Article title

Learning *beyond* the classroom: students' attitudes towards the integration of CLIL and museum-based pedagogies

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Abstract

In the last two decades, several studies have reported on the benefits of Content and Language Integrated Learning (CLIL) on students' affective and cognitive gains. These studies, however, have mainly concentrated on the implementation of CLIL within the formal (school) context, with very little research on its impact in non-formal (out-of-school) contexts. Thus, the present article addresses this gap by describing an action research project aimed at understanding secondary school students' attitudes towards the integration of CLIL and museum-based pedagogies. The project involved 284 students (14-16 years old) in northern Italy, who participated in a CLIL museum visit on Animal Classification through English at the *Natural History Museum* in Venice. A mixed method research design was implemented and data was collected through students' questionnaires and focus groups. Results reveal that students showed very positive attitudes towards taking part in a CLIL museum visit based on the interaction among the following dimensions: engagement with museum objects, use of English beyond the classroom, methodology and students' interests, self-concept and career plans.

Keywords

Main text

Introduction

In the last twenty years, CLIL (Content and Language Integrated Learning) has certainly gained momentum across and outside Europe as one of the most innovative approaches aimed at promoting multilingualism. The recent report on the state of the educational policies regarding the teaching and learning of languages in 42 European countries (European Commission 2017) shows that, as of today, the vast majority of the European countries have implemented CLIL in their educational system, to different degrees and in different ways. This trend is the result of the belief that CLIL promotes a more authentic and motivating use of the foreign language (henceforth FL). Not only have several studies shown that CLIL students are more motivated to learn the FL (Seikkula-Leino 2007), but they have also been found to be more linguistically competent than their non-CLIL counterparts, while no negative repercussion on their L1 development and content learning has been detected (Dalton-Puffer 2011).

Interestingly, Sylvén and Sundqvist (2015, 59) underscore that CLIL can take place outside of the school context with positive results, because "it seems particularly effective when learners use English while at the same time there is content of some type needed to be learned".

In this article, we specifically focus on CLIL in the museum because of the recent emergence of CLIL visits offered by museums across Italy (see Fazzi 2018). The phenomenon is probably linked to the internationalisation of the Italian school curriculum resulting from the Reform of the second cycle of secondary school education (D.P.R. 15 March 2010), which made CLIL compulsory in the upper secondary school system, albeit with differences across types of schools (Coonan 2012).

However, while some studies have indicated the potential of language learning in the museum, we are still unaware of the repercussions of integrating CLIL and museum-based pedagogies[1], especially when students engage with specimens and/or other science-related content instead of the more widely researched visual arts.

In trying to address the above-mentioned gap, this article presents key findings of a research project focused on evaluating the impact that a CLIL museum visit to the *Natural History Museum of Venice* has on students' attitudes towards the integration of CLIL and museum-based pedagogies, that is, an analysis of students' response to the implementation of a CLIL approach within a visit to a museum as an out-of-school activity. The following sections offer an overview of studies investigating CLIL in and beyond the classroom and language learning in the museum context. Next, the current study is presented, describing the action research design, the participants, the data collection instruments and the activities that were carried out at both the museum and in a local partner upper secondary school. In the results section, the quantitative and qualitative data gathered from our mixed-method approach is analysed. Finally, the findings are discussed and the main conclusions on the impact of integrating CLIL and museum-based pedagogies are underlined, together with key implications for future research in this area of inquiry.

Literature review

CLIL in the classroom

Despite some critics viewing CLIL as an elitist and ambiguous approach (Bruton 2013; Paran 2013), several studies have shown that learning through CLIL has a positive impact on both students' affective factors and learning outcomes (Lasagabaster 2011; Doiz, Lasagabaster, and Sierra 2014; Lasagabaster and Doiz 2016; Coyle 2013; Coonan 2011).

Lasagabaster and Doiz (2016) highlight some of the common reasons that students appreciate CLIL. First, students feel that teachers pay more attention to lesson preparation, and to making materials more accessible than in the traditional content classroom (Coonan 2007). Moreover, they claim that, in CLIL, learning is more challenging but also more engaging, as activities are often focused on peer interaction and collaboration (Doiz, Lasagabaster and Sierra 2014).

In another investigation on students' perceptions of CLIL, Coyle (2013) found that students valued both the provision of stimulating and more socially meaningful, tasks, scaffolding practices, and the opportunity to develop language awareness. In another study, Lasagabaster (2017) explored students' beliefs regarding CLIL instruction over a three year period. He came to the conclusion that, despite fluctuations over time, students' motivation for learning in CLIL remained stable as a result of their strong instrumental orientation towards mastering English (i.e. job prospects, parents' expectations).

CLIL beyond the classroom

According to Reinders and Benson (2017, 563), we are only now beginning to understand how and what people learn beyond the classroom, and the dimensions that underpin their learning. However, there is wide agreement that the activities that learners carry out in informal and non-

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[1] When talking about museum based-pedagogies, we refer to the array of approaches, strategies, and tools used to promote learning about or through tangible and intangible museum objects. Museum based-pedagogies differ from classroom based-teaching inasmuch museum learning results from the combination of factors which pertain to the different dimensions – personal, sociocultural, physical, and instructional - that are specific to the museum context (see the *Contextual Model of Learning* by Falk and Dierking 2000).

formal contexts can lead to better communicative competence, and motivation, among other linguistic and affective dimensions (see Benson and Reinders 2011; Sundqvist 2009; Sylvén and Sundqvist 2012, 2015, 2017; Rodgers and Webb 2011; Menegale 2013).

For example, in a study in Sweden, Sundqvist (2009) found that the total amount of time spent on informal English activities was positively and significantly correlated with both students' oral proficiency and the size of their vocabulary. Also, her findings revealed a significant positive correlation between students' engagement in extramural English activities and their self-efficacy. In another study in Italy, Menegale (2013, 12) found that students perceived the English learnt beyond the classroom as different from that learnt in the school setting, as "the language they run into in informal contexts cannot be found in schoolbooks", and it is much "closer to their everyday life, interests, and needs".

Within this field, an interesting though very much unexplored topic is CLIL *beyond* the classroom, specifically in non-formal contexts. With learning in non-formal contexts we here refer to learning: "which takes place through planned activities (in terms of learning objectives, learning time) where some form of learning support is present (e.g. student teacher relationships)" (European Commission 2012); is organised by institutions, such as museums, zoos, public bodies, libraries, summer camps etc.; is non-sequential and may lead to motivation being usually intrinsic; does not require evaluation and assessment (Eshach 2007). Some initial reports offer promising results. One example is an action research study investigating the impact of integrating CLIL within a technology assisted urban game (Pitura and Terlecka-Pacut 2018). The authors found that, even though the game was perceived as challenging, the upper secondary students felt satisfied with having the opportunity to compete with their peers, and successfully accomplish the tasks during the game. The authors also found that students' interest in the game was connected to the novelty of the experience (i.e. being in a new town, using a map, using English for authentic communication). Furthermore, the aspect that students valued the most was the social dimension of the experience, which pushed them to finish the game, despite the bad weather conditions.

A second study (Rodenhauser and Preisfeld 2018) is a quasi-experimental investigation of the effects of combining CLIL principles with practical experimentation in an out-of-school lab during a course on molecular biology in Germany. Three groups of secondary school students took part in the study: one CLIL group, who participated in the pre-lab activities and lab experience in English as a FL, one monolingual group, who participated in the pre-lab activities and lab experience in German as an L1, and one control group, who took the same course as the other two groups minus the lab experience. Concerning students' affective responses, the students in the bilingual group who were more FL-oriented seemed to have increased their self-concept as biologists, meaning they felt more capable of doing science thanks to the practical lab experience.

Language learning in the museum

Studies on language learning beyond the classroom have focused on different settings (Reinders and Benson 2017), from independent learning at home (Palfreyman 2011) to language learning in online settings (Chik 2014). However, the research on the dynamics and impact of language learning in the museum setting is quite limited.

According to Rohmann (2013, 150), while formal learning is text-based, learning in the museum is "holistic, involving both cognitive and emotional domains, and, in the end personal, because it is based on a subjective access to objects composed in such a way that the space gives a plenitude of meanings". Indeed, Ruanglertbutr's (2016) research report on the impact of an ESL educational programme at the Potter Museum of Art in Melbourne (Australia) shows that through engaging with art in the museum context, students were able to use art-specific vocabulary, while

also understanding "the value of cultural resources in democratic societies" (Ruanglertbutr 2016, 18).

Díaz (2016) presents a closer inspection of FL learning in museums with a project that was implemented at Dickinson College in the US to supplement the FL curriculum through incorporating visits to the art museum on campus. Students involved in the project claimed that everyone felt engaged and active in group discussions, as the art works triggered students' desire to communicate a message, shifting their attention from how to say something to what to say, reducing their anxiety and inhibitions to communicate (Díaz 2016, 444). An interesting study on the impact of integrating CLIL and the visual arts was conducted by Abdelhadi et al. (2019) in an Arabic complementary school in North London. This study aimed at exploring the influence of engaging with art works on secondary students' language and culture learning of Arabic. Findings reveal that engaging with the target material culture has a positive effect on students' language and cultural awareness, engagement, confidence and active citizenship skills, and, finally, appreciation of the aesthetics of multimodal design in the context of Arabic history and culture. However, the activities studied in this research were implemented in the classroom context. Indeed, to our knowledge, only Charalampidi et al. (2017) report on a CLIL module with lessons both at school and at the museum, but their investigation only concentrated on the potential of using CLIL in the context of heritage language learning (i.e. Greek), without looking into the differences between in- and out-of-school CLIL.

The study

This study is part of a three-year action research project, initiated through a collaboration between the University Ca' Foscari and the Foundation of Civic Museums of Venice (Italy). The action research project involved the first author (Researcher-practitioner), the museum educators, and upper secondary school teachers and students from the Veneto region (Northeast Italy), and it aimed at: (i) developing a pedagogical framework to support the design and implementation of CLIL museum learning visits and (ii) exploring students' attitudes towards the integration of CLIL and museum-based pedagogies and perceived learning outcomes.

The current article addresses this second aim and draws on both quantitative and qualitative data to determine the value of CLIL beyond the classroom from students' perspective. For this report, only the impact on students' attitudes is considered. However, we were also interested in understanding the impact on students' attitudes of pre-visit (school) activities, which is why we also partnered with a *liceo artistico*[2], and designed and implemented a CLIL science module with lessons at school before and after the museum visit.

Overview of the CLIL museum visit

The CLIL learning programme "*Animal Classification*", running at the *Natural History Museum* (Foundation Civic Museums of Venice), aimed at promoting science and English language learning. It was designed collaboratively by the Researcher-practitioner, the two museum educators, and a science teacher working in the partner school. The objectives of the CLIL museum visit were for students to learn the principles of scientific inquiry and to understand the

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[2] Following the Reform in 2003, the Italian high secondary school system is currently structured in: Lycée system (*Licei*), technical schools (*istituti tecnici*), and vocational schools (*istituti professionali*). The *Licei* are generally directed at students aged 14 to 19, and are divided in sub-types with different curricula and specializations: *liceo artistico specialises in arts* (i.e. fine arts, design, sculpture), *liceo linguistico* specialises in languages (i.e. foreign languages, cultures and literatures), *liceo scientifico* specializes in sciences (i.e. biology, chemistry, physics and math) (for a full description see INDIRE and MIUR 2014).

difference between homologous and analogous structures, while also developing their scientific vocabulary and skills in English within the context of animal classification. The content objectives were chosen because they were linked to the science curriculum of 1st and 2nd year students across the different types of upper secondary schools in Italy. As regards the teaching methodology, at the macro-level, we developed a structure, which integrated Willis' (1996) Task-based Approach and Johnson's (1995, 2009) touring strategies. Specifically, Johnson (1995, 2009) presents a list of guidelines aimed at educators delivering guided museum visits to different audiences. In particular, she suggests structuring the museum visit in four stages - Welcome, Body, and Final Remarks – and using 'transitions', that is linking sentences, to support visitors' understanding and orientation in the museum. At the micro-level, CLIL and IBSE (Inquiry Based Science Education) were integrated so as to support and promote students' engagement with the specimens exhibited in the museum, while also facilitating and developing their English language skills and vocabulary. Specifically, we used scaffolding strategies (repeated instructions, visuals), worksheets with different group exercises, and a glossary. These various techniques were meant to balance linguistic and cognitive demands. In so doing, we adapted Coyle, Hood, and Marsh's (2010, 43-44) CLIL Matrix (adapted from Cummins 1984) to support both students' comprehension and production in English. Additionally, the visit also followed the stages of the scientific method: data collection, hypothesis creation and testing, and observation formulation (see Pedaste et al. 2015; see the Appendix for the detailed structure of the visit).

Overview of the CLIL school-museum module with partner school

The module (9 hours) was aimed at 1st and 2nd year students (14-16 years old) of the partner school in Venice. This partner school is a *liceo artistico[3]*, an upper secondary school that specialises in arts. The module, which comprised in-school lessons (preparation: 3 hours), CLIL museum visit at the *Natural History Museum* (2 hours), and in-school lessons (follow up: 4 hours), was implemented in eleven different classes in the second semester of the 2016-2017 school year by two teaching teams: Science teacher 1 and the Researcher-practitioner (four classes); Science teacher 2 and the Teaching Assistant (seven classes).

During the preparation stage, the goals, methodology, structure and assessment procedures of the module were presented and students were provided with pre-visit comprehension and production activities based on authentic written and oral materials and vocabulary activities on the themes of Evolutionism, History of classification and Characteristics to classify animals. During the follow-up stage, students worked on a final project (a poster), which they orally presented in class. For the project, students presented on a topic chosen from a list; the presentations were done either in groups or alone, depending on their teaching team. In this article, only the impact of the pre-visit (school) activities is taken into consideration.

The Sample

The sample was made up of 284 upper secondary students, who were divided into two groups: students from the partner school (*liceo artistico;* Group 1) who participated in the CLIL school-museum module, and students from other schools (*liceo linguistico, liceo scientifico;* Group 2), who only participated in the CLIL museum experience (see Table 1 for more details).

Table 1: *Characteristics of the sample*

Students	n	Age range	Type of museum	CLIL school-museum module	Type of school
Group 1	204	14-16 years old	*science*	yes	*Liceo artistico*
Group 2	80	14-16 years old	*science*	no	*Liceo linguistico and scientifico*

Students in both groups all lived in the Veneto region (Northern East of Italy) and had a native or native like command of Italian, while also speaking the local dialect. Only two of the students in Group 2 had Chinese as their first language. The majority of the students had an A2 level in the English language, with very few demonstrating a B1 level or above. Students had varied experiences with the CLIL methodology prior to this research project, going from zero experience to participation in at least one short module, always in the school classroom. None of the students had ever participated in a CLIL experience in the museum context.

Research Questions

This article addresses the following research questions (henceforth RQ):

RQ1: What impact does the participation in a CLIL museum visit have on students' attitudes towards the integration of CLIL and museum-based pedagogies?

RQ2: What impact does the participation in pre-visit (school) activities have on students' attitudes towards the integration of CLIL and museum-based pedagogies?

Research methodology

The analysis was based on students' responses to questionnaires, which were constructed by adapting those used in previous studies on learners' attitudes and perceived learning outcomes in CLIL contexts (see Dörnyei and Taguchi 2010; Lasagabaster 2011; Coyle 2013; Coonan 2012) and studies on motivation resulting from learning in the museum (see Hooper-Greenhill 1994). The questionnaire consisted of both closed and open-ended questions and was divided into three sections. The first section was a series four-point Likert scale questions aimed at identifying students' attitudes. The second section aimed at understanding students' perceived learning outcomes and consisted of three multiple-choice items and two true-false items. Lastly, the third section aimed at exploring students' attitudes through two additional four-point Likert questions and two open-ended questions. The questionnaire was administered to students in both Group 1 and 2 after the CLIL museum visit and their open-ended responses were later translated into

English. In the current article, only the findings related to the first and third section will be presented as they aimed at collecting data on students' attitudes.

Concerning the focus groups, after the CLIL museum visit, 40 students in Group 2 were selected and asked to participate in one of seven sessions, each consisting of 6 or 7 participants. Our aim was to get a deeper understanding of students' quantitative responses by integrating by analysing them alongside students' qualitative responses and focus group discussions. The focus group discussions were administered in Italian, audio recorded and later translated into English.

As regards the quantitative results, the analysis procedures will be explained in the following section.

For the qualitative results, the analysis of students' open-ended responses in the questionnaires and students' focus groups was based on Thematic Analysis (Liamputtong 2011). We first read through the students' open-ended responses to find repeated patterns of meaning (Liamputtong 2011). Then, we read through each transcript and combined the interview data with the open-ended responses data. We performed initial and axial coding, working from a more descriptive to a more analytic perspective. During the initial coding, we grouped the data and assigned labels, which we then further categorised. In so doing, we looked for the most significant and frequent initial codes. Finally, we conducted axial coding by making connections between major categories and their respective sub-categories (Liamputtong 2011). N-vivo was used to assign the codes to the focus group segments and open-ended responses and to keep track of how the codes were organised and represented in the transcripts during both coding stages. In analysing the focus groups, we considered three levels of analysis: the individual, the group, and the group interaction.

In reporting the qualitative results, students' ID numbers (i.e. S28) were used for the open- ended responses, while pseudonyms (i.e. Enrico) were chosen for the focus groups, discerning the different sessions with the appropriate code (i.e. FG1, FG2).

Quantitative results

To answer RQ1, we first performed a Factor Analysis (Principle Component Analysis with a Direct Oblimin rotation) of students' responses to find out how many factors there were in the attitude towards the CLIL museum learning visit parts of the questionnaire. Our 9-item scale resulted from the combination of Part 1 and 3 of the questionnaire, as they both addressed students' attitudes and consisted of four-point Likert scale items. The Factor Analysis revealed that two factors underlined these 9-items. The first factor comprised attitudes towards the overall CLIL museum experience, while the second factor encompassed attitudes towards the use of English outside school. Each factor with the loading values of each variable is presented in the rotated factor matrix lists (see Table 2).

Factor 1: Attitudes towards the overall CLIL museum experience
Item 5: I would recommend this experience to others
Item 8: To what extent did you enjoy the museum visit?
Item 1: Overall, the museum visit was in line with my expectations
Item 9: To what extent do you rate this experience useful?
Item 6: I didn't find the museum experience inspiring at all
Item 7: A museum is a good context for practicing a foreign language outside of school

Factor 2: Attitudes towards the use of English outside school
Item 4: If the museum visit had been in Italian, I would have enjoyed it much more
Item 2: It was difficult to learn new things through English at the museum
Item 3: I enjoyed using English in a different context other than school

Table 2: *Items comprised in each factor and their effect*

Variables	Factors	
	1	**2**
Item 5	.784	
Item 8	.774	
Item 1	.765	
Item 9	.692	
Item 6	.665	
Item 7	.530	
Item 4		.795
Item 2		.771
Item 3		.611
Variance explained (%)	39.5	15.7

Factor 1 contributed 39.5% to the common variance, and Factor 2 contributed 15.7%. As shown in Table 2, by adding the two factors, the total common variance or communality is obtained, which is 55.2% of the total variance. In order to understand the internal reliability of the 9-item scale, we ran a Cronbach's alpha, which is reported in Table 3. Despite Factor 2 showing a lower value of internal consistency (.636), the test revealed a total coefficient equal to .777 (see Table 3). As the total coefficient indicates a satisfactory level of internal consistency of our scale, we decided to maintain the distinction of the variables in two factors (Factor 1 and 2), as indicated by the Factor Analysis.

Table 3: *Cronbach's Alpha of the 9-item scale measuring students' attitudes towards the CLIL museum experience*

	Items	Cronbach's α
Factor 1	8, 5, 1, 9, 6, 7	.796
Factor 2	2, 3, 4	.636
		.777

The second step in the analysis of the questionnaire data consisted in evaluating students' attitudes. Overall, the large majority of the students in our sample showed very positive attitudes towards both the overall CLIL Museum Experience (Factor 1; M=3.51, SD=.46) and the Use of English as a FL in an out-of-school context (Factor 2; M=3.19, SD=.67).

Regarding RQ2, a non-parametric Mann-Whitney U Test was performed to evaluate whether there was a significant difference between how students in Group 1 and Group 2 responded to Factor 1. The test revealed that students in Group 2 responded significantly more positively (Md=3.6, n=79, mean rank=131.61) than students in Group 1 (Md=3.6, n=197, mean rank=155.67), U=6425, z=-2.288, p=.022, with a small effect size r=.13 (see Table 4)

Table 4: *Results of Mann-Whitney U Test between Group 1 and 2 in relation to Factor 1*

	n	Md	Sig.
Group 1	197	3.6	
Group 2	79	3.6	.022
Total	276	3.6	

*Significance (two-tailed) = p < 0.05

We thus carried out a second Mann-Whitney U Test to evaluate whether there was a difference in the attitudes of students in Group 1 and 2 towards Factor 2. The test revealed that students in Group 2 responded significantly more positively (Md=3.6, n=80, mean rank=177.58) than students in Group 1 (Md=3.3, n=201, mean rank=126.44), U=5114, z=-4843, p=.000, with a small effect size r=.28 (see Table 5).

Table 5: *Results of Mann-Whitney U Test between Group 1 and 2 in relation to Factor 2*

	n	Md	Sig.
Group 1	201	3.3	
Group 2	80	3.6	.000
Total	281	3.3	

*Significance (two-tailed) = p < 0.05

These results revealed that, overall, students showed very positive attitudes towards both factors, but there was a significant difference in the way Group 1, who participated in the CLIL museum experience as part of a CLIL module that included pre-visit activities at school, and Group 2, who only participated in the CLIL museum experience, responded to Factor 2. The interesting result was that Group 2 seemed to have responded more positively to both the overall CLIL museum visit (Factor 1) and the use of English as a FL in an out-of-school context (Factor 2). In order to explain these results, we decided to investigate whether the type of school attended could have affected students' attitudes towards both Factors. Indeed, while Group 1 was only comprised of students attending *liceo artistico*, whose curriculum is focused on art subjects, Group 2 was comprised of students attending *liceo linguistico* and *liceo scientifico*, whose curriculum is characterised by a higher number of both science and English language classes per week than *liceo artistico*. We thus decided to analyse whether the type of school could have had an impact on the significantly more positive attitudes of Group 2 towards both Factor 1 and Factor 2, despite the fact that this group had not participated in pre-visit (school) activities before visiting the museum.

To establish whether the statistical difference between Group 1 and 2 depended on the type of school, we performed a Kruskal-Wallis Test. The test revealed that there was no significant statistical difference in their attitudes towards Factor 1 across Art, Science, and Language students (Art, n=197; Science, n=42; Language, n=37), ($\chi2(2$, n=276 U=5.303, p=.07) (see Table 6).

Table 6: *Results of Kruskal-Wallis Test across Art, Science, and Language students in relation to Factor 1*

Students	n	Md	Sig.
Art	197	3.6	
Science	42	3.7	
Language	37	3.6	0.7
Total	276	3.6	

* Significance (two-tailed) = p < 0.05

Thus, we performed a Kruskal-Wallis Test to evaluate whether there was a significant difference in the attitudes towards Factor 2 across Art (*liceo artistico*), Science (*liceo scientifico*), and Language (*liceo linguistico*) students. The test revealed that there was a statistically significant difference depending on the type of school (Art, n=201; Science, n=42; Language, n=38), ($\chi2(2$, n= U=23.54, p=.000) (see Table 7).

Table 7: *Results of* Kruskal-Wallis Test *across Art, Science, and Language students in relation to Factor 2*

Students	n	Md	Sig.
Art	201	3.3	
Science	42	3.6	
Language	38	3.6	.000
Total	281	3.3	

* Significance (two-tailed) = p < 0.05

To establish the reliability of the Kruskall-Wallis Test (Pallant 2010), we carried out three follow up Mann Whitney U Tests between Science and Art students (Test 1), between Language and Art students (Test 2), and between Science and Language students (Test 3). The results revealed that Science and Language students had significantly more positive attitudes than Art students (p=.000) towards Factor 2, whereas no significant differences were found between Science and Language students (p=.75).

Qualitative results

To respond to RQ1, answers to the open-ended questionnaire items and focus group discussions were analysed using the same Factor 1 and 2 distinction used in the quantitative analysis. We then identified different categories within each factor group.

Factor 1: Attitudes towards the overall CLIL museum experience

In investigating students' attitudes towards the overall CLIL museum learning visit (Factor 1), we identified two categories: *The museum visit as different from and more interesting than school,* and *Attitudes towards the teaching methodology.*

The museum visit as more interesting and different than school

To explain why they enjoyed the CLIL museum visit, students in both groups and all types of school concurred that it was the presence of museum objects and specimens that made the learning experience both authentic and extraordinary:

> **Kristina:** in the museum, there were-I mean I had never seen stuffed-real animals, STUFFED [emphasis]…I kept my eyes [wide] open [miming]…to look at them…in general…so it was beautiful…engaging **(FG 1)**

In fact, when asked if there was a difference between CLIL at school and CLIL at the museum, students explained that they felt much more attentive at the museum because they would not likely have a similar multisensorial and "material" experience inside the classroom:

> **Claudio:** I felt actively engaged but…how can I say this?...even a bit more…because, for example, when I entered the rooms, I felt like I was entering the animal world, how they reacted…it was very [miming amazement] **(FG 2)**

Attitudes towards the methodology

As regards this category, students agreed that the reason that they felt so positive about the museum visit was not only the opportunity to engage with museum objects, but also the methodology of the visit. Indeed, they often acknowledged how the CLIL museum experience had turned out to be different from the "traditional" guided tours and much more engaging and fun than they had anticipated:

> **Isabella:** I also put 'surprised' because I didn't expect it to be…something so beautiful
> **Kristina:** yeah [nodding]
> **Researcher-practitioner:** what did you expect?
> **Isabella:** well, I expected the usual boring visits…you go there and walk around the entire museum-
> **Kristina:** (overlapping) yeah, me too
> **Isabella:** you stand there and feel like you want to sleep and instead it wasn't like that…it was more…interactive and more fun and useful **(FG 1)**

Students often connected their positive attitudes to their engagement in group and enquiry-based activities:

>**S266 (Group 2):** (…) because working in group made this experience fun

Indeed, students revealed that touring the museum on their own with the aim of completing the worksheets was something similar to having a "flow" experience (see Csikszentmihalyi and Hermanson 1995), almost making them forget that the experience was school related:

>**Enrico:** it was more like a game…something different…it didn't even feel like you were doing something school-related and so it was interesting **(FG 3)**

Interestingly, students seemed to like the fact that the CLIL museum visit had a visible didactic structure, while still allowing them to be autonomous in the gallery (Part 1 of the visit) and freely observe the specimens:

>**Enrico:** We had to look for the specimens that were listed in the…worksheets…and you didn't have to talk just for the sake of talking
>**Eleonora:** Yes, we had to walk around the museum, looking at the specimens, one by one…
>**Researcher-practitioner:** So, you liked the fact that it had a bit of a structure?...an objective?
>**PP:** Yes
>**Luca:** [It was] more engaging **(FG 3)**

Factor 2: Attitudes towards the use of English outside school

In investigating students' attitudes towards the use of English in an out-of-school context (Factor 2), we identified two categories: *Authentic communication* and *Fostering of affective factors.*

Authentic communication

For this category, students showed widespread agreement towards the lack of opportunities to use the FL outside of the school context. Indeed, students often claimed that the reason they found the visit useful was because it gave them the opportunity to practice English:

>**S252 (Group 2):** I used English outside of the school context
>**S272 (Group 2):** I spoke in English, exploiting and applying its grammar rules

Moreover, students in the focus groups underscored how it is one thing to learn English at school and another to use it outside, and how difficult it is to move from being a "learner" to being a "user" of the language:

>**Gemma:** well, let's say that at school they [teach us?] the meaning and they explain the grammar, but…if you study English at school [it doesn't mean that you learn it]…I mean, outside, to speak with English people, to speak and listen…it's something completely different…it's almost like it's a different language...in the end, it's much more difficult right?! **(FG 5)**

However, students also highlighted how using English outside school was more stimulating, as it gave them the chance to talk about "concrete" things:

> **Jessica:** (overlapping) it's also different from staying in the classroom…because you can better experiment with the language
> **Researcher-practitioner:** Ok…what do you mean by "you can better experiment with the language"?
> **Jessica:** Hmmm…you're more stimulated...to speak it, [because] you're talking about concrete things **(FG3)**

While the CLIL museum experience did not have an "authentic" communicative goal per se, given that the students shared Italian as their first language, they still perceived it as closer to a "real" situation than a CLIL lesson at school:

> **Julie:** (…) if you go abroad you learn the language much more willingly and much more…easily because you're in contact with people from that culture…and so I think it was much more useful to go to the museum and use the language instead of just [passively listening to] explanations at school that you need but maybe it's more boring (…) **(FG 5)**

Despite the somehow "artificiality" of the experience, students also reported to have used English for a communicative purpose with other museum staff:

> **Sofia:** for example, even with the invigilators…even if we used the wrong words [and didn't know exactly what to say], we spoke in English (…) they helped us too, to understand where the rooms were **(FG 7)**

Fostering of affective factors

For this category, students claimed that the visit had been useful because it had been a way for them to test their English knowledge and skills outside of the school context:

> **S261 (Group 2):** I used English outside of the school context and I had the chance to test my knowledge

Curiously enough, they interpreted this "test" as a positive challenge, noting that it made them feel more autonomous than in school:

> **Gloria:** even this experience…I mean…I don't like English [group laughter]…but I liked it at the museum…because it was different from being at school…and listen…
> **Enrico:** it was a bit like a challenge, to speak in English at the museum **(FG 3)**

Students also affirmed that using English in the museum context had a positive impact on their confidence and self-esteem as learners/users of English:

> **Cinzia:** I wrote 'surprised' because I was very surprised of how I was able to make myself understood, bringing out an English [knowledge] I didn't know I had (…)
> **Gemma:** I also put 'proud' because (…) it was like we were able to bring out the English that-
> **Cinzia:** (overlapping) that was inside us…and then it's like you say "Gosh, I can't

believe I'm this good" [group laughter]
Gemma: and this makes you a little proud…you tell yourself "I'll learn English this way" **(FG 5)**

When asked about how they felt during the CLIL museum visit, students responded that their initial feeling of anxiety was fast replaced by a feeling of being relaxed and comfortable:

> **Julie:** let's say that, initially, I was more anxious…because I knew that the activity was very much focused on English, that I had to speak in English and I was very worried about saying the phrase in the correct way…but little by little I relaxed and I didn't have to think about it that much anymore (…) and I said something anyway **(FG 5)**

However, it must be noted that students from the partner school (Group 1) often described their English language competence in very negative and, sometimes, disparaging terms, showing a very low self-concept as English users:

> **Claudio:** (…) it was 'useful' because you talked in English and I'm totally hopeless in English **(FG 2)**

> **Francesca:** (…) as I said before, my English is below zero (…) **(FG 2)**

As regards RQ2, the quantitative analysis showed that the Art students who participated in the pre-visit activities (Group 1) revealed significantly less positive attitudes towards the overall CLIL museum experience (Factor 1) and using English in an out-of-school context (Factor 2) than Language and Science students (Group 2).

Interestingly, the analysis of the qualitative data revealed that Art students' future professional selves and personal interests might have affected their attitudes towards participating in a CLIL experience outside the classroom. Indeed, while acknowledging that both the CLIL museum visit and the pre-visit (school) activities had been enjoyable and "fun" experiences, students in Group 1 argued that learning English in relation to science was not so useful and interesting for them:

> **S28 (Group 1):** I learnt new things but I'm not sure they'll be useful for me in my daily life

Indeed, during the focus group discussions, students in Group 1 expressed a very strong preference towards focusing the CLIL museum learning visit and the module on art rather than science. They particularly explained that art was not only their passion, but also their potential career:

> **Rosa:** yeah…it would be so much better to do it in art
> **Researcher-practitioner:** would it better if [the module] was in art?
> **Julie:** maybe it would engage us more (…)
> **Amanda:** art is our passion, if we're here…and [to do it] in English nowadays-
> **Rosa:** (overlapping) it's important
> **Amanda:** it's very important
> **Cinzia:** I mean also for a job in the future
> **Rosa:** exactly
> **Gemma:** exactly, in case we become museum guides **(FG 5)**

What emerges from our data is that students evaluated the usefulness of the CLIL experience in relation to its relevance to their career goals. Indeed, they argued that if they were to become museum/tour guides in the future, a career chosen by many art students, they would need to know and use art rather than science-specific vocabulary and content in English:

> **Cinzia:** if you decide to become a tourist guide you need to know about art but you also need to know English
> **Amanda:** and you need to know how to talk about the art [concepts] in English **(FG 5)**

Discussion and Conclusion

While research has widely documented the benefits of CLIL at school, there is still little evidence of its value in an out-of-school context. This article has explored students' attitudes towards the integration of CLIL and museum-based pedagogies (RQ1), and the effect of pre-visit (school) activities (RQ2).

As regards RQ1, we have ascertained that both Art students in Group 1 and Science and Language students in Group 2 showed very positive attitudes towards both the overall CLIL museum experience (Factor 1) and the use of English outside of school (Factor 2). However, what emerges from our quantitative findings in regard to RQ2 is that Science and Language students (Group 2; no pre-visit activities) were significantly more positive towards both factors than Art students (Group 1), who participated in the pre-visit activities.

Tallying with the quantitative data, the themes emerging from the qualitative analysis related to both factors lead us to suggest that students' attitudes towards the integration of CLIL and museum-based pedagogies result from the interaction of four different dimensions:

1) the museum objects.
2) The use of English beyond the classroom.
3) The methodology, and
4) learners' interests, self-concept[4], and career plans.

As regards the "Museum objects" dimension, students in our sample often commented on the uniqueness of the museum objects and specimens, expressing fascination and empowerment when engaging with them. Indeed, while classroom learning is text-based, museum learning revolves around objects that provide a direct access "to 'the real' – the original creative act, or a rare natural entity" (Evans, Mull, and Poling 2002, 72), and thus trigger amazement, positive emotions and curiosity.

Concerning the "English beyond the classroom" dimension, it needs to be pointed out that students in Italy do not encounter the same opportunities to use their English outside of school as do students in other countries, such as Sweden (see Sylvén and Sundqvist 2015; Sundqvist 2009). Indeed, the majority of the students in our sample confirmed that using English at the museum was a unique opportunity for them to practise their FL skills beyond the classroom, in preparation for future work and study abroad experiences. Students reported how using English to learn about and engage with specimens boosted their confidence as language learners/users outside the classroom. Moreover, applying CLIL in the museum also gives students the opportunity to interact with people of the "real" world. In fact, students reported to have started off conversations

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[4] The notion of "self-concept" refers to the "cognitive appraisals of attributes about ourselves" (Hattie 2014, 10). Self-conceptions can be either confirmed or changed on the basis of the evidence that individuals collect in their daily life (see Hattie 2014 for a more in depth discussion of the psychological dimensions underpinning this notion).

also with the invigilators working at the *Natural History Museum* of Venice. Thus, when CLIL is delivered in the museum, the engagement with the museum contents through English is also influenced by the presence and performance of others in the periphery of students' actions.

Looking to the "Methodology" dimension, students perceived the visit as more enjoyable and fun in comparison to more traditional and guided museum tours, almost assimilating it to a "treasure hunt". Students felt stimulated to work in groups and to look for information, by applying the principles at the basis of the scientific method, and challenged each other in completing the worksheets. While enjoying being autonomous in the museum galleries, students also confirmed that using worksheets that had some structure and direction supported both their engagement with the specimens (see Bamberg and Tal 2007) and their understanding of instructions and materials in English. These results also support Rodenhauser and Preisfeld's (2018, 132) claim that, when involving students in bilingual out-of-school laboratory courses, "the challenge seems not to be letting students solve problems on their own, without any kind of instruction, but to construct a structured and guided learning environment which the learners do not perceive as instructional".

As regards the "Learners' interests, self-concept, and career plans" dimension, we suggested that the less significant attitudes of Art students might have been the result of the type of school attended, rather than a detrimental effect of the pre-visit (school) activities. Indeed, while students in Group 1 have an art-based school curriculum, with few science and English language classes, students in Group 2 attend *liceo scientifico* and *liceo linguistico*, in which science and English language classes take up more of the timetable and represent core subjects on the curriculum. The focus group data reveals that the Art students (Group 1) would have preferred an art-based CLIL module rather than a science based one, leading us to believe that there is a connection between CLIL beyond the classroom and students' future professional selves. In particular, many of the Art students commented on the possibility of becoming tour/museum guides, and stressed that to be able to talk about artworks in English would certainly help them in their future career. Moreover, it must be noted that the Art students often described their competence and ability to use English in very negative terms, showing very low self-perceived language competence, and self-esteem as English language users.

Clearly, there are some limitations to the study. While we can confirm that students in both groups showed positive attitudes towards the integration of CLIL and museum-based pedagogies (RQ1), further research is needed in terms of the pre-visit activities' impact (RQ2). In our study, the impact of participation in a CLIL museum visit is more significant than that of pre-visit activities. However, future studies should include art pre-visit activities and a visit to an art museum for Art students (a possibility not available in our case), because this would allow us to gauge the influence of art-related pre-visit activities more adequately and to analyse the interaction between the museum visit and pre-visit activities. Nonetheless, there are some interesting implications we can draw from this study. On the one hand, museum objects have great potential to encourage students to use the FL with different people and in a more authentic and creative way. On the other, the success of a CLIL museum visit is very much linked to the methodology used, and to students' interests and future prospects.

Acknowledgements

Disclosure statement

No potential conflict of interest was reported by the authors.

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