1. Introduction

The use of video for educational purposes helps bring new and imaginative perspectives to almost any subject matter, as it encompasses the systematic and creative blending of product and idea technologies (Hooper & Rieber, 1995) and engenders teaching and learning processes within and across disciplines (Bednar & Sweeder, 2005; Sweeder & Bednar, 2001; Sweeder, Bednar, & Ryan, 1998). Moreover, it is increasingly common to find that, in educational domains, questions emerge concerning the purpose and the adequate approach to language and literacy education in a world dominated by technological advances. In a shift from books to screens, the use of image has gained ground and has contributed to society moving "from print to post-print text cultures" (Lankshear, 1997:1). Kress (2003:1) talks about a "revolution in the uses and effects of literacy and of associated means for representing and communicating at every level and in every domain." The New Literacy Studies movement[1] is also responsible for a significant impetus to the study of multimodality in literacy and language learning. Thorne, Black, and Sykes (2009) underscore the influence the New London Group has had on research perspectives in language education and media literacy:

Over a decade ago, the New London Group (1996) put forth a manifesto that called for a broadening of traditional language-based approaches to literacy teaching and learning to acknowledge and accommodate emergent literacy practices catalyzed by "the multiplicity of communications channels" (…). (Thorne et al., 2009: 804)

Increasingly, researchers underline the mediating role of teacher, peers, setting, language, and technology (Lantolf, 2000) and in particular have begun to focus on communicative practices that are based on technological mediation (García-Carbonell, Rising, Montero, & Watts, 2001; Kendon, 2004; Thorne & Reinhardt, 2008; Zheng, Young, & Wagner, 2009). While much of the focus has been on the introduction of Internet into teaching and learning environments, the role of videos should not be overlooked. Given both the relevance that videos can have for knowledge construction and the challenges their use in the classroom can bring, it is reasonable that teacher training programmes include contextualised video proposals integrated into their curricula.

Research shows that videos can provide significant input to the overall development of future teachers (Cullen, 1991), moreover, studies also show that student-teachers who learn to use technology during their pre-service studies are far more likely to incorporate technology in their future classes than those who have not had hands-on experience with its use (McKinney, 1998; Goldsby & Fazal, 2000). This implies that teacher educators can cover both theory and practice by using videos to serve a double-folded objective: as a means for constructing knowledge and developing reflective skills; and as a tool for forming critical video consumers and producers.

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[1] This is a group of independent but linked researchers, in a large part coming out of work by Gee, Street, Heath, Barton and Hamilton who specifically looked at literacy as a social practice.

The use of video cases in teacher education is quite common (Özkan, 2002; Masats, Sormunen, Hacklin & Ducos, 2007). Traditionally, such experiences could be grouped into three categories according to the way in which videos were used: video-viewing, video-modelling and video-coaching. *Video-viewing* is often used as a method to focus student-teachers' attention on certain topics and to set up a base for class discussion and assignments. *Video-modelling* is a means of getting student-teachers' to focus their attention on target skills or behaviour. *Video-coaching* has been used to refer to the use of taped activities of the student-teachers' themselves which then leads into group discussion.

The expansion of digital technology affords possibilities that go beyond the aforementioned categories. Because technology has become more accessible, cheaper and user-friendly, in-class *video-making* is gaining popularity in teacher education.

This article focuses on the how these four alternatives can be integrated into a sole socio-constructivist teaching approach. The authors will first discuss the current situation of video-use in teacher education, followed by an outline of a holistic proposal that integrates the four above-mentioned uses of videos into the teacher education programme. The proposal is then exemplified through four different cases, each one specifically highlighting one means of using video with teachers and student-teachers. An overview of data from the cases is given. Each case has been dubbed with a nickname associated with using videos.

2. Effective video use in the classroom: the role of teacher training

It is a common feeling today that the 'technological revolution' has left primary and secondary teachers breathlessly running to try to catch up and stay abreast of constantly evolving technological advances. More than a decade ago, O'Sullivan, Dutton, and Rayner (1998) talked of a 'media saturated world'. Several years along, technology has become even more mainstream and it is now commonplace to hear educators talk of 'new literacies' (Alvermann & Hagood, 2000; Hagood, Stevens, & Reinking, 2003; Lankshear & Knobel, 2003) and 'media literacy' (see Goodman, 2003; Kist, 2005; Thoman & Jolls, 2005; Hobbs, 2007).

Media Literacy is a 21st century approach to education. It provides a framework to access, analyze, evaluate and create messages in a variety of forms -from print to video to the Internet. Media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy. (Thoman & Jolls, 2005: 190)

This implies that teachers must help their students move beyond simply 'viewing' the multi-modal texts they will be encountering daily. Students must be encouraged to use reflective thinking and critical evaluation of what they are seeing and hearing. The use of videos − in whichever way it is implemented − can help promote a student-centred environment where the pupils are learning by doing; as well as promoting a more critical awareness of their consumption of media products.

Casting an eye to teacher training, it can be argued that there is the added responsibility of going beyond demonstrating 'teaching strategies'; teacher training should encourage pre-service and in-service teachers *to learn to observe, reflect and think critically on their own teaching strategies*. In this sense, video-modelling and video-coaching in teacher training can play an important role. Student-teachers must learn to notice their own students 'way of being' and develop practices that help them have insight into student thinking so that they are better able to adapt to their students' needs and the context in which they are teaching. Research shows that, to a large degree, student-teachers' previously held knowledge and assumptions about

teaching are based on their own learning experiences (Pajares, 1992). So teacher trainers are met with the challenge of ensuring that the future teachers in their classrooms are not only able to stay abreast of technological changes and be literate in multiple modalities, they must also subtly nudge them to adopt teaching approaches that they themselves have not necessarily experienced as learners.

The benefits (and challenges) of video-modelling and video-coaching in teacher training have been well-documented as it is evidenced by the wide body of literature on both topics (for video-modelling see, among others, Abell, 2004; Beck, King, & Marshall, 2002; Bliss & Reynolds, 2004; Campbell, 2004; Copeland & Decker, 1996; Dexter, Anderson, & Becker, 1999; Friel & Carboni, 2000; Kellogg & Kersaint, 2004; Nemirovsky & Galvis, 2004; Masingila & Doerr, 2002; Perry & Talley, 2001; Wong, Yung, Cheng, Leung Lam, & Hodson, 2006; and for video-coaching, see Atjonen, 1998; Gamoran Sherin & van Es, 2002; Kpanja, 2001; Nilssen, Gudmundsdottir, & Wangsmocappelen, 1998; Oonk, Goffree, & Verloop, 2004; Sharpe et al, 2003; Spurgeon & Bowen, 2002). Yet, video-viewing and video-making tend to play a minor role in teacher education and, as Gamoran Sherin & van Es indicate (2002:2535), "more research is needed to understand the affordances of video for teacher education and those aspects of teacher cognition that are influenced by the viewing [and making] of video".

We suggest that the aforementioned activities (video-modelling; video-coaching, video-viewing and video-making) can play an integrative part in a holistic teacher education proposal. Furthermore, while the content of videos used in teacher education is important, the way they are actually used may be even more so. Thus, our proposal aims to provide a series of coherently integrated video activities that guide future teachers through the co-construction of knowledge. In order to do so, we have devised a four-pronged integrated scheme that can be carried out to help ensure quality teacher education.

3. Analytical approach

Several video case studies were carried out over the course of a three year period in initial teacher training programmes for primary and secondary education in order to determine whether an integrative approach to video use in teacher education was effective. Longitudinal collection of case studies and students' reflections on the work done allowed the authors to draw hypotheses concerning how to design a holistic scheme of different video activities. These hypotheses were then highlighted and tested for validity through end-of-term surveys and focus group discussions of participants from each case. However, longitudinal data collection was not specific to individual teacher-students (data pertain to groups) and are therefore presented here as cross-sectional for each case.

To maintain coherency throughout the study, the surveys followed similar formats for all the groups. The survey was intentionally short and required minimal time and effort to complete to ensure that a maximum number of participants would fill them in (all of the questions are included in Annex 1). The participants used their university ID numbers for the coding. The answers were collocated on a 6 point Likert scale with the following values:

0 = Not at all
1 = Minimally
2 = Somewhat
3 = Average
4 = Much
5 = Very much

Once the results from the surveys had been compiled, focus group members (four) from each group were invited to take part in

semi-elicited interviews. To choose the focus group members, the survey responses were coded and answers were compiled first. Then eight random surveys were chosen (by a third person who was not involved in the courses) to represent as wide a variety of answers possible (answers ranging from very negative to very positive). The codes were then matched to the names of the respondents and they were invited to join the focus group. In the case of a member who preferred not to attend, the member who corresponded to the next coded survey was contacted. All the members were ensured anonymity in publications stemming from the discussions and were asked to sign consent forms for use of the data (both face-to-face discussions and online production). The discussions were held after the course was finished in order to limit, as much as possible, worries by the participants that their answers would influence their final mark.

The data were analysed according to the driving questions for the study:

-Is interesting and relevant video content sufficiently educational to have an impact on student-teacher paradigms or is the way the content is exploited more important?
-Which are the most appropriate conditions for promoting introspective practice in student-teachers?
-Can videos in teacher education be used to heighten attention to the underlying order of classroom interaction?

The analysed cases involved varying approaches and learning objectives but were, at the same time, leading the student-teachers towards a fuller competence in the use of video as a teaching tool. The selected testimonials provided in this article pertain only to members of the focus group. They were selected to illustrate the points that emerged with the most frequency from the discussion groups (e.g. "using videos helped me most to …"). For sake of brevity, we will provide selected case studies from both programmes to illustrate each prong rather than describing the whole scheme twice. Case 1 & 2 were implemented in a Training Programme for pre-service primary teachers. Case 1 was part of a Foreign Language Teaching Methods course and Case 2 occurred during tutoring of school placements. Cases 3 and 4 took place in a Foreign Language Teaching Methods course in a Training Programme for pre-service secondary teachers.

4. Results: sample cases of a four-pronged integrated scheme

The data derive from the implementation of the four-pronged scheme for teacher education at both primary and secondary levels, however, to provide a balanced view of the two parameters without being wordy; two cases from each level are given here. This point is highlighted in order to ensure that there is no confusion for the reader; it should be borne in mind that the four components were carried out at both levels because it is our understanding that all teacher education courses should include this holistic model.

4.1. Case 1: re-winding[2]

This model expands on the traditional use of video-viewing in teacher education. This proposal moves student-teachers from

simply watching a video of a classroom event or a sequence of activities to a process of reconstruction of the teacher's plans. Teachers must have bi-focalised perspectives in their planning and implementation, especially in cases of content and language integrated learning and other similar communicative language teaching approaches. This model departs from that necessity.

4.1.1. Case 1: description

Many schools throughout Europe are starting to adopt both Content and Language Integrated Learning (CLIL) and Project-Based Learning (PBL) approaches. Thus, it can be argued that pre-service teacher education programmes should offer student-teachers the possibility of becoming acquainted with both methodologies in order to guarantee they will know how to plan, implement and evaluate interdisciplinary projects once they become teachers in service.

In case 1, student-teachers were asked to view a video clip produced by a 5th grade English (as a foreign language) class. The video was the end product of a science project focused on how to protect the environment. After viewing the clip, the student-teachers then had to try to outline the plan the 5th grade teacher had followed to get the primary pupils to produce their video. In order to do this, student-teachers were divided into groups of four to discuss how the primary teacher had planned such a project (linguistic contents, non-linguistic contents, outcomes, activities); see task outline in Fig. 1. Then new groups of four were formed, each containing one member of each previous group, and together they had to fill in a planning grid to sketch out what they felt matched the original teaching plan. The discussions were done synchronically in a virtual forum. The first discussion was done online, through a forum on a virtual classroom in which the students could also access the video file.

The idea of carrying out the task in the computer room had a two-fold objective: a) student interaction was recorded and therefore could be used to discuss the results of the third task (the various rationales students had produced for this project): b) all students were 'gently' forced to participate in the discussions.

Following the completion of the online activity, two new forums were set up in the online platform. In one of them the student-teachers in the TEFL course were asked to evaluate the online activity and in the other one the use of the video to conduct such an activity.

At this point, what we have called re-winding phase began. Student-teachers were requested to view the video again. This time, viewing was accompanied by a set of guiding questions (see Fig. 2) aimed at helping them recognise (a) the scientific concepts dealt with in the primary class through this video project (it should be recalled that the clip derives from a CLIL course) and (b) the need to conceptualise the final product of a project before actually planning the tasks that would lead to its completion.

This task provided the necessary scaffolding for the student-teachers to design and plan their own projects: theoretical framework, target students, teaching objectives, learning goals, contents to be learnt/taught, end product, outcomes, resources, timing, assessment, etc. (See mind-map elaborated by a group of student-teachers to outline their project in Fig. 3).

4.1.2. Case 1: survey and focus group

The semi-elicited interviews in this focus group showed that student-teachers were not fully aware of the necessity of efficient planning when they first viewed the finished teaching outcome. As was expected, the first viewing only elicited descriptive comments about content even though they expressed enthusiasm about the fact the video was a real product made by primary pupils. This correlates with the earlier hypothesis held by the

| contents | view | edit |

add new item ▾ | state: visible ▾

The project-based approach | The goal of this workshop | Our case | **Our tasks** | Resouces | Evaluation | Conclusion |

Task one:

Go to resources and view the video "Find a bin and put it in."

Task two:

Divide into groups of four and choose one task. Post your contibution in the corresponding Forum in this classroom.

GROUP A: List the possible *linguistic contents* students need to learn to be able to produce such a video.

GROUP B: List the possible *non-linguistic contents* students need to learn to be able to produce such a video.

GROUP C: List the possible *subproducts* students need to create before producing the video.

Fig. 1. Online discussion tasks.

authors that even if the content of a video is interesting, viewing only becomes educational if it is appropriately exploited in the classroom. A post-course survey (completed by 32 students) indicated that they felt that the materials and activities, and the way in which they were used were efficiently applied by the instructor and that, overall, they had greater understanding of the teaching process.

Comments from the focus group discussions provided even richer detail of the type of learning that took place. The group discussion stemming from the guiding questions allowed student-teachers to look at the video with different eyes. They were able to grasp the linguistic *and* scientific contents included in the video and to better comprehend the process the primary teacher

followed to get her pupils to produce said video. This is mentioned by one of the focus group members.

"I was surprised to become aware that I did not know how to see things when I first viewed the video. I could imagine that the task of creating a video was very motivating for the primary ed [sic] students but I did not notice that in order to produce it they had learnt science and language too. Our TEFL teachers always are saying us [sic] that our lessons should not focus only on a single point of grammar. I did not understand what they meant until I saw that the students were producing imperatives, descriptions and dialogues and the like for the same video." (Alexis, Session 2, Focus Group 1)

Answer briefly the following questions :

1.- **Textual purpose**. Who would be the target viewer of this video? What does the composer of the video want us to know?
2.- **Textual structures and features**. What sort of genre does the video belong to? What do the images suggest? What do the words suggest? What kind of language is used in the video?
3.- **Construction of characters**. How are the characters constructed in the video? How many characters are being constructed? Why has the composer of the video represented the characters in a particular way?
4.- **Gaps and silences**. Are there "gaps and silences" in the video? Who is missing form the video? What has been left out of the video? What questions about itself does the video not raise?
5.- **Whose view: Whose reality?** What view of the world is the video representing? How? What is real in the video? How would the message be different if it were told in another time, place or culture?
6.- **Interrogating the composer**: What kind of pupils, and with interest or values, composed the video? What view of the world and values does the composer of the video assume that the viewer holds? How do we know?
7.- **Multiple meanings.** How do the contextual factors influence how the message is represented? How else could the video have been produced? How does the video rely on intertextuality to create its meaning?

Fig. 2. Guiding questions for the re-winding phase. Source: These questions were adapted from: http://wwwfp.education.tas.gov.au/English/critlit.htm.
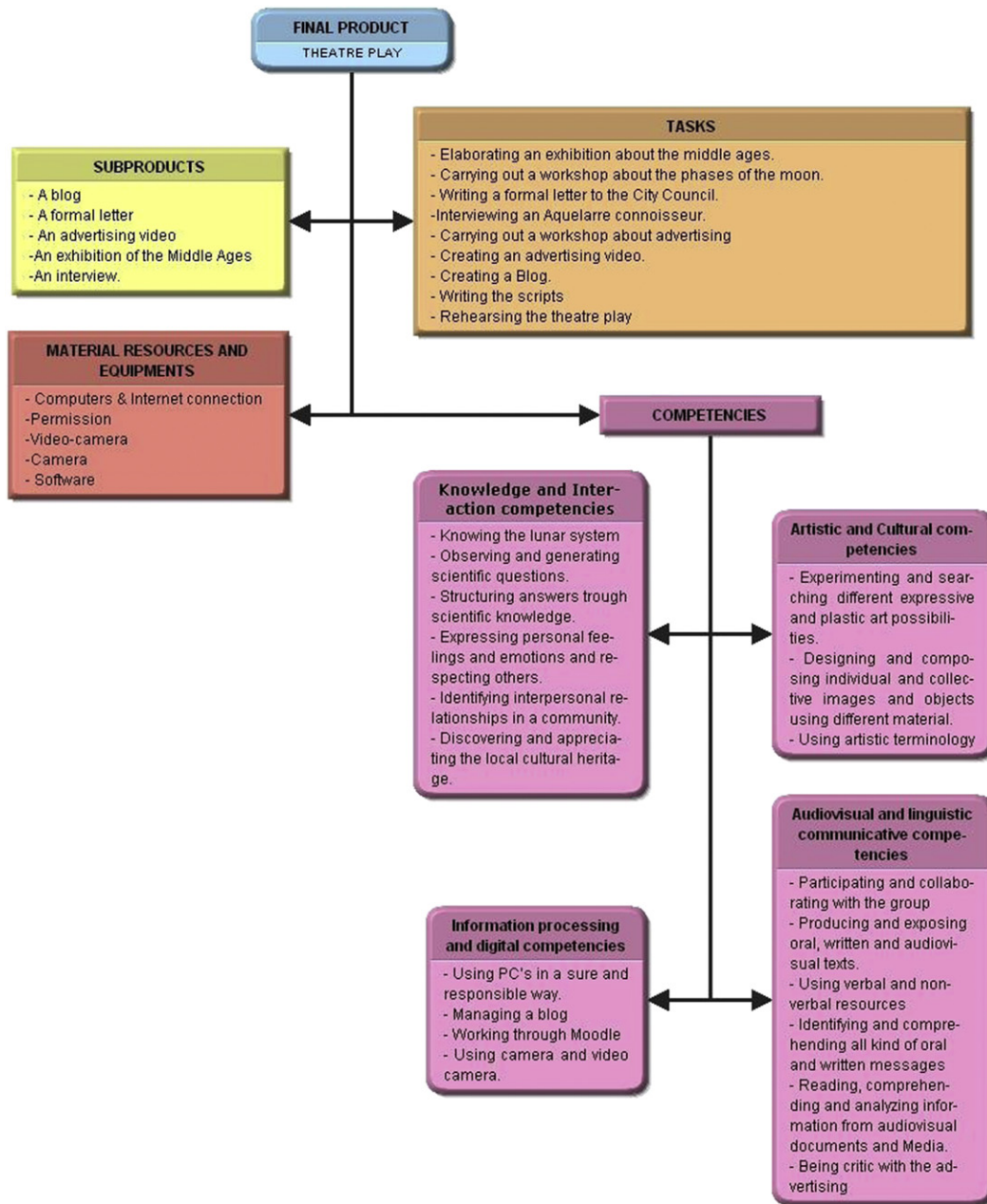
Fig. 3. Mind map produced by a group of student-teachers.

4.2. Case 2: zooming in

Case 2 is sustained in the belief that video-coaching offers student-teachers stimuli for personal reflection. As in most video-coaching proposals, student-teachers engage in reflection on their own teaching practice, however, this model also facilitates learning about evaluation and continual assessment processes and teacher behaviour by providing carefully scaffolded peer-assessment techniques. It is our position that an essential part of becoming a good teacher is being able to reflect on one's teaching practice. Taking Watson's (1997) notion of 'reflexive monitoring', it is possible to draw a connection between a higher level of critical awareness about one's process of 'knowing' and the practice of reflective teaching through the use of carefully oriented, focused introspection.

4.2.1. Case 2: description

Student-teachers prepared vignettes that explicitly highlighted doubts and areas where they would like input from their peers. The vignettes were accompanied by video-clips. The student-teachers, as peer-evaluators, were expected to put themselves in the role of teacher and to know how to provide guidance and constructive criticism. Using videotaped recordings of different moments in their practice teaching, the student-teachers were encouraged to critically examine their values, assumptions, theories and strategies that underlie their behaviour and their decisions in the classroom (Schön, 1988). In this way, student-teachers could make connections between philosophical and educational theoretical frameworks as well as attempt to make their own practice as transparent as possible (Guilherme, 2002) to themselves, their peers and their faculty teacher.

In order to promote critical thinking while designing their teaching sequences, the student-teachers were first asked to come up with a general idea of what they would like to do during their teaching sequences. These ideas were posted in an online forum (the students, faculty teacher and school tutors were members of a Moodle space). Their peers, their school tutors and the faculty teacher then gave them ideas and suggestions on how they might develop these initial ideas into a teaching sequence. This was followed by a face-to-face tutoring session to further discuss the ideas and to answer possible doubts and questions. The student-teachers were encouraged to bring materials that they felt might be useful for their peers in their teaching units.

Following this 'virtual brainstorming' session each individual student-teacher had a fixed date to upload their planning in the Moodle site and the following week, after giving their peers time to go over their proposals, each student presented their proposal in a face-to-face session, as well as presenting problems that they still wished to resolve (see Fig. 4). Their peers, school tutors and teacher educator then gave them further input, based on the recent revisions and final doubts and questions posted (all captured screenshots have been anonymised).

Next, taking into consideration the feedback given to them up to this point, the student-teachers made their final revisions on their teaching units and finally, they implemented them in their schools. During the implementation period, the student-teachers were expected to keep a weekly update on how they felt that the experience was progressing. They had 'orientation' in the form of questions they could ask themselves and ponder after each session. It was not compulsory to use these guidelines but all of the student-teachers did so. They kept individual journals and posted selections from their diaries in the weekly forum for discussion with their peers (Fig. 5).

The student-teachers were also expected to videotape their teaching unit sessions. The next steps for the student-teachers involved viewing the sessions individually — this allowed them the possibility of screening the material and to personally select the clips that they wanted to discuss with their peers. (The students volunteered to share their editing skills with each other, thus further promoting collaboration amongst them.) The teacher educator asked them to focus on moments that they felt proud of their teaching and if possible — and if they felt comfortable with the idea — to bring in clips of moments where they felt that they needed suggestions 'for improving' their teaching strategies.

4.2.2. Case 2: survey and focus group

In this particular case study, encouraging students to watch themselves in a positively critical light so that they might identify elements worth changing requires carefully planned sequenced activities that guide the students to a critical understanding of their own teaching. In the post-course surveys of this focus group (9 completed as it was a small tutorial group), the student-teachers again stated that they felt they had assimilated teaching competences, although they mentioned feeling awkward at first about watching themselves in a video.

It is important to help students avoid focusing only on 'bad things' they've done. As Yip (2006) has pointed out, if introspective practice is not carried out under appropriate conditions, it can be destructive and even contribute to problems in both professional and self-development. They may become too self-critical or even frustrated about their possibilities for progress. Therefore, the student-teachers had to be coached in peer reviewing and peer-assessment before-hand.

> "At first it was really hard to listen to the others' input, especially when it was negative. I am shy and I don't like to be exposed. I hated it the first time but later it got easy. I now know how to accept criticism and also to give it." (Núria, Session 3, Focus Group 2)

They also indicated that, due to the large amount of feedback on their teaching sequence drafts prior to implementation, that they were not only more mentally and emotionally prepared for 'zooming-in' on their teaching practice through the video clips, they felt more confident of the whole outcome.

> "I feel ready to teach. When I started out I thought I knew nothing. After input after input after input and so much
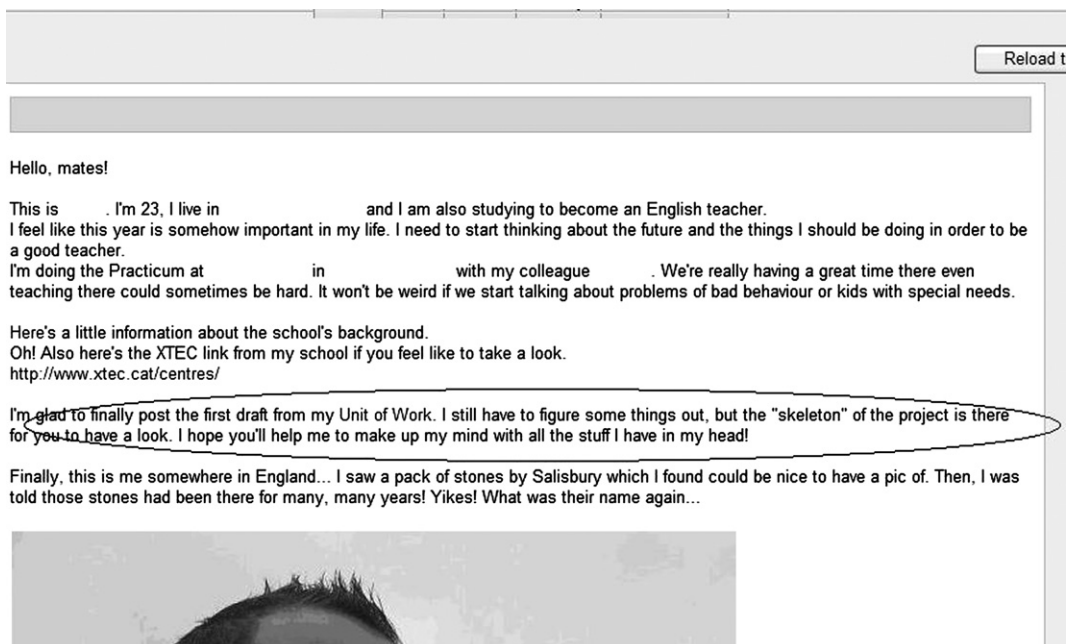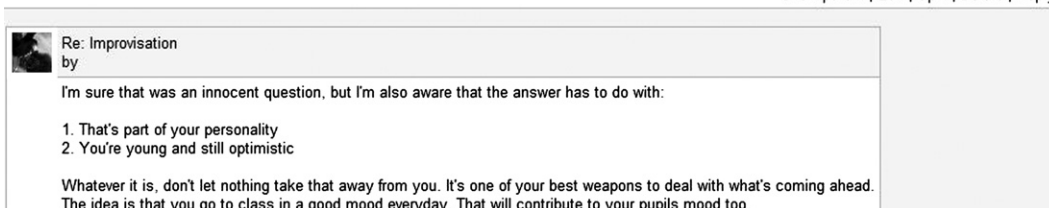

Fig. 4. Virtual brainstorming.

Yesterday I had the last day of my implementation and it happened to be very succesful. All what I have learnt while doing the research about Classroom management (strategies for managing lessons and dealing with discipline problems) and the contributions you did during the presentation of my topic have really helped me. I used many of the strategies (stopping and waiting, touching pupils on their shoulder, making eye-contact, speaking in a low/normal voice, targeting pupils, using positive reinforcement…) and the lessons went quite smoothly. Of course, there were noisy moments, but not out of why I consider normal.

After the lesson I felt good, and I remembered Mario's post. Yes, I've noticed how important it is to "seem like you have everything under control". I was very relaxed and felt confident during the lesson. I used the strategies and stayed firm. I don't know if I gave a *professional* look, but I like how the lesson went. Nevertheless, I got this *interesting* question   from a kid: "   , why are you always smiling?". It was funny, but do you thing this can influence negatively when trying to establish my authority?

Thank you for sharing your strategies!

Have a nice long weekend!

Show parent | Edit | Split | Delete | Reply

Re: Improvisation
by

I'm sure that was an innocent question, but I'm also aware that the answer has to do with:

1. That's part of your personality
2. You're young and still optimistic

Whatever it is, don't let nothing take that away from you. It's one of your best weapons to deal with what's coming ahead. The idea is that you go to class in a good mood everyday. That will contribute to your pupils mood too.

Fig. 5. Example of a journal entry.

feedback from everyone I really felt I know how to plan and implement teaching units." (Ana, Session 3, Focus Group 2)

4.3. Case 3: Freeze-framing[3]

It is generally accepted that language teachers need to be competent in the target language. However we argue that they must also be efficient in the use of the language in meaningful situations in order to scaffold students' learning process. This is even more important in CLIL classrooms, in which learners are trying to acquire non-linguistic knowledge through a foreign language. Nonetheless, despite the fact that teacher talk plays a key role in the process of knowledge construction, very few student-teachers are aware of the need to plan their talk. This model develops from video-modelling proposals in which student-teachers watch an example of 'best practice' carried out by an expert teacher. The proposal breaks down the teacher's behaviour and classroom interaction into frames so that the student-teacher is able to focus on minute details of how the expert teacher implements the activity sequence.

4.3.1. Case 3: description

Student-teachers were asked to view a video in which a CLIL teacher was going through the principles of Newton's Law with a group of secondary students. This served as a starting point to reflect upon elicitation techniques. The student-teachers were told to pay attention to how the secondary teacher elicited information from her students and to observe the kind of interaction she promoted. In order to do so, they first had to transcribe fragments of the video and select examples of elicitations. They were asked to do so in order to raise their awareness that language is learnt when it serves as a lingua franca for acquiring knowledge from other curricular areas.

The next step combined video-coaching (as described in case 2) with video-modelling by asking them to compare videos of their own interactions during their school placement with the now visible discursive features found during the transcribing process. This was further aided by reading and led to open reflection upon how they elicited information from their own (placement school) students (see Fig. 6). The student-teachers were asked to post their reflections in a forum. By prompting discussion through asynchronous communication, the student-teachers were encouraged to reflect even more profoundly on the learning processes they had observed in the videos and to consider their own performance. Through the forums, the teacher trainer had access to group learning that took place 'externally' and which is usually invisible to the trainer.

The posts reveal that learners did not simply provide a description of their actions; instead they questioned and/or justified them based on the knowledge gained through the workshop and through the course literature. After the completion of the online activity[4], a new forum was set up and the student-teachers were asked to evaluate the online activity and the use of the video to carry out this type of analytical activity. Examples of posts of this kind are given in Fig. 7.

4.3.2. Case 3: survey and focus group

The fact that student-teachers could see the video (online) as many times as they wished made the task of transcribing and analysing how the secondary teacher elicited questions easier. The post-course survey (total of 16 surveys completed) showed that the student-teachers felt that the materials (including videos and video-transcriptions) were appropriate to their learning and that they were efficiently used to guide them towards more teacher knowledge. The focus group discussions also mentioned that having access to the transcription of the video also helped their comparison and final reflection. Transcribing is a form of analysing (Psathas & Anderson, 1990; Nussbaum, 2006; Masats, 2008)

Fig. 6. Student reflection on elicitation practices.

because it brings attention to the underlying order of discourse as opposed to merely listening and viewing the interaction. It is one of the forms of freeze-framing as the student-teachers focus on minute discursive details and become more aware of the complexity of teacher talk, including non-verbal language. It is also an under-exploited advantage of video use in teacher education.

"Transcribing is a time-consuming activity but it was useful to me because I could see things that I had not noticed when I first viewed the videos. I do not mean that the video was not important, though. It was. Things like gestures, gazes or intonation changes are difficult to capture when you are transcribing. After doing the task, I could even understand the course readings better, but it is scary to see that as teachers we need to plan everything, even what we want to say"(Montserrat, session 4, Focus group 2).

As we can see in the extract above, freeze-framing as understood here (video-viewing and transcribing) also gives students the opportunity of going beyond the analysis of teacher's discourse to reconsider what teaching effectively means and what planning entails. This idea is even more clearly evident in the next fragment:

Fig. 7. Student observations about usefulness of video-modelling.

"When I prepared my class on the differences between the diet in the middle ages and today's diet, I spent hours and hours looking for nice pictures to illustrate my PowerPoint and on checking how certain foods are said in English, but I never thought about what I was going to say when I presented the PowerPoint to my students. The activity did not develop as I expected even though I invested a lot of time in planning it. The task that we have done now, analysing how teachers elicit information from students made me realise that I was all wrong. Why didn't it occur to me that I had to plan what I was going to say? I have viewed the recording of my class again and can say that I am not like the teacher we observed. She elicited information from students, I simply asked them questions with no purpose and it was me who answered them before my students had time to do it. I've always thought that planning is important, but I was not aware until now, I mean, until we completed the video activity, that planning our discourse was necessary" (Serena, session 4, Focus group 2).

4.4. Case 4: Bird's eye-viewing [5]

This case is based on the idea that video-making can be a vital tool for participative knowledge construction, especially in project-based learning and the use of technology in class (Masats, Dooly & Costa, 2009; Dooly & Masats, 2011) Research shows that student-teachers tend to replicate their own experiences as learners, as well as falling back on more traditional methods during their own teaching, especially in moments of tension or uncertainty (Pajares, 1992; Dooly, 2009a). In order to encourage student-teachers to integrate technology into their teaching, they must first experience it as students "so that they are exposed to technology from the student's perspective and can more easily assess the challenges it may have for a learner as well as the benefits" (Dooly, 2009b: 364). This proposal engages student-teachers in a video-making project, thus ensuring both technological know how and the development of teacher knowledge and skills for carrying out such projects. Through the empirical, shared knowledge-building, student-teachers are forced to interrogate already held beliefs about the use of PBL as well as technology in teaching.

4.4.1. Case 4: description

In case four, the student-teachers are told that they will be learning to produce their own teaching material (specifically a video tailor-made for their learners' needs). This connected the learning content (producing teaching materials) directly to the student-teachers' lives in a collaborative, hands-on approach. They were expected to work together in the selection of their topic for the video material, in the planning of the video sequences (story-board), in the research of the chosen topic, in the development of the video and in the exploitation and evaluation of the final output (see Fig. 8).

At the same time that the student-teachers were making their videos, the teacher educators recorded the project sessions taking place. These clips were edited to create a master-video which we called 'the *making of*' video. Student-teachers viewed the *making-of* clip and then reconstructed together the 'master' lesson plan in order to make the teaching and learning process of PBL they had just undergone explicit.

This case integrated movie-making as means of introducing student-teachers to a form of experiential learning, known as 'loop input' which "involves an alignment of the process (how) and the

content (what) of learning" (Woodward, 2003:301). The aim of this case was to provide the student-teachers the opportunity to learn about the project-based approach (how) by suspending their roles as student-teachers and taking on the role of learners participating in a movie-making project (what). The loop is then closed by asking the student-teachers to reflect on the whole process from the perspective of student and teacher (see Fig. 9).

4.4.2. Case 4: survey and focus group

In case 4, dialectical reflective practice —understood here along similar lines of Lisle (2006:1) as a means of "heightening of consciousness awareness" gave the student-teachers a bird's eye view on project-based learning, thus promoting teacher development beyond the mere theoretical to the imminently practical. The 15 completed post-course surveys showed that the students were generally satisfied with the materials used; three of the respondents wrote that they had learnt by carrying out Project-Based Learning as both a student and a teacher.

In the focus groups, the student-teachers stated that they felt more confident in their own abilities to design video-making projects because they had not only taken part in a project to do so (in the role of students), they had been able to reconstruct the planning of the teacher educators for the overall project and design their own lesson plans for the video they had made (both activities in the role of teachers).

"I never would have tried to do something like this in my own class if you hadn't forced me to do it for my practicum and if we hadn't all been in this together. I must say that I hated the idea at first (laughter). Do you remember how angry I was that first day? Now I can see that I have learnt a lot from all of this work we had to do." (Mireia, Session 6, Focus Group 4)
"Having to do everything —making up our own movie script, filming it, acting in it and all that- and then looking at what we had done as teachers, you know from a different perspective than how we had been seeing us as students —that really made me understand what you can do with video-projects." (Susana, Session 6, Focus Group 4)

5. Limitations to the study

As Gamoran Sherin (2004) points out, there is an extreme complexity that must be dealt with when trying to understand the use of video in teaching and learning environments. For instance, the context and the content may influence the way in which the video is interpreted (is it self-reflection on one's own, in front of peers, viewing other peers interaction?). The way in which the video use is embedded within other tasks is also relevant to the eventual teaching and learning. Furthermore, how these videos are used and shared among other teacher educators is significant. Brophy (2004) underlines the need for careful planning and designing of teacher education tasks that use video for professional development.

These complexities are exacerbated by the use of online platforms and computer-mediated communication in several of the case studies. Inevitably, the different modes of communication may affect the final communicative output (e.g. a discussion forum reply will not necessarily replicate a face-to-face comment). However, by acknowledging these pre-existing parameters are part of the contextual boundaries of the interaction (and make up the chosen mode of interaction for these particular circumstances or activities at hand), then only the results from the mode of interaction at that particular moment is of interest to the study. It is beyond the parameters of these case studies to surmise how the participants might have reacted in other modes of communication.
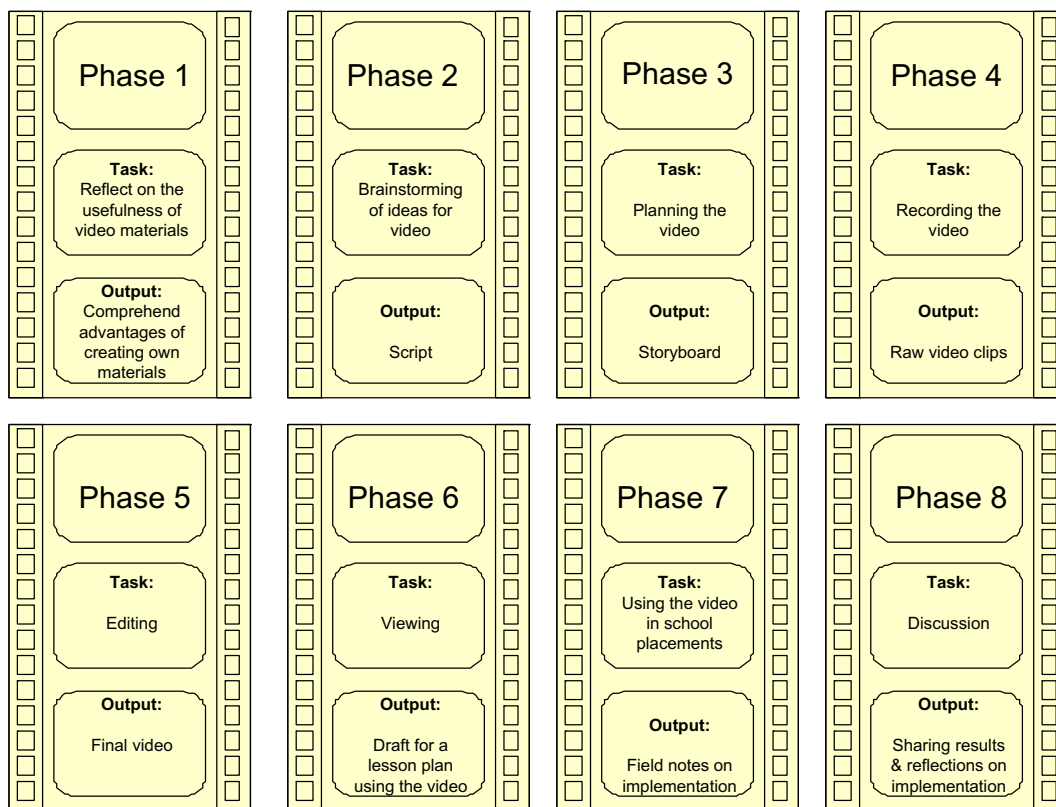

Fig. 8. The first eight phases in bird's eye-viewing.

Inevitably, the presentation of case studies implies the use of quite limited data samples; and as part of a study composed of qualitative observation, the descriptions are limited to what happens in small groups of people, thereby restraining any possible generalizations of results. However, by providing detailed contextual views into the four-pronged teaching scheme, it is felt that a compelling argument for its credibility is put forth.

Fig. 9. Final phase in bird's eye-viewing.

6. Discussion

A key component of the successful implementation of this four-pronged holistic approach to video-use in teacher education is the coordination across diverse courses of the programme. This allowed for links between theory (for instance, in methodology courses) and practice (as in the school placement tutorials). Obliging the student-teachers to view, use and produce videos at different points in their training, and from different perspectives proposed by the different teacher educators, "encourage[d] people to abandon their own positions, at least temporarily and to consider events from other points of view" (McNergney, 1994: 297).

It has been demonstrated that the use of video for educational purposes brings innovative and creative perspectives to teaching; however, teacher education must not only demonstrate the why and how of video-use, programmes must also provide diverse hands-on experience in doing so. It has been argued here that encouraging student-teachers to view, use and produce videos at different points in their training, and from different perspectives and different disciplines, will better enable them to use video-viewing, video-coaching and video-making as resources for supporting learner collaboration and development of shared knowledge.

Through the four-pronged holistic proposal, teacher-students were encouraged to think carefully about how to use videos to their maximum potential so that they could become an 'added value' to the learning process, not just an 'additional product'. Post-facto analysis of student-teachers' reactions to the integrated video activities (surveys, focus groups and student output) indicates that the student-teachers were positive about the experiences and felt that they had achieved higher critical awareness of their own teaching strategies; increased their understanding of the underlying complexity of teaching in different situations; had clearer
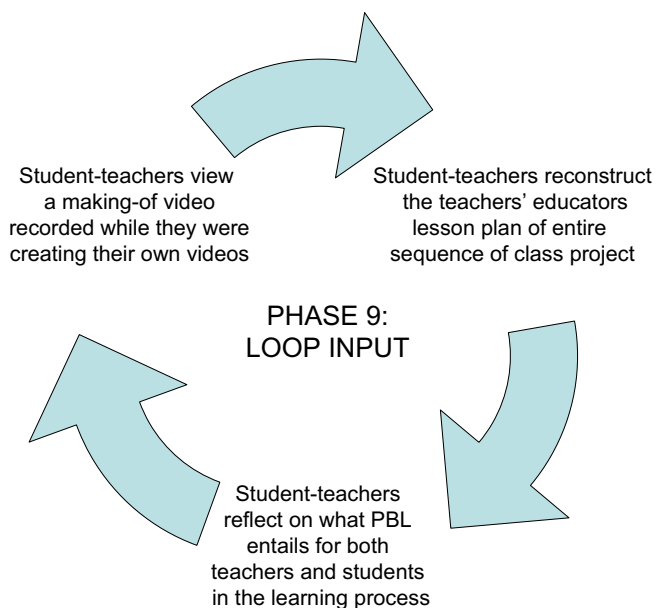
ideas of how to design and plan project-based learning sequences and perhaps most importantly, they felt certain that they would integrate different uses of video into their teaching.

In our proposal, the integration of videos into teacher education is done in such a way as to shift the focus to the learners (both the student-teachers as learners and their future students as learners) through a bifurcated focus of the teaching and learning process involved. Through 're-winding' (a careful scrutiny of a video-product created as part of a learning project) student-teachers discovered how to design and plan their own projects; through 'zooming-in' (examination of clips of school placement practice), the student-teachers were encouraged to critically examine their values, assumptions, theories and strategies that underlie their behaviour and their decisions in the classroom without falling into possibly negative or destructive self-criticism; through 'freeze-framing' (detailed analysis of teacher—student interaction and discourse) student-teachers became more aware of the complexity of teacher talk, including non-verbal language; and through 'bird's eye-viewing' (the making of video inside a video) the student-teachers explored project-based learning through a hands-on approach combined with reflection from learner and teacher perspectives.

As we stated in our introduction, our proposal does not cover new ground in the sense of entirely new techniques of video-use. It is, however, innovative in the proposed integration of different approaches to video, through carefully designed and implemented stages, all of which better ensures improved teacher education and more competent teachers in the future. This is essential, as the challenges facing new teachers are increasingly more complex. Inevitably, as technology and scientific discovery augment so too does the information content of a discipline. This means that it is even more vital for teachers to know how to facilitate learning methods, not the mere learning of more information. Moreover, teacher education must involve integrated approaches across disciplines and courses in order to demonstrate and make use of new learning paradigms holistically while leading the student-teacher from developmental stages of using different resources (such as videos) through production and logical extensions from use and production. It is our hope that these four cases, as part of a holistic approach to video-use in teacher education, can provide a possible framework for other teacher education programmes.

Annex 1

Survey questions.
1. The programme clearly described the course content.
2. The programme clearly defined assignments.
3. The programme clearly described class activities.
4. Course assignments were at an appropriate level of difficulty.
5. The instructor was good at facilitating class discussion.
6. The instructor treated all students fairly.
7. The readings appropriately covered the course content.
8. The instructor effectively used the readings to teach the course.
9. The materials (e.g. videos, online platforms) appropriately covered the course content.
10. The instructor effectively used the materials to teach the course.
11. The class activities (e.g. discussions, lectures, video-projects, online projects, forums, etc.) appropriately covered the course content.
12. The instructor effectively implemented the class activities to teach the course.
13. I feel have a stronger understanding of teaching because of this course.

References

Abell, S. K., & Cennamo, K. S. (2004). Videocases in elementary science teacher preparation. In J. Brophy (Ed.), *Using video in teacher education* (1st ed.). (pp. 103–129) Boston: Elsevier.

Alvermann, D. E., & Hagood, M. C. (2000). Critical media literacy: research, theory, and practice in "new times." *Journal of Educational Research, 93*(3), 193–205.

Atjonen, P. (1998). Information technology in the development of teaching practice. In S. Järvelä, & E. Kunelius (Eds.), *Learning & technology - dimensions to learning processes in different learning environments* (pp. 114–140). Oulu: University of Oulu.

Beck, R. J., King, A., & Marshall, S. K. (2002). Effects of videocase construction on preservice teachers' observations of teaching. *The Journal of Experimental Education, 70*(4), 345–361.

Bednar, M. R., & Sweeder, J. J. (2005). Defining and applying idea technologies: a systematic, conceptual framework for teachers. *Computers in the Schools, 22*(3/4), 35–47.

Bliss, T., & Reynolds, A. (2004). Quality visions and focused imagination. In J. Brophy (Ed.), *Using video in teacher education* (1st ed.). (pp. 29–52) Boston: Elsevier.

Brophy, J. (Ed.). (2004). *Using video in teacher education*. Boston: Elsevier.

Campbell Stephens, L. (2004). Designing and developing a video-case based interactive program for english language arts teacher preparation. In J. Brophy (Ed.), *Using video in teacher education* (1st ed.). (pp. 77–101) Boston: Elsevier.

Copeland, W. D., & Decker, D. L. (1996). Video cases and the development of meaning making in preservice teachers. *Teaching and Teacher Education, 12*(5), 467–481.

Cullen, R. (1991). Video in teacher training: the use of local materials. *ELT Journal, 45*(1), 33–42.

Dexter, S. L., Anderson, R. E., & Becker, H. (1999). Teachers' views of computers as catalysts for changes in their teaching practice. *Journal of Research in Computing Education, 31*(3), 221–239.

Dooly, M. (2009a). *Doing diversity: Teachers' construction of classroom reality*. Bern: Peter Lang.

Dooly, M. (2009b). New competencies in a new era? Examining the impact of a teacher training project. *ReCALL, 21*(3), 352–369.

Dooly, M., & Masats, D. (2011). Closing the loop between theory and praxis: new models in EFL teaching. *ELT Journal, 65*(1), 42–51.

Friel, S. N., & Carboni, L. W. (2000). Using video-based pedagogy in an elementary mathematics medthods course. *School Science & Mathematics, 100*(3), 118–127.

Gamoran Sherin, M. (2004). New perspectives on the role of video in teacher education. In J. Brophy (Ed.), *Using video in teacher education* (pp. 1–27). Boston: Elsevier.

Gamoran Sherin, M., & van Es, E. A. (2002). Using video to support teachers' ability to interpret classroom interactions. In S. Talley (Ed.), *Video cases. Society for information technology & teacher education, SITE 2002 Section* (pp. 2532–2536). Norfolk, VA: Association for the Advancement of Computing in Education, Retrieved May 15, 2010 from. http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED472254&ERICExtSearch_SearchType_0=no&accno=ED472254.

García-Carbonell, A., Rising, B., Montero, B., & Watts, F. (2001). Simulations/gaming and the acquisition of communicative competence in another language. *Simulation & Gaming, 32*, 481–491.

Goldsby, D. S., & Fazal, M. B. (2000). Technology's answer to portfolios for teachers. *Kappa Delta Pi Record, 36*(3), 121–123.

Goodman, S. (2003). *Teaching youth media: A critical guide to literacy, video production, and social change*. New York: Teachers College Press.

Guilherme, M. (2002). *Critical citizens for an intercultural world. Foreign language education as cultural politics*. Clevedon: Multilingual Matters.

Hagood, M. C., Stevens, L. P., & Reinking, D. (2003). What do they have to teach us? talkin' cross generations! In D. Alvermann (Ed.), *Adolescents and literacies in a digital world* (pp. 68–83) New York: Peter Lang.

Hobbs, R. (2007). *Reading the media: Media literacy in high school English*. New York: Teachers College Press.

Hooper, S., & Rieber, L. P. (1995). Teaching with technology. In A. C. Ornstein (Ed.), *Teaching: Theory into practice* (pp. 154–170). Needham Heights, MA: Allyn and Bacon.

Kellogg, M., & Kersaint, G. (2004). Creating a vision for the standards using online videos in an elementary mathematics methods course. *Contemporary Issues in Technology and Teacher Education, 4*(1), 23–34, Retrieved May 13, 2010 from. http://www.citejournal.org/vol4/iss1/mathematics/article1.cfm.

Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press.

Kist, W. (2005). *New literacy's in action: Teaching and learning in multiple media*. New York: Teachers College Press.

Kpanja, E. (2001). A study of the effects of video tape recording in microteaching training. *British Journal of Educational Technology, 32*(4), 483.

Kress, G. (2003). *Literacy in the new media Age*. London: Routledge.

Lankshear, C. (1997). *Changing literacies*. Buckingham: Open University Press.

Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge in the classroom*. Buckingham, UK: Open University Press.

Lantolf, S. (2000). Introducing sociocultural theory. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 1–26). Oxford: Oxford University Press.

Lisle, A. (2006). Maintaining interaction at the zone of proximal development through reflexive practice and action research. *Teacher Development, 10*(1), 117–143.

Masats, D. (2008). El discurs dels aprenents d'anglès com a llengua estrangera: Una aproximació interactivista al procés de construcció de tasques comunicatives (Discourse practices of EFL learners: Insights, from an interactionist perspective, into the process of constructing communicative tasks) Unpublished PhD Dissertation. Universitat Autònoma de Barcelona.

Masats, D., & Dooly, M. (2007). Case methodology applied to the use of videos: an example of a blended-learning experience in a pre-service teacher training programme. In E. Añaños & M. Martínez (Coord.), Proceedings of the IV Jornades d'Innovació Docent. Apartat recursos virtuals. Bellaterra: Universitat Autònoma de Barcelona. CD-Rom Edition.

Masats, D., & Dooly, M. (2008). Applying mixed media to teacher training: the OVIDE experience, In L. Gómez Chova, D. Martí Belenguer, & I. Candel Torres (Eds.). INTED2008 Proceedings. València: International Association of Technology, Education and Development (IATED). CD-Rom Edition.

Masats, D., Sormunen, K., Hacklin, S., & Ducos, G. (2007). The use of online video case studies in teacher training programmes: a literature review. Paper presented at the 32nd Annual Conference of the Association for Teacher Education in Europe (ATEE) "Equity and Diversity in Teacher Education". Telford (United Kingdom): 25−29 August 2007.

Masats, D., Dooly, M., & Costa, X. (2009). Exploring the potential of language learning through video making. In L. Gómez Chova, D. Martí Belenguer, & I. Candel Torres (Eds.). Proceedings of EDULEARN09 Conference (p. 341−352). Valencia: IATED, available at: http://www.divisproject.eu/attachments/132_ID_1083_EDULEARN.pdf.

Masingila, J. O., & Doerr, H. M. (2002). Understanding pre-service teachers' emerging practices through their analyses of a multimedia case study of practice. Journal of Mathematics Teacher Education, 5(3), 235−263.

McKinney, M. (1998). Preservice teachers' electronic portfolios: integrating technology, self assessment, and reflection. Teacher Education Quarterly, 25(1), 85−103.

McNergney, R. F. (1994). Videocases: a way to foster a global perspective on multicultural education. Phi Delta Kappan, 76(4), 296−298.

Nemirovsky, R., & Galvis, A. (2004). Facilitating grounded interactions in video case-based teacher professional development. Journal of Science Education and Technology, 13(1), 67−69.

Nilssen, V., Gudmundsdottir, S., & Wangsmocappelen, V. (1998). Mentoring the teaching of multiplication: a case study. European Journal of Teacher Education, 21(1), 29−45.

Nussbaum, L. (2006). La transcripción de la interacción en contextos de contacto y de aprendizaje de lenguas. In Y. Bürki, & E. de Stefani (Eds.), Trascrivere la Lingua. Transcribir la lengua (pp. 195−218). Bern: Peter Lang.

Özkan, B. (2002). The use of video cases in teacher education. The Turkish Online Journal of Educational Technology, 1(1), 37−40.

O'Sullivan, T., Dutton, B., & Rayner, P. (1998). Studying the media (2nd ed.). London: Arnold.

Oonk, W., Goffree, F., & Verloop, N. (2004). For the enrichment of practical knowledge: good practice and useful theory for future primary teachers. In J. Brophy (Ed.), Using video in teacher education (1st ed.). (pp. 131−168) Boston: Elsevier.

Pajares, M. F. (1992). Teachers' beliefs and educational research: cleaning up a messy construct. Review of Educational Research, 62(1), 307−332.

Perry, G., & Talley, S. (2001). Online video case studies and teacher education: a new tool for preservice education. Journal of Computing in Teacher Education, 17(4), 6−31.

Psathas, G., & Anderson, T. (1990). The 'practices' of transcription in conversation análisis. Semiotica, 78, 75−99.

Schön, D. (1988). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Sharpe, L., Hu, C., Crawford, L., Gopinathan, S., Swe Khine, M., & Ngoh Moo, S. (2003). Enhancing multipoint desktop video conferencing (MDVC) with lesson video clips: recent developments in pre-service teaching practice in Singapore. Teaching and Teacher Education, 19(5), 529−541.

Spurgeon, S., & Bowen, J. (2002). Promoting reflective thinking in teacher candidates: are digital video / multimedia portfolios a useful tool? ICCE, 2002(1), 1427−1428.

Sweeder, J. J., & Bednar, M. R. (2001). "Flying" with educational technology. Contemporary Issues in Technology and Teacher Education, 1(3), 421−428, Retrieved May 14, 2010, from. http://www.citejournal.org/vol1/iss3/currentpractice/article2.htm.

Sweeder, J. J., Bednar, M. R., & Ryan, F. J. (1998). Conjoining product technologies with multiple intelligence theory: rethinking teacher preparation. Journal of Technology and Teacher Education, 6(4), 273−282.

Thoman, E., & Jolls, T. (2005). Media literacy education: lessons from the center for media literacy. In G. Schwartz, & P. U. Brown (Eds.), Media literacy: Transforming curriculum and teaching, Vol. 104 (pp. 180−205). Malden, MA: National Society for the Study of Education.

Thorne, S. L., Black, R. W., & Sykes, J. M. (2009). Second language use, socialization, and learning in internet interest communities and online gaming. The Modern Language Journal, 93, 802−821.

Thorne, S. L., & Reinhardt, J. (2008). "Bridging activities," new media literacies and advanced foreign language proficiency. CALICO Journal, 25, 558−572.

Watson, R. (1997). Some general reflections on 'categorization' and 'sequence' in the analysis of conversation. In S. Hester, & P. Eglin (Eds.), Culture in action: Studies in membership categorization analysis (pp. 49−76). Washington, D.C: University Press of America.

Wong, S. L., Yung, B. H. W., Cheng, M. W., Leung Lam, K., & Hodson, D. (2006). Setting the stage for developing pre-service teachers' conceptions of good science teaching: the role of classroom videos. International Journal of Science Education, 28(1), 1−24.

Woodward, T. (2003). Loop input. ELT Journal, 57(3), 301−304.

Yip, K. S. (2006). Self-reflection in reflective practice: a note of caution. British Journal of Social Work, 36(5), 777−788.

Zheng, D., Young, M., & Wagner, M. (2009). Negotiation for action: english language learning in gamebased virtual worlds. Modern Language Journal, 93, 489−511.