This is the **accepted version** of the journal article:

This article will discuss the development of a teaching unit designed for initial secondary teacher training (specializing in foreign languages). The unit not only exemplified the theory of project-based learning (PBL) for the student-teachers but also involved them in a hands-on experience, thus fully engaging them in the development of the necessary management skills to be able to implement PBL in their own future classrooms. The unit was designed to help shift student-teachers' understanding of teaching approaches towards pedagogies that promote autonomous language learning and collaborative problem solving. We consider how English language teachers can capitalize on the language learning benefits of project work by first examining the characteristics of PBL and then by considering how this approach can be integrated into EFL training.

Today's children are generally eager users of technology and have little trouble developing the skills needed to participate in a 'wired' society. In parallel, the same technological advances that today's children are experiencing have had an impact on expectations of teacher competences; it is becoming more and more commonplace that teacher training curricula include information and communication technologies (ICT) knowledge and skills. This is especially so in areas of language teaching, because language and communication are often seen as going hand-in-hand, including media competences (both are closely associated with the idea of different types of literacy). A further development in teaching is the growing assumption that teachers should adopt pedagogies that promote cooperative learning (for example Slavin 1990; Cohen 1994; Johnson, Johnson, and Holubec 1994). This is also true in foreign language education as different frameworks for cooperative and collaborative learning are being incorporated into teaching approaches, corresponding with a general move away from more structural syllabi.

Along with the above-mentioned changes, research in both language and media education demonstrates the need for contextualized learning. In the field of language learning, there are a growing number of researchers and practitioners alike who argue in favour of merging language and content in order to promote the construction of both linguistic and non-linguistic knowledge (see Dalton-Puffer 2007). Concurrently, in the field of media education, it is broadly accepted that technology cannot be treated as context free, and thus, TPACK (Technological Pedagogical Content Knowledge)

teaching approaches are gaining support. According to Mishra and Koehler (2006), a teacher who is able to negotiate the relationships between content, pedagogy, and technology develops a form of expertise greater than the knowledge of a disciplinary expert, a technology expert, and an educator.

In this article, following the lines of 'multiple literacies' that call for today's students to be able to 'read and interpret' multiple modalities (written, spoken, visual, spatial, etc.), we take 'language' to mean any form of communication, thus allowing for a merge between language and media education (Masats, Dooly, and Costa 2009). It is our view that teacher education (especially in specialized language teaching areas) needs to provide future teachers with the methodological means to integrate language, technology, and media education. These means are being developed by language and media educators participating in the DIVIS[1] Comenius project, an initiative to promote language and media education (focusing principally on video) both in primary and secondary schools and in teacher training programmes.

It is our belief that schoolteachers can enable learners to develop audiovisual and linguistic competences (and the content knowledge inherent to both language systems), ICT competences (and the associated procedural knowledge), and inter- and intra-personal competences (and the skills necessary to learn in joint collaboration with others). Teacher training programmes should ensure that, upon the completion of their pre-service education, future teachers possess such competences, along with methodological tools to integrate language and technology in their teaching practices. We believe that project-based learning (PBL), based on tasks and subtasks, provides an ideal approach to achieve this. In many ways, project-based language learning (PBLL) is closely related to task-based language learning. Indeed, the idea of 'task' as a solid base for language learning has become quite widespread in the field of foreign language teaching and learning. However, we argue here that PBLL obliges both the teacher and the students to conceptualize the whole learning process as one embedded in a wider context of linguistic and non-linguistic objectives, content, and output.

PBL is a methodological approach based on contextualized cooperative learning (Sharan 1999) whose implementation fosters the development of learners' cognitive, social, and communicative skills through their engagement in the execution of authentic tasks (Willis and Willis 2007). A critical aspect of PBL for language teaching and learning is the way in which activities are highly interactive and integrated so that while students are practising and developing language skills in the five macro language learning areas (reading, writing, speaking, listening, and interaction), they are also developing interpersonal skills such as team work and organization. This concept of integrated language teaching—with its focus on communicative purpose— is hardly new to language teaching, nor is the idea of using PBLL in the language classroom. However, despite the fact that PBLL is not a new concept to language teaching, it is often met with scepticism, especially by novice language teachers. Research shows it is difficult to change teachers' established practices and beliefs and that, to a large extent, student-teachers' previously held knowledge and

assumptions about teaching are based on their own learning experiences (Pajares 1992). Evidence also shows that the 'beliefs' teachers may say they have are not always consistent with the way they teach and that it takes considerable time for teachers' beliefs to change. As Porter and Brophy (1988: 76) have written, 'Personal experiences, especially teachers' own experiences as students, are represented as important determinants of how teachers think and what they do'. This creates an intriguing challenge for teacher training: how to get student-teachers to adopt teaching approaches that they themselves have perhaps not experienced as learners?

Just as adopting the new pedagogical approach of PBLL often meets resistance because of lack of knowledge and personal experience on the part of the student-teacher, the use of technology is often met with reservations because student-teachers are unfamiliar with the possible pedagogical applications of ICT (whether they routinely use technology in their personal lives or not). Research shows that the teacher is key to effective use of technology in the educational system (Zhao, Hueyshan, and Mishra 2001) and also that only those student-teachers who learn to use technology during their pre-service studies are likely to incorporate technology in their future classes (Goldsby and Fazal 2000). It is therefore essential that pre- and in-service teachers are able to effectively use these new tools for learning.

Thus, considering the difficulties inherent in the adoption of new tools and in changing teaching paradigms, getting student-teachers to move away from more common teacher-centred interaction requires a powerful strategy. So, when asking ourselves how, as teacher educators, we could address the challenge to illustrate to our pre-service teachers the benefits of integrating language, ICT, and media education through PBLL, we felt it was important to practise what we preach and decided to design a project-based teacher-training unit. The training sequence aimed to get our student-teachers to contextualize how they could teach integrative language skills through video clips, how they could make their own teaching materials, and how best to implement PBLL with their own students.

Our project-based teacher-training unit was implemented as part of the language methodology module of the Masters' degree in Secondary Education, taught at the Faculty of Education, Universitat Autònoma de Barcelona. Through the implementation of this unit, we were able to embark our student-teachers on a form of experiential learning, known as 'loop input'. According to Woodward (2003: 301), who coined this term in the late 1980s, loop input 'involves an alignment of the process (how) and the content (what) of learning'. So our student-teachers learnt how to use PBLL to integrate language and media education (the what) by suspending their roles as teacher trainees and becoming students participating in a project whose final product was the creation of a three-minute video clip (the how). Woodward argues that 'decompression time' (the suspension of one's role to live an experience that will later be reconstructed in a group discussion) in loop input is more important than in straightforward experiential learning: 'allowing time for the decompression phase also involves participants in a detailed and very useful discussion of the steps,

materials, content, and participant experience of the activity from the inside out' (ibid.: 303).

Within this framework, it was our intention to follow the theoretical premises of PBLL:

- the project goal should be authentic, interesting, and viable
- the project development (the tasks learners carry out) leads to the elaboration of a final product that serves the project goal
- the addressee of the final product has to be determined before the planning stage.

However, contrary to common practice in PBLL, we did not want to reveal the real objective of the teaching unit (learning how to plan projects through the experience of participating in a project) to our teacher trainees since we wanted them to 'live' the project as students participating in a project, not as student-teachers 'learning' about the theoretical use of projects. This meant proposing a secondary objective—learning to make their own short clips fit the exact needs of their own classes and be used during their school placements. Thus, for the teacher trainees, the general project goal had to do with developing materials for their own students—not learning about PBLL. Figure 1 below sketches how we designed the project of creating a video clip.
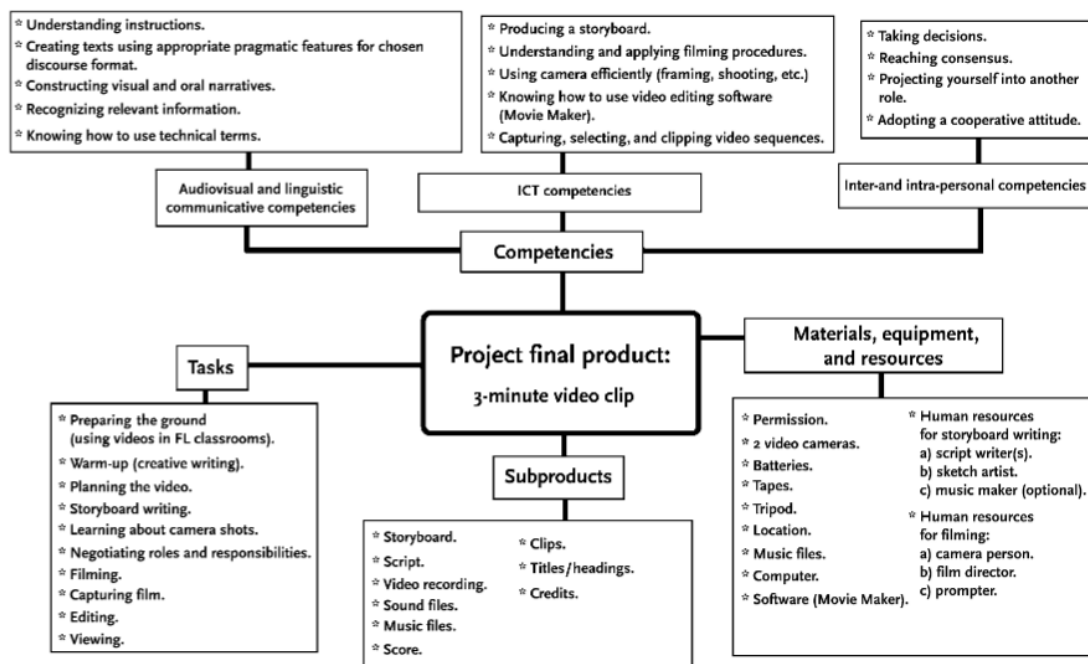

FIGURE 1
Sketch of a project on creating a video clip to be used as class material

We also followed the steps for implementing a project:

- planning
- project presentation to project participants
- implementation (development)
- presentation of project product(s)
- assessment.

In the planning stage, apart from sketching the whole product (see Figure 1 above), we had to take decisions with regards to how to overcome time constraints (we only had 16 contact hours to carry out this project). As the target group was composed of student-teachers with a good command of the English language, it was not necessary to focus the project on developing their communicative competence, and since they were mature students, we took for granted that they already possessed inter- and intra-personal competences required for PBL. As a consequence, we did not design any form-focused language tasks or any tasks to foster team building.

We principally designed the tasks to enable our target students to acquire ICT competences (movie making and material design), vocabulary, and teaching competences. Still, the interaction of language learning and media learning does occur at the three stages of a video production project: at the planning stage when students create the storyboards and scripts; at the shooting stage when they reproduce behaviours, discourse procedures, and norms of language use they associate with the communicative event they are going to video record; and at the editing stage, when they reconstruct the sequential narration of events (Masats *et al.* op.cit.). Figure 2 illustrates the goals we set for each session.

The project was presented to the trainees in the first session, after they had seen examples of how to use video materials in the language class. This was
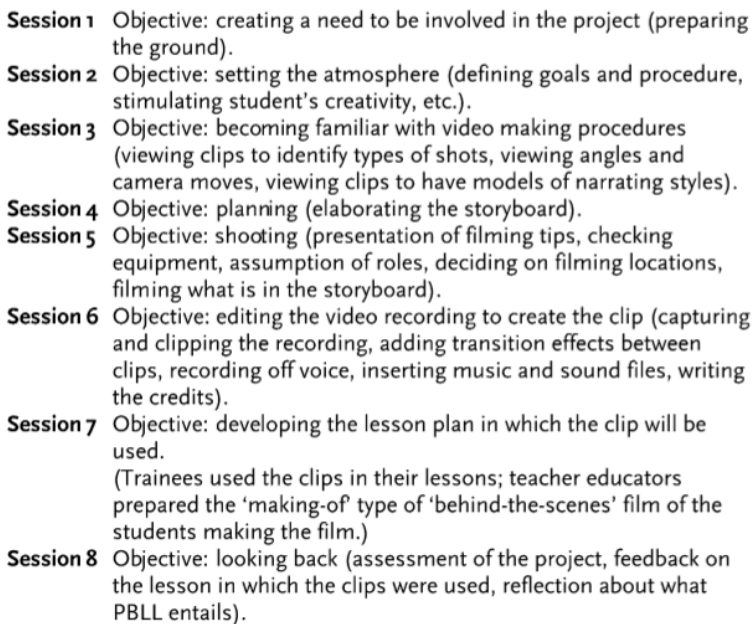
Session 1	Objective: creating a need to be involved in the project (preparing the ground).
Session 2	Objective: setting the atmosphere (defining goals and procedure, stimulating student's creativity, etc.).
Session 3	Objective: becoming familiar with video making procedures (viewing clips to identify types of shots, viewing angles and camera moves, viewing clips to have models of narrating styles).
Session 4	Objective: planning (elaborating the storyboard).
Session 5	Objective: shooting (presentation of filming tips, checking equipment, assumption of roles, deciding on filming locations, filming what is in the storyboard).
Session 6	Objective: editing the video recording to create the clip (capturing and clipping the recording, adding transition effects between clips, recording off voice, inserting music and sound files, writing the credits).
Session 7	Objective: developing the lesson plan in which the clip will be used. (Trainees used the clips in their lessons; teacher educators prepared the 'making-of' type of 'behind-the-scenes' film of the students making the film.)
Session 8	Objective: looking back (assessment of the project, feedback on the lesson in which the clips were used, reflection about what PBLL entails).

FIGURE 2
Session goals

also accompanied by a discussion on the kind of materials available, with the intention of leading them to the conclusion that occasionally teachers have to create their own materials. This was the perfect time to set the project and ensure that the goal of the teaching unit was authentic. We have to admit that we did not expect as many negative reactions as we got, some of which soon disappeared when they learnt that this task did not mean extra work at home or that they did not need to physically appear in the video if they did not wish to. Other trainees stated this was not an appropriate task to set in a Masters Programme, especially if this meant using all the contact hours they had with us (the two teachers in charge of this part of the module). We tried to explain to them why we thought this was an efficient way to learn about making their own materials and the students decided to go ahead with the unit. The students also gave permission to have all the sessions recorded for research purposes.

All sessions were student centred: they selected the topic of their clip, planned the clip, looked for the information or the materials they needed, took different roles (see Figure 1), planned the filming route, and edited the videos. All sessions started with a warm-up activity to set the atmosphere and establish the goal of that session, but immediately afterwards, trainees worked in groups taking responsibility for the learning process. Monitoring their work was easily facilitated because there were two educators in the classroom. Through peer interaction, teacher feedback, and support, the student-teachers could see that they were synthesizing practical and theoretical knowledge and became more engaged and enthusiastic as the sessions went on. The one exception to group work was Session 7 in which each student worked individually to develop a lesson plan based on the clip produced by his/her team and put it into practice during their subsequent school placement.

Session 8 had two parts. In the first part, they briefly reported on the lesson in which their clips were used. At this point, they all stated that the clip-making project had been interesting to do but it was not until they were required to reflect upon how to use the clip that the whole process made sense to them. Interestingly, the groups had discussed these topics (for example, how they could use the videos they were making in their own classes) when they were creating their storyboards, but it was only at the completion of the project, when the purpose of the final product was fulfilled, that it become relevant and generated explicit knowledge. In the second part of the session, we closed the loop and trainees viewed a video about how they had created their own clips and the students reflected on and assessed what they had done and learnt, thus affording the possibility for the 'decompression phase' wherein the participants were able to examine their experiences 'from the inside out' (Woodward op.cit.: 303).

As we said earlier, all the project sessions had been recorded and relevant extracts were transcribed. These were consulted when creating the video used to get students to reflect upon what implementing a project entails, but, perhaps even more importantly, the transcripts provided insight and led to additional knowledge for the teacher trainers. When trainees viewed the 'making-of' clip we had edited, they were asked to reconstruct together our lesson plan (we gave them first an empty version of the mind map we

provide in Figure 1 above and then the completed version). Additionally, trainees were asked to reflect on their own learning experiences in an online forum and to consider how all these diverse skills can help them work with their own pupils in the future. Here is the voice of one of the trainees in the group:

> As I had never participating [sic] in a project, I was not fully aware of how beneficial the experience could be until it was too late. I started to implement the CLIL teaching unit I was going to put into practice at school before we took the PBL module and therefore I did not use this methodology. Once I implemented the unit, I realized that the tasks I had prepared were not interlinked like they were in the project we did at the university and the products I was asking my students to do were not as realistic for them as the video clip had been for the people in my group. At this point I have to say that making the video was more interesting than actually using it with my students because I had to negotiate its content with the members of my group (not with our two teachers!) and our group decided to present to our students our university [sic] as an excuse for letting them know what they may encounter when they finish their secondary studies. The students enjoyed the video and the activities I prepared for its exploitation as a listening activity, but that lesson was not related to the regular content of the lessons. What I think is that the activities I prepared were not fully realistic or authentic. Making the video was different, as soon as we identified the target students, all the decisions we were taking with regards to its content were based on our perceptions of our students' interests. Creating documents (texts or videos) addressed to a real group of people is really an enjoyable experience, as we had to adapt both the message we wanted to convey and the language we wanted to use. (Forum entry, Student B)

An essential part of PBL is to encourage students to reflect on their own learning experience. In this case, the student-teachers could comprehend what it means to be a language learner in a PBLL context and to gain an awareness of the management skills, sensitivities, and confidence that they need in order to implement similar approaches. Importantly, the student-teachers came to see that, as teachers, they can share some of the responsibility of teaching with their students. They came to comprehend that they can propose self-directed tasks and let their students choose for themselves, just as they (as students) were given the liberty to choose the content and type of the materials that they wanted to produce.

As the quote at the end of the previous section illustrates, changes need to be made in the overall structure of the module in which our intervention was framed; yet, we succeeded in demonstrating that teachers do not need to take the floor all the time for learning to take place. One of the challenges of PBL work is reaching a balance between excessive teacher control versus an absence of teacher feedback and guidance during the process. In order to avoid dictating each step of the process, the entire project procedures were carefully designed to give freedom and student voice in defining the final video product, thus ensuring a sense of ownership and engagement. At the same time, providing enough support at different stages in the project was essential in order to avoid producing a feeling of being lost. This was not

always easy since the main objective could not be revealed to the student-teachers until after their video had been completed. Still, through the end-of-project discussion, reflection in the forum, and integration of socially constructed knowledge about PBLL methods, the end result for these future teachers was authenticity of experience and increased metacognitive awareness of what integrated teaching really signifies. We could say, then, that the 'decompression phase' was really worthwhile.

In essence, the teaching unit we designed for our trainees can be understood through a simile of Russian nesting dolls: several projects packed within a main project. Once unpacked, it is evident that the teaching unit consisted of an overall project of providing student-teachers with the opportunity to learn about and experience PBLL, in this case through the construction of their own teaching materials. Thus, in parallel to acquiring knowledge about PBLL, upon completion of the unit, the student-teachers were able to create a storyboard for their video clips, understand and apply filming procedures, use a camera effectively, capture, select, and clip video sequences, and use video editing software (Movie Maker). This knowledge, in turn, can be taught to their own students in similar video producing projects. Additionally, the student-teachers acquired subject content knowledge related to the development of ICT competences and media competences, such as storyboards as a text genre and types of shots and camera moves.

While the use of student-produced video can be considered an enjoyable activity, it is important to underline that the project work was not considered to be merely a source of entertainment. The focus was on real-world subject matter (the creation of their own teaching materials that they had to use for lesson planning) and at the same time, the student-teachers achieved significant gains in specific language knowledge (related to teaching and video making) and content learning (also related to teaching). The integration of the video they produced into their own lesson plans also reinforced the idea that, as future language teachers, they can focus on both content and language in their project-based lessons.

Previous research supports the positive experience described in this article, that is, PBLL has the potential to provide foreign language learners with optimal conditions for language learning.

> Because projects lend themselves naturally to integrated skills, we find that students are engaged in authentic tasks that require that they read to write, write to speak, listen to write, and so forth, leading to meaningful language use and the important recycling of vocabulary and grammar forms. Equally, if not more important is the fact that projects oblige students to read to learn, listen to learn, and speak to learn, preparing them for life-long learning (Stoller 2006: 26).

To the numerous advantages of PBLL (exposure to authentic materials, plentiful opportunities to use the target language, and plausible, authentic reasons for using it, etc.), we should add that in a teacher training course such as ours, the student-teachers were immersed in a context in which they used the target language meaningfully but at the same time, they were learning how to use media technology and how to implement projects by

being active participants in the development of one themselves. Thus, learning was possible because it was situated and allowed linguistic, technical, and pedagogical knowledge to emerge from practice. As it was pointed out earlier, changing teaching paradigms is never easy, since previous experience (as both student and teacher) will influence their teaching approach. However, if the student-teachers have clear expectations of the new approach, effective training and support, and good models (and their own modelling through experience), the possibilities for transformation are higher.

In our project, the combination of individual work, group discussions, and the use of technological resources signified moving away from a traditionalist perspective of using new technologies as mere complements of existing classroom practices and curriculum content. This shift in focus is not common at masters' level but we felt that, as teachers, we must be prepared to adapt our teaching styles and methods according to new developments in technology in education, especially since they will inevitably have repercussions in the language classroom (Masats and Dooly 2008). By using 'loop input' (Woodward op.cit.), the use of video technology and PBLL was not just learnt by the student-teachers on a theoretical level, they were learnt experientially.

PBLL presents challenges for both teachers and students, but none the less, we feel that the underlying idea is worthwhile and merits further research and implementation in teacher training, especially considering the multiple benefits that the incorporation of innovative teaching paradigms can provide student-teachers for their professional lives ahead. As the student in the forum indicated, it is important to make them 'fully aware of how beneficial the experience [can] be [before it is] too late'.

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Note

1 Digital Video Streaming and Multilingualism (141759-LLP-1-2008-1-DE-COMENIUS-CMP).

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