Reflective practice

Digital video creation in the LSP classroom

Ornaith Rodgers* and Labhaoise Ni Dhonnchadha**
National University of Ireland, Galway, Ireland

*ornaith.nidhuibhir@nuigalway.ie | **labhaoise.nidhonnchadha@nuigalway.ie

Abstract

The twenty-first century world of digital media and multimodalities demands a rethinking of approaches to languages for specific purposes (LSP). This article seeks to determine the effectiveness of digital video creation as a teaching and learning tool in the LSP context through an investigation of students' perceptions of the usefulness of this activity. The study is based on a digital video creation project carried out with a group of second year undergraduate students on the BSc in Biotechnology programme in NUI Galway who also study French as part of their degree programme. The findings are indicative of an overwhelmingly positive response from learners to this activity, both in terms of the development of language skills and other key social and professional skills. However, findings also warn that students' digital competencies must not be over-estimated, despite a general assumption in technology-enhanced language learning research, that the current generation of students have a high level of digital literacy. This study highlights the pedagogical potential of digital video creation in the language classroom and demonstrates that it embraces many of the core elements underpinning progressive LSP pedagogy, by giving students the opportunity to keep pace with the multimodality afforded by digital media and by ensuring their language learning is both contextualised and authentic. It advocates the use of digital video creation in language learning and particularly in LSP, by highlighting the strong impact that this activity had on the participants in this study.

Keywords: Languages for Specific Purposes, video, language pedagogy, digital literacy, multimodality.

1. Introduction

Since the 1960s, advances in instructional technologies have changed the landscape of foreign language teaching and learning by providing new possibilities for learning in ways beyond sitting in a traditional classroom (Duman, Orhon & Gedik, 2014, p. 197). Most language classes are taught using the support of computer-based multimedia in the form of audio, graphics or video and the internet is also regularly used for language learning (Burston, 2016: 3). However, during the last 10 years, the widespread ownership of mobile technologies such as smartphones, media players and tablet computers has encouraged a new dimension to technology-enhanced learning. While Mobile-Assisted-Language Learning (MALL) has been in existence for over 20 years, improvements in connectivity, Bluetooth, GPRS, storage and processing have extended the capabilities of mobile devices to tools that can be used to facilitate language learning (Duman et al, 2014: 198). Developments in computer assisted language learning (CALL), MALL and computer-mediated communication (CMC) have combined to transform the language classroom into what can be termed "a fertile venue for testing out innovative technology-based projects aimed at empowering language learners" (Dugartsyrenova & Sardegna, 2016: 59). It is against this backdrop of advances in instructional technology, that the role of video in the language classroom needs to be re-evaluated.

Advances in digital technology have created exciting opportunities not just for language learning in general, but particularly for dynamic uses of video in the language classroom. Students are living in a society where the use of technology is an integral

aspect of everyday living and are literate in ways that differ from previous generations. Prensky (2001) distinguished between *digital natives* (born into the digital era) and *digital immigrants* (those who grew up in the pre-digital era). Students are arguably *digital natives* (Prensky & Heppell, 2008), capable of dealing with multi-modal and digital texts which require non-sequential processing (Dal, 2010: 2). Although already an integral part of foreign language teaching, digital technology is destined to play an increasing role in language teaching in the coming years. As we move further into the 21st century, the distinction between *digital natives* and *digital immigrants* becomes less relevant, and Prensky (2012, 181) emphasises the need for *digital* wisdom, arguing that digital technology can make us wiser, that "it is from the interaction of the human mind and digital technology that the digitally wise person is coming to be" (Prensky, 2012: 182). He further insists that "educators are digitally wise when they let students learn by using new technologies, putting themselves in the roles of guides, context providers, and quality controllers" (Prensky, 2012: 190). It is also within the context of the need for *digital wisdom* that this study arises.

This study focusses on the practice of digital video creation in the language classroom with a specific focus on the Languages for Specific Purposes (LSP) classroom. Naqvi and Mahrooqi (2016: 49) use the abbreviation of SCDV (student created digital video) for this practice and define it as follows:

> *SCDV refers to the practice where students, either individually or in groups take part in the creation of a short video using either online software programs or their own software and hardware". Students engage in researching, recording, directing, storyboarding, scripting, practicing and performing (…), editing and other post-production activities.*

In this study, we examine the effectiveness of digital video creation as a teaching and learning activity in the context of LSP. This is done through an analysis of students' perceptions of the use of digital video creation as a tool to enhance language learning in the LSP classroom, and a comparison of these initial findings with an analysis of the videos created. The article first reviews literature in the related fields of video in the language classroom and LSP, before outlining the factors which point to the pedagogical potential of digital video creation in the LSP field. The study itself is based on a digital video creation project carried out with a group of second year University students in Galway, Ireland who are studying French as part of their degree in Biotechnology, and is outlined in terms of context, participants, methodology and analysis of results, focusing on important findings and their relevance to LSP teaching and learning. The article concludes with the implications of this study for LSP practice and theory, and its wider implications for language teaching and learning in general.

2. Theoretical framework

2.1. Video in the language classroom

Video-based methodologies are well-established in second language teaching. According to Goldstein and Driver (2015: 1), the earliest paper on the subject dates back to 1947 and was an article by J.E. Travis on "The Use of the Film in Language Teaching and Learning". In 1983, Willis established key roles for video in the classroom such as language focus, skills practice, stimulus and resource material (Willis, 1983: 29-42) and during the 1980s and 1990s, a vast quantity of video materials were specifically developed for use in the foreign language classroom, and language methodologists encouraged teachers to integrate video into foreign language teaching (Allan, 1985; Cooper, Lavery & Rinvolucri, 1991). However, during the 1980s and 1990s, video was largely used as a static resource with classroom activities centred around viewing and listening to the video, or teaching the culture of the target language (Gardner, 1994; Nikitina, 2010). Video was often seen as a type of reward or light relief, often shown on a Friday afternoon or at the end of term.

In recent years, advances in digital technology have created exciting opportunities for using video in language teaching and learning. Video digital technology has made it easier to produce and edit video in a classroom setting as it is highly accessible with much of the technology already existing on students' mobile phones, ipods and ipads. On the internet, video editing software such as *Windows Movie Maker* can be

downloaded for free and students can edit their videos easily. Research on video production as a tool for language learning and teaching has thus started to emerge with researchers examining the potential of digital video creation as a tool to enhance language learning. (Dal, 2010; Goldstein & Driver, 2015; Hafner and Miller, 2011; Shrosbee, 2008). Several case studies have been carried out in which researchers evaluated the effectiveness of video-making projects conducted in their own language classrooms (Goulah, 2007; Gromik, 2012; Kearney, Jones and Roberts, 2012; Naqvi & Mahrooqi, 2016; Nikitina, 2010; Reyes, Pich and Garcia, 2012). Between 2008 and 2010, the European funded *Divis* project *(Digital video streaming and multilingualism)* also aimed to encourage, motivate and equip language teachers to include video production in their teaching (1). The abovementioned studies demonstrate that digital video creation is not a new idea, and indicate that it is becoming an increasingly popular practice amongst researchers and teachers. However, it is also clear that very little research has been conducted on the integration of digital video creation in language teaching, and even less on its implications for developing language skills and other skills such as critical thinking, social and collaborative skills (Naqvi & Mahrooqi, 2016: 51). Caws and Heift (2016: 129) further argue that "the current culture of CALL, and, more specifically, the growing role of digital media in the daily life of learners, cannot be ignored." In particular, digital video creation in the LSP context is entirely unexplored and it is thus timely to examine its integration in this area.

2.2. Languages for specific purposes

Languages for Specific Purposes (LSP) is a term with many definitions, interpretations and applications. Sager, Dungsworth and McDonald (1980: 68) define it as "specialist-to-specialist" communication, but this definition does not necessarily include the situation of the language learner who may not yet be a specialist in their domain. Chambers, (1996: 233) emphasises the need to take into account that different levels of specialisation may exist amongst learners, that language learners "may initially be non-specialists both in the language and in the subject they are studying." Dudley-Evans and St. John (1998: 4-5) provide a detailed definition of English for Specific Purposes (ESP) arguing that ESP is designed to meet specific needs of the learner, using the underlying methodology and activities of the disciplines it serves and is centred on the language, skills, discourse and genres appropriate to these activities. This definition highlights the core concepts of LSP, that it is driven by the need to respond to students' specific linguistic needs and uses the methodologies and activities needed to help learners enter the discourse community of the relevant discipline. This view of LSP is consolidated by Arnó-Macià (2014: 5) who argues that "since LSP teaching aims at helping students enter particular discourse communities, its methodology draws on relevant activities and practices". For the purposes of this study, we will use this definition of LSP as a form of language teaching driven by students' specific linguistic needs. In this case, the participants in our study are second-year undergraduate students on the BSc in Biotechnology programme and are thus non-specialists both in the French language and in the field of Biotechnology. Their language programme uses specific methodologies and activities which aim to help them enter the discourse community of Biotechnology.

Swales (2000: 59) traces research in LSP back to the 1960s when Halliday, McIntosh and Strevens (1964) highlighted the lack of investigation into the specialised material required to teach English to groups with specific linguistic needs such as power station engineers in India or police inspectors in Nigeria. However, Gollin-Kies, Hall and Moore (2015: 18) cite several examples of specialised goal-oriented courses prior to the development of LSP as a self-identified filed such as a 1932 book designed to teach medical Arabic for medical workers in Syria and Palestine, and the introduction of German as a Foreign Language into the curriculum of a medical school in Shanghai, China in 1907. Early studies in LSP tended to be largely quantitative lexicostatistical studies providing information on specialist terminology and on which syntactic structures occurred most frequently in scientific prose (Chambers, 1996: 233). Swales (2000: 59) describes this early LSP research as descriptive and "basically textual or transcriptal". However, over the years, challenges to this descriptive, textual tradition of work in LSP have arisen. There have been challenges to the simplistic relationship between linguistic analysis and classroom activities (Widdowson, 1998; Hutchinson and

Waters, 1987) together with new influences on LSP such as the development of the communicative approach to language learning (Chambers, 1996), the use of corpus linguistics data in LSP courses (Rodgers, Chambers and Le-Baron, 2011) and content and language integrated learning (CLIL) (Dalton-Puffer, Nikula and Smit, 2010: 1).

In more recent years, the field of LSP has been further shaped by factors such as increasing globalisation and the development of new communication technologies. (Gollin-Kies et al., 2015: 29-33). Globalisation has led to an increased demand for the teaching of foreign languages for specific purposes (Gollin-Kies et al., 2015: 35; Uber Grosse & Voght, 2012: 191) and one of the challenges of LSP teaching is to prepare students for "globalized academic and professional contexts" (Arnó-Macià, 2014: 15). Recent studies have also highlighted that advances in technology have revolutionised LSP language education, (Uber Grosse & Voght, 2012: 191) and that there is a need for special attention to be paid to LSP within the context of the integration of technology into language education (Arnó-Macià, 2012: 89). It is generally agreed that technology has transformed LSP teaching and learning in a number of ways. The role of IT in different areas of LSP research (Arnó, Soler & Rueda, 2006) and the design and implementation of online LSP materials (Gonzáles-Pueyo, Foz, Jaime & Luzón, 2009) have been studied. Researchers acknowledge that developments in CALL, applied linguistics and the pervasive use of technology in communication have revolutionised LSP teaching (Arnó-Macià, 2012: 89). Uber Grosse and Voght (2012: 191) underline that technology gives LSP learners "instant access to current information about target languages and cultures" and that the Internet has "made it possible for LSP teachers and learners to access instantly rich resources of authentic language materials in their content field". García Laborda (2011: 106) also highlights that because of the internet, "LSP materials that were difficult to find until recently (…) are now readily accessible and usually free". Similarly, Arnó-Macià (2012: 89) outlines the ways in which emerging technologies have been integrated into the LSP classroom:

> *Through technology, LSP teachers and researchers can access discipline-specific materials and situations and compile corpora of specialized texts. Computer-mediated communication provides learning tools and a gateway to the discourse community. Technology also provides opportunities for collaborating, creating virtual environments and online courses, and fostering learner autonomy.*

More recently Bárcena, Read and Arús' (2014) edited volume looks at LSP in the digital era and examines the impact of developments in the use of technologies such as CALL, wikis, corpus-based approaches and natural language processing on LSP, while the Gollin-Kies et al. (2015) volume also looks at the impact of new technologies on LSP teaching and learning in the 21st century in their volume on LSP.

However, while it is evident that the role of technology in LSP teaching and learning has been both examined and advocated, the role of video and more particularly video creation has not been explored within the LSP context.

2.2. Video creation in LSP

While the area of video creation in LSP has been hitherto unexplored, research in the related fields of LSP and video in the language classroom in general, point to video production as a particularly appropriate teaching and learning tool in LSP. LSP is traditionally a multidisciplinary activity which requires the learner to engage not just with the target language but also with disciplinary knowledge. Digital video creation enables language learners to link the learning of the target language with the learning of other content linked to their discipline. It further enables them to do this within a realistic context, reinforcing the principle that tasks for LSP learners should be as realistic for the learners' language goals as possible (García Laborda, 2011: 104) and use 'real-world' language in 'real-life' situations (Secules, Herron & Tomasello, 1992). LSP learners can thus blend language learning with disciplinary learning in a 'real-world' context through video production.

LSP teaching must also move with developments in new technologies as it is vital that "LSP methodologies should be rooted in how technology is used in real-life professional practices" (Arnó-Macià, 2014: 15-16). Digital video production gives learners the

opportunity to embrace not just the practice of creating a video but also the multimodality of the target language. The rise in multimodality is a particularly striking trend in technologically-mediated communication as the development of new communication technologies has enabled LSP teachers and students to download and engage with large amounts of multimodal data which provide excellent opportunities for language learning (Gollin-Kies et al., 2015: 43). Digital media carry words, sounds and images and enable learners to embrace the multimodality of language. It can be argued that language has always been multimodal and it has always been "a mixture of sound, words, images created in the mind, and gestures used in contexts full of objects, sounds, actions and interactions" (Gee & Hayes, 2011: 1). Multimodality is equally considered to be a defining characteristic of CALL (Guichon and Cohen, 2016: 509). For the LSP learner, it is particularly important to keep pace with the rise in multimodality afforded by digital media as it is a central tenet of LSP that their language learning must be both contextualised and authentic.

Video creation also assists the LSP learner in the acquisition of a wider range of professional and social skills. Arnó-Macià (2014: 9) draws attention to the centrality of social and critical skills for the LSP learner, arguing that LSP courses play a vital role in the integration of professional communication skills with key social and critical competences that students need to participate in society. It is particularly important that LSP learners acquire those communication skills necessary to participate in 21st century society. Goldstein & Driver (2015: 117) cite the acquisition of '21st century skills' as amongst the goals of any digital video creation project:

> *The primary goals are situating language through practical engagement in the creation of digital artefacts. This is achieved through the process of guided reflection, critical thinking, performance, debate, design, creativity and other competences often referred to as '21st century skills'.*

Video production enables LSP learners to think critically about the topic they have chosen to present, to express their ideas and opinions, to debate, to perform and above all to be creative. It gives learners choices, not only about what to say, but also how to say it and how to present a point of view (Dal, 2010: 5). The development of these skills is vital for the LSP learner, thus rendering video production a very appropriate tool for language learning in this domain.

The task-based nature of digital video creation is equally advantageous for the LSP learner. Video production is very much a learner-centred, practical, hands-on, creative project. It is essentially a form of task-based learning which embraces the social constructivist view of constructing knowledge and meaning in a social context through practice (Arnó-Macià, 2014: 14; Goldstein et al., 2015: 118). Nikitina (2010: 22) argues video-making projects include all the core elements of progressive language pedagogy.

> (…) *involving language learners in the production of digital video in the target language follows constructivist perspectives on teaching and learning since the main tenets of progressive language pedagogy, such as learner-centeredness, activity-based learning, and a communicative approach, put emphasis on the active involvement of the learners in the teaching/learning process and call for collaboration between learners. All these elements are present in the video-making activity.*

Through video creation LSP learners learn to negotiate meaning through the creation of a digital artefact. Students become 'producers' of language (Dal, 2010: 3; Shrosbee, 2008: 75). This is vital in language learning as every human is both a producer and a consumer of language and digital media enable learners to be both producers and consumers of language (Gee and Hayes 2011: 2-3). By producing videos on subject areas relevant to their discipline, they produce language, negotiate meaning, communicate and collaborate and thus engage in a language learning activity which is both meaningful and pedagogically effective.

While research in the related fields of LSP and video in the language classroom point to video creation as a particularly appropriate tool for the LSP classroom, this study investigates student perceptions of this activity and reports on its effectiveness from a

learner perspective. It also analyses the videos created in order to see if the outcome of this teaching and learning activity substantiates the initial findings.

3. Current Study

This study is based on a digital video project conducted by second-year university students of French. It seeks firstly, to examine their perceptions of the effectiveness of video production to develop their language skills within the context of LSP and secondly, to determine if these findings are substantiated through an analysis of the videos created. The study thus attempts to add to the body of research on both video in language learning and LSP.

3.1. Participants

The students participating in this study were twenty-three second-year students in NUI Galway taking the BSc. in Biotechnology, a domain of Science which is often described as the application of biology for the benefit of humanity and the environment. Students on this four-year programme study a wide range of subjects such as biology, chemistry, biochemistry, microbiology, genetics, toxicology and pharmacology. They tend to find employment in industries such as biopharmaceuticals, diagnostics, healthcare and the environment. In addition to studying the relevant science subjects, students on this programme study either French or German for the first three years and tend to continue with the language they have previously studied at second-level. Many students choose this course because of its unique offering of Science and a language, and are aware of the prominent positions of France and Canada in the biotechnology industry.

Students have three hours of French per week and their programme aims to enable them to acquire the specialised French for Biotechnology they need to enter this discourse community. Activities such as text analysis, roleplays, simulations, communication games, grammar activities, project work, multimedia lab work, group discussions and presentations are all used to promote their engagement with the target language and develop their knowledge of French for Biotechnology. Classes and activities are generally based around contemporary topics of interest in the field of Biotechnology such as stem-cell research, gene therapy, cancer research, marine biotechnology and so on.

3.2. Project

The main objectives of the video creation project were to help students to further develop their language skills in French, to acquire a more in-depth knowledge of specialised French for Biotechnology, to develop the practical sub-skills of video production and editing and to acquire other key competences such as critical thinking, creativity and teamwork. Students were asked to create three to four minute videos in groups of three (2) on an area of contemporary Biotechnology research of their choice, describing the area involved and highlighting those aspects of it they found most interesting. The only instruction they were given was that all members of the group were to speak and feature in the video. They were subsequently taken for a preparatory class where guidance was given on how to create storyboards and edit the end product. It was explained to them that video production comprises three key phases; pre-production, production, and post-production. They learned that pre-production is primarily a planning phase encompassing storyboarding (defining each individual shot as visual representations), location scouting, scripting and audience identification. They learned that production is the creation of the footage required for the video in accordance with the storyboard and script while post-production centres on the editing required, both audio and video, to produce the final film. They were introduced to software such as *Windows Moviemaker* and *Me Move* and advice was given on the creation of storyboards and video production and editing. They were given six weeks to create their video outside of class time and they were asked to submit it as an MP4 file via the University's internal server *Blackboard.* They were not given any other instructions or restrictions in order to allow for maximum creativity. They were free to choose their own themes for the videos and their own formats. For example, they could make a short movie, a documentary, an interview, a promotional video, a debate or talk show. The videos were to be screened during class after the six week preparatory period so that they could all view each other's work. The teacher believed this would

motivate them to be more creative and produce a better video. In total, eight videos were produced by seven groups of three students and one group of two. The videos produced were based on a variety of topics including hybrid embryos, genetically modified foods, the Zika virus, animal testing in Biotechnology research and designer babies.

3.3. Methodology

The effectiveness of this teaching and learning activity was evaluated in a number of ways. At this point, it is imperative to remind ourselves of the complexity of the evaluation of CALL tasks, and that learning is in general an unquantifiable concept (Nokelainen, 2006: 183). In this evaluation, we are seeking to establish the effectiveness of digital video creation as a tool for these particular learners, echoing in many ways Chapelle (2001: 5), who argues that "an evaluation has to result in an argument indicating in what ways a particular CALL task is appropriate for particular learners at a given time." The evaluation in this study includes the factors generally included in an evaluation in CALL: the actors (learners), the tool that is being utilised and the artefact created (Caws and Heift, 2016: 128). In this instance, the effectiveness of the activity from a student perspective was evaluated using a mixed method of data collection, combining student questionnaires and semi-structured group interviews. Part One of the questionnaire was designed to gather background information about the subjects' language and video production skills by asking they how long they had been studying French, if they had ever created videos or used video editing software before, how difficult or easy they found it to use the editing software, what device they used for filming and what video editing software they used. Part Two of the questionnaire focussed on what they felt they had learned from creating the video. In questions six to eight, students were asked to describe how helpful or unhelpful they found the video creation activity for learning vocabulary and grammar, using a four-point Likert scale ranging from "very helpful", "helpful", "a little helpful" to "not at all helpful". They were also asked to compare the use of video production with traditional ways of learning French. Question nine asked if they thought they had acquired any other skills (apart from language) from participating in this project while question ten and was an open question in which they were asked to list what they felt were the main advantages and disadvantages of creating a video to learn French for Biotechnology. The final question asked students for any general comments or recommendations in relation to the use of video creation for learning French for Biotechnology.

The semi-structured group interview took place in a thirty minute session after class. The interview aimed to delve deeper into students' experiences and invited them to reflect carefully on their experience of video creation for language learning. They were asked at the beginning of the session to be honest about their experience of the video creation project, even if the experience was negative. The questions were intended to enable students to express their ideas without any undue influence by the teacher conducting them. Students were simply asked what they liked or did not like about the video creation project and what they felt they had learned. As various points were raised, they were further probed by the interviewer and expanded upon by other students. The discussion was allowed to unfold in a natural way and the teacher did not comment on the points made. The session was recorded and subsequently transcribed.

Quantitative data from the questionnaire was subsequently examined, firstly to establish background information on students' level of language learning and experience of video production and editing, and secondly to rate their perceptions of the usefulness of video creation to learn French. Qualitative data from the open questions in the questionnaire and the group interview were manually analysed and categorised into broad themes to report on key aspects of students' perceptions of video creation as a language learning tool for LSP.

The videos were then analysed in order to see if the learners' claims could be substantiated. It was not the purpose of this study to use pre- or post-tests to measure progress or vocabulary acquisition, but rather to see if the outcome of this activity was indicative of its pedagogical value. The videos were thus closely examined by both researchers in this study, and observations were recorded and subsequently compared with initial data stemming from the questionnaire and interview. We recognise that in

observational data of any description, there is a limitation which must be acknowledged, that the conclusions drawn must be taken as indicative as opposed to conclusive (Harbon and Shen, 2015: 463). The analysis of the videos created thus seeks to establish whether the artefacts created by students were *indicative* of the pedagogical effectiveness of the activity.

4. Results and Discussion

4.1. Questionnaire analysis: quantitative data

Twenty-two students in total completed the questionnaire. From Part One, it was clear that most students had been studying French for five to eight years. Most students had never created videos previously, with only six students stating they had made videos before, during a transition year of secondary school. Five of these six students had used video editing software before and indicated that they had used either *Microsoft Movie Maker* or *Video Star.* It was evident that video production and editing was a new activity for the vast majority of participants. When asked how easy or difficult they found it to use the editing software, responses indicated that in general, students found this aspect of the project challenging. This question was directed only to the seventeen participants who had never used video editing software before and the majority of students described it as "a little difficult". Eight videos in total were created by this group, two of which were filmed using android phones, two using iPhones, two with iPads and two using laptop cameras. While students were offered the use of Camileo clips, it was clear that they preferred to use their own devices, thus corroborating Burston's (2016: 5) view that mobile device ownership has reached a point where it is feasible to expect students to use their own devices for language learning. When asked what video editing software they used, the majority of students had used *Microsoft Movie Maker*, while other software used included *Filmauro Wondershare, Microsoft Video Editor, Video pod, Splice* and *NCH.* The analysis of Part One of the questionnaire, therefore, indicated that while students were approaching this project with at least 5 or more years of French behind them, most had no experience of video production or editing and found the editing aspect a little difficult, thus perhaps challenging the view that all members of the current generation are "digital natives" (Prensky & Heppell, 2008).

In Part Two, students were asked to describe how helpful (or unhelpful) they found this project for learning French and responses were extremely positive. When asked to what extent they found creating the video helped them acquire French vocabulary relating to Biotechnology, all students replied that they found it either "very helpful" or "helpful". When asked to what extent they found it helpful to improve their knowledge of French grammar and structures, twenty students felt that it was either "very helpful" or "helpful", while two described it as "a little helpful". Students were thus overwhelmingly positive in their evaluation of the usefulness of the project to improve their language skills, particularly in the domain of the acquisition of specialised vocabulary. When asked to compare how they found video production as a tool to learn French compared to traditional ways they were taught in the past, all but one student described it as either "a lot more helpful" or "more helpful".

In Section 2.3, it was highlighted that research in the related fields of video production in language learning and LSP point to video production as a particularly appropriate tool for LSP. The quantitative data elicited from this analysis is indicative of an overwhelmingly positive response to the usefulness of video creation for language learning in the LSP domain. Students perceive it as a helpful means of improving their knowledge of French grammar and structures and find it particularly helpful to acquire specialised vocabulary relating to Biotechnology. One of the core concepts of LSP underlined in Section 2.2, is that it is driven by the need to respond to students' *specific* linguistic needs and that it should use activities to help learners to enter the discourse community of their relevant discipline (Arnó-Macià: 2014: 5). This project thus enables them to focus on the terminology and structures most relevant to their field of study. In addition, it compares very favourably with traditional ways of learning French. It is however, the comments of the learners, both in the questionnaires and the semi-structured group interview, which shed more light on the pedagogical potential of video creation in an LSP context.

4.2. Qualitative data from the questionnaire and semi-structured group interview

Qualitative data was elicited from four open questions in the student questionnaire. When asked in question nine to compare video production with traditional ways of learning French, participants were asked to explain their answer. Question ten asked them what other skills (if any) apart from language, they felt they had acquired from participating in the project while Question eleven asked them to list, in their opinion, the main advantages and disadvantages of creating a video to learn French for Biotechnology. The final question invited them to make any further comments or recommendations with regard to the video creation project.

As mentioned in the previous section, twenty-one out of the twenty-two students surveyed described video production in Question nine as more helpful when asked to compare it to traditional ways they were taught in the past. When asked to explain their answer, eleven students focussed on how this project made them more aware of their pronunciation and accent in French, explaining that because they had to listen to themselves speaking French, that they became more conscious of pronunciation errors and tried to correct them, very often by re-filming segments. This self-awareness of their speaking skills in French together with the opportunities it afforded for self-correction is mentioned several times in other open questions and appears to be a key factor in their perception of the usefulness of this project. Seven students also mentioned that it provided them with variety in their language learning and that it was "fun".

In Question ten, students elaborated on other skills they felt they had acquired from participating in the project. Teamwork seemed to be a key skill they thought they had developed with sixteen students referring to it as a skill acquired. Ten students also referred to the development of their teamwork skills during the interview and elaborated that this was the first time during their time at University that they had really had to work together in this way. They explained that tasks cannot really be divided up when making a video as all team members have to participate actively in each stage of the process, corroborating Nikitina's (2010: 22) argument that video-making requires learners to collaborate and work together. Eleven students also mentioned organisational skills in the questionnaire as an important feature, with some students further explaining that the project required them to manage their time, work to a deadline, organise schedules, equipment and so on. Ten students listed video production and editing skills as another key competency acquired, a point that was echoed in the group interviews by twelve students. In the group interview, these students observed that they had never done anything like this project before and that the acquisition of the technical skills necessary to produce and edit a video was something they really valued. Communication skills were also mentioned in the questionnaire by five of the students surveyed. These reactions corroborate the view that video creation enables students to acquire key competences or "21st century skills" (Goldstein & Driver, 2015: 117). The findings show that students felt that this project enabled them to develop organisational, communication, technical and teamwork skills and thus also confirm Arnó-Macià's (2014: 9) argument that LSP courses have a key role to play in the integration of professional and social communication skills.

Question eleven asked the students to list up to three advantages and disadvantages of creating a video to learn French for Biotechnology. Fifty-four advantages in total were listed (an average of 2.5 per student) while twenty-nine disadvantages were listed (an average of 1.3 per student). The main advantage perceived by students and specified in the questionnaire, was that video creation enabled them to see and listen to themselves speaking French, thus allowing them to improve their pronunciation, accent and spoken French in general, with seventeen students citing this as an advantage. Likewise, in the group interview fourteen described the main advantage of creating video as the capacity to hear and see themselves speaking French, and to be able to correct their own errors by re-filming when necessary. On the whole, the responses suggest that self-awareness of their spoken competencies in the target language together with the ability to self-correct was perceived by students as the key advantage. A substantial number of students (nine) also mentioned in the questionnaire, that creating the video had allowed them to practice their speaking skills and that they had gained confidence in speaking

French, while a further ten students described how they appreciated the opportunity this project gave them to learn in a different way. The other key advantages mentioned were the teamwork dimension to the project, the opportunity it gave them to be creative and several students described it as a "fun" way to learn. These findings were echoed in the group interview where students expanded on the "fun" aspect to the project. Ten students used the word "fun" in the group interview and explained that they really enjoyed completing this project and had laughed a lot in the process. Eight students spoke about the opportunity to be creative, explaining that they appreciated the freedom to pick their own topic and presentation format. Creativity and activity-based learning are core elements of current language pedagogy and students' reactions confirm their willingness to become creative learners and 'producers' of language (Dal, 2010: 3; Shrosbee, 2008: 75). Four students mentioned the opportunity to explore scientific topics in an in-depth way in French as an advantage in the questionnaire and this point was reiterated by five students in the group interview. Learners thus also appreciated the opportunity to link their knowledge of the target language and their discipline, to use language in a realistic context (García Laborda, 2011: 104).

In terms of disadvantages, there appeared to be two main elements the students found difficult. In question eleven of the questionnaire, ten students commented on the time-consuming nature of the project, while a further ten described how difficult they found the editing process. Other disadvantages mentioned included the difficulty of selecting a topic, working in a group and finding times to suit everybody. These findings were echoed in the group interview with twelve students referring to the complexity of the editing process as a disadvantage and ten describing how time-consuming the project was. When probed as to how much time the project took to complete, responses ranged from six hours to sixteen and students described how difficult it is to create storyboards, time segments, prepare scripts and edit. The difficulties encountered by students on the technical side of video creation were largely unanticipated in this study as it appears to defy an underlying assumption in CALL, MALL and CMC research, that students are part of a digital generation and entirely capable of engaging with the necessary technology. Instead, data from this study highlights how difficult they can find it and warns us as researchers to refrain from too many assumptions in this domain.

The final question on the questionnaire invited students to make comments or recommendations in relation to the use of video creation for learning French for Biotechnology. Eight students had no comments and of the remaining fourteen, five commented that they would have liked more training on video editing prior to commencing the project. The remaining nine mostly reiterated that they had enjoyed the project and that they would recommend it be used with future groups of students.

4.3. Observational data from the analysis of the videos created

Observational data from the analysis of these videos indicates that the key claims made by students in the questionnaires and group interviews; including improved language skills, acquisition of new technical skills, and improved organisational, communication, creative and teamwork skills can be substantiated.

In terms of their language skills, students had claimed that this activity had enabled them to improve their language skills, particularly their acquisition of specialised vocabulary relating to Biotechnology. Their acquisition and successful use of specialised vocabulary was evident in all eight videos. In some instances, they were consolidating the use of vocabulary acquired in class, and in others they demonstrated their acquisition of terminology previously unknown as indicated in the following three examples. Video three was based on the topic of hybrid embryos and here specialised terms were used such as "la pénurie d'ovocytes humains" (*the shortage of human embryos),* "des lignées de cellules souches" *(stem cell lines),* "l'ADN" *(DNA),* "greffer" *(to transplant)* and "des défauts génétiques" *(genetic defects).* Video four explored the topic of the Zika virus and over the course of the video, the learners demonstrated their acquisition of specialised terminology such as "les maladies parasitaires" *(parasitic diseases),* "des moustiques génétiquement modifiés" *(genetically modified mosquitos),* "l'accouplement" *(mating)* and "des vecteurs" *(vectors).* Video six on the subject of genetically modified foods showed students using terms such as "l'hôte" *(the host)*,

"une carence" *(a deficiency)*, "des insects ravageurs" *(devastating insects)* and "le génie génétique" *(genetic engineering).*

Participants had also highlighted the usefulness of this project to improve their pronunciation, accent and general speaking skills and had particularly emphasised the opportunity digital video creation gave them to see and hear themselves, and self-correct before submitting the final product. While it is not within the scope of this study to measure the exact level of improvement in pronunciation and speaking skills as a result of producing these videos, it was evident from a close analysis of the videos that the participants' displayed a high level of accuracy in pronunciation, intonation and accent. It was also apparent that a considerable amount of editing had taken place in all eight videos (see below), thus confirming the participants' claims that they had re-recorded on several occasions in an effort to correct their pronunciation.

Teamwork, organisational, communication and technical video production skills were all identified as key competencies acquired during the course of this project. Each of the eight videos portrayed an obvious style which was adhered to throughout the video; amongst them a news report, a college debate, a chat show discussion, and a scientific report. Each group maintained the style of their individual video by sourcing appropriate locations and costumes, and by scripting the video to use appropriate language; thereby evidencing the level of teamwork, communication and planning involved. Obvious examples include the multiple locations that were used in the filming of five of the videos. For example, in video two, based on the development of a device for astronauts to analyse their own blood samples, five different locations were used including an interview room, hospital entrance, hospital bed, office setting and foyer. Similarly in video one about designer babies; four locations were used including a kitchen, laboratory, corridor and classroom. Video seven on ethical issues in Biotechnology used a classroom setting with a teacher and two students to explore the topic, while videos five and eight used a debate amongst speakers to frame the topic. Videos three and four used news report settings with multiple locations to present their topic.

Technical skills acquired by all eight groups during video production include the framing of the shot; allowing adequate head room and looking room, shot composition; close-ups (CUs) medium close-ups (MCUs), mid-shots (MS), medium long shots (MLS), establishing shots and long shots (LS); panning, tilting, zooming. In keeping with the scientific nature of the subject, the groups framed many shots as a piece-to-camera (PTC), a key technique used on news reports or factual programmes, where the presenter would introduce a topic by speaking directly to camera. Evidence of technical skills during post-production included the use of opening titles and credits by seven of the eight groups, with five of these groups also including a soundtrack (four groups sourced French language songs), with the eighth group also applying credits during post-production. Dissolves and fades were used in four of the videos to move between shots, while cutaways (the use of footage or still images appropriate to the matter being discussed) were used in three videos.

Creativity, while subjective, was clearly evidenced in all videos by the participants acting out roles they had assigned to themselves; news reporters, presenters, teachers, victims of the Zika virus, chefs, hybrid organisms, astronauts, patients, researchers, scientists in Hazmat suits, doctors, babies and many more. They dressed up in character and used props, music and humour to present their topics creatively and in two videos used out-takes at the end of the video to show humorous moments during filming. Also, on a practical level, because all student members of each team had to feature and speak in their video this required them to take turns filming and plan each video carefully, thereby improving communication and teamwork.

5. Conclusion

The principal aim of this project was to determine the effectiveness of digital video creation as a teaching and learning tool in the LSP context through an investigation of student perceptions of the usefulness of this activity and a subsequent comparison of this data with an analysis of the digital artefacts created. The quantitative and qualitative data gathered indicate an overwhelmingly positive response to the use of this tool in LSP. The participants in this study found it to be a very helpful means of

improving their language skills, especially in the domain of the acquisition of specialised vocabulary. In particular, the usefulness of this project to improve their pronunciation, accent and general speaking skills was highlighted and participants explained that digital video creation gives learners the unique opportunity to see and hear themselves and to self-correct before submitting the final product. Teamwork, organisational, communication and video production skills were all identified as key competencies acquired during the course of this project, thus demonstrating that video creation can play a key role in the acquisition of professional and social skills, a factor identified as a key tenet of LSP courses. "Fun" was a frequent term used by students in feedback gathered, and responses showed that students appreciated the opportunities to be creative and to engage in task-based learning that this project gave them. Students thus perceive digital video creation as more than just a means to improve their language skills, but also as a means to acquire other key social and professional skills in a creative and fun way. The analysis of the videos indicated that these findings could be substantiated, and the high quality of the videos produced demonstrated that engaging in digital video production had had a strong impact on these learners.

Going forward, however, the data gathered shows the students must be given more support and help with the production and editing processes. Video production and editing were new activities for the vast majority of these learners and a greater level of technical assistance will have to be provided in the future to make this a better learning experience. While 21st century students may be considered "digital natives" (Prensky & Heppell, 2008), this does not mean that they can master all aspects of digital technology without assistance or guidance, and responses from students indicate that this project was more challenging and time-consuming from a technical perspective than anticipated. If anything, this study strengthens Prensky's view that our young people need to become digitally wise in order to be able to keep up in what he terms "an unimaginably complex future" (2012: 182).

In the broader context of language teaching and learning research, this study highlights the pedagogical potential of digital video creation in the language classroom. It corroborates studies which point to video creation as a pedagogically useful tool for language learning and teaching and extends this largely unexplored area of research to the field of LSP. While LSP research advocates the need to integrate emerging technologies into the 21st century LSP classroom, this study gives a very practical example of how this can be done. It demonstrates that digital video creation embraces many of the core elements underpinning LSP pedagogy by enabling language learners to link their language learning with their discipline of study and to do so in a 'real-world' or 'real-life' situation. It also gives them the opportunity to keep pace with the multimodality afforded by digital media and thus means their language learning is both contextualised and authentic. In addition, it assists LSP learners in the acquisition of those professional, social and communication skills necessary to participate in 21st century society. Critical thinking, creativity, performance and autonomy are all skills developed through digital video creation. This study thus contributes to the area of LSP research and to the broader areas of digital technology in language learning by demonstrating that digital video creation is a pedagogically beneficial and meaningful activity for LSP learners.

References

Allan, M. (1985). *Teaching English with video.* Essex: Longman.

Arnó-Macià, E. (2012). The role of technology in teaching languages for specific purposes courses. *The Modern Language Journal, Focus Issue: Languages for Specific Purposes,* (96): 89-104.

Arnó-Macià, E. (2014). Information technology and languages for specific purposes in the EHEA: options and challenges for the knowledge society. In Bárcena, E., Read, T. and Arus, J. (eds.) *Languages for specific purposes in the digital era.* Heidelberg; New York; Dordrecht; London: Springer.

Arnó, E., Soler, A. and Rueda, C. (eds.) (2006). *Information technology in languages for specific purposes.* New York: Springer.

Bárcena, E., Read, T. and Arus, J. (eds.) (2014). *Languages for specific purposes in the digital era.* Heidelberg; New York; Dordrecht; London: Springer.

Burston, J. (2016). The future of foreign language instructional technology: BYOD MALL. *The EUROCALL Review,* 24(1): 3-9.

Caws, C. and Heift, T. (2016). Evaluation in CALL. Tools, interactions, outcomes. In Farr, F. and Murray, M. (Eds.). *The Routledge Handbook of Language Learning and Technology.* London; New York: Routledge, 127-140.

Chambers, A. (1996). LSP theory and second language acquisition. In Hickey, T. and Williams J. (eds.), *Language, education and society.* Bristol: Multilingual Matters, 232-238.

Chapelle, C. (2001). *Computer Applications in Second Language Acquisition: Foundations for Teaching, Testing and Research.* Cambridge: Cambridge University Press.

Cooper, R., Lavery, M. and Rinvolucri, M. (1991). *Video.* Oxford: Oxford University Press.

Dal, M. (2010). Digital video production and task-based language learning. *Ráostefnurit Netlu-Menntakvika.* http://netla.khi.is/menntakvika2010/alm.021.pdf (accessed June 20, 2017)

Dalton-Puffer, C., Nikula, T. and Smit, U. (2010). *Language use and language learning in CLIL classrooms.* Philadelphia; Amsterdam: John Benjamins.

Dudley-Evans, T. and St. John, M.J. (1998). *Developments in ESP. A multi-disciplinary approach.* Cambridge: Cambridge University Press.

Dugartsyrenova, V. and Sardegna, V. (2016). Developing oral proficiency with VoiceThread: Learners' strategic uses and view. *ReCALL,* 29(1): 59-79.

Duman, G., Orhon, G. and Gedik, N. (2014). Research trends in mobile assisted language learning from 2000 to 2012. *ReCALL,* 27(2): 197-216.

García Laborda, J. (2011). Revisiting materials for teaching languages for specific purposes. *The Southeast Asian Journal of English Language Studies,* 17(1): 102-112.

Gardner, D. (1994). Student-produced video documentary: Hong-Kong as a self-access resource. *Hong Kong Papers in Linguistics and Language Teaching,* 17: 45-53.

Gee, J.P. and Hayes, E.R. (2011). *Language and learning in the digital age.* New York: Routledge.

Goldstein, B. and Driver, P. (2015). *Language learning with digital video.* Cambridge: Cambridge University Press.

Gollin-Kies, S., Hall, D. and Moore, S.H. (2015). *Language for specific purposes.* New York: Palgrave Macmillan.

González-Pueyo, I., Foz, C. Jaime, M. and Luzón, M.J. (eds.) (2009). *Teaching academic and professional English online.* Bern: Lang.

Goulah, J. (2007). Village voices, global visions: digital video as a transformative foreign language tool. *Foreign Language Annals,* 40(1): 62-78.

Gromik, N. (2012). Cell phone video recording feature as a language learning tool: A case study. *Computers & Education,* 58: 223-230.

Guichon, N. and Cohen, C. (2016). Multimodality and CALL. In Farr, F. and Murray, M. (Eds.). *The Routledge Handbook of Language Learning and Technology.* London; New York: Routledge, 509-521.

Hafner, C. and Miller, L. (2011). Fostering learner autonomy in English for science: a collaborative digital video project in a technological learning environment. *Language Learning & Technology,* 15(3): 68-86.

Halliday, M.A.K., Strevens, P. and McIntosh, A. (1964). *The linguistic sciences and language teaching.* London: Longman.

Harbon, L. and Shen, H. (2015). Researching language classrooms. In Paltridge, B. and Phakiti, A. (eds.). *Research Methods in Applied Linguistics. A Practical Resource.* London; New Delhi; New York; Sydney: Bloomsbury, 457-470.

Hutchinson, T. and Waters, A. (1987). *English for specific purposes.* London: Longman.

Kearney, M., Jones, G. and Roberts, L. (2012). An emerging learning design for student-generated 'iVideos'. *Teaching English with Technology*. *Special Issue on LAMS and Learning Design.* 12(2): 103-120.

Naqvi, S. and Mahrooqi, R. (2016). ICT and language learning: A case study on student-created digital video projects. *Journal of Cases on Information Technology,* 18(1): 49-64.

Nikitina, L. (2010). Video-making in the foreign language classroom: applying principles of constructivist pedagogy. *Electronic Journal of Foreign Language Teaching,* 7(1): 21-31.

Nokelainen, P. (2006). An empirical assessment of pedagogical usability criteria for digital learning material with elementary school students. *Educational Technology and Society,* 9(2): 178-197.

Prensky, M. (2012). *From digital natives to digital wisdom: hopeful essays for 21st century learning.* California, London, New Delhi: Sage.

Prensky, M. and Heppell, S. (2008). *Teaching digital natives: partnering for real learning*. Thousand Oaks, California: Corwin Press.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon* (MCB University Press). 9(5): 1-6.

Reyes, A., Pich, E. and Garcia, M.D. (2012). Digital storytelling as a pedagogical tool within a didactic sequence in foreign language teaching. *Digital Education Review,* 22: 1-18.

Rodgers, O., Chambers, A. and Le-Baron Earle, F. (2011). Corpora in the LSP classroom: a learner-centred corpus of French for biotechnologists. *International Journal of Corpus Linguistics. Applying Corpus Linguistics,* 16(3): 391-411.

Sager, J.C., Dungworth, D. and McDonald, P.M. (1980). *English special languages: principles and practice in science and technology.* Wiesbaden: Brandstetter Verlag.

Secules, T., Herron, C. and Tomasello, M. (1992). The effect of video context on foreign language learning. *The Modern Language Journal,* 76: 480-490.

Shrosbee, M. (2008). Digital video in the language classroom. *JALT CALL Journal,* 4(1): 75-84.

Swales, J.M. (2000). Languages for specific purposes. *Annual Review of Applied Linguistics,* 20: 59-76.

Über-Grosse, C. and Voght, G.M. (2012). The continuing evolution of languages for specific purposes. *The Modern Language Journal, Focus Issue: Languages for Specific Purposes* 96: 190-202.

Widdowson, H.G. (1998). Communication and community: the pragmatics of ESP. *English for Specific Purposes.* 17: 3-14.

Willis, J. (1983). Implications for the exploitation of video in the EFL classroom. In McGovern, J. (ed.), *Video applications in English language teaching, ELT documents 114.* London: Pergamon Press, 29-42.

Appendix A

Questionnaire – Quantitative Data

Q1 How long have you been studying French?	3-5 years	**0**
	5-8 years	**20**
	More than 8 years	**2**
Q2 Have you ever created videos before this Semester?	Yes	**6**
	No	**16**
	Don't know	**0**
Q3 Have you ever used video editing software before this project?	Yes	**5**
	No	**17**
	Don't know	**0**
Q4 If you answered no to the previous question, how difficult or easy did you find it to learn to use the editing software?	Very easy	**1**
	Easy	**2**
	A little difficult	**12**
	Very difficult	**2**
Q5 What device did you use to film the video?	Android phone	**2**
	iPhone	**2**
	iPad	**2**
	Laptop camera	**2**
Q6 What video editing software did you use?	Windows Movie Maker	**11**
	NCH	**2**
	Filmora Wondershare	**3**
	VideoPad	**3**
	Splice	**3**
Q7 During the semester, you created a video on an area of Biotechnology of your choice. To what extent do you feel that creating this video helped you acquire French vocabulary relating to Biotechnology?	Very helpful	**14**
	Helpful	**8**
	A little helpful	**0**
	Not at all helpful	**0**
Q8 To what extent do you feel the creation of this video helped you to improve your knowledge of French grammar and structures?	Very helpful	**7**
	Helpful	**13**
	A little helpful	**2**
	Not at all helpful	**0**
Q9 How did you find video production as a means to learn French compared to traditional ways you were taught in the past?	A lot more helpful	**12**
	More helpful	**9**
	A little less helpful	**1**
	A lot less helpful	**0**

[1] www.divisproject.eu

[2] As there were twenty-three students in the group, we had seven groups of three and one group of two.