

# INCLUSION, MULTICULTURALISM AND SCHOOL CONNECTION: RECONSIDERING TEACHER EDUCATION THROUGH STUDENTS' VIDEO GENERATION

ANTONIO TORRALBA<sup>\*</sup>, MARTA GARCÍA-SAMPEDRO<sup>\*</sup> & PÍA FERNÁNDEZ-CANTELI<sup>\*\*</sup>

Universidad de Oviedo<sup>\*</sup>; Consejería de Educación, Principado de Asturias<sup>\*\*</sup>

## ABSTRACT

This paper presents a reflection on the necessity of designing inclusive educational practices, not only at school, but at Education Faculties, too. The interaction between schools and education faculties is, without any doubt, crucial for both institutions, especially for future teachers who will be able to improve their skills working closely with in-service teachers and schoolchildren. Through a video self-generation experience, students from the Teacher Training and Education Faculty, University of Oviedo, Spain, learn how to design didactic videos for school audiences with an inclusive and multicultural perspective. The objectives of the experience are focused on developing student teachers' professional skills, especially, communicative, cooperative, and multicultural abilities for this new globalized era, and also intensifying the relationship among primary, secondary and tertiary educational stages.

**KEYWORDS:** teacher education, didactic videos, inclusive education

Nowadays, we find ourselves immersed in globalized and diverse societies, especially from an economic and cultural point of view, which is reflected in heterogeneous and varied types of students in all educational stages<sup>1</sup>. These societies, which are also conformed as network societies, aim at globality<sup>2</sup>. In them, learning communities expand, transcending schools, and linking elementary institutions and universities in different locations, countries, and cultures.

In recent decades, and mainly, in recent years, this can be exemplified in many ways such as the development of dissimilar educational formats based on different resources. In this case, we are presenting a reflection on

---

<sup>1</sup> P. FIGUERA GAZO, J. L. COIDURAS RODRÍGUEZ, *La transición a la universidad: un análisis desde la diversidad de las voces de los estudiantes*, in «*Revista de Educación*», 362, 2013, pp. 713-736.

<sup>2</sup> M. CASTELLS, *The Rise of the Network Society. The information age: economy, society, and culture, Volume 1*. 2nd edition, John Wiley & Sons, 2011.

an innovative experience focused on university and school students self-generated didactic videos. The didactic videos produced at education faculties and schools can be spread through social networks, particularly through YouTube. Videos dissemination manage to reach people who want to learn those contents or methodologies in distant parts of the planet integrating them in both non-formal and formal education<sup>3</sup>.

Didactic video development has fully increased since the pandemic, confirming that offering equitable and inclusive education for the entire population involve a vast number of difficulties. The closure of face-to-face educational facilities improved the development of educational strategies and methodologies over the Internet<sup>4</sup>. This new context let educational authorities know students' deficient technological abilities to face instruction in online environments, and later in hybrid scenarios, too. At the same time, teachers' digital skills deficiencies were revealed in similar teaching and learning circumstances<sup>5</sup>.

A remarkable impulse to improve educational legislation should help the enhancement of diversity understanding to facilitate both the exchange of thoughts and cultures. It would also be desirable to include students in diverse, motivating, and inclusive ways of teaching-learning processes as a means to engage all in learning without leaving any of them behind. These measures in favour of diversity not only should be included in norms (legislations) but in valuable pedagogical actions as a reflexive impulse of the educational agents (using Colicchi's terminology<sup>6</sup>).

Using appropriate learning environments to this new reality has been a complex issue to solve because inclusive education, overall, and the design

---

<sup>3</sup> See, for example, S. MOGHAVVEMI, A. SULAIMAN, N. I. JAAFAR, N. KASEM, *Social media as a complementary learning tool for teaching and learning: the case of YouTube*, in «*The International Journal of Management Education*», 16(1), 2018, 37-42. V. CURRAN, K. SIMMONS, L. MATTHEWS, L. FLEET, D. L. GUSTAFSON, N. A. FAIRBRIDGE, X. XU, *YouTube as an educational resource in medical education: a scoping review*, in «*Medical Science Educator*», 30(4), 2020, pp. 1775-1782. Remark necessary for the learning model based on audiovisuals from the Kahn Academy, see H. E. VIDERGOR, P. BEN-AMRAM, *Khan academy effectiveness: The case of math secondary students' perceptions*, in «*Computers & Education*», 157, 2020, 103985.

<sup>4</sup> C. CARRILLO, M. A. FLORES, *COVID-19 and teacher education: a literature review of online teaching and learning practices*, in «*European Journal of Teacher Education*», 43(4), 2020, pp. 466-487. J. I. POZO, M. P. PÉREZ ECHEVERRÍA, B. CABELLOS, D. L. SÁNCHEZ, *Teaching and learning in times of COVID-19: Uses of digital technologies during school lockdowns*, in «*Frontiers in Psychology*», 12, 2021, 656776.

<sup>5</sup> B. B. LOCKEE, *Shifting digital, shifting context:(re) considering teacher professional development for online and blended learning in the COVID-19 era*, in «*Educational Technology Research and Development*», 69(1), 2021, pp. 17-20. Y. AN, R. KAPLAN-RAKOWSKI, J. YANG, J. CONAN, W. KINARD, L. DAUGHRITY, *Examining K-12 teachers' feelings, experiences, and perspectives regarding online teaching during the early stage of the COVID-19 pandemic*, in «*Educational Technology Research and Development*», 69, 2021, pp. 2589-2613. M. GARCÍA-SAMPEDRO, E. PEÑA-SUÁREZ, L. RODRÍGUEZ-OLAY, *Online Education during the COVID 19 lockdown and school closures in Spain. Teachers' perceptions*, in «*Aloma: revista de psicología, ciències de l'educació i de l'esport*», 39 (2), 2021, pp.43-51.

<sup>6</sup> E. COLICCHI, *I valori in educazione e in pedagogia*. Carocci, 2021

of teaching resources should always take into consideration students' needs. In this sense, some current educational experiences have already been incorporating these issues in their development and will be able to facilitate diverse teaching-learning processes in this latest reality.

Within this reference framework, Teacher Education Faculties should provide future teachers with the adequate didactic experiences and training to develop their professional skills. This instruction should integrate ICTs, bearing in mind the nowadays diverse societies we are living in. This way, student teachers will be skilled enough to employ them in their future professional experiences<sup>7</sup>.

Following this train of thought, this article will reflect on how through an interactive generating video experience, student teachers will improve their future professional abilities, and above all, their capacity of understanding cultural diversity and bridging gaps between universities and schools, and particularly, among Teacher Education Faculties from different countries.

## 1. FUTURE TEACHERS AS VIDEO GENERATORS

In the Faculty of Teacher Training and Education of the University of Oviedo, Spain, an innovative experience related to audiovisual resources generation has been implementing since 2018<sup>8</sup>. The creation of a multi-channel online television platform, based on YouTube and fed by didactic videos generated by student teachers was proposed. The general parameters of this experience have been previously presented<sup>9</sup>, but can be outlined as follows: 1) diagnostic assessment of student teachers' attitudes towards learning through the video generation; 2) selection of specific methodologies depending on the course (16 participant courses in early childhood, primary and secondary education teaching degrees and masters); 3) generation of

---

<sup>7</sup> E. J. INSTEFJORD, E. MUNTHE, *Educating digitally competent teachers: A study of integration of professional digital competence in teacher education*, in «*Teaching and Teacher Education*», 67, 2017, pp. 37-45. R. A. RASHEED, A. KAMSIN, N. A. ABDULLAH, *Challenges in the online component of blended learning: A systematic review*, in «*Computers & Education*», 144, 2020, 103701.

<sup>8</sup> The implementation of Didactictac TV experience was endorsed by the Teacher Training and Education Faculty and the Education Sciences Department authorities and approved by the University of Oviedo Teaching Innovation Committee (code PINN-18-A-022, dated 27/11/2019, code PINN-19-B-02 dated 02/12/2020, and PINN-20-074 code). Some of the inclusion and accessibility features have been improved by the University of Oviedo project Generation, Use and Evaluation of Digital Teaching Resources (code UNOV-21-RLD-UE-5).

<sup>9</sup> A. TORRALBA-BURRIAL, M. GARCÍA-SAMPEDRO, *Key factors to implement a multilingual and cross-curricular YouTube - Based Portal as an online Teacher Training resource*, In J.M. Exteve et al. (eds), *Transformando la educación a través del conocimiento*, Barcelona, Editorial Octaedro, 2022, pp. 1276-1287.

educational videos by students; 4) viewing of the videos in the classroom and discussion; 5) uploading videos to the YouTube channels and link this channels to the general Didactictac-TV portal web. Courses from some other teacher training faculties located in Spain (University of León, University of Castilla-La Mancha, Complutense University of Madrid, University of Córdoba) have also been included. Finally, two foreign universities in Poland (University Marie Curie Skłodowska, in Lublin) and Japan (Kio University), besides 20 primary and secondary schools, were also incorporated into the Project.

More than 300 videos have been produced with more than 23000 viewings, having been analysed data from some of the courses such as, Didactics of Mathematics<sup>10</sup>, Didactics of Experimental Sciences<sup>11</sup>, and Didactics of Music<sup>12</sup>.

Another relevant aspect of the experience is the use of accessibility and inclusion criteria to generate and openly disseminate videos through the educational community. Additionally, the vast number of educational perspectives and practices displayed in the videos, together with the varieties of languages employed, gives a general idea of the multicultural and multilinguistic principles that the project follows.

## 2. BEARING IN MIND INCLUSION AND ACCESSIBILITY

In terms of diversity, generating teaching materials implies thinking. From a pedagogical point of view, it is necessary to reflect on how these materials are designed to reach as much students as possible so that they can accede to them in the best possible way. For this reason, the selection of the educational platform or network to upload them is essential. If the platform used is not accessible, part of the students will not be able to access the multiple teaching resources created. In this particular case, the use of the YouTube social network as a repository for the videos guarantees the

---

<sup>10</sup> A. AGUILAR-GONZÁLEZ, E. LORENZO-FERNÁNDEZ, L. MUÑIZ-RODRÍGUEZ, *Mathumers: creadores y consumidores de vídeos educativos sobre matemáticas*, in A. VIZCAÍNO-VERDÚ *et al.* (coord.), *Cultura participativa, fandom y narrativas emergentes en redes sociales*, Dykinson, 2021, pp 784-805. L. MUÑIZ-RODRÍGUEZ, E. LORENZO-FERNÁNDEZ, A. AGUILAR-GONZÁLEZ, *Mejora de la motivación hacia la didáctica de la matemática y desarrollo de la competencia docente de los estudiantes para maestro a partir de una experiencia de m-learning*, in *Congreso In Red 2021*, 2021, pp. 47-60.

<sup>11</sup> A. TORRALBA-BURRIAL, D. ÁLVAREZ, M. HERRERO, M. GARCÍA-SAMPEDRO, *Recursos didácticos audiovisuales en YouTube sobre Medio Natural: generación y autoconsumo por futuros docentes de Educación Primaria*, in *29 Encuentros de Didáctica de las Ciencias Experimentales*, Córdoba: Universidad de Córdoba & APICE, 2021, pp. 810-817.

<sup>12</sup> D. DÍAZ GONZÁLEZ, *Una televisión en línea para el desarrollo de competencias del profesorado de música en formación*, in A. GUILLÉN-RIQUELME (ed.), *International Handbook of Innovation and Assessment of the Quality of Higher Education and Research*, Vol. 1, Thomson Reuters, 2022.

accessibility of the platform, considering the different automatic and configurable approachability options available on that social network<sup>13</sup>.

However, the accessibility of the platform is only the first step, since it is necessary that the educational resources generated (videos in this case) are also designed attending to an accessibility criterion, which does not always happen<sup>14</sup>. In the case of videos generated by students, two basic measures were taken into consideration to improve their availability: 1) all videos had to have both image and sound; 2) all videos had to incorporate subtitles. These measures, which had previously been applied in videos generated by university lecturers in teacher training<sup>15</sup>, guarantee that these teaching resources present the information in a multimodal way (audio + video).

It should be emphasized that this innovative project allows multimodal access both for students who may present a specific and permanent educational need, and for students who present temporal educational needs. For example, facilitating access when or where it is not be feasible to view the video or listen to the audio.

Generating educational videos from an inclusive approach, bearing in mind their accessibility, can generate broader effects. These effects can be summarized in reflecting on the materials that are being produced; considering the reasons for the need of being inclusive, or the steps that should be taken to be inclusive, and, especially, increasing future teachers' professional sensitivity. In this sense, it should not be forgotten that there is an urgent and imperious necessity of overspreading inclusive education principles all over the world so that every student could be taught effectively and efficiently.

### 3. VALUING MULTICULTURALISM

---

<sup>13</sup> T. ACOSTA, P. ACOSTA-VARGAS, J. ZAMBRANO-MIRANDA, S. LUJAN-MORA, *Web Accessibility evaluation of videos published on YouTube by worldwide top-ranking universities*, in «*IEEE Access*», 8, 2020, pp. 110994-111011.

<sup>14</sup> T. ACOSTA *et al.*, *op. cit.*

<sup>15</sup> S. AGUDO PRADO, M. HERRERO, A. TORRALBA-BURRIAL, S. CALVO, ... L. ÁLVAREZ BLANCO, *Redes docentes interdisciplinares para promover la infoaccessibilidad en campus virtuales inclusivos*. In A.M. MARTÍN-CUADRADO, M.A. CANO-RAMOS (eds.), *La profesionalización del docente a través de la innovación educativa. Libro de actas: IX Jornadas de redes de investigación en innovación docente*, Madrid, UNED, 2018, pp. 232-235. A. TORRALBA-BURRIAL, M. HERRERO, *Potenciando la inclusión mediante buenas prácticas en infoaccessibilidad: la Didáctica de las Ciencias de la Vida en la formación inicial de maestros de Educación Infantil y Primaria*, in A. I. Allueva Pinilla, J. L. Alejandro Marco (eds.), *Casos de éxito en aprendizaje ubicuo y social mediado con tecnologías*, Zaragoza, Prensas de la Universidad de Zaragoza, 2018, pp. 109-117.

Regarding the set of videos generated in the didactic experience, student teachers considered the criteria of location and belonging to the place (based on the physical geography of the place or the local traditions); making references to gastronomic or intangible culture of society; universalization (scientists and universal experiences), or approaching to learning in different languages (Spanish, English, Asturian). It is important to highlight the bridges of understanding extended amidst students and lecturers from different countries (Spain, Poland, Japan), who were able to share the varied productions and methodologies chosen in each of those countries to address the educational experience.

#### 4. UNIVERSITY-SCHOOL RELATIONSHIP

The experience has made possible to increase the connection between student teachers and their professional future, facilitating the viewing of videos produced by students from primary and secondary education schools on various topics. Likewise, some active teachers at these schools were able to watch some of the videos generated by student teachers in the Teacher Education Faculties. These exchanges may provide reflection on their own educational practice, or, rather, on the idea of their own educational practice. Do the educational videos generated are adequate for the pupils and students for whom they were supposedly designed? Are they accessible? Are they motivating for students from a local perspective, or can they also be motivating for people from other countries? Through this project, videos generated by student teachers from other countries could be also analysed, allowing the reflection on the global or local functioning of pedagogical methodologies and learners' interests. All this, through the generation of videos and their dissemination on the YouTube social network.

#### 5. FINAL REFLECTION

The project has resulted in a very stimulating, beneficial, and useful educational innovative experience in Teacher Education, allowing the connection and interaction among university students and lecturers with school students and teachers through the audiovisual products designed and produced by all of them. These videos have been edited in different languages: Spanish, Asturian, English and Polish and have a multidisciplinary nature, considering the wide variety of topics they deal with. Student teachers have perceived video generation as an extremely

useful learning experience, coinciding with prior research<sup>16</sup>. This practice helps student teachers develop procedure knowledge<sup>17</sup>, clarify concepts<sup>18</sup>, and improve general learning outcomes<sup>19</sup>. Similar methodological approaches to promote student-generated didactic videos have been previously implemented in numerous disciplines worldwide with great success. They have normally been aimed at a specific learning area of learning<sup>20</sup>. However, in this case, the approach to the experience has gone further, considering the intentionality of the pedagogical fact to facilitate inclusion and accessibility, and, especially, to reflect on that same intentionality.

In conclusion, it might be said that the experience stands out, to a greater extent, for the search of a reflection on the pedagogical fact of facilitating the learning of diverse students. That is, exploring through technology the reasonable possibilities of achieving that pedagogical utopia of: learning opportunities for everyone through educational praxis (freely paraphrasing E. Colicchi<sup>21</sup>).

## 6. BIBLIOGRAPHY

- ACOSTA, T., P. ACOSTA-VARGAS, J. ZAMBRANO-MIRANDA, S. LUJAN-MORA, *Web Accessibility evaluation of videos published on YouTube by worldwide top-ranking universities*, in «*IEEE Access*», 8, 2020, pp. 110994-111011.
- AGUDO PRADO, S., M. HERRERO, A. TORRALBA-BURRIAL, S. CALVO, ... L. ÁLVAREZ BLANCO, *Redes docentes interdisciplinares para promover la infoaccesibilidad en campus virtuales inclusivos*. In A.M. MARTÍN-CUADRADO, M.A. CANO-RAMOS (eds.), *La profesionalización del*

---

<sup>16</sup> R. HAWLEY, C. ALLEN, *Student-generated video creation for assessment: can it transform assessment within Higher Education?* in «*International Journal for Transformative Research*», 5(1), 2018, pp. 1-11.

B. S. EPPS, T. LUO, P. S. MULJANA, *Lights, camera, activity! A systematic review of research on learner-generated videos*, in «*Journal of Information Technology Education: Research*», 20, 2021, pp. 405-427.

<sup>17</sup> J. L. PEREIRA, L. ECHEAZARRA, S. SANZ-SANTAMARÍA, J. GUTIÉRREZ, *Student-generated online videos to develop cross-curricular and curricular competencies in Nursing Studies*, in «*Computers in Human Behavior*», 31, 2014, pp. 580-590. J. T. JORDAN, M. C. BOX, K. E. EGUREN, T. A. PARKER, V. M. SARALDI-GALLARDO, M. I. WOLFE, M. T. GALLARDO-WILLIAMS, *Effectiveness of student-generated video as a teaching tool for an instrumental technique in the organic chemistry laboratory*, in «*Journal of Chemical Education*», 93(1), 2016, pp. 141-145.

<sup>18</sup> J. L. PEREIRA *et al.*, *op. cit.*

<sup>19</sup> C. ORÚS, M. J. BARLÉS, D. BELANCHE, L. CASALÓ, E. FRAJ, R. GURREA, *The effects of learner-generated videos for YouTube on learning outcomes and satisfaction*, in «*Computers & Education*», 95, 2016, pp. 254-269.

<sup>20</sup> See reviews on R. HAWLEY, C. ALLEN, *op. cit.*, and B. S. EPPS *et al.*, *op. cit.*

<sup>21</sup> E. COLICCHI, *Pedagogia «tra sfide e utopie» e «società della conoscenza»*, in *Studi sulla formazione*, 2-2008, pp. 15-24.

- docente a través de la innovación educativa. Libro de actas: IX Jornadas de redes de investigación en innovación docente*, Madrid, UNED, 2018, pp. 232-235.
- AGUILAR-GONZÁLEZ, A., E. LORENZO-FERNÁNDEZ, L. MUÑIZ-RODRÍGUEZ, *Mathumers: creadores y consumidores de vídeos educativos sobre matemáticas*, in A. VIZCAÍNO-VERDÚ *et al.* (coord.), *Cultura participativa, fandom y narrativas emergentes en redes sociales*, Dykinson, 2021, pp 784-805.
- AN, Y., R. KAPLAN-RAKOWSKI, J. YANG, J. CONAN, W. KINARD, L. DAUGHRITY, *Examining K-12 teachers' feelings, experiences, and perspectives regarding online teaching during the early stage of the COVID-19 pandemic*, in «*Educational Technology Research and Development*», 69, 2021, pp. 2589-2613.
- CARRILLO, C., M. A. FLORES, *COVID-19 and teacher education: a literature review of online teaching and learning practices*, in «*European Journal of Teacher Education*», 43(4), 2020, pp. 466-487
- CASTELLS, M., *The Rise of the Network Society. The information age: economy, society, and culture, Volume 1*. 2nd edition, John Wiley & Sons, 2011.
- COLICCHI, E., *Pedagogia «tra sfide e utopie» e «società della conoscenza»*, in *Studi sulla formazione*, 2-2008, pp. 15-24.
- COLICCHI, E., *I valori in educazione e in pedagogia*. Carocci, 2021.
- CURRAN, V., K. SIMMONS, L. MATTHEWS, L. FLEET, D. L. GUSTAFSON, N. A. FAIRBRIDGE, X. XU, *YouTube as an educational resource in medical education: a scoping review*, in «*Medical Science Educator*», 30(4), 2020, pp. 1775-1782.
- DÍAZ GONZÁLEZ, D., *Una televisión en línea para el desarrollo de competencias del profesorado de música en formación*, in A. GUILLÉN-RIQUELME (ed.), *International Handbook of Innovation and Assessment of the Quality of Higher Education and Research*, Vol. 1, Thomson Reuters, 2022.
- FIGUERA GAZO, P., J. L. COIDURAS RODRÍGUEZ, *La transición a la universidad: un análisis desde la diversidad de las voces de los estudiantes*, in «*Revista de Educación*», 362, 2013, pp. 713-736.
- GARCÍA-SAMPEDRO, M., E. PEÑA-SUÁREZ, L. RODRÍGUEZ-OLAY, *Online Education during the COVID 19 lockdown and school closures in Spain. Teachers' perceptions*, in «*Aloma: revista de psicología, ciències de l'educació i de l'esport*», 39 (2)2021, pp.43-51.
- HAWLEY, R., C. ALLEN, *Student-generated video creation for assessment: can it transform assessment within Higher Education?* in «*International Journal for Transformative Research*», 5(1), 2018, pp.



- 1-11. EPPS, B. S., T. LUO, P. S. MULJANA, *Lights, camera, activity! A systematic review of research on learner-generated videos*, in «*Journal of Information Technology Education: Research*», 20, 2021, pp. 405-427.
- INSTEFJORD, E. J., E. MUNTHE, *Educating digitally competent teachers: A study of integration of professional digital competence in teacher education*, in «*Teaching and Teacher Education*», 67, 2017, pp. 37-45.
- JORDAN, J.T., M. C. BOX, K. E. EGUREN, T. A. PARKER, V. M. SARALDI-GALLARDO, M. I. WOLFE, M. T. GALLARDO-WILLIAMS, *Effectiveness of student-generated video as a teaching tool for an instrumental technique in the organic chemistry laboratory*, in «*Journal of Chemical Education*», 93(1), 2016, pp. 141-145.
- LOCKEE, B. B. *Shifting digital, shifting context:(re) considering teacher professional development for online and blended learning in the COVID-19 era*, in «*Educational Technology Research and Development*», 69(1), 2021, pp. 17-20.
- MOGHAVVEMI, S., A. SULAIMAN, N. I. JAAFAR, N. KASEM, *Social media as a complementary learning tool for teaching and learning: the case of YouTube*, in «*The International Journal of Management Education*», 16(1), 2018, 37-42.
- MUÑIZ-RODRÍGUEZ, L., E. LORENZO-FERNÁNDEZ, A. AGUILAR-GONZÁLEZ, *Mejora de la motivación hacia la didáctica de la matemática y desarrollo de la competencia docente de los estudiantes para maestro a partir de una experiencia de m-learning*, in *Congreso In Red 2021*, 2021, pp. 47-60.
- ORÚS, C., M. J. BARLÉS, D. BELANCHE, L. CASALÓ, E. FRAJ, R. GURREA, *The effects of learner-generated videos for YouTube on learning outcomes and satisfaction*, in «*Computers & Education*», 95, 2016, pp. 254-269.
- PEREIRA, J. L., L. ECHEAZARRA, S. SANZ-SANTAMARÍA, J. GUTIÉRREZ, *Student-generated online videos to develop cross-curricular and curricular competencies in Nursing Studies*, in «*Computers in Human Behavior*», 31, 2014, pp. 580-590.
- POZO, J. I., M. P. PÉREZ ECHEVERRÍA, B. CABELLOS, D. L. SÁNCHEZ, *Teaching and learning in times of COVID-19: Uses of digital technologies during school lockdowns*, in «*Frontiers in Psychology*», 12, 2021, 656776.
- RASHEED, R. A., A. KAMSIN, N. A. ABDULLAH, *Challenges in the online component of blended learning: A systematic review*, in «*Computers & Education*», 144, 2020, 103701.
- TORRALBA-BURRIAL, A., M. GARCÍA-SAMPEDRO, *Key factors to implement a multilingual and cross-curricular YouTube - Based Portal as an online*

*Teacher Training resource*, In J.M. Exteve *et al.* (eds), *Transformando la educación a través del conocimiento*, Barcelona, Editorial Octaedro, 2022, pp. 1276-1287.

TORRALBA-BURRIAL, A., M. HERRERO, *Potenciando la inclusión mediante buenas prácticas en infoaccesibilidad: la Didáctica de las Ciencias de la Vida en la formación inicial de maestros de Educación Infantil y Primaria*, in A. I. Allueva Pinilla, J. L. Alejandro Marco (eds.), *Casos de éxito en aprendizaje ubicuo y social mediado con tecnologías*, Zaragoza, Prensas de la Universidad de Zaragoza, 2018, pp. 109-117.

TORRALBA-BURRIAL, A., D. ÁLVAREZ, M. HERRERO, M. GARCÍA-SAMPEDRO, *Recursos didácticos audiovisuales en YouTube sobre Medio Natural: generación y autoconsumo por futuros docentes de Educación Primaria*, in *29 Encuentros de Didáctica de las Ciencias Experimentales*, Córdoba: Universidad de Córdoba & APICE, 2021, pp. 810-817.

VIDERGOR, H. E., P. BEN-AMRAM, *Khan academy effectiveness: The case of math secondary students' perceptions*, in «*Computers & Education*», 157, 2020, 103985.