

**Teachers and Teacher  
Educators Learning  
Through Inquiry:  
International Perspectives**

Edited by:  
Pete Boyd & Agnieszka Szplit

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*This book is dedicated to the memory  
of our friend and colleague  
Professor Carey Philpott*

Teachers and Teacher Educators Learning Through Inquiry:  
International Perspectives

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# In-service Content and Language Integrated Learning (CLIL) Teacher Development: an Action Research Project in Teachers' Professional Learning

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## **Abstract**

All teacher education programmes require to handle complex layers of learning because they are teaching teachers to teach. Arguably a programme involving Content and Language Integrated Learning (CLIL), preparing experienced school teachers to teach curriculum subjects in a target foreign language (usually English), has an additional layer of complexity. This chapter describes an action research approach to the investigation of a CLIL teacher education programme and indicates that a pedagogy aligned to action research seems effective in such contexts. There is an indication that action research based pedagogy applied to CLIL teacher education can lay the foundation for inquiry-based professional learning where teachers develop as practitioner-researchers who are able to improve their own practice and also apply research methods to systematically validate their work, thus contributing to the body of CLIL research.

## **Key words**

Content and Language Integrated Learning (CLIL), in-service teacher development, professional learning, action research, physical education

## **Introduction**

The importance of having foreign language skills has come sharply into focus in recent years (European Commission 1995) and member states of the European Union have funded numerous initiatives to promote the teaching and learning of foreign languages, particularly English (Dalton-Puffer 2011; Lorenzo, Casal & Moore 2011). There is an increasing need and desire among global citizens to communicate easily with anyone, and English is the language in which much of the world's communicative exchange is carried out. Increasing number of schools are

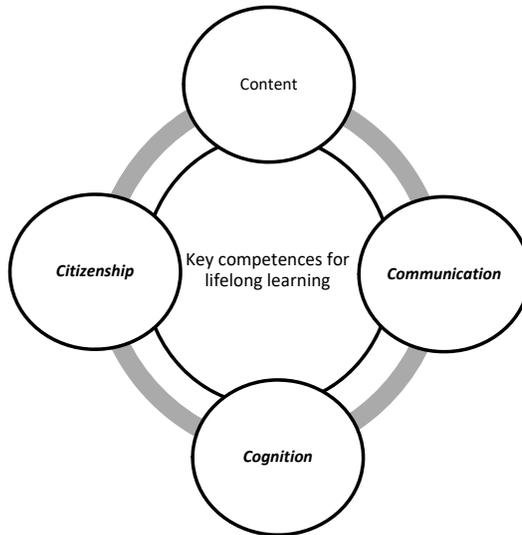


Figure 1. Adaptation of the 4Cs theoretical concept (Coyle, 1999) in the context of a competence-based curriculum.

offering content and language integrated learning programmes (hereafter, CLIL) to teach subjects such as mathematics, physical education (PE) or music, using English as the instructional medium. Integrating content and language is not an especially new idea. Snow, Met and Genesse (1989) proposed a conceptual model for a content-based programme emphasizing collaboration between content and language teachers to achieve their separate objectives in tandem. The acronym 'CLIL' appeared shortly thereafter, in the mid-1990s, and is now an umbrella term that refers to any educational situation where an additional language, usually a foreign language, is used for the teaching and learning of subjects other than the language itself (Marsh & Langé, 2000). Coyle, Hood & Marsh (2010, p.1) state that, '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'. However, it is a particularly challenging approach because in CLIL classrooms both the curricular subject and the new language are taught at the same time, and this requires integrating thinking and learning skills by means of supportive language scaffolding.

Bentley (2010, p. 5) states that 'CLIL can involve many methodologies from both subject and language teaching', and this represents a new challenge not only for aspiring CLIL teachers, who require specialised training, but also for the authorities responsible for providing that training. In the case of Catalonia, the Department of Education has chosen to adopt a conceptual map for

understanding CLIL, the so-called 4Cs framework (Coyle, 1999, 2006), as its base-model in teacher training. The adaptation of the original 4Cs stands for Content, Communication, Cognition and Citizenship (this fourth C was originally Culture but we reformulated it as Citizenship) and is a theoretical concept that must be always considered within a context which, in our case, is a competence-based curriculum (figure 1).

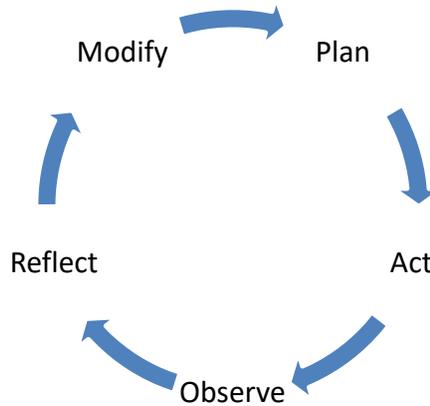
Competences are defined as 'a combination of knowledge, skills and attitudes appropriate to the context. Key Competences are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment (European Union, 2006: L 394/313). The radial cycle diagram in figure 1 illustrates how each of the 4Cs has an equal bearing on the key competences for lifelong learning. It is up to the teacher, informed by the 4Cs, to facilitate a learner's acquisition of those key competences.

To accomplish that goal, the CLIL teacher must possess multiple types of expertise. The European Framework for CLIL Teacher notes the need for expertise 'in the content subject; in a language; in best practice in teaching and learning; in the integration of the previous three; and in the integration of CLIL within an educational institution' (Marsh, Mehisto, Wolff & Frigols, 2010). Thus, while proficiency level in foreign language is essential, adequate training in CLIL classroom methodology is no less important for a teacher to be truly effective. Educational administrations are usually quite rigorous about requiring CLIL teachers to hold a C1 foreign language competence certification<sup>1</sup>. When it refers to methodology, however, though the teacher may be obliged pass a specific methodological course offered by universities or the educational administration itself, finding a methodology that works for a particular subject with a particular student profile is likely to come as much out of actual empirical experience in the classroom as it does from the sort of theoretical reflections that have often tended to predominate in formal in-service teacher education programmes. Thus, rather than simply attending lectures, the trainees in the programme would work under the guidance of CLIL experts to empirically resolve the issues particular to their specific CLIL classroom context, sharing ideas and experiences with their co-trainees, and at the end of the programme scientifically validate the results of their efforts to make a formal contribution to the body of CLIL research.

This relates to the distinction between *professional development*, which is usually associated with the kind of formal lecture-based courses that are widespread throughout Europe and the idea of *professional learning*, which involves a practice-based approach in which teachers undertake practitioner-driven research within

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<sup>1</sup> It corresponds to an advanced user of a foreign language according to the Common European Framework of Reference for Languages (CEFR).



*Figure 2. The Action Research cycle.*

*Adapted from Kemmis and McTaggart (1982)*

a professional learning community (Macphail, 2011). Although there are many different models of practitioner research applied to teaching, teachers analyse their own practices and discuss issues that affect their teaching with their peers (Miller & Maguire, 2009). The key features of a practice-based teacher education programme are teachers' commitment to the collective project and their capacity to analyse and evaluate what is happening in their own lessons (Zwozdiak-Myers, 2012). This combination of action and reflection will allow teachers to enhance the quality of their teaching and thus their students' learning.

The pilot study that we present in this chapter is 'a form of enquiry that enables practitioners everywhere to investigate and evaluate their work' (McNiff & Whitehead, 2008, p.7) and also an example of how the Action Research cycle illustrated in figure 2 (adapted from Kemmis & Taggart, 1982) can be applied as a general tool in teacher education. The AR cycle represents a continuous process whereby existing knowledge is combined with actions that can either '... contribute to, or be derived from, such knowledge' (Townsend, 2010, p.131). This formula was thought to be well suited to in-service CLIL teachers in Catalonia since they tend to be highly experienced and motivated teachers fully able to plan effective subject lessons in their L1. More often than not, however, teaching in a foreign language after only a short theoretical introduction to CLIL constitutes a considerable challenge to them. Nonetheless, once engaged in the AR process of planning, acting, observing, reflecting and if necessary modifying the original plan, under the guidance of an action researcher, teachers find that achieving solutions to complex problems of practice seems much less daunting.

## The Action Research project to support CLIL teachers' professional learning

The goal of the AR project was to provide primary and secondary school teachers with the evidence-based and inquiry-based knowledge necessary to successfully negotiate CLIL lessons at their schools. Lasting over the 2014-2015 and 2015-2016 school years, the project followed a five-stage process adapted from Elliot (1991) and consisting of a preliminary preparation stage, a reconnaissance and revision stage, two fieldwork cycles and a focused research stage (see figure 3).

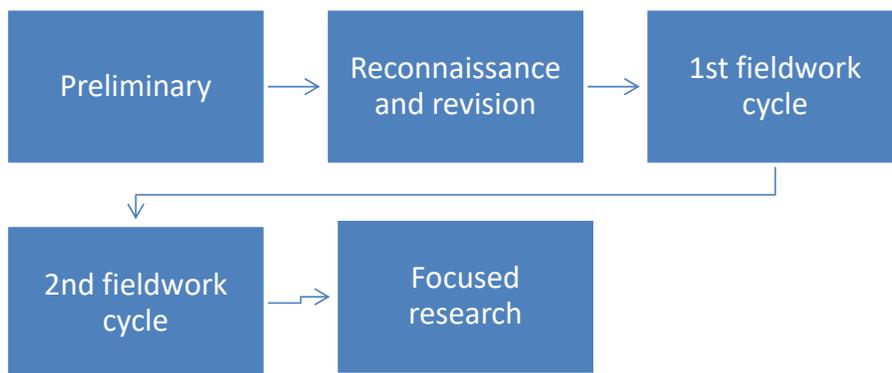


Figure 3. The five-stage process of the AR project

- In the preliminary stage, participating teachers attended a 30-hour summer course which introduced them to the basic principles of integrating content and language teaching in the classroom.
- The reconnaissance and revision stage was intended to make teachers conscious of the gaps in their knowledge about and understanding of CLIL, and to help them take responsibility for their own learning process in a collective fashion. This stage took place concurrently with the summer course.
- A first period of fieldwork focused on task design, oral interaction and language scaffolding. Participants met with teacher educators and fellow participants either face-to-face or online. In this case, the role of the educators focused more on the diagnosis of problems that individual teachers had encountered and helping them find the most appropriate solution for their particular teaching context (Imbernón, 2009).
- A second period of fieldwork focused on analysing the success or failure of the classroom tasks implemented in the first fieldwork cycle, revising them accordingly, re-implementing them and carrying out classroom observations (Coral & Lleixà, 2014, 2016).

- Finally, in the specific focused research stage, participants carried out a formal investigation of two issues that had arisen in the course of the fieldwork cycles, with the ultimate goal of publishing their results and thus contributing to the body of CLIL research.

### **The preliminary stage: the summer course**

This stage consisted of a 30-hour summer course<sup>2</sup>, with 25 of the hours devoted to lectures and practical activities held face-to-face and the remaining five involving distance learning. This module was one of the many professional development courses offered by the Catalan government's Department of Education and was thus open to any teacher in the public system. It was intended to provide participants with the basic notions of CLIL and information about how it can be practically applied in theory to any school subject in the context of a competence-based curriculum, although in this case it focused on CLIL for physical education (PE) classes by way of example. Though it was therefore of primary interest to PE teachers, it also gave guidance to teachers of other subjects such as music and even English on how to incorporate physical activities into their class in accordance with CLIL principles, the assumption being that the skills thus learned would allow content teachers to develop tailored CLIL activities appropriate to their own specific needs.

Once all participating teachers had been enrolled in the module programme, and before the summer coursework proper started, they were organised into groups such that each group had as heterogeneous a mix as possible in terms of level of English, educational stage (primary or secondary), gender and previous knowledge of or experience in CLIL. This was done in order to allow participants to experience for themselves the value of cross-curricular cooperation and how working with a diversity of skills and skill levels—a likely feature of their own future CLIL classrooms—can yield a more enriching and effective learning environment.

The first part of the summer course focused on introducing CLIL approach (Escobar Urmeneta, 2011) and exemplifying the cross-curricular relationships among the 4Cs framework, key competences and learning outcomes. Figure 4 illustrates relationships between the 4Cs and competences specifically related to PE classes.

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<sup>2</sup> A total of 20 teachers enrolled in this summer course, and for various reasons only 13 were prepared to make a commitment to the full two years of the AR process.

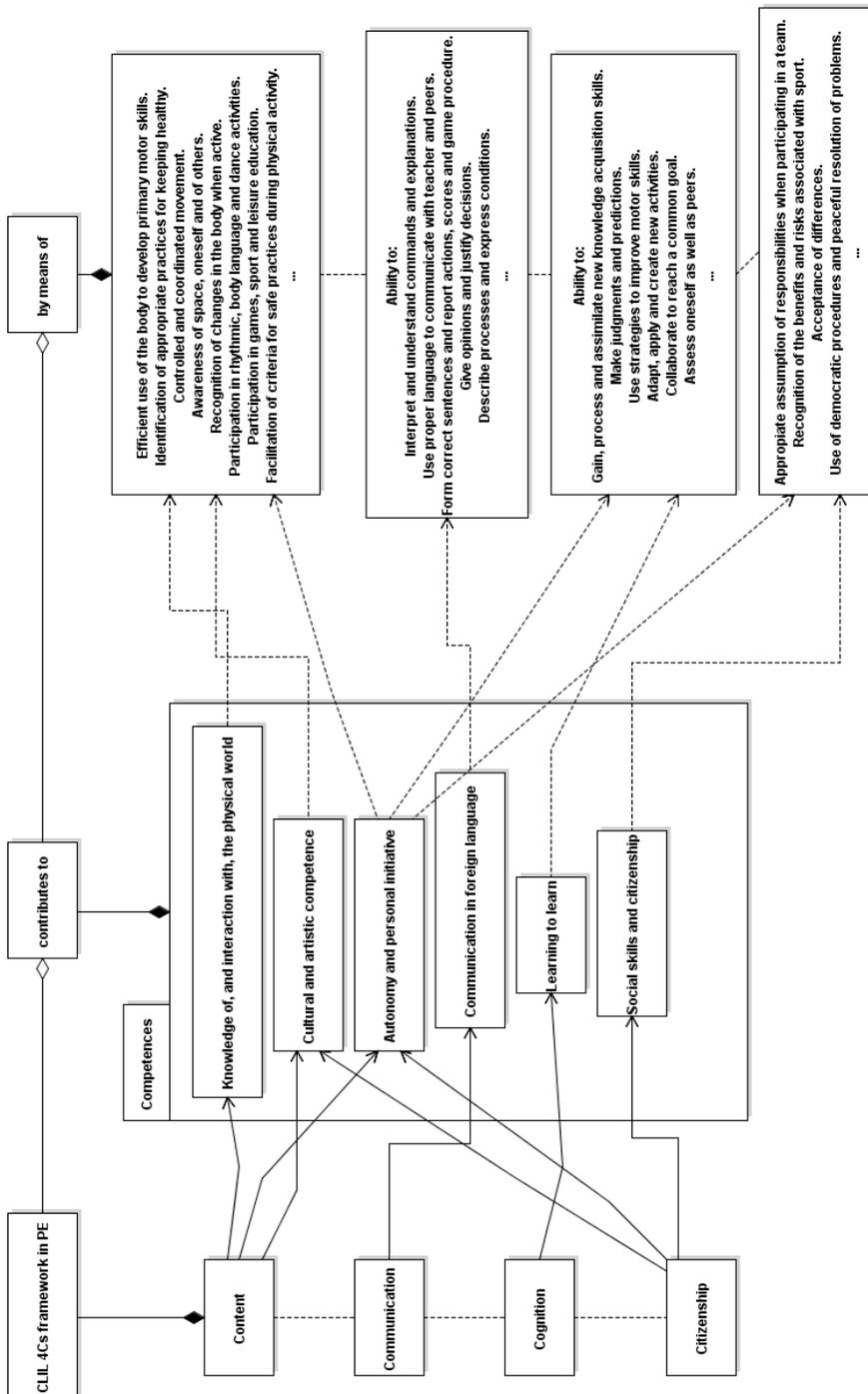


Figure 4. How the relationships between the 4Cs and Key Competences manifest themselves in skills and competences specifically related to PE classes

By emphasizing that the 4Cs framework is just another way to mobilise ‘practical skills, knowledge, motivation, ethical values, attitudes, emotions and other social components and behaviour’ (Lleixà, González-Arévalo & Braz-Vieira, 2016), this approach showed teachers how teaching methods need to be grounded in the 4Cs and directed towards enhancing key competences in order to yield effective learning outcomes (Coral, J., Lleixà, T., & Ventura, C., 2016). Above all, it emphasised the importance of applying the principles of learning by doing when teaching in CLIL.

Of the 4Cs, Content and Communication, clearly form the twin centrepiece in CLIL. Communication in CLIL contexts is described as learning to use language and using language to learn (Coyle et al., 2010) and is divided into *language of* (vocabulary and structures), *language for* (basic language functions such as asking & answering, explaining, giving reasons, etc.) and *language through* (the language needed to engage learners cognitively and solve unplanned situations). As the Content is always the dominant element in terms of curricular objectives, the sort of language needed for any particular CLIL class is dependent on the subject matter of the class, a situation best served by close cooperation between language and content teachers, as recommended by Snow et al. (1989). Cognition refers to thinking skills, which, in Bloom’s taxonomy, can be broken down into Lower Order Thinking Skills (LOTS) and Higher Order Thinking Skills (HOTS). It is also linked to “learning to learn” competence through the use of cooperative learning and problem-solving strategies as well as formative assessment. Finally, Citizenship develops cultural awareness, intercultural understanding and global citizenship (Coyle et al., 2010), although we link it more broadly to the key competences of cultural and artistic competence, autonomy and personal initiative, and social skills.

The second part of the summer course introduced teachers to the use of cooperative learning strategies in CLIL settings, showed them how to prepare supportive language scaffolding and ensured their familiarity with CLIL teaching performance indicators (de Graaff, Koopman, Anikina & Westhoff, 2007). By the end of the course participants have reflected on and were able to articulate a rationale for the teaching of PE or another specialised subject through a CLIL approach within a competence-based curriculum. They had also learned about task design (Meyer, 2010; Coyle et al., 2010; Coral, 2013) and had opportunities to put these concepts into practice through peer teaching activities. In order to support their own English speaking skills and awareness, teachers had also been given the opportunity to practise in real contexts with some language teaching techniques such as pre-teaching, paraphrasing and reformulating.

Finally, the distance learning segment of the summer course was composed of two compulsory readings (Coral, 2013; Dyson & Grineski, 2013) and a document

with expressions for discussion and debate was provided to support their oral skills and help them to improve their fluency. Moreover, each participant designed a CLIL task and then, through a cross-procedure system, the members of each group evaluated each other's tasks.

### **The reconnaissance and revision stage**

This stage was carried out concurrently with the summer course by having each participating teacher continuously reflect on their learning process. On the first day of the summer course, each teacher identified the knowledge about CLIL theory and practice with which they had come into the course as well as the knowledge that they felt they lacked. Thereafter, on a daily basis, each group summarised those knowledge gaps that had been filled in the course of that session and those knowledge gaps that remained to be addressed. By following this procedure, the participants had the chance to reflect on their learning process. Finally, on the last day of the course, participants identified the aspects they wanted to work on in the next stage, to wit:

- the design of tasks that would facilitate oral interaction in CLIL settings.
- the type of language scaffolding that would be needed to implement those tasks.

### **The first fieldwork cycle**

This stage –which constituted the heart of this inquiry-based in-service professional learning model for CLIL teachers –was carried out with the support of the Specific Educational Resource Centre for Innovation and Educational Research<sup>3</sup> (henceforth CESIRE), a unit of the Catalan government's Department of Education created in 2014. CESIRE includes several professional teams of primary and secondary school teachers that were previously distributed throughout the Catalan community in different units organized according to curricular disciplines. One of CESIRE's aims is to keep abreast of research in teaching and education from schools, universities and other institutions so that the results can be promoted and adapted to meet teachers' needs. Thus, because the training programme's fieldwork cycles were led by CLIL experts from both CESIRE and Autonomous University of Barcelona, the fieldwork itself was fully informed by the latest CLIL research.

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<sup>3</sup> <http://xtec.gencat.cat/ca/innovacio/cesire/>

The specific interests of the participating teachers having been identified at the conclusion of the reconnaissance and revision stage as described above, an AR group was formed under the title 'Action Research as professional development: teaching Physical Education and motor activities in CLIL contexts'. It was made up of a university educator and researcher, a CESIRE educator and the 13 teachers who had volunteered to participate: nine PE teachers of primary and secondary education, three primary teachers of English and one primary teacher of music. Upon completing the full programme, they would each receive formal certification from CESIRE for having completed 40 hours of training. It was agreed among the participants that English would be the language of communication, since this would not only give them opportunities to develop their own English communication skills but give them an idea of what a CLIL classroom felt like from the students' perspective.

The first fieldwork cycle took place during the first term of 2014-2015 school year. In its first face-to-face meeting, the full AR group discussed the procedure that would be followed during the first fieldwork cycle and came to an agreement regarding how they would prepare, carry out and fully document the process. It was decided to begin by focusing on the following specific question:

- In motor game settings<sup>4</sup>, how can student oracy be improved while teachers are checking comprehension of motor activities, speaking in English and performing the same motor actions as they would be in a L1 classroom context?

In addition, in accordance with the specific needs identified by teachers in the reconnaissance and revision stage, three objectives were set:

- To design tasks that facilitate oral interaction in motor games in a CLIL context.
- To check that in such tasks comprehension is achieved and motor actions are developed similarly to what one would expect in a L1 context.
- To analyse the type of language scaffolding that is needed in order to facilitate the achievement of goals 1 and 2.

The teachers then informed their school boards that they were participating in this AR research group and received full permission to video-record tasks and pupils in their classrooms. Each teacher then decided which one of his or her groups of pupils would serve as the context for their trying out ideas and conducting research. The next step was for each teacher to design a task or set of tasks based on motor games/actions that would be new for the group that they had chosen along with the necessary learning scaffolding. They also selected three students from the target group according the following criteria:

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<sup>4</sup> It refers to activities, tasks and teaching proposals that involve or include physical games.

- One pupil whom they knew to have excellent motor skills but severe difficulties in using English.
- One pupil with excellent motor skills and mild difficulties in using English.
- One pupil with a very good command of English, independent of their motor skills.

Teachers then carried out the task or tasks they had designed, with the entire session video-recorded. When the lesson was finished, they interviewed the three focus students in their L1 (Catalan) and audio-recorded the interviews. The questions that they posed to the three students were:

1. What is your opinion about the activity you have just done?
2. What were the most important physical skills involved in the activity?
3. In your opinion, did you perform them properly?
4. What were the key words and the most important sentences used during the activity?
5. In your opinion, did you employ them properly?
6. How could the activity be improved?

Teachers transcribed the interviews within a period of 24 hours and added a description of the pupils selected including gender, age, personality, school achievements, and attitude to PE. Then they wrote their reflections as a diary entry following these guidelines:

- The date
- The location and socio-economic-cultural context of the school.
- Number of pupils in their target class, their level in the school system and their ages.
- Facilities/environment where the task/s were carried out.
- Title and aim of the task.
- A description of what transpired as the tasks were carried.
- Difficulties the teacher encountered in connection with the motor contents of the task.
- Difficulties the teacher encountered in connection with the language contents of the task.
- Procedural difficulties the teacher encountered.
- Perceived strengths and weaknesses of the task/s.
- Proposals for improving the task/s.
- Further comments.

During the first term of the 2014-2015 school year, teachers designed, applied and recorded their CLIL tasks in this fashion. They then shared their diary

entries with fellow participants and educators by means of online folders using the Moodle forum platform provided by CESIRE. Teachers also posted the files of their classroom video-recordings in a shared Google Drive folder.

The first fieldwork cycle concluded with a reflection process conducted through groups (Wibeck, Dahlgreen & Öberg, 2007) and a presentation of their respective video recordings of tasks. To make the reflection process less unwieldy, the main group was split into two and a CLIL expert acting as a moderator was assigned to each one. Group discussions were also audio-recorded and then analysed separately, in a cross-procedure system, without any exchange of information between analysts.

Figure 5 relates to the template that was provided in order to guide the analysis and give it a cohesive framework.

Date:	Main ideas	
<b>Category 1:</b>	1:	
<b>The teaching of PE through CLIL</b>	2:	
	3:	
<b>Category 2:</b>	1:	
<b>How can oracy be improved?</b>	2:	
	3:	
<b>Identify the main key words, i.e., the words or concepts repeated most frequently in the discussion</b>		
<b>Key words</b>	How many times did the word appear in the transcription?	
1:		
2:		
3:		

Figure 5. Template to guide analysis of the group discussion

Additionally, the following questions were posed to collect concrete information. The goal here was to identify changes in teachers' beliefs and gather clues to guide the second AR cycle.

- How do your fellow teachers' opinions about teaching PE through English seem to have changed?
- What comments did they make about the differences between teaching PE in L1 and teaching it in a foreign language?

- What inherent strengths and weaknesses of PE-in-CLIL teaching did they identify?
- Regarding more specifically oracy in PE-in-CLIL, did they identify the strengths and weaknesses of this approach?
- According to their opinions, how can oracy be improved in PE-in-CLIL settings?

To complete the transcriptions, the analysis and answer the questions extra time was required so teachers agreed to finish it at home and post the results in the Moodle platform.

### **The second fieldwork cycle**

Once the weaknesses and strengths of the tasks had been identified in this collective fashion, it was agreed that the necessary changes should be applied to the design of the tasks in question and the tasks implemented a second time in their improved form. Teachers would use their reflections, the feedback they had received and the conclusions of their group discussions to introduce changes in the activities they had designed. Having thus revised the lesson plan involving the activity and modified the scaffolding as necessary, each teacher then applied the revised activity to the target group again and to another group as well. Teachers were asked to once again video-record the new task as it was implemented in these two classes and to write up their reflections as a diary entry including the following information:

- The number of the version of the task (v2, v3, etc)
- A description of all the changes that have been introduced.
- A description of what transpired as the modified task was carried out.
- An assessment of how successful the revised version was at overcoming the problems identified in the original version of the task.
- An identification of any new problems arising in the revised version of the activity.
- An overall conclusion.

At the end of the second fieldwork cycle, which took two terms of the 2014-2015 school year, a second group evaluation process was carried out although this time organised in three focus groups, separated by subject content or level whereby the three English teachers and one music teacher formed one group, the primary school PE teachers formed another and the secondary school PE teachers formed the third. Each group discussed questions related to the learning process they had undergone, to wit:

- The knowledge that they had already before participating in the programme.
- The gaps in their knowledge prior to starting.
- The knowledge gaps that they felt had been successfully filled in the course of the AR process.
- The knowledge gaps that they felt still had not been filled by the process.
- The things that helped them to fill those gaps.
- The things that had not helped them to fill those gaps.

Each group then prepared a short summary of the main points made during the group discussion. This was intended to help the educators identify the issues that remained to be covered, whether by means of self-study materials, a complementary formal course or through the research that the participants would carry out themselves in the fifth stage of the AR process.

PARTICIPANTS' KNOWLEDGE ABOUT CLIL PRIOR TO PARTICIPATION IN THE AR PROJECT		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
<p>'To be honest, we did not have a strong and solid knowledge about this matter.'</p> <p>'At first, we felt a bit insecure because our main objective was to enrol in this research group in order to learn.'</p> <p>'The only knowledge we can refer to is our experience teaching at schools.'</p>	<p>'We all had done the summer course about PE in CLIL. So we had some previous knowledge about it.'</p> <p>'We had more prior information about PE activities than English language activities so we had to focus our efforts on the linguistic aspects.'</p>	<p>'We did not have any experience in applying the CLIL approach in PE context.'</p> <p>'We had only experienced this approach in some courses offered by the Department of Education.'</p>

*Table 1. Excerpts from summaries of the focus group discussions related to participants' knowledge about CLIL prior to participation in the AR project*

The feedback provided by these summaries showed that the knowledge about CLIL that the participants had brought with them to the programme was indeed slim, confirming that the summer course had provided them with the basic concepts of the CLIL approach but was not really long enough to give them the confidence necessary to actually carry out the CLIL approach in their classrooms. In general, however, the feedback also showed that despite their

lack of experience participating teachers were highly motivated and had enrolled in the AR group expecting to learn more in this inquiry-based approach.

GAPS IN PARTICIPANTS' CLIL-RELATED KNOWLEDGE PRIOR TO THEIR IN THE PROJECT		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
<p>'We had a lot of questions about, for instance, how to put into practice these physical games in our speciality. For some of us, this has been the first time ever to carry out a PE activity through oral communication in English.'</p>	<p>'We did not know how to link language content with motor content and how to make pupils speak in English.'</p> <p>'We did not know how to relate PE and linguistic content. We lacked knowledge about the steps to introduce English language progressively in PE lessons.'</p>	<p>'We were not sure how difficult the tasks should be given the English level of the target students.'</p> <p>'We did not know how to create understandable and useful scaffolding for the students to improve their English communicative skills.'</p> <p>'We were unsure about how to apply the task/s in a PE class taking into account the CLIL approach.'</p> <p>'We had questions about how long the task/s proposed to the students should last.'</p> <p>'We did not know how to create an evaluable worksheet and the impact (positive and negative) that it may have among the students.'</p> <p>'We did not know how to balance the Linguistic and Motor contents in the assessment of the PE subject.'</p>

*Table 2. Excerpts of summaries of the focus group discussions related to gaps in participants' CLIL-related knowledge prior to their in the project*

Teachers reported having had two big gaps in what they wanted to know when they started the AR process. The first gap, which was reported by English and music teachers, involved knowing how to include physical games in their regular lessons. To address this particular need, educators provided them with an article by Tomlinson and Masuhara (2010) which describes concrete methods for solving their doubts. Note was also made to cover this topic more thoroughly in future versions of the summer course. The second gap, reported by both primary and secondary PE teachers, revolved around the practicalities of not only designing and programming CLIL tasks but also measuring their effectiveness. It was from these reflections that the idea first emerged of creating a tool to guide the design of effective CLIL tasks.

GAPS IN PARTICIPANTS' KNOWLEDGE THAT HAD BEEN FILLED IN THE COURSE OF THE AR PROJECT.		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
'We have learned how to choose the activity/game which creates a balance between motor skills and language skills. Also, We have also learned how to adjust the activity appropriately to the students' level of language and how to motivate students to communicate in English.'	'We have learned how to find the correct balance between linguistic and motor content.'	'We have learned how to get students to communicate among themselves and with the teacher in English, no matter their level.' 'We have learned how a PE teacher can make him or herself understood by students during the class.' 'We have learned how a PE teacher can communicate in English to students that off-task behaviour is not acceptable so that the student clearly gets the information.' 'We have learned how to find reliable resources to prepare CLIL tasks although we have also realised how long it can take a teacher to prepare CLIL material.'

*Table 3. Excerpts from summaries of the focus group discussions related to gaps in participants' knowledge that had been filled in the course of the AR project*

As can be seen in some of the summary extracts in table 3 regarding whether the AR project had filled these gaps or not, it is clear that the process was largely successful with regard to issues such as how to teach physical games and PE activities in English, that is, how to find the proper balance between linguistic and motor content, how to adapt the teachers' discourse to the level of the students and how to motivate pupils to use English in game settings. Though teachers reported success in designing tasks, however, they pointed out that this required considerable time, thus confirming again the need to develop a tool to facilitate the designing of CLIL tasks.

GAPS IN PARTICIPANTS'S KNOWLEDGE ABOUT CLIL THAT THE AR PROJECT LEFT UNFILLED		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
<p>'The most difficult thing to manage is making pupils communicate in English. Combining both oral communication and PE contents is, from our point of view, a difficult goal to achieve.'</p>	<p>'We still do not know exactly what the best sentences are to work with and what activities are most suitable to improve pupil's English skills. We are still working with a trial and error methodology.'</p> <p>'We still do not know how to determine, in advance, the English level of the pupils.'</p> <p>'Sometimes it is difficult to include all the language that is required without slowing the pace of the game.'</p>	<p>'We still do not know exactly how to a good use of the English in the PE class, when the students are playing as if it was their mother tongue.'</p> <p>'Pupils do not seem to be clear about how to communicate with the teacher and classmates in English as if it was normal and natural.'</p> <p>'We still are not sure how to create a task that fits into the time that you have planned for it.'</p> <p>'We still do not know how to include the language without jeopardising the amount of real time spent on physical activity.'</p>

*Table 4. Excerpts from summaries of the focus group discussions related to gaps in participants's knowledge about CLIL that the AR project left unfilled*

Regarding the gaps which the project failed to fill, the feedback from participants suggests that more language teaching techniques (e.g. paraphrasing or reformulating) should be included in in-service CLIL teachers' education (when they are not English teachers too) to help them to promote oracy efficiently in physical activities. Although such techniques can be learnt in specific language training courses, experience has demonstrated that in order for CLIL teachers to master them they must be put into practice in subject-oriented activities. It is also confirmed that more collaboration between English and content teachers is needed to know pupils' level in advance and to reach an agreement on which language structures can be used in tandem. Additionally, unlike English and music teachers, PE specialists wondered if the inclusion of a foreign language in their subject might not have the undesirable effect of reducing the amount of physical activity in their lessons. This is a point to be considered since compulsory PE in

primary and secondary school is the only way to guarantee that regular physical activity is performed in childhood and adolescence. And not surprisingly, the official state curriculum also mandates that all PE classes must provide healthy physical activity. So the point raised by teachers was not a trivial one and suggested the need for formal research in this area.

HOW THE AR PROCESS HELPED PARTICIPANTS TO APPLY CLIL EFFECTIVELY IN THEIR CLASSES		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
<p>'Planning the lesson while thinking about the creation of the scaffolding was very helpful because we had to think about a content session through English language.'</p> <p>'It was very useful to share our experiences with our fellow teachers.'</p> <p>'The feedback provided by our students was extremely useful.'</p> <p>'The process of designing the task, carrying it out, getting feedback from the students, sharing the experience in the meetings, reading the diaries of our peers and then repeating the task again with changes—all this has enriched us a lot.'</p>	<p>'The template was really helpful to structure our mind and then design the task.'</p> <p>'The process helped us to focus our attention on important aspects of the planned activity.'</p> <p>'The process helped us understand how to adapt the language content to the children's level and try to simplify it.'</p> <p>'Good advice: few rules make the activities easier and more attractive.'</p> <p>'It was very helpful to make video recordings of pupils carrying out the tasks we had designed.'</p>	<p>'It was very useful to reflect on and assess the effectiveness of the PE class after applying CLIL approach.'</p> <p>'The process helped us in the creation of useful and understandable scaffolding for the students so that they could follow the PE class in English.'</p> <p>'The interviews that we carried out with the students greatly helped us to improve our work.'</p> <p>'Recording the activity to assess our way of teaching in English was very useful.'</p> <p>'It was very helpful to keep a diary where we wrote down everything that happened before, during and after the execution of the class.'</p> <p>'Modifying the initial design of our classroom task and then implementing it in class again with improvements was a great way to learn.'</p>

Table 5. Excerpts from summaries of the focus group discussions related to how the AR process helped participants to apply CLIL effectively in their classes

With regard to how participants felt the AR process had helped them apply CLIL effectively, participants emphasised the utility of trying out an activity in class, then revising it and applying it again (in other words, stages three and four of the AR process). They also placed a high value on using written and recorded documentation as the basis for reflection, because it allowed them to learn from their own practice and improve their teaching. These findings reinforce the need to include this type of inquiry-based professional learning in CLIL teacher education.

WAYS IN WHICH THE AR PROCESS FAILED TO HELP PARTICIPANTS APPLY CLIL EFFECTIVELY IN THEIR CLASSES		
ENGLISH AND MUSIC TEACHERS	PRIMARY PE TEACHERS	SECONDARY PE TEACHERS
'Our lack of experience in including physical games in our lessons was a problem.' 'We found it very difficult to combine motor skills and oral communication skills.'	'We had considerable difficulty transcribing the first group discussion recordings because we were not familiar with such procedures.'	'We were negatively affected by the lack of English publications regarding applying a CLIL approach in PE classes.' 'We suffered from a lack of collaboration from our English department colleagues.' 'We faced difficulties related to PE vocabulary in English because of its specificity.' 'It was a challenge to find the proper balance between linguistic content and motor content to make the activity interesting and motivating for the students.'

*Table 6. Excerpts from summaries of the focus group discussions on ways in which the AR process failed to help participants apply CLIL effectively in their classes*

When it came to the features of the AR process that participants felt did not help them apply CLIL in the classroom, differences emerged among the three groups. Although lack of experience is obviously something that can only be remedied by doing, it is understandable that English and music teachers experienced more difficulties in applying physical games than PE teachers. As for transcribing the group discussion recordings, the feedback from the primary PE teachers suggests that perhaps a bit of previous training should have been

included in the programme. However, it was the secondary PE teachers that seem to have encountered most difficulties. First, with regard to pre-existing validated PE-in-CLIL materials, while such materials are available and have been published for primary level teachers (Coral, 2013a, 2013b), at present secondary level teachers have only a few on-line materials at their disposal<sup>5</sup>. Additionally, the feedback from participants suggests that more specific language resources (e.g. websites links, glossaries) should be included in the summer course and in the first field work cycle. Second, the structure of secondary schools tends not to facilitate collaboration among departments, unlike what is generally the case in primary schools, where teachers are more accustomed to working together despite having different areas of specialisation. By the same token, secondary teachers seem to have more trouble motivating pupils than primary teachers. This is consistent with research by Cecchini, Méndez and Contreras (2005), who reported that interest in physical activity tends to diminish in teenagers, some of whom even give up sport altogether. They recommend making activities as participatory and enjoyable as possible. Additionally, if teenagers can be made to understand the value to them of a task, teachers will have less difficulty motivating them to do it. Letting them participate in the decision-making process, explaining to them the value that using a foreign language will add to the activity—and presenting an assessment system that rewards the use of English in their PE lessons are examples of things that can increase teenagers' motivation in CLIL settings.

### **The focused research stage**

This stage was to carry out specific research focused on two of the important issues that had arisen in the second fieldwork cycle: a) the need for an easy-to-use tool to evaluate CLIL tasks and b) the need to explore in depth whether the teaching of PE in CLIL approach necessarily implies a reduction in the amount of class time devoted to physical activity in comparison with a PE class taught in the pupils' native language.

To pursue these separate tracks, participants joined one of two research teams. One of them was composed of primary teachers of English, PE and music while the other consisted of secondary PE teachers. Each research team was supported by an educational researcher and CLIL expert. The goal of the study carried out by primary teachers was to design and validate a user-friendly tool to evaluate CLIL tasks for teachers as well as CLIL teacher educators. In particular, the study explored three research questions:

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<sup>5</sup> [http://svcnpbs.xtec.cat/cirel/cirel/index.php?option=com\\_content&view=article&id=181&Itemid=212](http://svcnpbs.xtec.cat/cirel/cirel/index.php?option=com_content&view=article&id=181&Itemid=212)

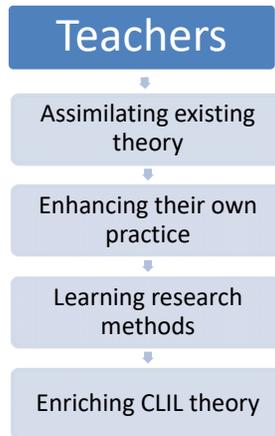
- What variables and indicators can be used to evaluate the effectiveness of CLIL tasks?
- Of the various common validation procedures available, which one is most appropriate in the context of this study?
- Once applied, does the proposed validation procedure confirm the reliability and validity of the CLIL task-evaluation tool presented here?

First, a preliminary version of the CLIL task-evaluation tool was created based on the collective experiences of participants and the expertise of the advising CLIL expert. The team then conducted a data base search, which revealed that a validated version of such instrument had not been yet published. Next, after reviewing the existing literature, a process was devised which was intended to ensure the reliability and validity of the tool. This process involved having five judges (experienced CLIL practitioners) independently apply the tool to the same CLIL tasks to check its content validity. Next, a further pilot testing of the tool by 20 trained CLIL teachers on 30 CLIL tasks confirmed its internal consistency as an instrument of measurement. All the procedures were confirmed using statistical procedures and the results obtained—to be published shortly (Coral, Benito & Esquerda, forthcoming)—suggested that the new tool was fully valid to evaluate CLIL tasks.

Regarding the second research question about the impact of CLIL on physical activity time in PE classes, at present work is not yet complete. Team members are using observational methodology to analyse video recorded lessons to later compare with the results of existing studies regarding activity versus inactivity times in PE classes taught in the pupils' L1. Results thus far seem to suggest that such a reduction in physical activity time does indeed occur in some PE-in-CLIL classes, caused either by lengthier explanations/examples given by teachers when they use a foreign language or by the need for extra language scaffolding. Once final results are available, the team should be able to make recommendations regarding how to compensate for the shortfall in physical activity time by allocating greater time to these classes, or possibly by making adjustments in the methodology applied by PE-in-CLIL teachers.

## **Conclusions**

This case study has illustrated how a collaborative AR project might lay the foundations of a five-stage inquiry-based professional learning process where teachers evolve from being receptors of information in a formal course to practitioner researchers who are able not only to improve their own practice



*Figure 6. Process followed during AR-based in-service CLIL professional learning*

but also to add to the body of theoretical knowledge. The process followed through AR establishes a model of in-service CLIL professional learning where teachers transform theory into practice, and then use that practice to enrich theory (Figure 6). In this case, participants applied the 4Cs theoretical concept by designing CLIL tasks adapted to the competence-based curriculum while incorporating the appropriate language scaffolding. Teachers also ‘enhanced the quality of their own teaching’ (Zwozdiak-Myers, 2012, p. 145), by first applying the tasks they had designed in real classroom contexts then reflecting on their teaching practice and sharing their conclusions with their peer group and finally creating a new version of the task. During the process teachers also resolved ‘the theory-practice problem by theorising from the standpoint of the agent in a situation they feel to be unsatisfactory’ (Elliot, 2007, p. 212), learnt different research methods for the pragmatic purpose of validating the findings that had emerged from their practice, and in so doing enriched CLIL theory. We strongly believe that CLIL inquiry-based teachers’ professional learning programmes promoted by the educational authorities are vital to the success of CLIL evidence-based teaching. During the process teachers experience different ways to enhance their knowledge—through both traditional teacher training and advanced research—while improving their own classroom practices, thus enabling them to gain strength from their own personal learning journey. By participating in an AR professional learning approach, teachers were also able to make the changes they needed while at the same time giving legitimacy to these actions through extended research. We believe that this framework should be instituted on a regular

basis since it makes an important contribution to the continuing development of CLIL professional learning approaches where teachers, researchers and administrations work together towards a common goal of educational success.

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