

TEACHING ONLINE: DIGITAL INITIATIVES IN DIGITAL EDUCATION AND MOBILE LEARNING

Anette Bengs¹, Colla J. MacDonald², Maria Cassar², Alexandros Yeratziotis⁴, George Geratziotis⁴, Mirko Prosen³, James Cilia², Anna Granberg¹, George A. Papadopoulos⁴, Sabina Ličen³

¹*Faculty of Education and Welfare Studies, Åbo Akademi University (FINLAND)*

²*Department of Nursing, University of Malta (MALTA)*

³*Department of Nursing, Faculty of Health Sciences, University of Primorska (SLOVENIA)*

⁴*Department of Computer Science, University of Cyprus (CYPRUS)*

Abstract

TOVID, an Erasmus+ funded project, addresses an unmet need – relevant, practical, continuing education accessible via digital video. TOVID addresses learning solutions by providing innovative, digital videos of high-quality content to faculty and staff at Universities in Malta, Finland, Cyprus and Slovenia, industry partners, hospitals, and an NGO. Three video series: Get Ready, Get Started, and Get Online Teaching Tips were designed, delivered and evaluated to increase learner motivation, competencies, a learning community, and a website <http://tovid.eu/> to further distribute the programs. Evaluating the resources enabled understanding of the value of video series and mobile learning in digital education. A mixed method design involving quantitative surveys and qualitative focus group interviews obtained a full understanding of the interventions. The videos were emailed to academic staff at participating universities and staff with the industry partners. Learners completed a survey after watching the videos. Follow-up focus groups were held with each organization. Preliminary findings suggest delivering continuing education via videos had positive results for engaging learners and learner knowledge retention. Findings showed that the videos generated new thinking with regard to online education, the resources both increased participant digital education readiness and competence, and produced innovative, long-lasting resources to facilitate educator's digital capacity. Findings also provided suggestions on how to improve the videos. The video education series not only involved educators as consumers of eLearning, but as digital creators as they developed scripts and shared teaching tips with colleagues. Learning with and from one another reduced the learning curve, costs and time to diffuse innovation and change and met the need of educators to adopt innovative approaches and digital technologies in teaching.

Keywords: Education, video pedagogy, educational technology, research project.

1 INTRODUCTION

COVID 19 affected and changed many industries and education was no exception. Travel, gymnasiums, salons and the tourist industry were totally shut down, hospitals and long-term care homes were short staffed and overwhelmed, pharmaceutical and medical suppliers flourished, while the retail and education industries had to change their business model to online deliver or cease to exist [1]. Overnight online learning needed to come to the rescue of educational organisations with an unprecedented uptake of educational solutions [2]. In response, Erasmus+ put out a call to support researchers and practitioners to develop solutions and provide alternative ways for academic staff and educators to receive continuing education during this time of crisis.

The purpose of the Erasmus+ funded Video Initiatives in Digital Education and Online Learning (TOVID) project was to address an unmet educational need that always existed, but was intensified by the COVID pandemic – design, deliver and evaluate relevant, practical, high quality digital content and best practices, accessible remotely. Having access to convenient digital education was essential during the COVID pandemic when face-to-face learning was not an option. Digital continuing education has always been a preference for short staffed hospitals and long-term care staff where leaving the workplace could jeopardize patient safety and care. Traditional continuing education activities, such as face-to-face day-long conferences, are often seen as ineffective drivers of change [3]. TOVID's digital video education programs (Get Ready, Get Started and Get Online Teaching Tips) were the proposed solution to increase readiness, knowledge and skills regarding using technology in educational experiences. The videos are entertaining, and easily accessible on mobile devices making the potential for outreach

limitless [4]. The intent of the three TOVID digital education video series is to create an international learning community of practice to collaboratively develop, share and distribute innovative training. The videos generate new thinking with regard to online education—an essential tool for integration into the knowledge economy and fostering collaboration with other educational institutions around the world - ultimately deepening the breadth and depth of cross-cultural dialogue [5]. It stood to reason, then, (1) convenient, practical, researched mobile learning and (2) one's colleagues as a source of information is beneficial as a means of creating learning experiences for effective staff development.

Delivering continuing education via digital videos has had positive results for both engaging learners and learner knowledge retention [4], [5]. Indeed, the keynote speaker at the INTED2023 conference, University Distinguished Teaching Scholar and Professor, Michael Wesch, states that, "Video is a great way to increase presence, connection, and engagement in your online class" [6] This use of digital education acknowledges that (a) educators are busier now than they ever have been and (b) adult educators enjoy learning from peers [7]. TOVID video series are unique, practical and innovative and implement new and exciting learning strategies that are timely and fill a void - enabling continuing education that otherwise wouldn't be possible – especially during a pandemic.

There is a wealth of literature on the use of video as an effective pedagogical tool [8]–[12]. Videos have been used in teaching and learning for decades, often using what are called experiential and reflective forms of cognition [10]. There is also a creative mode of knowing that focuses on using the interactive possibilities of video that technological advances have made possible. Certain practices have emerged, such as the use of video to support learning, as well as to support teachers' professional development, particularly their perceptual skills [13]. Despite this growing knowledge base, however, some issues remain unresolved. International studies have shown that many teachers still do not know how to use videos systematically in their teaching or misuse them. In some scientific literature, however, the use of videos in pedagogy is still predominantly regarded as an information medium and not as a medium for imparting knowledge [14], [15].

While there is ample literature documenting the potential educational benefits and value of video in teaching and learning contexts and environments, there are very few studies that specifically address video pedagogy. Video pedagogy refers to the various ways of leveraging the use of video materials in teaching and learning (including frameworks, objectives, and all other dimensions of a pedagogical scenario) in formal, non-formal, and informal contexts [16]. In video pedagogy, it is crucial to think of a dynamic triangle of "who, what, and how" when making pedagogical decisions and choices. The learner (who is being taught), the curriculum (what is to be taught, learned, and assessed), and the process (how the learner is taught, learned, and assessed) must be considered, as well as how video can mediate and facilitate these areas, their linkages and connections, and the processes that lead to effective and active learning [10], [17].

Video has become an important part of higher education but the efficient and effective use of videos in education requires innovation and investment [7]. It is integrated into traditional courses, is a cornerstone of many blended courses, and is often the primary mechanism for information delivery in online courses. Several meta-analyses have shown that technology can enhance learning, and several studies have shown that video in particular can be a very effective educational tool [8]. They are used to present factual, conceptual, or procedural content to students, provide flexible learning opportunities, allow input from other voices and leading experts, provide feedback to students, and allow students to provide feedback to instructors. The increasing use of digital video in higher education is understandable, as video has been shown to lead to higher learning gains than static media and live lectures when delivered effectively. Videos are valued by students as a learning tool and can increase student motivation [18].

Academic staff in four universities in (Malta, Cyprus, Finland and Slovenia); Malta's Ministry of Health and students at Mater Dei Hospital, the Malta Postgraduate Medical Training Centre; private industries' Learning Works staff delivering continuing education in long-term care facilities, and nurses in the European Federation of Educators for Nursing Science NGO (FINE), collaborated to create, share and distribute innovative resources to: a) support educators and reduce redundancy, time and cost, b) expediated uptake and scalability of digital technologies and increased confidence, knowledge, and skills of academic and healthcare staff with regard to digital education, c) increased adoption of digital technologies and innovative approaches in less digital enabled countries to improve learning experiences and prepare students to succeed in a digital world and d) increased understanding of the value of videos and mobile learning, and how and under what circumstances educators transfer learning to teaching. TOVID was intended to complement, supplement and extend the Digital Education and Timely Solutions (DIG-IT) Erasmus+ project (2019), where one of the outputs was a demanding 5-hour

a week, 9-module International E-Learning Award winning course to teach academic staff how to effectively design, delivery and evaluate online Study Units [19]–[21].

1.1 Description of the Video Series

TOVID was intended to complement, supplement and extend the Digital Education and Timely Solutions (DIG-IT) Erasmus+ project (2019) where one of the outputs was a demanding 5-hour a week, 9-module International E-Learning Awards winning course to teach academic staff how to effectively design, delivery and evaluate online Study Units [15]. The course now has over 200 graduates from the University of Malta. Our concern when conceptualizing the TOVID project was that once we work through the 'early adopters' waiting list for the course, how do we motivate educators still resistant to using technologies to enrol in the 9-module course to attain the knowledge, skills and confidence to meet the needs of students in a digital world? The TOVID Get Ready and Get Started Videos Series are new solutions to address this issue to maintain the waiting list for the 9-module course. The videos were designed to provide educators with the confidence, knowledge and skills to take first steps toward adopting digital technologies and innovative approaches in teaching and are intended to inspire some to enrol in additional digital education training - such as the 9-module course. In the evaluation of the 9-module course, academic staff reported they like to learn with and from each other – especially other disciplines. How could we create a learning community among educators who were transitioning to eLearning so they could share best online teaching tips and practices to ensure continued learning and development? The TOVID Get Online Teaching Tips digital education program was designed to solve this issue by developing strategic partnerships to support the exchange of good practices and provide a learning community to continue peer-to-peer support to continue to learn best practices regarding online teaching.

To solve these issues, TOVID set out to develop three video series. The first, Get Ready was intended to address the portion of the academic staff and trainers who were still resistant to digital education. For early adopters, this video series may seem redundant as it addresses topics they may have dealt with a decade or more ago. But the reality, particularly before COVID, in some countries such as Malta, Italy and Slovenia, we found there was still considerable resistance to transitioning to teaching online. It wasn't uncommon to hear academic staff suggest eLearning was inferior, express concerns that student would cheat if not face-to-face, and the conviction of the quality of their face-to-face teaching even though learners admitted to being distracted, texting, completing assignments, shopping or browsing the internet during face-to-face lectures. This set of 3 approximately 5 minutes Get Ready videos covers topics such as what is eLearning, when is eLearning appropriate, what are the benefits and shortcomings of eLearning; and the rationale for teaching online. The expectation was that this digital education series would convince sceptical educators of the merits of eLearning and motivate them to continue to view the second TOVID video series, Get Started.

The Get Started video series consists of 4 approximately 5-minute videos that summarize topics highlighted the 9-module course and the European Union Digital Education Quality Standard Framework (<http://project-digit.eu/index.php/resources/> such as: Designing Content for effective eLearning, Delivering Effective eLearning, Structure, Policies and Supporting the online learner; the Importance of Community to eLearning, Evaluating Online Learners and Online Study-Units. The digital video series contained links to practical resources to help improve pedagogies, digital literacy, assessment methods, and the learning experience of students in a digital age. The series was designed to motivate learners to take first steps in teaching online and to enrol in additional digital education training.

The third TOVID digital video series entitled Get Online Teaching Tips consists of 19 approximately 3-minute videos sharing online teaching tips by educators who have transitioned to teaching online. Topics are related to organizing content, saving time, and engaging learners. Educators wrote their scripts in a standardized template, so all videos have a consistent look and feel. The purpose this video digital program was to create a learning community among educators and provide continuous support for digital education allowing countries, universities, and the private and public healthcare industry to learn with and from one another. The Get Teaching provided an opportunity for academic staff and healthcare educators to continue to learn and improve the quality of their online teaching.

2 METHODOLOGY

A mixed method design involving quantitative surveys and qualitative focus group interviews obtained a full understanding of the interventions.

2.1 Video Scripts

The first step in designing the three digital video series was to write the scripts for the videos that included the content necessary to meet the objectives of the resource. This step was relatively straight forward and ran smoothly. Cyprus was assigned with drafting the three video series for the Get Ready Series and the University of Malta was responsible for drafting the four video scripts for the Get Started video series. Meetings were held to discuss the topics that would be most appropriate to cover, the most effective length and the style the videos reflect. Once drafted, the scripts were shared with all partners for comments, suggestions and edits until all partners were satisfied. Each of the four participating universities in TOVID invited five academic staff members experienced in teaching online to participate in creating a teaching tips for the Get Teaching Tips video series. The academic staff member was responsible for drafting their content guided by a template to ensure each tip in the series had a similar look and feel. The templates were reviewed and edited by the TOVID team and minor edits, and suggestions implemented.

2.2 Videoing and Editing








To demonstrate diversity each of the three Get Ready videos were assigned to different universities in Cyprus, Slovenia and Malta, and each of the four Get Started videos were assigned accordingly to universities in Cyprus, Slovenia, Malta and Finland. Each institution was responsible for selecting the participate and recording the video assigned to them. A videographer from each institution was hired to film the video. We predicted this would be a straightforward process, but it turned out to be more difficult than intended. One problem was finding a teleprompter in order to ensure the 5-minute scripts had a professional look and feel. The university of Malta didn't have one and it took several weeks, and several requests from government offices, the ministry of education, colleges, and schools on the island. Eventually, we learned of a private company that owned one and were able to rent it and conduct all the videoing over a two-day period. The university of Malta now owns a teleprompter as a result of the TOVID project. One of the partners conducted their videos without using a teleprompter. The result was not good with the participants constantly looking down to their scripts and back at the camera. The request by the project manager to ask the partners to redo the videos was well received, and the second versions using a teleprompter were much improved. Each video was then edited by the videographer who filmed the video.

2.3 Adding Graphics and Animations

Adding the graphics and animations again created a challenge for the project. After a few attempts within the project, we ended up needing to hire an expert outside the project. This again meant consultation in order to satisfy all team members that the videos were professional and of high quality. Fortunately, these consultations were always professional and well received. Hiring an external expert however did complicate the process as funds needed to be transferred, calls put out, and interviews held, all within the limits of the grant rules and protocols. The hick ups we experienced in what we thought was going to be a simple project meant our timelines were totally thrown. Unlike most Erasmus+ projects, the COVID call was only two years instead of three and no extensions were permitted.

The process followed for implementing video graphics and animations are described in the following steps. All steps were deemed crucial in terms of bringing recognition to the TOVID project. The colours of the project specifically contributed to this aspect, as well as a consistent design applied to all video scenarios. The initial step was for the videos to be reviewed in detail to ensure that the sound and lighting was correct to provide the user with a better experience by making viewing more pleasant and memorable.

Table 1. Procedure for inserting graphics and animations into the videos.

No.	Step name	Picture examples (where possible)	Outcome
1.	Evaluate website and logo to identify project brand colors.		Red and dark grey colors represent the project brand.
2.	Evaluate the quality of videos sound and picture.		Color and sound quality were poor.
3.	Design icons for animations for each specific video by considering the transcript.		Project brand colors were applied to designed relevant to subject icons.
4.	Decide on backgrounds for each video series.		Applied a background relevant to videos series subject.
5.	Edit videos sound and picture quality.		Sound and picture quality improved.
6.	Decide how to present the titles of the sections for each video.		Applied primary color for titles (red) and included logos of SEIT Lab (UCY), UM and Erasmus+. All partner logos were presented at the end of a video.
7.	Trim video to final length.		
8.	Add animations to video.		Applied project brand colors and designed relevant to subject icons and placed on the right side of presenter, being careful to avoid overlapping.

Following the steps above, was presenting the first video to the consortium for approval of the approach for feedback, to adjust the video based on the feedback and to apply the same concept for the rest of the videos.

2.4 Distribution

All the videos were uploaded onto the TOVID website <https://tovid.eu/>. The original plan was to email two videos out each week to educators at each institution to watch on their phone, computer or tablet with a brief message describing the purpose of the videos and how to access and evaluate them. Due to delays in finalizing the videos and the short project with no options for extensions, it was necessary to send three videos a week and adapt the evaluation plan. An example of an individualized email to UM academics and admin staff that was sent for week two is displayed in Fig. 1. Please note that this is one unified email, presented in six images below.

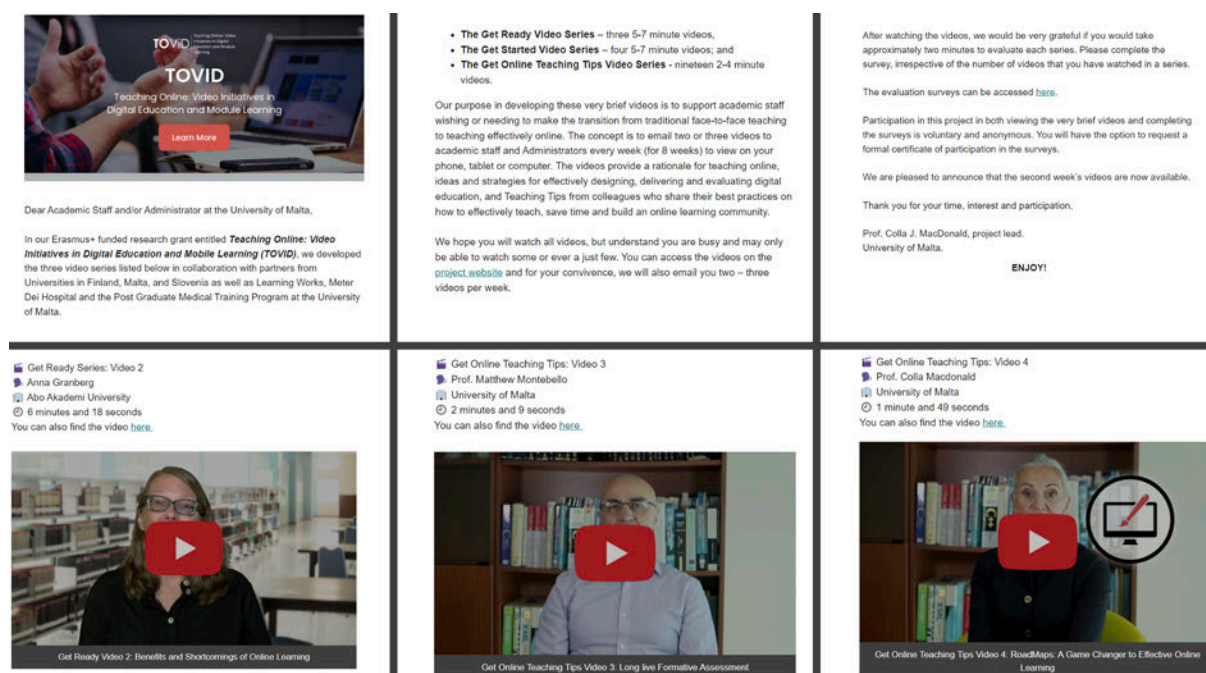


Figure 1. An example of an individualized email to academics and administrators at the University of Malta.

2.5 Evaluation

Evaluating the resources enabled understanding with regard to the value of video and mobile learning in digital education, how and under what circumstances busy academics, industry trainers and short staffed healthcare worker transfer learning to teaching, and how geography, cultural, gender, and language - impact digital education.

2.5.1 Participants

The sample consisted of teaching staff from four universities in Cyprus, Finland, Malta, and Slovenia. Additionally, in Malta long-term care staff from a private company, clinicians, residents, and students from a teaching hospital and a post-graduate medical training center participated in the study. The total number of responses to the questionnaires was 200 and a total of 12 focus group interviews were conducted (three per country) including 48 participants all in all.

2.5.2 Survey

A mixed method design involving quantitative surveys and qualitative focus group interviews was applied in order to obtain a full understanding of the interventions. The questionnaire was developed based on previous research and survey instruments. The items were adapted from the EU Digital Framework Summative Questionnaire [22] and the Instructional Video Evaluation Instrument [23]. Additional questions were developed by the researchers based on existing literature and knowledge of the field to complement those adapted from these instruments. The questionnaires for evaluating all three-video series [24] consists of 8 questions comprising 18 items. Of this number, 6 were closed-ended questions

and 2 were open-ended questions. The closed-ended questions were based on Likert scales, with anchors ranging from 1 (poor) to 5 (Excellent) for questions referring to quality and anchors ranging from 1 (Strongly disagree) to 5 (Strongly agree) for questions in the form of statements. The questionnaires are available online: [The Get Ready Video Series](#), [Get Started Video Series](#) and [Get Teaching Tips Video Series](#).

The first part of the questionnaire introduced the consent form, which explained the objectives of the project and the anonymity and confidentiality of the study. The closed-ended questions were divided into three sections: demographics (age, gender, and country), evaluation of the videos (general, audio, visuals, content), and subjective experiences and opinions (enjoyment, learning, interest, motivation, transfer of learning to practice, structure and duration of the videos). The two open-ended questions at the end of the questionnaires addressed identifying best aspects of the videos and how the videos could be improved.

The questionnaire was created and distributed in English across all four countries. Invitations to watch the videos and participate in the evaluation were sent by email to teaching staff in the organizations participating in the project. The links to the online questionnaires were included in the email and available on the video platform. The learners were asked to complete a 1-minute survey after viewing the videos.

2.5.3 *Focus group interviews*

Follow-up focus groups were held with academics and employees within each organization. Data were collected through 12 semi-structured focus group interviews, three in each country, in order to obtain a full understanding of the interventions. Examples of questions that were discussed include; Can you tell me about your experiences of digital teaching and learning in general? Tell me about your experience watching the TOVID video series; Did they meet your needs as a teacher or in your professional role? Did you learn anything new? What is your view on using video as a way of delivering and taking part in courses or training programs?

Two researchers conducted the interviews online using zoom. Invitations to participate in the focus group interviews were sent by email to the target groups in each organization participating in the project. Those who agreed to participate in the focus groups were provided with more information about the study, a time for the interview was set, and a consent form was signed and returned by email before the focus group interview. Participation in the focus groups was voluntary and interviews were scheduled for one hour at a time. The interviews were audio-recorded with participants' consent and transcribed verbatim.

2.5.4 *Data analysis*

Quantitative data were analyzed for descriptive statistics using the IBM SPSS statistics 27 software. The qualitative data were analyzed inductively by applying qualitative thematic analysis [25]. Following the steps, process, and guidelines provided by Braun and Clark [25], the transcripts were repeatedly read, and codes were generated after which themes were searched for, reviewed, and named. The analysis was conducted by two researchers independently and any discrepancies were thoroughly discussed before a consensus was finally reached.

3 RESULTS

3.1 Descriptive statistics

Overall, the experiences of the interventions (i.e., the videos) were positive. As the mean values presented in Table 1 show, the participants rated the quality of the videos as good to very good. This included the general rating as well as the ratings of the audio, visual, and content quality. The descriptive statistics also demonstrate that the participants agreed that the videos are of appropriate length and that the content was delivered in a clear and structured manner. The statistics presented in Table 1 also suggest that the participants enjoyed the videos, learned new ideas, and would recommend the videos to colleagues. The results imply that the participants intend to transfer the knowledge gained from watching the videos to practice. Moreover, data statistics item-specific means were quite high for the application of learning to practice and for helping to better serve the students.

Table 2. Mean values and standard deviations of items.

<i>Items</i>	<i>Mean value</i>	<i>Standard deviation</i>
General quality of the videos	3.46	0.93
Audio quality	4.07	0.83
Visual quality	3.07	1.29
Content quality	3.43	0.94
The length of the videos was appropriate	3.83	1.19
The presenter delivered the content in a clear and structured manner	4.13	0.68
I enjoyed the videos	3.83	0.86
I learned new ideas	3.46	1.10
The video kept my interest throughout	3.36	1.09
Watching the video motivated me to engage in future digital education	3.07	1.14
I will apply what I learned in my work.	3.67	0.92
I would recommend the videos to a colleague	3.75	1.03
The knowledge and skills I attained will help me better serve my students.	3.64	1.01

3.2 Four themes related to video-based and online learning

Preliminary analysis of the qualitative data revealed the following themes: engagement and knowledge retention, increased readiness, new thinking, and need for convenient and accessible CE. These are elaborated on next.

3.2.1 Engagement and knowledge retention

Participants expressed that delivering continuing education via videos had positive results for both engaging learners and learner knowledge retention, which are two key factors in determining the effectiveness of educational videos. The videos evaluated in this study facilitated these factors in different ways. Participants mentioned that the language used in the videos was clear and concise, and presenters had a clear pace of speaking. This finding is also supported by the high rating of the audio quality presented above. The practical, applicable, and step-by-step instructions were valued among the participants. The majority of the participants also pointed out that the repetition and review of key concepts helped with memory recall. A few did however find this to be redundant, resulting in videos that were longer than needed. Keeping videos short and to the point is perceived by busy academics and healthcare professionals as important for keeping viewers engaged. The Teaching Tip videos were 1.5-2.5 minutes long, and all participants considered these to be of appropriate length. In particular, the step-by-step instructions in the Online Teaching Tip Videos were highly appreciated by the participants. However, there was some disagreements regarding the appropriateness of the length of the 5-7 minutes long videos in the Get Ready and Get Started video series, suggesting that several 2-2.5-minute videos covering a narrow set of topics might be more effective in keeping learners engaged and attentive, compared to fewer 7 minutes long videos covering a broader set of topics. Last but not least, the visual appeal and the use of graphics and closed captions are important for promoting engagement and learner retention. The participants enjoyed the use of digital video graphics, and captions. It was evident that the videos developed within the TOVID project support different learning styles, but there was a general request among participants for more graphics. As one participant put it: "Perhaps more visuals complementing the script of the speaker ... such as when mentioning social platforms, Covid-19 etc.- just to keep it more upbeat". Another participant highlighted that: "Including more illustrations. Only four were included in the beginning of the video. More should have been included while the narrator is explaining what she demonstrates and what she expects from her students."

3.2.2 New thinking

According to the participants, the videos generated new thinking with regard to online education. This is an essential tool for integration into the knowledge economy and fostering collaboration with other educational institutions around the world and deepening the breadth and depth of cross-cultural

dialogue. By watching the TOVID videos and Online Teaching Tips delivered by colleagues across Europe, the participants reported learning about new ideas, digital tools, and concepts. The videos provided new ways of looking at familiar topics and challenged current beliefs and assumptions. One participant stated that it is “nice to get hands on tips from other teachers”. The Get Ready and Get Started videos were particularly considered to be a good source of new thinking for those less familiar with digital teaching and learning. One participant stated that they were “very informative for those who are new to digital education” and another pointed out they were good for “refreshing my brain on aspects relating to online learning”. Additionally, the Online Teaching Tip videos were perceived as inspirational and motivating by the participants. However, participants who were experienced in digital teaching and learning wished for “more new interesting aspects based on research” to stimulate new thinking and ideas. To conclude, educational videos can be a valuable source for expanding knowledge, developing new skills, or generally broadening horizons.

3.2.3 Increased readiness

Participants generally agreed that the resources both increased their digital education readiness and competence, and produced innovative, long-lasting resources to facilitate educator’s digital capacity. The resources supported individuals in acquiring and developing basic skills and competences. Digital education readiness and competence refer to being prepared to adopt and effectively use digital technology and content in education, including both access to necessary technology and content and the skills and knowledge to use them for teaching and learning. The videos in the first two series – Get Ready and Get Started – were considered useful for increasing the readiness for those new to online teaching and learning and for those currently transitioning from traditional to online teaching and learning. On the other hand, the videos in the Get Online Teaching Tips series were considered to be useful for all. These very short videos focusing on a specific tip were considered to be both practical and informative. The step-by-step instructions were considered to be particularly useful for increasing digital readiness and competence. However, the participants clearly stated a need for more concrete examples to be included in the videos.

3.2.4 Need for convenient and accessible CE

Participants clearly expressed a need for convenient, accessible continuing education for academic staff, healthcare professionals and students, and long-term care staff to transition from traditional teaching to teaching online. Traditional continuing education activities, such as day-long workshops, were considered to be potentially costly, and inconvenient to attend for educators with daily obligations. It was clear that convenient and accessible continuing education is driven by the need to continuously develop professionally, keep up with changes, and improve job performance. This is where online learning, self-paced courses, and flexible scheduling options are deemed essential. Digital options allow individuals to fit continuing education into their busy schedules and learn at their own pace, according to the participants. They expressed that videos can be an effective way to provide educational content for learners as they provide a self-paced, convenient, flexible, and accessible format. They provide a way for learners to easily develop new skills, stay informed and up-to-date with the latest trends and changes, learn new information, skills and challenges which may improve job performance and benefit their organizations. The value of convenient digital video for busy staff members is illustrated in the following response to the question ‘what do you like most about the videos’: “Short format and practical tips from peers”. However, participants highlighted that it is important to ensure that the videos used in continuing education are high-quality, well-produced, and relevant to the learning goals.

4 CONCLUSIONS

Preliminary findings suggest delivering continuing education via videos had positive results for both engaging learners and learner knowledge retention. The videos generated new thinking with regard to online education - an essential tool for integration into the knowledge economy and fostering collaboration with other educational institutions around the world - ultimately deepening the breadth and depth of cross-cultural dialogue. Findings showed that the resources both increased participant digital education readiness and competence, and produced innovative, long-lasting resources to facilitate educator’s digital capacity. Moreover, the findings suggested the resources supported individuals in acquiring and developing basic skills and competences. Findings confirmed there is a need for convenient, accessibly continuing education for academic staff, healthcare professionals and students, and long-term care staff to transition from traditional teaching to teaching online. Traditional continuing education activities, such as day-long workshops, are often seen as ineffective drivers of change, as

well as potentially costly, and inconvenient to attend for educators with daily obligations. Video clips have the benefit of being memorable and once a clip has been viewed, only a few times, the learner becomes quite familiar with the particulars of that event. The digital video education series not only involve educators as consumers of eLearning, but as digital creators as they developed video scripts and share best online teaching tips with colleagues learning with and from one another. Collaborating and learning with and from other institutions reduces the learning curve, costs and time to diffuse innovation and change with regard to meeting the needs of educators to adopt innovative approaches and digital technologies in teaching and learning. Findings also suggested learners found the presenters knowledgeable and the graphics and animations used in the videos enhanced their engagement. Findings also provided suggestions on how to improve the videos. For example, adding more graphics would further support engagement and different learning styles. Results can assist educators in the academic and practice settings to implement best continuing education initiatives and to overcome common challenges. It is important that educators are role models in demonstrating effective teaching and efficient learning opportunities whilst stewarding continuing education. Digital videos appear to allow educators to reach out to everyone and teaching with excellence in a variety of (learning) environments. Implications for future research include an exploration of the preparedness of educators to develop video education initiatives and an investigation of the net cost of developing and using video education against a longitudinal measure of the impact of learning on practice over a period of time.

REFERENCES

- [1] K.H. Mok, "Impact of COVID-19 on Higher Education: Critical Reflections," *High. Educ. Policy*, vol. 35, no. 3, pp. 563–567, Sep. 2022, doi: 10.1057/s41307-022-00285-x.
- [2] S.-E. Kandri, "How COVID-19 is driving a long-overdue revolution in education," *The European Sting - Critical News & Insights on European Politics, Economy, Foreign Affairs, Business & Technology - europeansting.com*, May 12, 2020. <https://europeansting.com/2020/05/12/how-covid-19-is-driving-a-long-overdue-revolution-in-education/> (accessed Feb. 10, 2023).
- [3] S. Dhawan, "Online Learning: A Panacea in the Time of COVID-19 Crisis," *J. Educ. Technol. Syst.*, vol. 49, no. 1, pp. 5–22, Sep. 2020, doi: 10.1177/0047239520934018.
- [4] S. Kohler and T.C. Dietrich, "Potentials and Limitations of Educational Videos on YouTube for Science Communication," *Front. Commun.*, vol. 6, 2021, Accessed: Feb. 10, 2023. [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fcomm.2021.581302>
- [5] M. Burns, *Distance Education for Teacher Training: Modes, Models, and Methods: An Edited Reference Book*. Independently published, 2022.
- [6] "INTED2023 Keynote Speakers." <https://iated.org/inted/keynote> (accessed Feb. 10, 2023).
- [7] W. Laaser and E. A. Toloza, "The Changing Role of the Educational Video in Higher Distance Education," *Int. Rev. Res. Open Distrib. Learn.*, vol. 18, no. 2, Apr. 2017, doi: 10.19173/irrodl.v18i2.3067.
- [8] C.J. Brame, "Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content," *CBE—Life Sci. Educ.*, vol. 15, no. 4, p. es6, Dec. 2016, doi: 10.1187/cbe.16-03-0125.
- [9] F. Meyer, R. Lampron, and M.-A. Gazé, "Four pedagogical models using video as a tool for learning in a distance teacher training program context," *Formre - Open J. Formazione Rete*, vol. 14, no. 2, Art. no. 2, Jun. 2014, doi: 10.13128/formare-15125.
- [10] A.A.P. Cattaneo et al., "Video-based collaborative learning: a pedagogical model and instructional design tool emerging from an international multiple case study," *Eur. J. Teach. Educ.*, vol. 0, no. 0, pp. 1–25, Jun. 2022, doi: 10.1080/02619768.2022.2086859.
- [11] D.T. Sharma and S. Sharma, "A study of YouTube as an effective educational tool," *J. Contemp. Issues Bus. Gov.*, vol. 27, no. 1, pp. 2686–2690, Mar. 2021.
- [12] S. Ličen, I. Karnjuš, and M. Prosen, "An evaluation study of nurse educators' learning experience in a digital modular course," *Andrag. Spoznanja*, vol. 28, no. 1, pp. 43–55, 2022.
- [13] C. Gaudin and S. Chaliès, "Video viewing in teacher education and professional development: A literature review," *Educ. Res. Rev.*, vol. 16, pp. 41–67, Oct. 2015, doi: 10.1016/j.edurev.2015.06.001.

- [14] C. Coman, L. G. Țîru, L. Meseșan-Schmitz, C. Stanciu, and M.C. Bularca, "Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective," *Sustainability*, vol. 12, no. 24, Art. no. 24, Jan. 2020, doi: 10.3390/su122410367.
- [15] A. Basantes-Andrade, S. Casillas-Martín, M. Cabezas-González, M. Naranjo-Toro, and F. Guerra-Reyes, "Standards of Teacher Digital Competence in Higher Education: A Systematic Literature Review," *Sustainability*, vol. 14, no. 21, Art. no. 21, Jan. 2022, doi: 10.3390/su142113983.
- [16] A. Cattaneo, A. Evi-Colombo, and M. Ruberto, *Video pedagogy for vocational education and training: an overview of video based teaching and learning*. LU: Publications Office, 2019. Accessed: Feb. 10, 2023. [Online]. Available: <https://data.europa.eu/doi/10.2816/720936>
- [17] D.S.P. Gedera and A. Zalipour, Eds., *Video Pedagogy: Theory and Practice*, 1st ed. 2021 edition. Springer, 2021.
- [18] M. Fyfield, M. Henderson, E. Heinrich, and P. Redmond, "Videos in higher education: Making the most of a good thing," *Australas. J. Educ. Technol.*, vol. 35, no. 5, Art. no. 5, Nov. 2019, doi: 10.14742/ajet.5930.
- [19] C.J. MacDonald et al., "European Union Digital Education quality standard framework and companion evaluation toolkit," *Open Learn. J. Open Distance E-Learn.*, Jul. 2021, Accessed: Dec. 04, 2021. [Online]. Available: <https://cogentoa.tandfonline.com/doi/full/10.1080/02680513.2021.1936476>
- [20] C.J. MacDonald et al., "Program Evaluation of a Continuing Education Course to Support Academic Staff Transitioning to Online Teaching," *IJSPE*, vol. 3, no. 2, pp. 54–80, 2021.
- [21] D. Clendinneng et al., "European Union Digital education framework: A quality standard to guide the design of healthcare apps," *Cogent Educ.*, vol. 9, no. 1, p. 2127480, Dec. 2022, doi: 10.1080/2331186X.2022.2127480.
- [22] C.J. MacDonald, "EU Digital Education Framework," Jan. 07, 2020. <http://project-digit.eu/index.php/digital-education-quality-standards/> (accessed Jan. 05, 2022).
- [23] B.P. Beaudin and D. Quick, "Instructional Video Evaluation Instrument," *J. Ext.*, vol. 34, no. 3, 1996.
- [24] A. Bengs, "TOVID Video Evaluation Questionnaire." <https://tovid.eu/index.php/videos-evaluation/> (accessed Feb. 12, 2023).
- [25] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qual. Res. Psychol.*, vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp063oa.K.H. Mok, "Impact of COVID-19 on Higher Education: Critical Reflections," *High. Educ. Policy*, vol. 35, no. 3, pp. 563–567, Sep. 2022, doi: 10.1057/s41307-022-00285-x.