was 4,58).

Despite of the fact that most research works showed CLIL approach improve students' academic motivation (Coyle, 2006), it is difficult to state whether or not CLIL exerts a positive impact on students' academic motivations towards L2 learning worldwide because learning is a social phenomenon and individuals cannot be separated from their social context (Wigfield, Eccles, &

Rodriguez, 1998). In other words, education is highly influenced by social, cultural and economic factors. (Wentzel & Skinner, 2022; Koenka, 2020)

The above declared factors change from one country or region to another and also change from one school to another within the same country or region. Research works also showed that peers can have a positive influence on each other's academic motivation (Wigfield, Eccles, & Rodriguez, 1998; Wentzel & Skinner, 2022). New research works should be done in different contexts in terms of CLIL and its influence on students' academic motivation towards L2 learning as well as the role of students and teachers in CLIL programs to improve students' academic motivations with regard to L2 learning.

The results shown in this paper were observed within a six-week period, at this stage of the study we could not assure that students' academic motivation differences would be steadily sustained in time. In addition, this study analyzed academic motivation from students' perspective. Other variables such as time, age, gender should be considered in future studies as well as the role of other agents as families, administrators and community members, in both, CLIL implementation and students' academic motivations towards an L2 learning.

Conclusions

The current study was planned with the objective of exploring how CLIL program improve L2 students' motivation, comparing traditional School EFL program with High School CLIL program. AMS proposed by Vallerand et al. (1993), which was implemented for assessing motivation with a high and steady internal consistency of the questionnaire items and measurements.

Once the research process and statistical analysis was carried out, appropriate evidence was found to support the alternative hypothesis ($H_a: \mu \neq H_o$). It was concluded that the students involved in the CLIL program were more motivated towards English as L2 language learning than the students involved in the traditional EFL program after six-week period.

Other aspects which may impact on students' academic motivation towards English as L2 language learning in Latin American educational settings such as time, age, gender and social, economic and cultural variables were not included in this study. Future research and projects should aim to explore the effects of the above mention factors on academic motivation of students of different educational levels and settings in the Latin-American educational context.

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