José María Esteve Faubel
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(eds.)

# Transformando la educación a través del conocimiento

universidad

Octaedro

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# Key factors to implement a multilingual and cross-curricular YouTube - Based Portal as an online Teacher Training resource

Torralba-Burrial, Antonio & García-Sampedro, Marta

*Department of Education Sciences, University of Oviedo (Spain)*

**Abstract:** Nowadays, social media, especially video, represent an important source of information, being relevant both in formal and in non-formal education. Training preservice teachers to use and generate online audiovisuals as teaching resources could improve their teaching and professional skills. This study presents an innovative experience developed at a Teacher Training faculty with the aim of fostering preservice teachers´ generation and use of online videos as teaching resources. Student-generated videos have been located and disseminated through an online TV portal, YouTube-based, implemented for this purpose. The preservice teachers involved in the experience generated more than 300 didactic videos. The online tv portal was designed to link and connect the Teacher Training faculty teachers and students with other education faculties, and with some elementary and secondary schools. Additionally, this channel place value on student-generated videos and facilitate their projects dissemination. Results show a beneficial interaction for all of them, including a wide variety of video formats production. The contents released through these videos reveal a multicultural and multilingual richness, and a desirable and necessary interaction with schools. Flexibility in video and channel requirements became one of the most important key factors of the experience, which was able to accommodate the high heterogeneity among educative stages and institutions.

**Keywords:** teacher education, audiovisual materials, educational technology, social media, blended learning.

## 1. INTRODUCTION

Nowadays, social media represent an important source of information, being relevant both in formal and in non-formal education (Chawinga, 2017; Gleason & Von Gillern, 2018; Luo, 2018; Rodríguez, López et al., 2017). One of these social media main tendencies is the use of visual resources, especially video, which has become highly predominant over texts in most of them.

The progressive tendency towards an educational model of blended-learning (b-learning) that combines face-to-face and virtual learning processes, has been in-creasing for the last months due to COVID-19 pandemic necessities. The situation of total or partial school lockdown (IESALC, 2020) and the possibility of new closures in classrooms, schools or universities requires the implementation of e-learning and b-learning didactic tools and new methodological approaches (Ferdig et al., 2020). Pre-vious experiences show that all the participant teachers are not sufficiently trained for this new educational environment (Ramírez-Montoya et al., 2017). Bearing this in mind, educational authorities have imposed social media-facilitating curricula with the aim of integrating digital citizenship dimensions in the teaching-learning processes (Gleason & Von Gillern, 2018).

Among social media, YouTube has evolved into one of the most visited sites on the Internet, not only as an entertainment source, but also as a learning tool (Moghavvemi et al., 2018; Ramírez-Ochoa, 2016). YouTube's learning potential is extremely high, with outstanding successful experiences since their foundation in 2005 (Berk, 2009; Moghavvemi et al., 2018). However, in order to fulfil this didactic purposes, YouTube´s channels should be properly selected (Romero-Tena et al., 2017) and

audiovisual content and production should be appropriate for the target audience (Buzzetto-More, 2014; Welbourne & Grant, 2015).

In this sense, YouTube has been implemented successfully as a learning resource in Primary (del Valle-Ramón et al., 2020), Secondary (Dreon et al., 2011; Gómez, 2014), and in Higher Education (Fleck et al., 2014; Buzzetto-More, 2015). Khan academy could be another excellent example of a teaching multimedia source (accessible through YouTube) with an external structured platform (https://www.khanacademy.org). More specifically, in the science teaching field, several studies have analyzed the use of YouTube in the teaching-learning processes finding three different types of approaches: students who use videos created for a general audience (Barry et al., 2016; Moll & Nielsen, 2017), students who consume videos made by teachers and addressed to their own classrooms (Arguedas & Herrera, 2016), and students who produce and watch their own videos (Hawley & Allen 2018; Jordan et al., 2016; Pereira et al., 2014).

In teacher training environments, preservice teachers, as with all university students, are social media users and audiovisual consumers in their private lives but they should also implement these resources in their future careers. Although university students of Social and Legal Sciences degrees (as preservice teachers) include most frequently than students of other knowledge areas the video generation to share digital contents, the percentages are still low in Spain (Prendes et al., 2019). Several studies state their favourable willingness to incorporate YouTube as an educational tool in their forthcoming teaching activities no matter whether they are specialized in early child-hood education, primary or secondary education (Rodríguez, Pérez et al., 2017; Szeto et al., 2016). Consequently, preservice teachers should meet the ability to integrate social networking among their teaching and learning skills (Boholano, 2017).

As social media, YouTube not only allows students to access to audiovisual content but also enables them to create and spread their own videos. This approach, through which students produce videos for the courses they are attending, has been successfully implemented worldwide in different areas at diverse educational levels (see review on Hawley & Allen, 2018). These sorts of videos enhance students´ knowledge on procedures (Jordan et al., 2016, Pereira et al., 2014), concepts (Pereira et al., 2014), and general learning outcomes (Orús et al., 2016). Moreover, these videos can improve students' motivation and engagement on learning (Rodríguez-Muñiz et al., 2021; Stanley & Zhang, 2018).

From teachers´ perspective, student-generated videos can be also used to assess students´ didactic competence and their specific understanding of the matter (Gallardo-Williams et al., 2020). Consequently, there is a need to ameliorate video generation skills as didactic tools in teacher training processes.

Here, it is described the context, design and development of a student-generated videos experience in the Teaching Training context and the YouTube web portal in which they are located. Besides, some outcomes of the first years of the experience connecting Teacher Training faculties and schools are shown. This research also presents the different types of videos displayed regarding disciplines, educational stages (Early Childhood, Primary, Secondary Education and Teacher Training) and countries, highlighting the factors that facilitate this experience joint implementation among students, teachers and institutions.

## 2. METHODS

This YouTube-based portal, *Didactictac TV*, was created with the main aim of improving teacher training students´ digital skills and cross-curricular competences (Castañeda et al., 2021; UNESCO,

2018). Additionally, connecting Teacher Training faculties with schools has also been considering as a fundamental aspect to be developed through the experience, placing value on students´ generated videos. These video activities have been implemented through several specific didactic modules in three different teaching degrees and in a master's degree too (Table 1).

**Table 1.** Teachers, students and courses involved in *Didactictac TV* project.

| Course | Degree [1] | Year | Teachers | Students |
|---|---|---|---|---|
| Body expression and human communication | DECE | E | 1 | 30 |
| Curriculum development of social sciences | DPET | 3rd | 1 | 40 |
| Didactic training for the language classroom II-English | DPET | E | 1 | 80 |
| Didactics of Asturian Language II | DPET | 4th | 1 | 60 |
| Didactics of cultural and natural heritage | DPET & DECE | E | 1 | 6 |
| Didactics of Literature | DPET | 4th | 1 | 180 |
| Didactics of Mathematics I | DPET | 2nd | 3 | 320 |
| Didactics of plastic expression | DPET | 2nd | 3 | 80 |
| Didactics of Social Sciences | DPET | 4th | 1 | 20 |
| Didactics of the natural environment and its cultural implication | DPET | 3rd | 4 | 320 |
| Laboratory of experimental sciences | MDTT | 1st | 1 | 12 |
| Learning and teaching: English | MDTT | 1st | 1 | 15 |
| Organization and management of socio-educational institutions | DP | 3rd | 1 | 90 |
| Workshop of stories, games and songs for the Foreign Language classroom - English | DECE | E | 1 | 60 |
| **TOTAL** | | | **18** | **1313** |

[1] DECE: Degree in Early Childhood Education. DP: Degree in Pedagogy. DPET: Degree in Primary Education Teaching. MDTT: Master's Degree in Teacher Training in Secondary and Upper Secondary Education and Vocational Training. E: Elective course.

The portal first version exhibited students' video productions through different courses channels using a website approach (García-Sampedro et al., 2021), but a second, more user-friendly, YouTube based version, was implemented and this version is used here. The feedback produced by university teachers, preservice teachers, and in-service teachers and pupils from elementary and secondary schools was essential in this choice. The YouTube video-sharing platform meets all requirements of the portal to implement the experience:

- Continuous updating.
- Individualized access to the specific course channels.
- Access to videos from the faculty classrooms.
- Online access from outside the university network.
- Video listing for public screens in Faculty building halls.
- Online access from schools

This approach has allowed to include other Teaching Training faculties and schools in the experience providing an innovative audiovisual tool to disseminate and share all types of video productions. This way, *Didactictac TV* portal, configured as a YouTube channel (Figure 1; https://www.youtube.com/channel/UCcHZFvrh7XPpKu66Tq1MibA), is nourished by specific YouTube courses channels related to (1) the Teacher Training and Education Faculty at University of Oviedo, (2) other Education Faculties from Spain, Japan and Poland; and (3) several schools (Primary and Secondary).

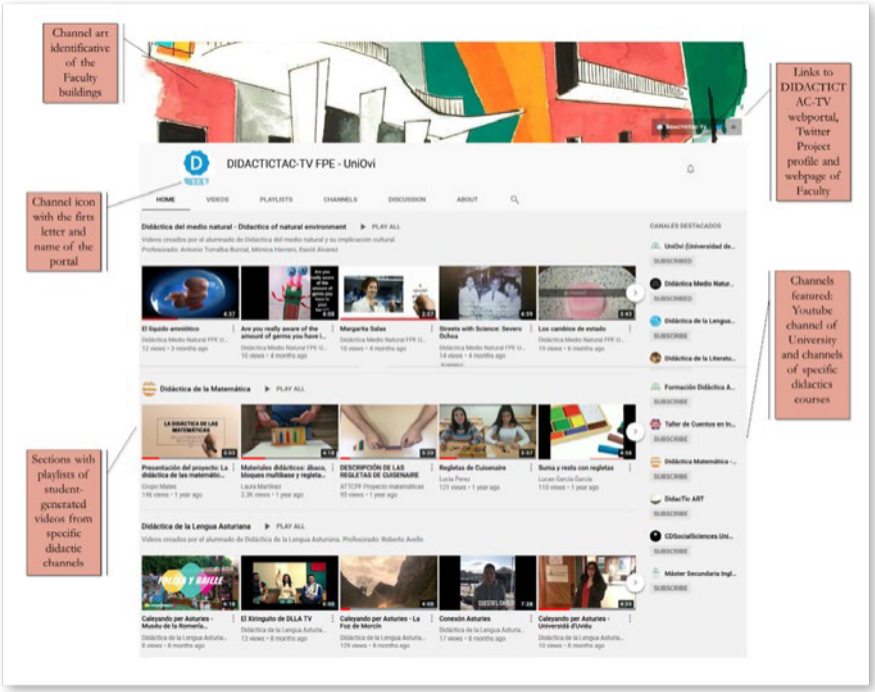


**Figure 1.** *Didactictac TV* YouTube channel portal.

Experience coordinators designed *Didactictac TV* portal to hold and link all the TV channels produced at the Teacher Training faculties and schools. On this web page, links to faculties and schools' webpages and blogs were also included, providing an extended version of Community of Inquiry (CoI) (Popescu & Badea, 2020). The portal provides an online environment with a general holistic integrated and comprehensive experience view (like the portal described by Rodafinos et al., 2018), where pre-service teachers can access to all simultaneous learning experiences from all the included educational institution, and schools can access to all *Didactictac TV* products, designed by students. The structure established to design the portal and integrate videos generated by the students is shown in Figure 2.

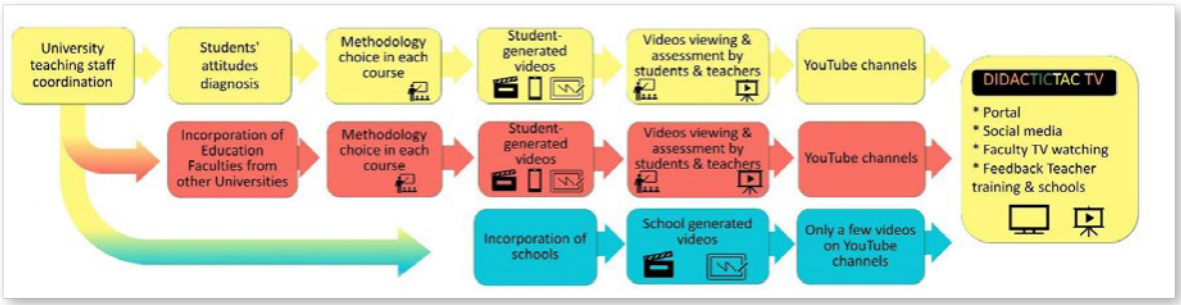


**Figure 2.** Experience stages including student-generated videos processes and Teacher Training faculties from other Universities and elementary and secondary schools´ incorporation.

Preservice teachers' perceptions and attitudes about the experience as well as their opinions about b-learning and m-learning, resources showed a highly positive perception of the project, and their interest in including the generation of audiovisual products in their future classrooms. Networking with Teacher Training and Education Faculties from other Universities allows the incorporation of new working groups to the experience. At the same time, meetings with elementary and secondary schools' teachers enabled to recruit several local and national schools.

## 3. RESULTS AND DISCUSSION

### 3.1. Development of teacher training channels

In the beginning, twelve YouTube channels at the Teacher Training and Education Faculty, University of Oviedo were created and included in the experience. Most of them started in 2018/19 academic year. Channels were expected to be designed including a header image, a profile image, some project information, and links to the project web portal. However, only 17% of these project channels comply with all the required features, and 17% observe all the aspects except one. On the other hand, the channels hosted the student-generated videos (see below) but in some cases, the videos were held in the students YouTube accounts linked to several playlist of the course channel. These examples show that heterogeneity is inherent in this multidisciplinary, multicultural, and multilinguistic experience that involves numerous teachers and students from different disciplines, universities, countries and continents. This plurality, which is also intrinsic to the Faculty itself, increases when other faculties and schools from different regions and countries join in the experience.

The specific channels were linked to *Didactictac TV* YouTube general channel and the portal and were also linked to the courses´ virtual classrooms in Virtual Campus of the University (implemented in a Moodle platform).

### 3.2. Development of channels in Elementary/Secondary Schools

Firstly, local schools were contacted and incorporated to the project, later, some regional schools showed their interest in joining in, and finally, some schools from other regions in the country were also included in it.

Teacher contacts and arrangements were made through telephone calls and afterwards, an informative meeting was celebrated at the Faculty. Some university and schoolteachers shared their experience with other colleagues, and more faculties and schools were aggregated to the project successively. Along the project, some specific meetings were organized with these new members to explain the characteristics of the project and provide them with the necessary information and protocols to be followed.

Whilst the portal was being developed at the faculty, some schools started to implement their own channels. Some of these channels were hosted in YouTube and some others in Vimeo platforms. Both types were held on webpages, Google Drive or school blogs, according to schoolteachers' preferences. Seven schools participated in the first-year project experience and six more were incorporated to *Didactictac TV* during the second.

The variety of thematic and video styles was very wide. Among those publicly available on YouTube, those produced by secondary students were recorded in English and were used mainly as a foreign language learning tool, and their topics were related to History, Experimental Sciences and Arts. In Primary Schools, environmental issues, Experimental Sciences, Music and Languages learning were the most frequent subjects in the audiovisuals.

### 3.3. Generation of audiovisual resources by preservice teachers

Groups of 4-5 preservice teachers were organized to design the videos. Students' groups selected a course content, wrote a digital storytelling including concepts and methods to be learned, and combined them with an engaging and suitable production (Dreon et al., 2011) for their audience (primary or secondary education students). After discussing video objectives, contents and methodology with their course teachers, students recorded their videos using mobile devices (smartphones, tablets or laptops) according to BYOD model (Bring Your Own Device). Empty classrooms, faculty nearby streets or students' own homes become recording sets.

Students showed a wide variety of video styles in which the main actors' roles were performed by puppets, toys, drawings, photographs, or students themselves. In most cases, videos were edited with mobile devices and for this purpose, students chose free or shareware software (e.g., Filmorago, Filmora, PowerDirector, Viva Video…).

The student-generated videos were viewed and discussed in the classrooms, and those approved by teachers were uploaded to the course YouTube channel. In some of the courses, students uploaded videos through their Google accounts, and the teacher linked all the course videos in a playlist; in some others, students' videos were uploaded by the teacher. In both cases, students previously signed an authorization to let the university reproduce their videos. This permission can be revoked at any time (in this case, the visibility of the video affected by the request is turned into private mode or eliminated, depending on the platform of the channel). After uploading the videos, preservice teachers should provide subtitles in the language they consider more appropriate, following info accessibility criteria (Rodafinos et al., 2018; Torralba-Burrial & Herrero Vázquez, 2018), and using YouTube accessibility options (Acosta et al., 2020).

### 3.4. Portal as Community of Inquiry

The design and implementation of the portal has been a complete success and has exceeded all the expectations bearing in mind the high number of participants, videos and institutions involved.

In Table 2, the portal use is shown, considering the number of accessible videos and the number of views achieved. It should be born in mind that the number of audiovisual resources generated by the students was higher than the figures shown below since some videos are not publicly available for different reasons. In some cases, students were not happy with the quality of images or sound. In some other cases, teachers found mistakes in explanations or excessive use of copyrighted material. Schools also decided not to publish some of their videos because of privacy issues and public image of under-age students.

**Table 2.** Number and views of student-generated videos accessible through the portal.

| Educacional centers | Videos | Views |
|---|---|---|
| Faculty of Teacher Training and Education of University of Oviedo | 176 | 5719 |
| Education Faculties from other universities | 37 | 14089 |
| Elementary and Secondary Schools | 105 | 3989 |
| **TOTAL** | **318** | **23 797** |

Analyzing how preservice teachers access and interact with the teaching resources they have produced, and with those produced by their peers from different countries, can improve the design of

educational networking and their social media use. In this sense, some other studies have showed that students access to YouTube videos mainly through mobile devices (e.g., Buzzetto-More, 2014). However, the specific analysis of one of the main channels in *Didacticac TV*, Didactics of Natural Environment, show a similar access through computers and mobile phones (around 50% each) and a minimal rate was found for the access through other mobile devices (Torralba-Burrial et al., 2021).

Other studies on Communities of Inquiry development analysed blog posts and tweets as complementary support to CoI learning and discussion spaces (Popescu & Badea, 2020). In this case, although there have been interactions on the portal and the videos through Twitter and Facebook, the most used social media has been WhatsApp, according to video access analyses hosted in YouTube (Torralba-Burrial et al., 2021). Social media such as Facebook, Twitter and Instagram can be perceived more as social interaction tools than as educational tools by students (Garrison, 2017), however, WhatsApp is normally used as a collaborative learning tool among university students. Private interactions among students in WhatsApp are considered opaque by teachers, and could only be estimated indirectly by analyzing different channels and videos accesses in YouTube from that social network (Torralba-Burrial et al., 2021).

One of the most interesting possibilities of the portal is facilitating the connection amidst preservice teachers, in-service teachers and students, allowing the discussion about audiovisual productions and methodologies used.

Additionally, the portal has allowed preservice teachers to connect with elementary/secondary schools and schools with them: preservice teachers produce audiovisual didactic resources, and schoolteachers and their pupils can view videos, discuss and give some feedback to them. Preservice teachers can also view videos generated by other preservice teachers from other collaborating universities in the project and compare them with their own work (Figure 3). At the beginning of the project, preservice teachers provided feedback on the videos generated by primary and secondary school students was considered, but legal issues regarding image privacy in the case of minors, especially in primary education students, ruled out this possibility.

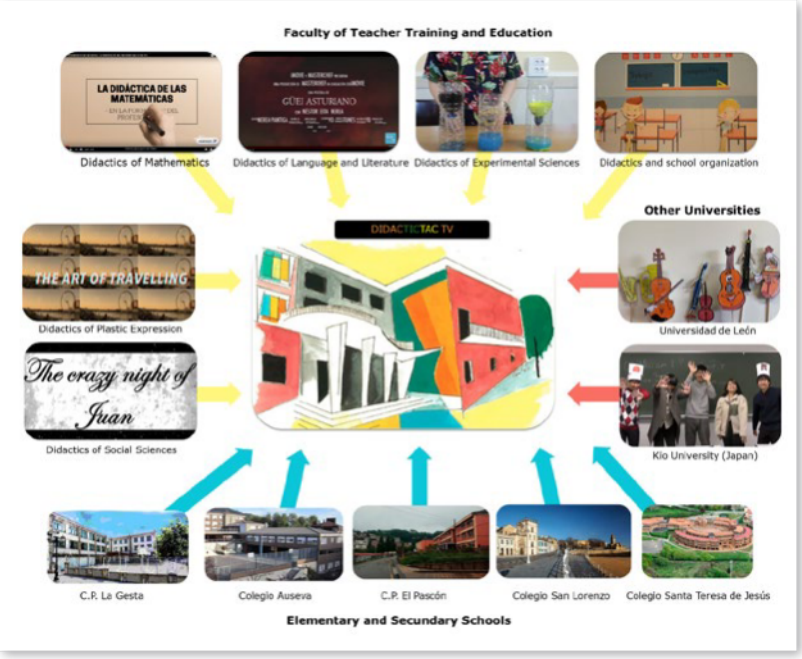


**Figure 3.** Visual scheme showing main portal inputs from preservice teachers training courses, education faculties from other universities, and regional schools.

The portal has allowed the connection among preservice teachers from several regions, countries and continents with different cultures and languages. The student-generated videos have facilitated the comparison of preservice teachers' productions in different didactic disciplines in Teacher Training contexts (teaching of Experimental sciences, Mathematics, Social sciences, Languages…).

## 4. CONCLUSIONS

This innovative experience has been a success, regarding the high number of teachers, courses and students from the institutions involved. *Didactictac TV* portal has evolved into a stimulating, beneficial and helpful didactic innovation in the Faculty of Teacher Training and Education at University of Oviedo and in the other participant universities and schools' contexts, permitting the connection and interaction among preservice teachers and university teachers with schoolteachers and pupils through their audiovisual productions. These productions, published in several distinct languages (Spanish, Asturian, English, Japanese, Polish), deal with an extremely wide variety of didactic topics and are edited in completely different styles. The videos produced by students, both at universities and at schools are multicultural and cross curricular, providing a very stimulating vision of the didactic topics and approaches de-livered. Likewise, the large number of teachers, students, departments and courses involved have developed a collaborative relationship focused on spreading and publicizing their common interests and products and provides an idea of the magnitude of the project.

The didactic experience was firstly addressed to Education faculties. However, its implementation in primary and secondary schools helped extend and enlarge an extremely important and necessary university-school / school-university network. Faculties of Education can learn what projects and methodologies are being developed at schools and the other way round, schools can disseminate their projects and connect with faculties which facilitates this mutual innovative progress.

The didactic experience presented in this article was initially conceived as an innovative way of connecting students and teachers from different teaching fields within the faculty, as well as connecting education faculties from different parts of the world. Besides, *Didactictac TV* also pretended to add value to students´ audiovisual products and promote their dissemination. Additionally, the necessary connection with schools opened the door to schoolteachers and student's participation. Heterogeneity is inherent in this multidisciplinary, multicultural and multilingual project which includes numerous teachers and students from different educational levels. Therefore, it would be advisable, as a recommendation for practitioners starting a similar portal or experience, to try to accommodate to this heterogeneity designing clear and effective instructions, guidelines and tutorials addressed to teachers and students in order to facilitate a smooth workflow. For all these reasons, flexibility became one of the most important characteristics of the project which was able to accommodate this heterogeneity of its many users. The elaboration of chart flows with clear instructions for teachers and students helped implement the project in many diverse institutions and led to its expansion, avoiding feelings of helplessness among its participants.

It would be optimal to elaborate the necessary tools to value to what extent preservice teachers integrate the acquired skills during their work placement periods or in their future professional development. It would be recommendable to analyze what sort of devices are employed by users to access the portal (smart phones, tablets, laptops, computers…) in different educational levels and countries. It would also be essential to know if teachers and students utilize portal videos as a resource for their practices or lessons, or if they use them to interact with their students or among students. Another possibility would be to research if videos are watched in full or not. Finally, it would also be interesting to

know to what extent the project facilitates methodological and cultural exchange among participants. All this information will be very useful to help preservice teachers to design their future products, use educational networks and improve their teaching skills.


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