English-Taught Programs and Scaffolding in CLIL Settings
A Case Study

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Abstract   This study examines the effectiveness of scaffolding provided in a Content and Language Integrated Learning (CLIL) environment at the University of Urbino in Italy, as perceived by a group of students attending CLIL courses taught in English at the university. Data were gathered through an online post-course questionnaire that learners answered on a voluntary basis. Results show that, overall, students perceived the scaffolding that was provided as rather effective, although some shortcomings emerged.

Summary   1 Introduction. – 1.1 ETPs. – 1.2 Review of Literature. – 1.3 Scaffolding in CLIL Settings. – 2 The Study. – 2.1 Research Questions. – 2.2 Methods. – 2.3 Participants. – 2.4 Results. – 2.5 Discussion. – 2.6 Limitations of the Study. – 3 Conclusion.

Keywords   English-Taught Programs. CLIL. Higher education. Scaffolding. Student perceptions.

1   Introduction

In the last few decades, there has been a growing interest in English-Taught Programs (ETPs), that is, degree courses taught in English in higher education institutions in non-English speaking countries. ETPs have developed mainly to attract foreign/international students to institutions in these countries and to enable domestic students to acquire English language skills. The Bologna Process has fostered the development of ETPs as part of the internationalisation and student mobility process it advocated; and more generally, ETPs have played a pivotal role in fostering internationalisation in higher education (EC, EACEA, Eurydice 2015).

The number of ETPs in Europe has increased significantly in the last couple of decades, rising from somewhat over 2,000 in 2002 to somewhat over 8,000 in 2014; data show that 80% of ETPs are at master's level and 20% at undergraduate level (Wächter, Maiworm 2014). ETPs have spread especially widely in Northern and West-Central Europe, representing 38% of the university-level programs in Denmark, 30% in the Netherlands, and

24% in Sweden and Germany (Wächter, Maiworm 2014). ETPs have also recently increased in number in Southern Europe, for example in Spain and Italy, and have started developing in East-Central Europe and the Baltic States, for instance in Poland and Estonia (Wächter, Maiworm 2014).

1.1 ETPs

Overall, ETPs are still in need of a methodological framework, especially in countries such as Italy (Wächter, Maiworm 2014), where they have increased significantly (Helm 2015). There are various types of ETPs in Europe, such as English-Medium Instruction (EMI) and CLIL learning environments. In EMI settings, instructors teach subject content in English (Dimova, Hultgren, Jensen 2015); since EMI aims to foster only the acquisition of content knowledge, and language development is not an objective, lecturers do not implement any language-supportive methodologies, or if they do, they provide very limited foreign language instructional support (Doiz, Lasagabaster, Sierra 2013). However, as research on language immersion shows, effective language acquisition is not likely to take place merely by means of incidental learning through exposure to lectures (Lyster 2007). As a result, learners face challenges in EMI when foreign language instructional support is either not provided or provided to a very limited extent (Airey 2012). Furthermore, active construction of meaning on the part of students is necessary for language development to occur (Wannagat 2007). Thus, to enhance content and language development concurrently in English-taught courses, instructors need to provide learners with subject- and language-specific scaffolding (Lyster 2007; Doiz, Lasagabaster, Sierra 2013; Dimova, Hultgren, Jensen 2015; Jiménez Muñoz 2016). In this light, Lyster (2007) advocates for a counterbalanced instructional framework integrating content-based and form-focused instruction.

The CLIL learning environment, developed in Europe over the last few decades, seems well suited to fostering the concurrent development of content and language in higher education settings. CLIL is a dual-focused approach in which subject content is taught through the medium of an additional language (Coyle, Hood, Marsh 2010); in it, "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" (Coyle, Hood, Marsh 2010, 1). Language-supportive methodologies are a key feature of this educational approach, which also incorporates cognitive engagement, problem-solving and higher-order thinking skills as core components (Coyle, Hood, Marsh 2010). Research has shown that language-supportive methodologies are likely both to effectively foster content knowledge processing in CLIL environments and to help to prevent students' cognitive overload when they are engaged in content and language processing concurrently (Heine 2010).

1.2   Review of Literature

CLIL, which has been researched from different perspectives (Juan-Garua, Salazar-Noguera 2015; Meyer et al. 2015), is also a source of increasing research activity in higher education (Coleman 2006; Dafouz, Núñez 2009; Jexenflicker, Dalton-Puffer 2010; Izumi et al. 2012; Fortanet-Gómez 2013; Aguilar, Muñoz 2014; Fürstenberg, Kletzenbauer 2015; Jiménez Muñoz 2015). As the studies show, instructors have integrated content and language to various degrees and with mixed results at the tertiary level; language-supportive methodologies especially are widely varied (Arnó-Macià, Mancho-Barés 2015). Lecturers' challenges while scaffolding learners' comprehension of input and language development have also been documented (Aguilar, Rodriguez 2012; Airey 2012; Arnó-Macià, Mancho-Barés 2015).

Research has examined the perceptions of students on the effectiveness of CLIL in higher education. In this respect, one recent study showed a significantly positive attitude towards CLIL on the part of learners who rated the approach as effective thanks to the various teaching methodologies implemented to convey content while also scaffolding language improvement (Chostelidoua, Griva 2014). Positive student attitudes towards CLIL have also been recorded in other studies at the tertiary level (Bartik et al. 2012; Martín de Lama 2015; Maíz-Arévalo, Domínguez Romero 2015; Tsuchiya, Pérez Murillo 2015).

Overall, research shows that learners' positive perceptions of CLIL experiences play a pivotal role in the effective implementation of this educational approach in higher education. Further study is necessary, however, especially to thoroughly investigate students' perceptions of the kind of scaffolding provided in CLIL university settings. Scaffolding refers to the various strategies implemented by more competent interactants, such as teachers and peers, through dialogical interaction or operationalised by means of resources, such as activities and digital tools, instrumental in helping students learn within their zone of proximal development (ZPD) (Wells 1999), which Vygotsky (1978, 86) defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under […] guidance, or in collaboration with more capable peers". Since CLIL is a flexible approach that can be adapted to the particular features of the contexts where it is implemented (Coyle, Hood, Marsh 2010), various types of scaffolding are likely to exist. The present study investigates the perceptions of a group of learners at the University of Urbino, in Italy, regarding the effectiveness of the scaffolding provided in four CLIL courses. In doing so, this paper aims to contribute to the ongoing discussions about the effectiveness of the strategies used by instructors in CLIL environments at the tertiary level.

1.3 Scaffolding in CLIL Settings

Scaffolding is conceived "as a pedagogically useful construct that 'implies graduated assistance from the […] expert' and also 'ascribes an active role to the […] [learner] in interactions with […] [experts]' ([Stetsenko] 1999, 243)" (Thorne, Hellermann 2015, 285).

Within a socio-constructivist framework, foreign language learning, meaning-making, and knowledge development occur through the social construction of meaning fostered through dialogical interaction (Vygotsky 1978; Lantolf 2000; Lantolf, Thorne 2006). In particular, sociocultural theory interfaces with second language acquisition when it holds that human cognition is mediated through symbolic tools, such as language, that connect the outer world with the human mind (Lantolf 2000; Lantolf, Thorne 2006):

> Talk – whether teacher or learner talk – provides a real-time window into thinking, an immediate snapshot of how someone understands a concept or engages with an activity. Moreover, talk provides a space between educational participants, a place for interthinking (Mercer 2000) and dialogic engagement (Wegerif 2010). (Moate 2011, 18)

A socio-constructivist framework envisions students as actively engaged in meaning-making and knowledge construction (Prince 2004). In learning environments taking inspiration from socio-constructivist theory, instructors scaffold learning processes through

> methodologies that […] emphasize the need to link new information to something the student already understands; making the topic of learning relevant to the student's own perspectives and understanding; [and] providing differentiated learning opportunities. (Marsh, Pavón Vázquez, Frigols Martín 2013, 37)

In CLIL courses, lecturers need to provide learners with the scaffolding necessary to develop content knowledge and language competence concurrently. Within this theoretical framework, lecturers working as facilitators need to provide learners with scaffolding suitable for fostering subject-specific input processing, output production, negotiation of meaning, and dialogical interaction within students' ZPD:

> Social-constructivist learning in essence focuses on interactive, mediated and student-led learning. This kind of scenario requires social interaction between learners and teachers and scaffolded (that is, supported) learning by someone or something more "expert" – that might be the teacher, other learners or resources. When learners are able to accommodate cognitive challenge – that is, to deal with new knowledge – they

are likely to be engaged in interacting with "expert" others and peers to develop their individual thinking. (Coyle, Hood, Marsh 2010, 29)

For content and language development to occur in CLIL environments, lecturers thus need to scaffold learners' comprehension of content-specific input (Krashen 1982, 1985), comprehensible output (Swain 2000), and negotiation of meaning (Long 1996). Through scaffolding, instructors can also decrease the degree of cognitive challenge students face in CLIL settings. In particular, a CLIL scaffolding system may encompass various practices and strategies aimed at fostering input comprehension, knowledge construction, comprehensible output, negotiation of meaning, and language development, while also decreasing students' cognitive load. Lecturers can provide scaffolding in ways such as activating learners' prior knowledge, asking questions, providing feedback and formative assessment, encouraging active participation by students, promoting high student agency, using PowerPoint presentations featuring activities suitable to be carried out before/during/after lectures, and providing learners with activities and/or learning materials customised to help them produce comprehensible output and engage in effective negotiation of meaning. Teacher talk, in which instructors use discourse strategies catering to students' foreign language proficiency, can also serve as scaffolding.

Overall, within a socio-constructivist, learner-centered CLIL framework, students need to be provided with both the scaffolding necessary to help them cognitively master challenging learning processes and the highly interactive learning environments that can lead to active engagement.

2 The Study

The present study investigates students' perceptions of the effectiveness of the scaffolding provided during CLIL face-to-face instruction in four courses implemented at the University of Urbino.

2.1 Research Questions

In this paper, we examine the perceptions of a group of students who attended four CLIL courses taught in English at the University of Urbino in the academic year 2016-17. Through the analysis of learners' perceptions, the following research question was investigated: how effective did students perceive the scaffolding provided by instructors in the examined CLIL environments to be?

2.2   Methods

Students' perceptions were collected through an online post-course questionnaire, created with Google Forms,[1] which they filled in on a voluntary basis at the end of the CLIL courses they attended in the academic year 2016-17. The semi-structured questionnaire, featuring closed- and open-ended questions, aimed at guiding learners to reflect on their CLIL experience, especially in terms of scaffolding. Students could access the questionnaire on Moodle, the learning management system (LMS) used at the University of Urbino.

2.3   Participants

In all, 82 graduate and undergraduate students answered the online CLIL post-course questionnaire. The respondents had attended four English-taught courses in fields ranging from social sciences to applied linguistics to hard sciences.

2.4   Results

As the data show, instructors mostly, to varying degrees, mixed lectures and pair/group work within each class session: often (31%), sometimes (28%), or always (11%); the rest of them (30%) almost never or never did. Again, to various extents, lecturers seemed to create opportunities for pair and group work. Instructors often (35%), sometimes (26%) or always (10%) implemented pair work in class; for the rest (29%), it was almost never or never done. Overall, group work was used slightly less than pair work (sometimes 39%, often 28%, always 7%, and almost never or never 26%). Thanks to pair and group work, 36% of students interacted in English with their peers between 60% and 80% of the lesson, 32% of learners from 80% to 100% and 14% of informants from 40% to 60%. On the other end, only 11% of students seemed to talk with their classmates from 10% to 40% of class time, and 7% less than 10%. Overall, most learners felt that they were offered the opportunity to interact with their peers in English on a rather regular basis, while some reported little peer interaction. In the CLIL environments analysed, besides varying amounts of conventional lecturing, lecturers seemed to provide students with various opportunities to interact meaningfully with peers in the target language, mainly through pair and group work.

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1 https://www.google.com/forms/about (2017-06-10).

Learners were provided varying degrees of talking time during CLIL classes depending on the degree to which instructors mixed lectures with pair/group work. Regarding student talking time, 28% of learners reported that they themselves talked from 60% to 80% of the lesson and 25% talked during 40% to 60% of the lesson; only 12% of students claimed that they talked from 80% to 100% of the lesson, while 20% talked less than 10% and 15% less than 40%. A considerable proportion of learners valued positively the amount of student talking time allocated while the rest pinpointed teacher talking time as still too high.

As the data suggest, a significant amount of academic research (articles, book chapters, etc.) was made available for students online on a rather regular basis before class (sometimes 33%, always 30%, often 29%, and almost never or never 8%) along with learning materials such as PowerPoint presentations (always 21%, often 21%, sometimes 21%, and almost never or never 37%). Lecturers also put online subject-specific objectives and keyword lists before class, though less frequently (sometimes 33%, often 26%, always 12%, and almost never or never 29%) than other materials; to a much lesser extent, glossaries were also made available before class (often 23%, sometimes 20%, always 9%, and almost never or never 48%). In general, learners found useful reading articles and/or book chapters before going to class; 37% of students read these materials quite regularly before class, while 32% did it just sometimes and the rest (31%) almost never or never did. Findings show that only 20% of the learners read PowerPoint presentations rather consistently before class while about the same percentage did it sometimes (22%); the rest (58%) almost never or never did. Within a socio-constructivist framework, students had the opportunity to go over the materials beforehand to various degrees, and it seems that learners used these materials to a rather substantial extent to build prior content and language knowledge, instrumental in decreasing cognitive load during CLIL in-class instruction.

In terms of learners' perceptions of instructors' output in class, it was found that while teaching and/or lecturing, to make input comprehensible, instructors used various strategies concurrently; overall, lecturers enunciated more clearly than usual (52%), repeated words and sentences (32%), and talked slower than in Italian (29%). The results show that when instructors lectured and/or talked in English, 65% of students understood from 80% to 100%, 26% from 60% to 80%, 4% from 40% to 60%, 4% less than 40%, and 1% less than 10% of their talk. Furthermore, the results show that, while lecturing in English, lecturers used PowerPoint presentations to varying degrees: rather regularly (50%), occasionally (24%), or not at all (26%). In class, instructors also used authentic subject-specific videos, quite challenging input, either rather consistently (36%) or occasionally (35%); the rest (29%) almost never or never did. About 50% of the learners found it effective overall the way content was presented in class,

while a smaller percentage (38%) found it slightly less effective; the rest (12%) almost never or never found it effective.

Students identified active participation as a key asset of the CLIL experience: about 50% of the learners held that pair and group work was generally useful to understanding subject content in English, in that it helped foster socially constructed meaning in a foreign language. About 35% of students found pair and group work useful on a less regular basis, and the rest (15%) did not find it useful at all.

The majority of learners found asking peers and lecturers questions an effective way to foster content knowledge development to some degree (sometimes 34%, often 26%, always 12%); on the other hand, about 28% did not find the strategy useful at all. Most students (79%) perceived instructors as consistently available to interact with them on a one-on-one basis in English in class, while the rest (21%) sensed a much lower degree of instructor availability to interact with learners on an individual basis during class.

Results show that lecturers used translanguaging, which is "a systematic shift from one language to another for specific reasons" (Coyle, Hood, Marsh 2010, 16) appropriate for the promotion of comprehensible input, rather extensively; they used the strategy mainly when they deemed it necessary, ad hoc, but also often routinely at the beginning and at the end of the lesson as a summarizing strategy.

Processing content and language concurrently is cognitively challenging for students, and motivation is a key element for success in CLIL; as a consequence, providing learners with an encouraging environment is critical. In this respect, many students found the encouraging environment created by instructors consistently (53%) or occasionally (23%) useful in helping them understand their lessons, while the rest (24%) reported it neutrally. Similarly, most learners felt that lecturers constantly and extensively (74%) encouraged active participation in class, including through questions, while the rest of the students (26%) felt less frequently encouraged. Overall, instructors generally managed to make learners feel welcome and comfortable in class (88%), although a non-negligible minority of students (12%) did not have the same positive experience. In keeping with this, during classroom instruction, most learners felt comfortable (68%) and/or calm (52%), while only a very small group of students felt worried (9%). In general, lecturers seemed to be able to motivate learners rather successfully in the CLIL settings analysed.

2.5   Discussion

Overall, students perceived the scaffolding provided by instructors in the CLIL environment as rather effective. In general, the analysis of learners' perceptions showed that of the various teaching practices and strategies lecturers used to scaffold learning, students found especially useful doing pair/group work, the discourse strategies instructors used to cater to learners' English language proficiency, browsing materials before class, and the use of PowerPoint presentations during lectures. Thanks to the various strategies that lecturers implemented, students seemed to understand instructors' subject-specific output to a high degree; a slower pace of delivery, repetitions, clearer pronunciation, and PowerPoint presentations were crucial for fostering content-specific input processing. Lecturers' use of repetition has also been found in earlier research (Dafouz, Llinares 2008). Likewise, instructors' high degree of translanguaging, which has been detected in the examined CLIL environments, has been found in previous studies (Costa 2012). However, some learners highlighted the difficulty of understanding subject-specific language, which entails that more language-related scaffolding is probably necessary. Furthermore, on a few occasions, students rated lecturers' speech rate as too fast for their English language proficiency. Some learners also wished instructors would check students' understanding more often, implying that more activities providing formative assessment need to be implemented. In terms of language development, learners' comments in open-ended questions seem to suggest the need for wider availability of scaffolding materials online; lack of language scaffolding emerges explicitly on a few occasions. In this respect, it is also noteworthy that while in open-ended answers some students highlighted how CLIL lessons fostered language improvement in terms of subject-specific vocabulary, grammar was rarely mentioned. More language-supportive methodologies that are also suitable to scaffolding learners' cognitive load when they are engaged in subject-specific content processing (Sweller, Ayres, Kalyuga 2011; Sweller 2015, 2016) and fostering the development of subject-specific lexico-grammar may thus be necessary.

It is notable that learners did not like when instructors oversimplified language and/or content in an attempt to make input comprehensible, and, overall, it seems that lecturers managed to avoid the pitfall found in earlier research of "water[ing] down and simplifi[cation of content] […] to make [it] […] comprehensible" (Costa, Coleman 2010, 26).

Students perceived the authenticity of subject-specific materials and activities as part of the value of CLIL, which has been described in previous research: "Graddol (2006, 86) describes CLIL as the 'ultimate communicative methodology' […] especially relating to authenticity" (Coyle, Hood, Marsh 2010, 5). In this respect, learners especially enjoyed the use of

videos as input, which also allowed instructors to present topics in a more contextualised way. Furthermore, students highly valued the encouraging environment their lecturers created in class and how strongly motivated and motivating the instructors were.

Overall, learners felt fairly engaged during CLIL lessons, and the results show students' eagerness to be actively engaged in their learning process. In particular, learners appreciated the high interactivity of the classes, especially in terms of pair and group work, which enabled them to talk in English about content topics with their peers. Students also valued the opportunity to interact extensively in English with their instructors. Although the majority of learners experienced pair and group work in class, students wished to be even more engaged in active learning during classroom instruction, and also expressed the desire for more talking time with peers. In this sense, there is still room to promote a higher degree of engagement via pair and group work.

2.6   Limitations of the Study

The main limitations of the study are related to the small number of courses involved and respondents surveyed; the results may not be easily generalised. Furthermore, the questionnaire items do not enable us to determine the impact of CLIL courses on learners' perceptions of content and language development. Thus, one question still unanswered is whether and to what degree the scaffolding instructors provided actually fostered students' content and language development.

3   Conclusion

Overall, the CLIL environments investigated seemed to cater fairly well to learners' needs to be active agents, which shows that the scaffolding provided proved rather effective, although some improvements can again be made. For this reason, in the future, CLIL experts will help instructors devise course-customised digital CLIL activities (Dooly, O'Dowd 2012; Hubbard, Levy 2016) to scaffold comprehension further, avoid cognitive overload, and foster the acquisition of content and language in the four courses investigated:

> Tailoring and personalizing learning of content with English language and conceptual scaffolding is one of the most significant advantages of working with digitized learning environments in English-taught degree programmes. (Marsh, Pavón Vázquez, Frigols Martín 2013, 42)

In particular, CLIL experts will create pre-viewing and while-viewing interactive activities with Google Forms or other digital tools to scaffold students' comprehension of videos made available before class. Digital, interactive, Google-Forms-based activities will be devised to provide learners with formative feedback:

> Formative assessment […] lends itself well to technology, the use of which can reduce staff workload, boost learner autonomy, and enhance performance outcomes. […] [F]eedback […] maximize[s] interactivity […]. It is a […] world […] closer to a peer-learning environment where students work together to achieve joint outcomes. (Marsh, Pavón Vázquez, Frigols Martín 2013, 28-38)

Furthermore, in class, students' processing of information in the target language will be scaffolded further by requiring them to answer closed-ended questions (such as multiple choice, true/false, or matching questions) while listening to their instructors lecturing. To this purpose, CLIL experts will create suitable teaching/learning materials, inserting closed-ended questions in PowerPoint presentations or using digital tools such as Kahoot.[2] During lectures, learners will thus get immediate formative assessment, which should help them feel more confident during lectures and develop a sense of self-efficacy.

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2 https://kahoot.com (2017-06-20).

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