

CLIL in Galicia: Repercussions on Academic Performance.

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The aim of this study is to get conclusions about the possible effects the implementation of CLIL programs (Content and Language Integrated Learning) based on a foreign language (L3) in the Primary Education in the Galician region can bring to the academic performance of the students as for the co-official languages in that region, that is, Galician and Spanish (L1 and L2). Academic grades of students from 13 schools were analyzed, for two consecutive school years. The CLIL group consisted on 13 classrooms, whereas the non-CLIL was composed by 44. Representatives of all the levels in Primary education were present. From a conservative approach, results tell us that the difference between the participants groups can not be explained as significant. Being less conservative we could say that a small difference can be observed for some of the groups, but not in favour of the non-CLIL groups.

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The name of CLIL, *Content and Language Integrated Learning* is given to that learning approach in which the focus is on content and not only the language. That is, beyond the language lessons in which grammar issues are explained, tasks and communicative situations practice happen, the intention is to work other kinds of content using the language as a vehicle, without paying most attention to the learning of language or linguistic form, but the contents.

Practice of this system is not new, there were many past experiences based on similar principles, like linguistic immersion. Further past, this was a very common practice. Medieval Universities taught in Latin independently of the mother tongue of their students. In the Arab countries they teach through a standard high register Arabic not used in family contexts, as for mandarin Chinese. The reasons why on each of the cases a language that the students don't know is used and he or she has to learn parallel to the contents are different on each case. Sometimes to maintain a common

language which can be a bridge between culturally similar communities whose colloquial languages have surpassed the understandably threshold. Other times because of the higher consideration one of the languages may have in terms of cultural prestige. Some other times the reasons are religious. All in all, there is no doubt that the practice of CLIL or similar approaches, with these or those objectives, goes back several centuries.

However, its use had practically disappeared in the more developed countries, where the languages considered vulgar in the Middle Ages, as the centuries passed, and thanks to the arrival of democracy, got to level in status with the classical languages, that survived only as a vehicle of culture and knowledge. Paradoxically, many times, this lead to as societies progressed in scientific development, they went back in language knowledge. It was very common, in the Middle Ages, that aristocrat families managed on a daily basis a good deal of languages. Marriages between people from different nationalities were really common, because they were useful in order to establish important political links. Education of monarchs should include, necessarily, the learning of several languages so that they can communicate with the neighbouring countries. Wright (2004, p. 22) mentions as specially significant examples the Court in the region of Bohemia, where each of the members of the family spoke a different language because of residence or marriage reasons; and the Royal family of Luxembourg, a very similar case. In the case of University students, it was very common the use of texts in Latin and classical Greek; partly due to the lack of translations, partly due to the value they gave to being able to read the original sources. At the lower class levels, because of the needs of merchants, it was common, as well, the use of more than one language.

Linguistic borders, in that time, were not clear at all. The ability to understand the language of the neighbours simply diluted as the distances increased. With the birth of modern states linguistic borders did start to appear clearly, using

them as flags for national identity, trying to justify this way the delimitation of the states in a moment the borders were not clear at all for the populations.

The only incontrovertible commonality seemed to be language[...] in the struggles to achieve separate statehood, the question of *national* language was central to consciousness raising within the group and to the gaining of recognition from others. (Wright, 2004, pp. 33-45)

As a result of this process, people from each country started using their own language more and more, and rejecting classical languages as well as the languages from the neighbouring countries, for academical purposes and official administration. We experiment, as citizens in modern states the consequences of this, where the most common thing is that individuals communicate fluently on one or two languages. The second one, most likely, English.

When the European Union was born a lot of issues came into question, as a strongly multilingual society was setting up. Some dozens of different languages are spoken in Europe, most of them unintelligible one another. Besides, these languages come from different families: German, roman, Slav, ...On the one hand there is a need for European citizens to understand and be understood progressively by a larger number of neighbours. Parallel to this, people like to preserve their national identities, considered as an important piece of Europe cultural heritage that we should not allow them to disappear. Moreover, globalization make citizens from very distant places in the world see the necessity to understand each other, mainly because of the demands of international relationships in marketing. All these forces draw a path towards the use of English as a common language, along with the efforts of each member state to preserve their languages' cultural prestige, despite the attempts to foster linguistic diversity, like the one by Amin Maalouf and the group of intellectuals formed by the European Commission, who in 2008 proposed the concept of *language of the heart* thus favouring today's linguistic politics in the European Union, where one of the principal lines is the goal of each citizen masters three official languages in the territory.

Either because of the European Union initiatives, or because the needs of the markets, or because of any other reasons, it has been long since in Spain and a lot of other countries, education authorities are looking for a way to spread English competence massively. For some reason, maybe because of (as said before) preserve the own language, in a few countries they opted for an education system entirely in English¹. The different efforts on several countries threw different results. Northern Europe countries, for instance, got the most of the population to manage English fluently. Spain and others, specially some Mediterranean countries, haven't had all the success on that attempt.

These last years changes have been a lot, but the most important was the release of the *European Common*

Framework for Languages (Council of Europe, 2000). From that moment, although slowly, actions from the different member countries were converging. Educative approaches that have been used in Spain during the 80's, frequently based on grammar and translation, are being replaced with more communicative approaches. During the last few years the practice of oral communicative situations in the classroom, and the use of the foreign languages by the teachers in the classroom moved away any other approaches. And more recently, education administrations made room in the legislative framework for CLIL to become possible in schools. In the case of Spain, and more specifically Galicia², its regulation was first published in 2002, by means of the *Orde do 18 de Abril* (Xunta de Galicia, 2002, p. 6066), which established an experimental plan. It wasn't until 2006 (Xunta de Galicia, 2006, p. 9342) that its use spread to primary education.

Since then, the application of this kind of experiences increased constantly. Although with four years delay, primary education is approaching in terms of application percentage to high schools. During the school year 2010/2011, 83 primary schools were working with one or more CLIL classrooms (Xunta de Galicia, 2011b). Yet A bit far from the 100 CLIL high schools, specially if we take into account that there are a lot more primary schools in Galicia. Up to this point, more private schools are working with CLIL. This fact can be due to several reasons. On one hand, the higher flexibility that private schools have to adapt their staff to the needs of CLIL classrooms. On the other hand, the need that private institutions have to *compete* in order to get students to study in their schools makes them be faster when start developing new educative experiences.

State of the question

Once established the antecedents, we will analyze the impact that the apparition of CLIL in Galician society is making. Support by the families, in general, have shown itself, since in order to start a *sección bilingüe* in a school, consent by all the families implied is required. This fact grants strongly the trust put by the educative community on this language teaching approach. By the part of teachers, for until now they are the ones who have to start the process on every school, without any king of obligation from education authorities and not many incentives once they get the *seccións bilingües* running.

However, opposition forces exist as well. Mainly from the world of politics. Galicia is a region where two languages coexist with particular relations of power, very sensitive to linguistic politics issues. For some, it is a bilingual region while others say the situation is diglosia. I will not go into this point here. The Galician language was about to disappear

¹ Some countries in Africa and Asia did

² Autonomous Community of Galicia has complete legal competence in education

during Franco's dictatorship and one the main efforts regarding cultural matters from democratic governments have been the revival of the language on every social context, reaching a point of normalization as for public administration, while general use by Galician population has not taken off completely. Specially in big cities, where most of the people prefer to use Spanish. Because of this reason, "positive discrimination" politic actions towards Galician language have been a lot by the different regional governments, regardless the political party implied. In fact, the *Lei de Normalización Lingüística* (Xunta de Galicia, 1983) in 1983 established:

Article 14. The students have the right to receive the first stages of education in their mother tongue. [...] Education Authorities from the Autonomous Community will grant that at the end of the stages where teaching in Galician is compulsory, the students will know this, at oral and written levels, in equality with Spanish. (pp.1896-1897)

Nevertheless, the 21st of September of 2004 the *Plan Xeral de Normalización da Lingua Galega* (Xunta de Galicia, 2004) was approved. On its text, an analysis of the situation of Galician language use is included, establishing some lines of actions to foster its use in the population, since it is considered to be far below the expected level. Among the objectives and the measures are the following:

- Reaching a majority use by the teacher and on school environments in general.
- Achieving of a full Galician language competence in the compulsory system that have an effective repercussion on its adoption as regular language by new generations.
- Establish, at least, a third part of the weekly school time in Galician in kindergarten where the predominant language is Spanish, with the intention of increasing the percentage in the future.
- In Primary Education make sure that, at least, students receive 50 per cent of their lessons in Galician. Apart from Environmental Awareness, already legally established, it will be fostered to teach in Galician the most significant subjects, like Maths.

(Xunta de Galicia, 2004, p. 94)

As I said before, a positive discrimination towards Galician language is proposed, contradicting the same *lei de Normalización* (Xunta de Galicia, 1983) in some of its points. For instance, while the law granted the mother tongue in the first stages of the education system, now the proposal is that if the mother tongue is Spanish (in the case of Galician the requisites of the law would be fulfilled), only two thirds of the time would be taught using the mother tongue, reducing progressively this percentage in favour of

Galician. Besides, the proposal of a common core subject in Galician is not compatible with respect to 50% of the time initially establish for each of the languages. From the 25 school hours taught (Xunta de Galicia, 2007, p. 11758) in Primary Education, the three subjects suggested to be taught in Galician –Galician, Environmental Awareness and Maths– would sum up 12 hours in some cases and 13 or 14 in other cases (concretely in the first cycle). On any of this situations the 50% would be widely surpassed. When the case is 13 or 14 hours, clearly, and when 12 hours only in the case that English is taught in English, a fact more and more common. No mention, of course, when bilingual sections affect those areas originally taught in Spanish. Even though this plan did not have the force of a Law, the fact that it was approved by unanimity in the Galician Parliament gave it a democratic credit that led to consider its lines of action leaving a part the 1983 act.

The actual government in the Autonomous Community decided they would argue about the legal force of the plan, and they are basing their linguistic policies, again, in the 1983 act. Some interventions and articles criticized strongly these policies in the media, above all related with the *Decreto do plurilingüismo* (Xunta de Galicia, 2010), which practically derogated the *Plan Xeral* (Xunta de Galicia, 2004). Some of those critical voices argue that the special characteristics of the region, where two coofficial languages cohabit in the classrooms, do not configure the most adequate context for a balance in terms of the time devoted to the three languages present in the curriculum. The 25 weekly hours the *decreto* of the curriculum in the Primary Education (Xunta de Galicia, 2007, p. 11758) will be distributed in three equal parts in the more recent *decreto para o plurilingüismo* (Xunta de Galicia, 2010, p.9243). The deputy from the *Bloque Nacionalista Galego* party, Guillermo Vázquez, in his intervention in the Galician Parliament on January the 21st of 2010 used these words: "...Competence in Galician or English will not improve...". The very same day 30,000 people gathered in *Santiago de Compostela*, according to official sources, demanding the withdrawal of the mentioned *decreto*. They insisted in their conviction that the hourly distribution for each of the languages the *decreto* imposed was a direct attack to the quality of teaching of Galician Language. They said: "...Refusal to a law which only intends to put Galician away from the education system..."

I already mentioned that some political parties support the thesis that teaching more time in Galician, since is a minority language, is necessary to grant its survival. From that idea emerged the *Plan Xeral* (Xunta de Galicia, 2004). Research on this topic until now may lead us to think that, while increasing the amount of time devoted to grammar lessons of a given language does not necessarily conduct a kid to a better competence in that language (Serrano & Muñoz, 2007, cited in Navés & Victori, 2010, p. 38), when it is used as a means of instruction in other curricular subjects it does make a difference in linguistic competence (Muñoz & Navés,

2007, cited in Navés & Victori, 2010, p. 39), (Ruiz de Zarobe & Jiménez Catalán, 2009, cited in Navés & Victori, 2010, p. 39). Conclusions of the cited works oppose, therefore, to that idea.

In any case, the mentioned studies give conclusions based in the learning of a foreign language. Galician is a second language for the majority of the students in Galicia, and the first language for a big number of them, specially in rural areas. The starting point for the learning of English or other foreign languages by the students in the Primary Education in Galicia could be established, according to the European Common Framework (Council of Europe, 2000), in some point between the levels A0 and A1. The competence level in Galician for the same children would be in some point between A2 and B1+. Even though no research seems to exist with concrete data, the *Xunta de Galicia* gives a CELGA 2 certificate to those students who complete the Primary Education, if they studied the Galician language subject. Due to this substantial difference between the learning of the two languages, the conclusions from the studies previously mentioned can not be directly applied to the Galician population.

Moreover, as Lasagabaster and Sierra (2009) (cited in Ruiz de Zarobe and Lasagabaster (2010, p. 24)) suggest, an implementation of CLIL has a positive effect in the attitudes of children toward trilinguism. These attitudes are one of the main objectives of the policies carried out in regions like Euskadi or Galicia.

Students endorsed the importance of multilingualism on both the individual and social spheres, but this was especially so among the CLIL groups. (Lasagabaster & Ruiz de Zarobe, 2010, p. 24)

This way, research studies made until this moment support clearly the idea that the CLIL programs have positive effects, either for the attitudes of the students implied towards the learning of other languages as for their linguistic competence in the language used as a vehicle of instruction for the subjects included in the CLIL programs. In fact, more and more primary schools and high schools participate in *bilingual sections*, which is the name given to CLIL in Spain.

The Public Administrations are strongly supporting this approach, even though in the first stages of its application research supporting the superiority of CLIL as opposed to other approaches was really scarce. Probably, the fact that systematically the students in Spain showed much lower levels of English than the ones the European Union is looking for, where the mastery of English is more necessary everyday, pushed them to imitate other countries in their environment.

The impact of globalization, like climate change, was being increasingly felt in some parts of the world, especially in Europe during the period of rapid integration from 1990

to 2007. This impact highlighted the need for better language and communication educational outcomes. (Coyle, Hood, & D., 2010, p. 4)

Before anything, there is the principal objective of CLIL of improving the linguistic competence of the students, as the European Common Framework for Languages defines. (Poisel, 2007, p. 43)

This interest facilitated that the increment in the use of English and the wish of the governments for their population to master it be irreversible (Vázquez, 2007, p. 105).

Besides, many were the authors who in the last decades, even though no research about CLIL existed, supported philosophically the teaching of languages through CLIL. Graddol (2006) (cited in Coyle et al., 2010, p. 5) described it as *An ultimate communicative methodology*.

CLIL is a dual-focused educational approach in which an additional language is used of the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. Each is interwoven, even if the emphasis is greater on one or the other at a given time. CLIL is not a new form of language education. It is not a new form of subject education. It is an innovative fusion of both. CLIL is closely related to and shares some elements of a range of educational practices. Some of these practices –such as bilingual education and immersion– have been in operation for decades in specific countries and contexts; others, such as content-based language teaching of English as an Additional Language (EAL), may share some basic theories and practice but are not synonymous with CLIL since there are some fundamental differences. (Coyle et al., 2010, p. 1)

The CLIL approach is strongly related with constructivism, as it links disconnected areas and develops cognitive and significant associations and the life in and out of the schools, as Casal Madinabeitia (2007, p. 57) affirms.

Hypothesis

In this context, a main hypothesis that serves as starting point for the present study is the following: *Teaching one of the subjects of the Galician curriculum through English does not affect significantly the students' grades neither in Galician or Spanish.* While this hypothesis will be the theoretical reference to give coherence to the different actions, it is possible that the data would offer some additional data that may lead to further conclusions.

Data about impact on the English subject will not be collected. Previous research suggests a clear positive effect,

like Dalton-Puffer (2007) (cited in San Isidro (2010, p. 46)) or Lasagabaster (2008) (cited in Navés and Victori (2010, p. 46)), among others.

The influence in the level achieved on curricular subjects conducted in English was studied by Barreiro Gundín and San Isidro (2009, pp. 200-202), in a research study carried out for the *Consellería de Educación* of *Xunta de Galicia*. San Isidro used a questionnaire in order to gather data about the opinions the teachers involved in CLIL programs in the Secondary Education expressed about their experience participating in such programs. He got the following conclusion:

The contents taught in the different subjects via CLIL are assimilated in a similar fashion to what they are in non-CLIL contexts.

In the same study they were compared as well, transversely, the academic results of CLIL students with respect to non-CLIL students. The same author explains that some of the CLIL groups had been selected according to their academic achievement, even though in the case of rural schools, where there are no different groups for the same school year, all the students implied were included in CLIL. Once more, the data obtained seem to confirm the hypothesis of the present study. However, they can not be directly applied because all the students studied in Secondary Education. We can think that the results for Primary Education are going to be similar, but a systematic verification is necessary.

As Lasagabaster and Ruiz de Zarobe (2010) say, the *Ikastolen Elkartea*, the private school network where *Euskera* is the vehicle of instruction and Spanish is studied as a subject only, led to another research study, where they explain:

Teaching of Social Sciences in English does not prevent students from explaining in Basque the contents they have learn in the foreign language (*Ikastolen Elkarteko Eleanitz-Ingelesa Taldea*, 2003, cited in Ruiz de Zarobe and Lasagabaster (2010, p. 21))

Something similar to what this study intends was studied by Egiguren (2006) (cited in Ruiz de Zarobe and Lasagabaster (2010, p. 22)). In this case, the impact on the Basque and Spanish languages of the CLIL experiences was studied, compared with the study of English from early ages. They did not find differences between the experimental and the control groups. Even though the setting is not the same, the conclusions point as well in the same direction as the hypothesis of this study. Van de Craen, Mondt, Allain, and Gao (2007, p. 72) points out that there are not arguments to support the idea that CLIL could be harmful for the mother tongue. In case of some effects, they would be more positive than negative. The same author warns that in those areas where a majority and minority language cohabit, the fear to lose the language appears frequently as an argument in opposition to CLIL education. This is the very case of the population this study is about.

Contribution of this study to this field

As we have seen, research on this field is not yet very abundant. The studies are not many, and most of them focus on high schools. Therefore, it is important for the development of an education practice, which really seems to offer good outcomes, to count on a good solid theoretical framework which can motivate either professionals to go aboard CLIL projects and the families to support this initiatives. In fact, in this moment they are in a practically experimental stage, totally voluntary. In order to advance towards a normalized and official implementation a long way has to be walked yet, specially when we observe such a political movement around the issue.

Until now, this experimental character makes the different initiatives in the different schools be quite diverse on many aspects. On the one hand there is the teacher training. Sometimes foreign language teachers themselves are the ones who get involved, while some other times they are teachers with a linguistic competence too limited to face the project with warranties. Besides, legislation about the matter is not very concrete, and allows a great deal of diversity with regard to lesson planning, resources, etc. Up to a point where so basic factors as the use of the foreign language in the CLIL classrooms. It is allowed either to conduct them in the mother tongue while some activities are carried out in English or completely using the foreign language.

Because of all this, confirmation of the hypothesis hereby proposed is key. To grant, supported by research, that implementation of a program has a positive effect in the acquisition of foreign languages –a very clear objective for governments– and at the same time does not affect negatively the rest of the student's education, can only contribute to a greater commitment by Administrations. This will be possible with research that goes deep in the hypothesis I proposed, along with other important questions like the impact on the student's motivation, etc.

Methods

Sampling

This study was carried out by a longitudinal two groups design. Due to the schools organization, the sampling has been made in conglomerates. Each one is a classroom. The groups, therefore, are organized hierarchically in two levels, classrooms and subjects. The majority of the schools, however, did not provide identification data for each student. Due to this fact, it was not possible to relate evaluation data of a given student in the different years, so for the longitudinal analysis data belonging to the second level of the multilevel design could not be treated. This fact was a real inconvenient, as a bigger sample is needed to be for statistical contrast to be potent enough. A level of significance $\alpha = 0,05$ was desirable and a power $1 - \beta = 0,90$. Nevertheless, in the case of data of a given academic year only, we do counted with individual data, because it is not

necessary to identify the students, as long as we are not comparing data from different years. Even though in the moment of analysis the control over strange variables is not as strong, I will do the statistical contrast of the means from the experimental and the control groups in order to compare it with what I get from the analysis of the longitudinal design.

In order to establish the minimum size of the sample to fulfill the defined criteria I will follow the recommendations of Welcowitz et al. (1981) (cited in Jiménez Fernández, López-Barajas Zayas, and Pérez Juste (1991, p. 437)) with respect to the analysis of the test's power. The author points out that in the case that we do not know the value of μ and of σ in the population we are working with, we would use values reasonable enough. Let's suppose that in case the research hypothesis is not accepted, in our case $H_0 : \mu_A = \mu_B$, the difference of means in the two groups would be medium. Welcowitz recommend in this case a value of $\gamma = 0,5$. The value of δ in our case is 2,93, according to the table proposed by the same author, for the values of α and $1 - \beta$ we selected and given that the contrast will be unilateral, since the alternative hypothesis (H_1) expects μ_A to be lower than μ_B . The minimum number of elements for each group, in this case classrooms, would be calculated this way.

$$n = 2 \left(\frac{\delta}{\gamma} \right)^2 = 2 \left(\frac{3,60}{0,50} \right)^2 = 68$$

$$n = 2 \left(\frac{\delta}{\gamma} \right)^2 = 2 \left(\frac{3,60}{0,80} \right)^2 = 40$$

The groups in the sample should be composed by 68 classrooms each at least, according the result of the first formula, recommended when small differences between the means are expected. The number would be reduced to 40 if the differences expected a bit bigger. Due to different reasons I could not count on the collaboration of enough schools in order to get the more demanding number of classrooms. 44 non-CLIL classrooms and 13 CLIL classrooms participated. However, given that the data on each group is an average, not individual marks, a much bigger number of students is represented, $N = 747$, from which 136 are CLIL students, doubling the required number from the formula. Thus, there are no reasons to believe the statistical tests' power would be negatively affected by the sample size.

The experimental group consisted of 13 classrooms where at least one subject is taught through CLIL. The control group consists of 44 classrooms where no subjects are taught through CLIL. The selected schools were selected randomly among public schools in Galicia. There were urban and rural schools. In total, 13 schools were involved.

The independent variable is the existence of a CLIL subject. The dependant variables are the means of the grades in the Galician language and Spanish language subjects. The

Table 1
Longitudinal design.

	Evaluations before	CLIL	Evaluations after
<i>G.E.</i>	T_1	X	T_2
<i>G.C.</i>	T_1	–	T_2

Table 2
Design with only one test.

	CLIL	Evaluations after
<i>G.E.</i>	X	T_1
<i>G.C.</i>	–	T_1

same design for contrasts was used for each subject. The SPSS software was used.

Table 1 shows the longitudinal design above mentioned. The first measure of the dependent variable is the evaluation in the subject during the school year 2009/2010. The second one is the evaluation during year 2010/2011.

As I pointed out before, a parallel design with one test only was carried out, according to the scheme on table 2. In these case, evaluations in year 2010/2011 only will be considered.

Variables

I chose a longitudinal model for this study, as opposed to Barreiro Gundín and San Isidro (2009), where the data analyzed were gathered only for a specific moment. Roquet-Pugès (2009) (cited in Navés & Victori, 2010, p. 37) followed a model similar to this one, comparing the results obtained from a pre-test and a post-test about linguistic competence in English in a group of Secondary Education students in a CLIL program and another group which studied English as a foreign language. In this case evaluations of the students where compared with those in the previous year. With the longitudinal study a control on the effect of variables that would distort the results is seek. The students from one school can get higher or lower marks than the students in a different schools because of factors like socioeconomic level or the evaluation methods of their teachers. By comparing the variations in their evaluations instead of instant evaluations as they are given by the school, the effect of strange factors is reduced. In my opinion, the study research by Barreiro Gundín and San Isidro (2009) could be contaminated since the results were not filtered taking into account that a great part of the schools select, in order to incorporate in CLIL programs, those students with a higher motivation towards the study of languages, who frequently get a better academic performance –as the author himself suggests–. In fact, as we will see in the results, evaluations for the experimental group before the introduction of the independent variable were higher than evaluations in the control group. The same idea is reflected by Ruiz de Zarobe and Lasagabaster

(2010, p. 25):

It is important to point out, however, that CLIL experiences in Euskadi have been completed under the basis of voluntariety, which means that all of the students participating chose freely to take part in this approach. Most of the students in the previously mentioned research studies were selected before taking part in the CLIL lessons and, consequently, it is more likely that their academic achievement be higher than the average.

The dependent variable for this study was the evaluation before and after the introduction of CLIL. The analysis of data managed points that the correlation between the variable and the evaluations through time is very low (see table 5). It is true that the evolution of evaluations for each student do not follow a generalizable pattern, but it was observed that the CLIL groups showed better evaluations in the measures before applying the program. The reasons for this difference are not in the scope of this study.

Tests

Some possibilities were taken into account in order to collect the data. For the performance in Galician, there exist tests prepared by *Xunta de Galicia* for the identification of *CELGA* levels about the knowledge of Galician. In the case of Spanish, the *Instituto Cervantes* provides also standard tests. Moreover, the *Xunta de Galicia* applied the *Avaliación de Diagnóstico* (Diagnosis evaluation) during the school years 2009/2010 and 2010/2011 in all schools in Galicia, measuring performance in Maths and in the coofficial languages.

The first two tests are not designed specifically for children. In the case of the latter, the same teachers in the participants schools are the ones who applied and assessed the test. In mi opinion, this does not provide all the warranties necessary for the transparency of the process. It is frequent that the teachers see in this kind of tests an evaluation of their work. If they have access to the questionnaires some days before the day of application, there is nothing that keep them away from telling the students in advance the concrete contents that will be in the tests, distorting this way its validity. Besides, it is them who assess the tests, without any kind of supervision. Another possibility would be the design of a specific test for this study. In both cases it would not be possible to get a validity and liability bigger than that the evaluations got from the students in the normal development of school life.

Because of all this, when measuring the dependent variable evaluation data from the students' schools will be used. Other researchers used as well the evaluations from the schools to measure academic performance (González-Pianda, Núñez, & Valle, 1992) (Marsh, Parker, & Barnes, 1984) (Marsh, Smith, & Barnes, 1985). This represents the

problem that evaluations from one school are not comparable with the ones got from a different school; this problem is corrected by the use of a longitudinal design, where we can compare the evaluations from one year with those from the previous year, that is, we will analyze the variables within-subjects parallel to those between-subjects. Apart from this, the curriculum *decreto* for Primary Education in Galicia (*Xunta de Galicia*, 2007, p. 11671) defines a standard for evaluations, based on *key competences*, in the way the Council of Europe recommends.

All the European countries are trying to identify the *key competences* and the best way to achieve them, evaluate them and certify them. It is suggested to set up an European system to compare and spread such definitions, methods and practices. (Council of Europe, 1995, p. 38)

This standard consist of the definition of those key competences for the Galician environment, which should be reference for evaluation in Primary Education for all the territory. That is, each teacher should take into account this standard when he or she evaluates the students assigned. This new form of approaching evaluation in theory points towards homogeneity of evaluations we can observer in the different schools.

Several studies about this matter of academic performance support the use of school evaluations as their indicator (Blackorby, Chorost, Garza, & Guzman, 2003; Blanco, González, & Ordóñez, 2009). It is true that in other countries exist since long ago external standard tests of performance, applied at a national level. Even though in Galicia and other Autonomous Communities this process started, as I said before, they did not yet acquire the status other tests have, like those PISA (Program for International Student Assessment) makes. However, even in countries with national measures for performance they choose to use the evaluations given by teachers, which, after all, are the ones that make the families worry when accepting or not participation of their children in CLIL programs.

Even though performance in standard tests receive a major attention in the studies about academic performance, the evaluations made by teachers through school marks represent a common measure tightly linked to the daily teaching-learning process [...] However [...] marks given by teachers have evident limitations [...] Despite those factors [...], marks in fact point a certain degree of success either with regard to teacher's standards as for the relative success compared with the rest of the children in the classroom [...] They are composed measures which take into account not only the mastery of the content by the students, but frequently by other factors, like participation in the classroom, attitudes, progress through time, etc. (Blackorby et al., 2003, p. 4.2)

Table 3

Cross table for evaluations of Spanish language with respect to school year.

Year	Insuficiente	Suficiente	Ben	Notable	Sobresaliente	Total
3	30	47	43	64	20	204
4	23	36	35	54	22	170
5	26	27	41	54	19	167
6	31	40	38	63	34	205
Total	110	150	157	235	95	747

Table 4

Cross table for the evaluations of Galician language with respect to the school year.

Year	Insuficiente	Suficiente	Ben	Notable	Sobresaliente	Total
3	36	47	39	68	16	206
4	21	34	39	52	26	172
5	27	30	50	49	22	178
6	33	35	38	60	25	192
Total	117	146	166	229	89	747

Moreover, school marks are a good indicator of school performance, whatever their correlation with the latter is more or less noticeable.

Performance measurements in the research studies are linked with the instruments used to measure them. However, it would be expected that, even in the case we could not perform precise measurements of the latent features, *performance in Maths* for instance, the correlations of those repeated measures were similar to those of the latent features. (Blanco et al., 2009, p. 213)

Even though it is referred to University students, correlation between performance tests and marks given by teachers was demonstrated following the conclusions of Pemberton (1970, p. 5), who observes that the difference between ones and the other ones focus mainly in what the marks assigned by the teacher move away from the mean. This can be explained because the author uses the group in his classroom as a reference and not the University population in general.

Possibly we could not trust totally in the objectivity of evaluation processes in Primary Education schools. However, worries from Education Authorities and the families with regards to academic performance of the students has its roots, as I mentioned before, in the marks they get. With this study I want to contribute to demonstrate that the application of CLIL does not affect negatively to the academic performance in what the schools marks are attained.

Hypothesis contrast

The nullity hypothesis is defined ($H_0 : \mu_A = \mu_B$) as the hypothesis I want to accept confronted with the alternative ($H_1 : \mu_A < \mu_B$). The significance level chosen is $\alpha = 0,05$. I don't look for a more demanding α as long as I try to demonstrate

precisely the nullity hypothesis, for facilitating acceptance of the alternative hypothesis reinforce our contrast. In other words, I try to avoid a type II error³. The probability of committing a type II error $-\beta$, which is what I try to avoid, decreases when α value or the sample size is increased, or when decreasing the difference between the means of the groups. I did not use a higher α because it would increase too much the probability of committing a type I error.

Results

Longitudinal study contrast (Table 1)

The first aspect to highlight, as we can observe in the tables 7 and is that the time variable makes a significant difference in the school marks ($p < 0.05$), either in the Galician subject and the Spanish. This means that marks obtained in one of the academic years are significantly different to the ones in another year from which the measures were taken. As I said before (table 5), even being this difference significant, it does not correspond to any standard pattern. This is observed graphically in the figures 1 and 2.

It has been corroborated as well whether the difference between the means is significant attending the different educative level in which each group of students is placed (the groups selected corresponded to each one of the six educative levels in Primary Education). In this case, the differences is not significant in Galician, while it is very close to be ($p = 0.052$, very close to the limit $p < 0.05$). In Spanish is significant ($p = 0.018$).

Lastly, the effect of the CLIL factor is not significant on any of the two subjects studied, and furthermore it is very far away from being ($p = 0.275$ y $p = 0.152$). So we can not

³ This error appears when we accept the nullity hypothesis $-H_0$ —being false

Table 5
Correlation coefficients.

	Value	Asymp. Std. Err.	Approx T.	Approx. Sig.
R Pearson (Spa.)	.048	.037	1.308	.191
R Pearson (Gal.)	.041	.036	1.108	.268
N	747			

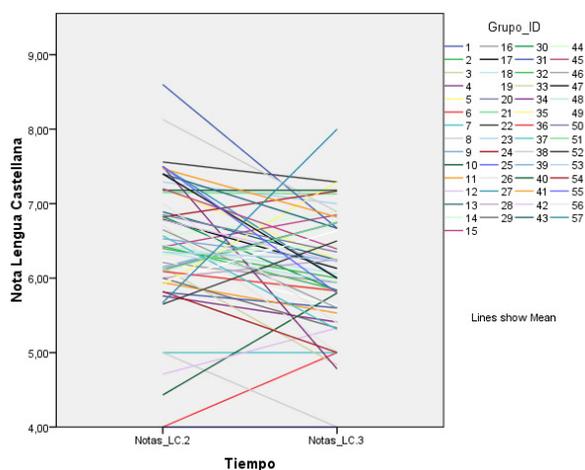


Figure 1. Variation of evaluations in Spanish for the different groups.

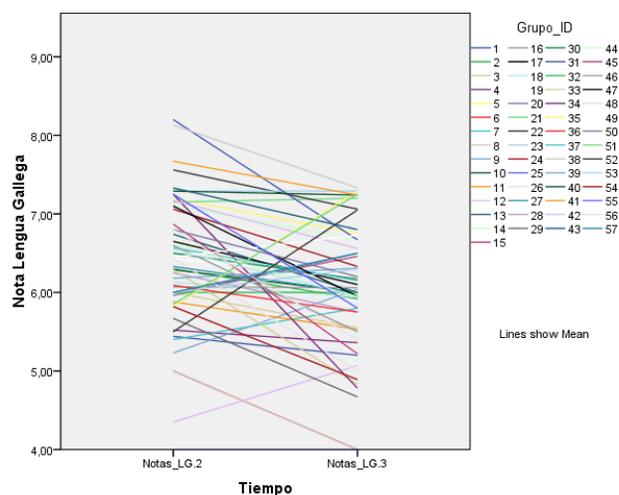


Figure 2. Variation of evaluations for Galician for the different groups.

reject the hypothesis $H_0 : \mu_A = \mu_B$.

In figures 4 and 3 we can see graphically the variation from year 2009/2010 to year 2010/2011 for the experimental group, who studied a CLIL subject, and the control group, who did not study any. Either in one case and the other, the first of the measures is higher in the CLIL group, although afterwards, the variation observed makes it come near to the

Table 7
Variance analysis for Spanish marks.

Source	F	Sig.
time	10.857	.002
time*level	5.990	.018
time*CLIL	2.108	.152

Variance analysis for marks in Galician.	F	Sig.
Source		
time	8.645	.005
time*level	3.940	.052
time*CLIL	1.214	.275

marks of the non-CLIL group. However, the variance analysis between groups (tables 7 and) tell us this effect is most likely hazardous.

Data analysis for the one-measure design (table 2)

Taking advantage of the circumstance that we have data to perform a contrast between the measures of the experimental and the control groups for the year 2010/2011, results obtained are presented for the analysis of variance. The test tells, according to what is on the table 9, that the difference of means between both groups (in both situations the mean of CLIL groups is higher) it can be considered significant in the case of Galician ($p < 0.05$) while in the case of Spanish we can not say the same ($p > 0.05$). This is a expected result after observing the results obtained by Barreiro Gundín and San Isidro (2009), where the CLIL groups show themselves higher for all the measures. However, as the variance test shows in the longitudinal design, this analysis is superficial, since provided the groups were already better before the introduction of CLIL, the difference of means due to this variable is much smaller.

In any case, as for the risk of losing precision with the longitudinal study presented in the previous heading, because it did not comply with the recommended minimum number of subjects from the formula given by Welcowitz et al. (1981) it is clear that the longitudinal design controlled much better the strange variables (different methods, different teachers, more motivation of the students, etc.). In fact, the results from the one-measure design supports more the working hypothesis as the CLIL teaching does not make worse the marks

Table 6
Longitudinal design dimensions.

	CLIL	Mean	Std. Dev.	N (groups)
Galician 2009/2010	No	6.3130	.87141	44
Galician 2009/2010	Yes	6.7523	1.00818	13
	Total	6.4132	.091404	57
Spanish 2010/2011	No	6.0500	.80447	44
Spanish 2010/2011	Yes	6.1077	.87277	13
	Total	6.0632	.81287	57
Galician 2009/2010	No	6.2795	.76976	44
Galician 2009/2010	Yes	6.6808	.99876	13
	Total	6.3711	.83514	57
Spanish 2010/2011	No	5.9709	.81434	44
Spanish 2010/2011	Yes	6.1185	.97504	13
	Total	6.0046	.84665	57

Table 8
Dimensions of the one-measure design.

Subject	CLIL	N (subjects)	Mean	Std. Dev.	Error std.
Lang. Spa.	No	611	6.1506	1.50090	.06072
Lang. Spa.	Yes	136	6.4044	1.38980	.11917
Lang. Spa.	Total	747	6.1968	1.48363	.05428
Lang. Gal.	No	611	6.0685	1.46925	.05934
Lang. Gal.	Yes	136	6.5588	1.45950	.12504
Lang. Gal.	Total	747	6.1575	1.47864	.05403

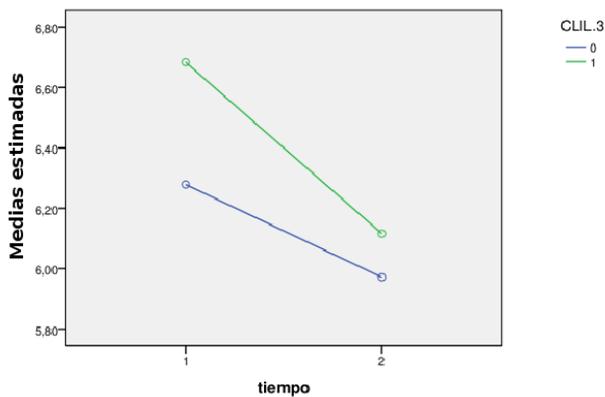


Figure 3. CLIL students vs. non-CLIL students in Galician.

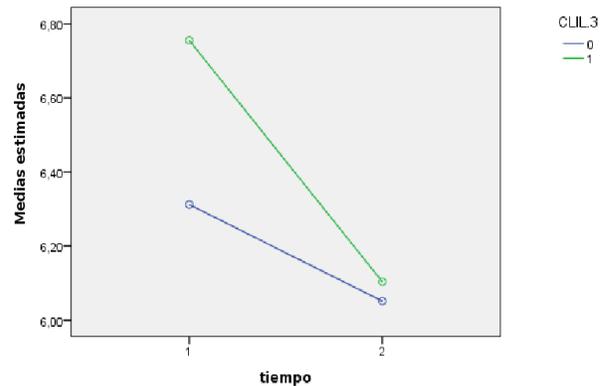


Figure 4. CLIL students vs. non-CLIL students in Spanish.

obtained by the students implied.

Further research

The possibilities to reinforce this line of research are many. On the one hand, this quantitative analysis would be deeper by combining with some qualitative data. This would require several years of research, since the difficulty of getting this kind of data in a backward manner is practically impossible, because it is not customary among the teachers in Primary Education to keep records of their qualitative

Table 9
Variance analysis of evaluations in one-measure design.

	F	Sig.
Lang. Spa.	3.266	.071
Lang. Gal.	12.426	.000

evaluations. In fact, possibly it is complicated even getting actual data in these terms, observing how difficult it was in this occasion to get quantitative data which are registered

and are very easy to provide digitally. An alternative would be a cross section study, instead of longitudinal. This possibility, however, would not solve the problem from the longitudinal design I have used (see p. 5). A sufficient warranty of homogeneity of evaluation criteria in the school marks given by teachers is not provided. Using evaluations from two consecutive years I corrected this partly, since environment factors in Primary Education tend to be more stable from a year to the next. Students usually stay some years in the same classroom with the same teacher. They have the right for this to be done, according to the Organic System of schools (Xunta de Galicia, 1997, p. 8508). So, a cross section study would be insufficient, because the students in the different levels in the same year do not share environmental factors. It would be useful in Secondary Education, since teachers are assigned to subjects, and not a group of students (sometimes both), so that it is really common that all the students of the same level are assigned to the same group of teachers.

As Rendón Duarte and Navarro Asencio (2007, p. 1) recommends, we could make this design stronger using a multilevel analysis, as Primary Education population is organized hierarchically in various levels (classroom, school).

It would be interesting to study as well the effect of bilingual sec sections on the students linguistic competence. The measure for this competence in a satisfactory fashion seems remote in this moment. The alternatives exposed on page 7 can be developed, but probably it implies some years of research. It is also necessary to count on the active participation of some institutions. The anonymity of the diagnosis evaluations, for instance, makes it hard to be able to use the data for each individual child. The same happens with PISA report. The only feasible alternative would be the elaboration of a performance test for languages, but its application in successive years would be necessary if we really want to improve the measures used here (school marks).

Another important issue to take into account is the population of the study, which has very concrete particularities. The bilingual Galician context (referred as diglosia by some people) is substantially different from Autonomous Communities with an official language only (see table 10). It is also different from other bilingual communities in two principal details. The first one, the proximity of the two languages –Galician and Spanish– which usually leads to problems of interference in the students speech, making it very difficult for them to express consistently with one of them without using resources from the other language, given that they find really difficult to distinguish them. The two languages share most of grammar rules and orthography apart from a great deal of vocabulary. The other detail is the great number of bilingual speakers, much higher than any other Community with two official languages. This characteristics could well keep conclusions hereby presented from being of application

away from this population, as their effects were not studied. The extension of the sample to other Communities is another possibility, so, to continue this line of research.

Nevertheless, the results obtained make us think that further research would find very difficult to reject the hypothesis of schools marks got by the students are significantly different as an effect of the introduction of bilingual sections (see p. 4). In any case, as conclusion from previous works show (see p. 2), the difference would favour CLIL groups. This would reinforce the objective of the research, because better results of the groups with CLIL would only support the creation of new CLIL classrooms in the schools.

However, at the sight of comparing the results got according to the longitudinal design and the one-measure design, it seems more sensible that the way of treating data, at least in Primary Education, and given the actual organization of the Galician context should be by similar design to this one. Ruiz de Zarobe and Lasagabaster (2010, p. 25) affirm with respect to longitudinal designs:

This designs could have suffered from a certain bias that in my opinion does affect the validity of the results. These experimental programs are the only ones available at the moment

This argument could have been valid in a moment when in fact an urgency in the gathering of date existed, this does not happen anymore, so research from now on should look for the highest standards available in the data. For Pérez-Vidal (2007, p. 41), Galicia, the same as Catalonia and Euskadi, has got a certain advantage when implementing CLIL, as long as there is the experience of the officialization of the two coofficial languages as a means for instruction, carried out during the process of normalization.

Discussion

The text of the *orde* about bilingual sections itself (Xunta de Galicia, 2011a) insists on various points that reflect the worries of the Administrations with regards to the acceptance of CLIL subjects⁴. On the one it makes explicit that it is about bilingual sections in the strict sense, that is, the teacher would use the two languages. It even expresses that in a first stage the mother tongue would be used more frequently and then progressively introduce the foreign language. It also admits the possibility of reducing the demands of contents of the subject when it is taught by means of a foreign language. De Graaf, Koopman, and Westhoff (2007, p. 12) support this idea:

It is expected that a CLIL teacher selects the material for input to maintain a level of challenge but comprehensible for the student (scaffolding).

⁴ Research points in any case in the oppose sense, as it can be observed in the results obtained by Barreiro Gundín and San Isidro (2009), where the CLIL group showed a better acceptance of the activities developed in the subject than the control group.

Table 10
Use of coofficial languages in Spain.

	Spanish	Coofficial language	Both indistinctly	Source
Catalonia	55%	31,7%	3,8%	(Generalitat de Catalunya, 2009, p. 33)
Galicia	30,1%	52%	16,3%	(Instituto galego de estatística, 2008)
Basque country	76,1%	78,8%	5,1%	(Gobierno del País Vasco, 2001)

^aThe percentage of people using the language as L1.

This measures of prudence denote a high degree of experimentality and provisionality of the CLIL classrooms. The same happens with the linguistic competence in the foreign language required for a teacher to join the program. Until 2011 (Xunta de Galicia, 2011a), after five years since the beginning of the program in Primary Education, and twelve years after the first experiences in Secondary Education a B2 level was not demanded, certifying for instance with the *advanced* title of Official Schools of Language⁵. In addition, the voluntariety of the participation by teachers and students, not according with the intentions of balancing the number of hours of instruction in the three languages –Galician, Spanish and English–, as the *decreto para o plurilingüismo* states. It is not possible to spread the teaching of subjects in English until the level described on this *decreto*, where the Administrations commit to carry out measures necessary to make it, while it is necessary to count on other factors favourable to initiate the program. Explicit consent by the teachers is required, as well as by the *Consello escolar* (where the families are represented, the administrative staff and the local authorities) and by each one of the families of the students affected. This latter requisite is very hard to get in some schools. I hope this study could help make it easier.

With all this, the number of participant schools increases each year. For these programs to acquire a character of officiality and stability, it is necessary to look means of gaining confidence by all the groups implied: Administrations, families, teachers and society in general. It is possible that lots of teachers who are carrying out bilingual programs in the schools lose their initial interest if they see that the continuity of the program is not granted for the following years, keeping them apart from a more systematic work. In fact, even though the number of schools increases, it is not an answer to the demands by the teachers. In conversations I have with the teachers in some of the participant schools, I found that some of them can not even initiate the program, some others with CLIL running have to stopped because they could not fulfill some of the requirements –usually the consent by teachers and the *Consello Escolar*–. If Administrations do not get a stronger commitment we are risking to lose the favourable conditions which is a great acceptance by part of many teachers.

The way to foster this commitment could be to make compulsory the teaching of subjects through foreign languages in those schools where the teachers are educated enough to do so. I can not find a reason for this to be true for Galician and not for other languages. In fact, it happens sometimes that the teachers are obliged to teach a subject in Galician although he or she is not prepared to do it. This is the case of the people who move from other Autonomous Communities and they do not have to certify the level of Galician during the first years. In the case of Primary schools it is very common that the foreign language teachers do not get to complete their timetables teaching the foreign language, but they have to teach other subjects too. It would be much more logical that they taught at least some of these subjects in the language they normally teach and for which they studied at University.

I don't really think reasons enough exist to keep being reluctant to a massive application of teaching subjects in other languages, if we really want to comply with the linguistic objectives of the European Union, as for their citizens to be able to use two official languages other than their mother tongue. This research study shows that it is not very likely that we can damage the achievement of the students in their native language when they study some of the subjects in a foreign language. Other studies mentioned points the same with regards to the knowledge of the referred subjects. It is not difficult at all, as I mentioned at the beginning, to find examples of countries where the study of languages in other languages work very satisfactorily since some years ago. In a recent travel to Lebanon I saw that citizens speak Arab and French fluently, and very commonly, English. The method they employed was the inclusion in the education system of subjects that are always taught in French. In the case of English, it is due to schools and Universities where the language of instruction is English. I do not try to say that the fact that it works in other countries means that it would work in any other, social realities are very complex. In fact, there are also examples where all the experiences to get a bilingual population failed. In China some were the trials since the Chinese government decided, in the late nineties, that all Chinese citizens should speak a foreign language,

⁵ Probably, it is arguable that this level is enough to provide warranties of quality for the program

preferably English⁶. During the celebration of the Olympic Games in Beijing, the lack of knowledge of English by Chinese citizens was a real organization problem⁷. What one should not do is keeping acting with fear of the failure of CLIL programs, when all the research until now supports them, there are people willing to develop them, and as I hope I contributed to demonstrate, there is nothing to think that it creates any problems.

At the sight of previous research, we could expect a demonstration that CLIL programs are clearly beneficial for the students in many aspects, provided the hypothesis of some studies (cited on page 4) point towards this direction. However, it seems that as more rigorous the control of variables is and the deeper the research is, less differences are observed in the means of the groups, with the exception of the foreign language competence, where repeatedly we do observe a positive difference towards CLIL groups. In my opinion it is quite logical that these clear differences do not exist. Many were the digressions about the contents to be included in educative programs, and many modifications have been made in the subjects the students have, but the perception of not achieving the expected results are a constant. This is due to a conception of education where we believe the knowledge is directly transmitted to the students by a person who show them to the students, and they would only learn those which are presented in a more explicit manner. In the age of *Google* this idea is absurd. What is really learned in schools is what to do with the knowledge one is exposed to, along with other abilities such as cooperation, exchange of ideas, etc. Rejecting the initial hypothesis, this latter idea is confirmed, because the performance of the students –very commonly measured in terms of the knowledge they have acquired– it is not affected by changing the amount of time we devote trying to transmit something concrete or the number of languages they are exposed to. Their learning depends more of themselves, in their interest in learning, than any other variable we could manipulate.

Following a model still dominant in most of the schools in the world, when we go into a classroom it almost seems that the knowledge be something scarce, difficult, practically impossible to obtain except if we have a sufficiently qualified adult standing in front of a group of youngster who listen solicitously, willing to write on their notebooks any data supposedly of value. But students know it is not like that! Knowledge is ubiquitous! They could go to *Google* and search an answer and getting it much faster than anyone in this room! Even a nine or ten years old kid can do it! It is true that maybe they don't have criteria to know which are the things worth searching for, nor the wisdom to value what they find, but it is clear that they can access knowledge; we don't have to give it to them. (Johnson, 2010)

Because of all this, everything points towards the only clear effect of the initiation of CLIL classrooms in schools is an improvement of the foreign languages competences. It has not been proved until now any kind of negative effect and it is not easy to justify by means of logic that the cohabitation of several languages in the education system would be negative from any point of view. It can only be concluded that it is advisable to keep on supporting the development of bilingual programs from all instances.

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⁶ A good example of the policies tried is the program *Beijing speaks English*

⁷ Tom (2011) analyze the possible causes of the failure of language teaching in China

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