College Teachers developing 21st-century skills during a CPD course in Mexico

Profesores universitarios desarrollan habilidades del siglo XXI durante un curso de DPC en México

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Abstract
Being users of technology does not necessarily imply that teachers and learners can be competent and skillfully literate in digital educational environments. This qualitative descriptive case study has the objective to present the way a Continuous Professional Development (CPD) course enabled a group of teachers in a public university in Puebla, Mexico to gradually develop 21st-century skills. The course also had the objective to create opportunities for meaningful learning through a set of multimodal tasks emerged from the new literacies of virtual contexts. During the course, the college teachers had to create multimodal resources (e.g., a podcast and a video) which were appropriate for their diverse academic fields within the university. The group of college teachers developed their digital literacy by making use of skills such as collaboration, complex and critical thinking, and analyzing information. The results showed that this group of teachers was willing to update their teaching skills in the middle of the pandemic, but they needed guidance and a safe environment that allowed them to feel confident so that they could teach in settings for which they were not fully prepared.
Keywords: teacher education, continuous learning, college teachers, digital literacy, Emergency Remote Teaching

Resumen
Poder hacer uso de la tecnología no necesariamente implica que maestros y estudiantes sean competentes y tengan la literacidad digital suficiente para funcionar en ambientes virtuales. Este estudio de caso cualitativo de corte descriptivo tiene como objetivo presentar la manera en que un curso de Desarrollo Profesional Continuo (CPD por sus siglas en inglés) permite a un grupo de profesores de una universidad pública en Puebla, México, desarrollar las habilidades llamadas del siglo 21º . Estas habilidades permitirán a los profesores crear oportunidades para un aprendizaje significativo a través de tareas multimodales que surgen de las nuevas literacidades necesarias para contextos virtuales. Durante el curso, los participantes crearon recursos multimodales (e.g., un podcast o un video) relacionados con sus campos académicos usando habilidades como la colaboración, el pensamiento crítico y complejo y el análisis de información. Los resultados mostraron que el grupo de profesores universitarios estaban dispuestos a actualizar sus habilidades docentes y digitales en la pandemia. Sin embargo, necesitaban una guía y el contexto apropiado

para sentirse confiados y seguros al enseñar en un ambiente para el que no estaban preparados por completo.

INTRODUCTION

The digitalization of communications has affected the way people interact, altering how language is used and hence, changing traditional approaches to literacy and education. As a result, the processes of teaching and learning have also changed. Cope and Kalantzis (2000) have affirmed that "literacy teaching and learning need to change because the world is changing" (p. 41). However, these changes in education have been rushed by the COVID-19 crisis in the world. Emergency Remote Teaching (ERT) took the place of face-to-face education, and different issues emerged when educational instruction had to take place from and at home, and a big number of college teachers around the world had to deliver instruction through a screen.

Regarding the use of virtual environments as the means ERT mainly took place, Kern and Warschauer (2000) claimed that technology shapes new language teaching and learning paradigms. Even when terms such as online education, Massive Open Online Courses (MOOCs) or webinars had been in use for some years. ERT made educators and learners realize that there was much to learn and teach and for which, not everybody was prepared. At the same time, Coiro et al. (2008) stated that new technologies have facilitated the emergence of new modalities and changed the concepts and views of literacy in education as well as in daily living.

The New London Group (1996) and Cope and Kalantzis (2015) indicated that the diversity of communications, channels, and different cultural and linguistic resources blend in multimodality, giving way to multiliteracies which need to be understood and, even, taught. In consequence, Allen and Paesani (2017) have affirmed that multiliteracy is one of the main goals of education in the 21st century. However, social and cultural practices are continuously changing during this century. In consequence, terms such as literacy and multiliteracies also need to be updated so that they reflect the real meaning of the practices they imply.

The users of new modalities need new skills to interpret, manage, share, and create their own and appropriate meanings through new communication channels which conform to the new literacies. Lankshear and Knobel (2003) have argued that multiliteracies involve not only new uses of technology but also "new ways of being and interacting in the world" (p.7). There is, then, the need to update the conceptualization of being literate, as Gee (2003) has claimed to appropriately function according to the new literacies. Literate people within the new multiliteracies "can bring about the transformation of thinking capacities, particularly when new cognitive tools, such as writing, or new processing tools, such as those relying on digital technology, are developed" (Martin & Grudziecki, 2006, p. 250).

This study presents a qualitative case study which describes and explores the development of 21st-century skills within a set of new literacies of a group of college teachers in a Public University in Mexico enrolled in a Continuous Professional Development (CPD) workshop-course during ERT. The study attempts to answer the question: How can a CPD course help a group of Mexican college teachers develop skills to approach 21st-century literacies during Emergency Remote Teaching?

Literacy and Multiliteracies

UNESCO (2005) defined literacy as the proficiency of cognitive and practical skills that can be developed according to their complexity. However, with the surge of the internet and other technologies, new semiotic modes and resources have also emerged, and there is a need to redefine literacy. To define "literacy", then, it is necessary to consider teaching and learning as changing processes based on how the world changes.

Multiliteracies is the concept used to identify a new perspective of literacy that reflects multiple communication ways and a more realistic and globalized context of cultural and linguistic diversity. The New London Group (1996) defined multiliteracy as the variety of ways to communicate or make meaning such as visual, audio and spatial elements, among others, including the different ways in which people read and write. The term also includes the notion of being able to efficiently read and write a variety of texts, for example, books, magazines, advertisements, or pamphlets as well as non-print media such as music, art, film, and television, and more recently, internet must be included. Kress (2003, 2010) attributed the changes in literacy to the media. As a result, multiple modes of communication appeared, and literacy practices became multimodal, as Kress and van Leeuwen (1996) affirmed. Later, these authors claimed that new technology emphasized multimodality, three-dimensionally, and interactivity in order to create new literacies (Kress & van Leeuwen, 2001) that teachers and students have started using in their daily, academic, professional, and personal lives. However, new literacies need new skills which allowed them to effectively make good use of the new literacies.

21st Century skills for new literacies

While getting ready for the future, the pandemic arrived, and teachers and learners realized that they were not fully prepared to face the demands of the situation. Technology was the means to deliver instruction. The term Emergency Remote Teaching (ERT) was coined by Hodges et al. (2020, para. 1) and have defined it as a "temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances". ERT developed, then, as the way to continue with instruction during a health emergency.

In the beginning of the century, the concept of 21st century skills was coined to refer to the knowledge, competences and skills which were needed to succeed in the 21st century (Anderson 2008; Voogt & Pelgrum, 2005). According to Dudeney et al. (2013), these 21st century skills include creativity, innovation, collaboration, teamwork, critical thinking, problem-solving, autonomy, flexibility, and lifelong learning. The role of these 21st-century skills is to enable users to efficiently make use of the new literacies that emerged from new modalities in communication to create meaning and to reflect a more realistic view of the real world in which teachers and learners interact nowadays. During ERT, teachers and learners had to use specific tools and resources so that they could make the most of technology.

Undoubtedly, the internet has played a central role as, given the context of the 21st century and the pandemic, many of the human actions and activities have been performed and mediated by digital tools. Following the identification of 21st-century skills, the context in which these skills can be developed should be defined, as most of the new literacies have emerged from a digital environment. Therefore, digital literacy has been defined as the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet according to the definition given by the Cornell University (2009, para. 1). However, this definition is still very broad.

Jones-Kavalier and Flannigan (2008) have been more specific in establishing that digital literacy is "…the ability to read and interpret media (text, sound, images), to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments" (p. 14).

The use of technology and the emergence of virtual environments for education have also made evident the limitations for teachers and learners to use technology for educational purposes within new social and academic practices. Users need to effectively function within these new paradigms or multiple literacies by "having access, interpreting, criticizing and participating in the emergent new forms of culture and society" as Kellner (2002, p. 163) claimed. Martin and Grudziecky affirmed (2006, p. 250) that "literacy can bring about the transformation of thinking capacities, particularly when new cognitive tools… as those relying on digital technology, are developed". ERT has pushed teachers to make use of all the resources available to deliver instruction in spite of the pandemic and the urgency of the transition to online teaching encountering a world of new literacies.

In order to offer the reader a more specific insight into the multiliteracies emerging, some examples of the new literacies are provided below:

- Technological literacies (Lankshear et al., 1997)
- Online literacy (Snyder & Beavis 2004; Tuman, 1996)
- eLiteracy (Martin, 2003)
- Visual literacy (Curtis, 2004; Moore & Dwyer, 1994)
- Computer literacy (Son et al., 2011)
- Internet literacy (Coiro et al., 2008)
- Technoliteracy (Kimber et al., 2007), among others.

As ERT has mostly occurred in digital environments, teachers had to develop different skills due to the demands of the situation caused by the pandemic. Even when living in the 21st century has made people users of technology, it does not necessarily make them knowledgeable users. To complement the concepts of multiple literacies, Martin (2003, p. 18) has also coined the term 'eLiteracy' to mean that "the awareness, skills, understandings, and reflective-evaluative approaches that are necessary for an individual to operate comfortably in information-rich and ICT-supported environments". However, the different definitions of literacy change as new technologies emerge (Leu et al., 2004) along with the practices that these new literacies involve and demand.

The twenty-first-century literacies' role

Multiliteracies in academic settings need teaching practices which attempt to include the current diversity of social, linguistic, and multimodal practices in communication. The new literacies have established a set of interconnected, strategic skills that connect language, meaning and social practices which in this study refer to the teaching practices of a group of college teachers during the pandemic.

With the new century, teachers have been required to adopt digital and multimodal practices in their teaching (Develotte et al. 2010; Miller 2010) to reduce the gap between teachers and learners which in the end may facilitate the teaching-learning processes. As a result, teachers and students have realized the importance to develop the necessary skills to perform in a multimodal world. By understanding how to perform teaching through multimodality, teachers learn "the metalanguage of multimodal texts" as Hung et al. (2013, p. 409) claimed. These new skills must

be developed by direct instruction and through practice. By understanding the way new literacies evolve, educators can use them and transform the teaching and learning processes in their classrooms.

From the basic concept of reading and writing, literacy now include the ability to read and write printed and digital texts. Additionally, users of these texts must be competent in assessing their own skills in accessing the new modes which aligned with technology have transformed the design of instruction, giving way to a pedagogy of literacies (Cope & Kalantzis, 2000) in order to create ways to approach and understand the meanings created by the new modalities. However, it has not been that easy; students and teachers need to learn a new set of skills which include how to use technology appropriately.

Developing the appropriate skills to perform well within the new literacies means developing skills such as creativity and innovation, communication, collaboration, research and information, critical thinking, problem-solving which have become necessary for students to work and live in a multimodal world. In this scenario, preparing students to function successfully in a digitalized society is one of the major concerns of teachers in spite of their own limitations and doubts.

METHODOLOGY

The study presented in this article falls into the category of a descriptive qualitative study as proposed by Yin (2009). The number of participants, eight, make this study a multiple case study as several cases are used to illustrate the issue, according to Creswell and Poth (2018). This qualitative, descriptive case study describes how a group of college teachers in Mexico developed skills to perform their teaching practices according to the new literacies which surged from multimodality in communication from various sources. The study investigates how the participants progressed in their development of the 21st century and the new literacies.

According to Creswell and Poth (2018), the procedure for conducting case study research is staged in four steps. The first is to determine if the methodology of the case study is appropriate for the study. The second was to identify the case or cases, that is, an individual or a group of individuals, an event, or an activity. Then, develop the procedures for data collection, usually from multiple data sources and define the analysis approach according to the issues that emerged from the data. Finally, it is necessary to report the meaning of the case and the lessons learned from the study.

The election of the case study emerged from the need to understand the process that college teachers go through when developing 21st-century skills and a deeper understanding of new literacies. The participants were selected from a group of college teachers who enrolled in a CPD course which made them get involved in the making of multimodal academic products for their disciplines and the subjects they were teaching at the moment of the study. The design of the course provided several sources of information described below. From the elements mentioned, this study falls into a qualitative, descriptive case study denomination.

The Context

The Escuela de Formación Docente y Desarrollo Profesional (EFD for its initials in Spanish for the Teachers´ Education School) was founded in April 2010 with the purpose of supporting the professionalization of the academic and administrative staff in the different educational levels offered in BUAP. The EFD also aims to offer, through its courses, the best pedagogic and administrative practices using ICT to update the skills of those who work at Benemérita Universidad Autónoma de Puebla (BUAP). The courses offered in the EFD are free for BUAP teachers.

The BUAP is a big public university in Mexico located in the state of Puebla. The EFD has maintained holistic, sociocultural constructivism, and humanistic approach in the planning and delivery of the courses so that the professionals who attend the courses give their students an integral education approach according to the philosophy and approaches of BUAP called the MUM model (Modelo Universitario Minerva) BUAP (2009). The EFD offers CPD courses all year long. Before March 2020, most of the courses were offered in a blended modality. However, during the COVID-19 surge, the courses were offered as full online instruction.

The courses offered by the EFD are considered workshops as learners (BUAP professors) can actively participate and learn not only theory but put the knowledge acquired into practice. One of the workshop courses offered is the Transversality in MUM course. This course aims at developing teachers´ awareness on transversality and to develop 21st century literacies so that they could produce materials and resources for their own courses following the idea of transversality, which aims at contributing to an integral formation of the student by establishing three axes or pillars which should pervade throughout the curriculum. The transversal axes of the university model of instruction are: technology, a foreign language, and research skills. These axes of instruction are expected to be included in all the courses taught at the university to offer a holistic approach to the preparation of professionals of different areas of knowledge or academic disciplines.

Participants

The participants of this qualitative case study were a group of BUAP professors who registered for the course and who were informed about the study, and they agreed that their tasks and collaborations in the forums along the course would be used for research. Fifteen professors registered, and only eight teachers finished the course successfully. These eight professors became the participants of this study, pseudonyms were used to protect their identity. They all came from different Schools or Institutes within BUAP. Their backgrounds were all different, as Chart 1 presents:

Chart 1. *The participants*

Name (pseudonyms)	Academic Background	Works at:
1.- Patricia	B.A in Psychology M.A. in Criminology	School of Criminology
2.- Alma	B.A. and M.A. in Education PhD student in Education	School of Communication
3.- Cristina	B.A. and M.A in ELT	School of Languages
4.- Diana	B.A. in Music M.A. in Esthetics and Arts	School of Music
5.- Jose	B.A and M.A. in Medicine	Nursing School
6.- Luis	B.A in Literature M.A in Language Science	BUAP High School
7.- Laura	B.A. and MEI in ELT	School of Languages
8.- Victor	B.A. in Law M.A. in Political Science PhD in Sociology	School of Law

The participants were all Mexican citizens who spoke Spanish as their native language. They were all working in the Fall- 2020 term during ERT and voluntarily enrolled in the course workshop.

The planning of the course

The workshop course called Transversality in MUM, is useful for BUAP teachers as it makes them use appropriate teaching-learning strategies in order to create opportunities for meaningful learning in their own disciplines while developing digital skills. The tasks in the course are designed in a way that they should contribute to the development of teachers´ complex and creative thinking, problem-solving, and collaboration, as well as the necessary skills for the use of technology, exploring the internet, and finding relevant information while using a foreign language, English in this case. At the same time, the course intends to help teachers improve their teaching practices following the guidelines established in the institutional model called Minerva, previously explained.

The course took place from November 9th to December 6th, 2020 that is four weeks. The program was designed in a way that each task demanded a certain development of the mentioned skills. As an online course, the Virtual Learning Environment (VLE) used to organize the contents of the course was Moodle, as it was the institutional platform offered by the BUAP.

Each week consisted of five stages, organized as shown in Figure 1 as an example:

Fig. 1 *Week two: Transversal topics in my own discipline*

Reto 2. Abordar temas transversales desde la propia disciplina
Semana 2

Note: from the EFD Moodle platform

- Identifying the challenge: Forum, which consisted in the presentation of a situation or problem in a higher education context and the participants had to participate in a forum each week presenting and sharing their views on the topic or the problem.
- Investigating: Some materials related to the topic of the week were uploaded and participants had to read articles or explore links. Additionally, participants were encouraged to find reliable information to complement the materials.
- Establishing the task: The participants had to identify the task (e.g., a text, a podcast or a video) and organize the contents of their task and elaborate it.
- Sharing: Participants shared their work either in a mind-map or by including the link to the podcast or video. An important feature of the course was peer feedback. This way, participants had the opportunity to revise their work and improve it.
- Documenting- delivering the task- Finally, participants had to submit their work on time. Finally, the facilitator sent some additional individual feedback

The tasks were designed to gradually develop some 21st-century skills of the participants (see Chart 2) by engaging in producing multimodal resources for their own classrooms or disciplines. Even when the course was online, the facilitator was available for guidance and academic support. The participants could send a message through the Moodle platform or by email to the facilitators´ institutional address.

Chart 2. *The tasks of the course*

Week	Identifying the challenge	Investigating (skills needed)	The task	Sharing and submitting the task
Week 1	Concepts Forum	Critical and complex thinking skills. Identifying key concepts for the course.	Writing a text	Sharing their findings, Commenting on each-other´s texts, Submitting a text with definitions.
Week 2	Creating a podcast	Critical thinking, Learning how to use tools and resources to create a podcast, Organizing content	Creating a podcast	Sharing podcasts, Commenting on each-other´s podcasts.
Week 3	Creating a video in a *Pecha Kucha* format in English	Learning how to use tools and resources to create a video Organizing content	Creating a *Pecha-Kucha* video in English	Sharing the link to their video and comment on each-other´s videos.
Final task	Writing a final document integrating their experiences, results and reflections on the tasks of the course.			

RESULTS

As a descriptive case study, the results of the study provide information for an in-depth understanding of the issue, collecting data from several sources. The data was collected from the forums and reflections in which the participants were involved and the tasks which they submitted during the one-month online CPD course. The course was designed in a way that the participants developed new skills for new literacies through guided tasks to produce their own multimodal teaching resources (e.g., a podcast and a video). According to the nature of this research, the development of the course is described in the following paragraphs.

When the course was open for registration, fifteen BUAP professors enrolled. The courses that the EFD offers are free for BUAP teachers. The first week, twelve teachers introduced themselves in the opening forum. However, only ten teachers send the first task which was a text which had to include definitions of the key concepts of the course (e.g., transversality in the curriculum, learning and teaching strategies). For this initial task, the challenge for the participants was to make use of several skills, for example, finding information from reliable sources and using their critical thinking to identify key concepts and write appropriate definitions. The topic for the

first week forum was to share experiences about their teaching trajectory. Before submitting their task, the participants had to share a mind-map with the concepts so that all participants could comment and get feedback from peers. By the end of the first week, ten teachers had engaged in the development of the first week by participating in the forum, doing, and submitting the task. The facilitator of the course reached the rest of the participants, but they did not respond to the messages and emails sent.

The task for the second week was to create a podcast related to one of the topics of the subject they were teaching during the term. Additionally, the professors had to participate in a forum about engaging students in their subjects and identifying some of the challenges they had met during their teaching practice. Some of the most relevant comments were:

"In order to engage students in the subject, it is important to know them and what they like, sometimes we, teachers, cannot compete with their gadgets, so I am a little afraid, but I know I can learn" Cristina

"Teachers must provide students the content of the subject in a way that knowledge is interesting for the new generations, so using technology sounds interesting but a challenge at the same time" Luis

"Content should be accompanied with meaning along the curriculum, a podcast is an interesting idea, but I need to learn how to do it" Diana

"It is the teacher´s role to provide students with tools and concepts, but also to help them project themselves into the future and the future is virtual and online" Victor

"Teachers must create a balance among content, teaching and learning so, by creating new materials for students, they can pace their own progress" Luis

Finally, they had to create their podcasts and share the link of their work with their peers who gave feedback to each other. The task at the end of the week was to send a document including the rationale for their podcast, the link to the audio, and a reflection on the difficulties faced and how they had succeeded in the challenge of creating a podcast. The number of participants who completed all the tasks of the second week and submitted the task was nine. The facilitator got in touch with the missing participant, but there was no answer-back.

For the third week, the challenge was more significant. Participants had to create a video related to the topic they had chosen for the previous task. This week, they had to communicate the content of the topic and organize it in a Pecha Kucha format presentation. A Pecha Kucha (PK) is a Japanese format of presentation which lasts six minutes and forty seconds, and it highlights the use of 20 images. Each image should be explained in 20 seconds. This format is also called a PK 20x20 presentation.

Once they had videotaped their presentation, the participants uploaded it to a YouTube Channel and shared the link with their peers. They commented on each other´s work so that they could get feedback from the facilitator but also from peers. The task at the end of the week was to submit a paper stating the challenges participants faced and how they overcame obstacles, as well as how they felt by achieving the goal of creating a Pecha Kucha, uploading it to an Internet platform, share it, and receive feedback from peers. In the third week, eight participants completed the tasks and submitted their video.

The final task was to submit a document in which they integrated all the work done during the course but also how they were planning to use the skills, tools, and resources learned as well

as their final reflections on the CPD course. Here are some examples of the insights the participants vested in their final document:

> Victor expressed "With the activities that we have done, we realized that it is necessary to take a course like this in order to assimilate the way students deal with technology and foreign languages. It is important to mention that this reality is a challenge that tested our previous knowledge and beliefs and our own professional experience"

> Alma said "The incorporation of new knowledge and the introduction of new digital tools will give me more elements to understand the new complex educational reality which the pandemic has originated. This way, I will be able to guarantee an integral learning, which requires the addition of transversal axes in the classroom at a global level".

> Cristina wrote in her final task: "During this course, I felt like a novice teacher again by creating new and innovative resources for online classes. I realized that it is necessary to change some of the paradigms we have been using in our teaching".

> Luis reflected on actions to take "I cannot say I enjoyed the course, the tasks were difficult and I realized I need to work on my technology and language skills. I need to improve my pronunciation in English. However, it has been an interesting and challenging course".

The eight participants successfully finished the course, and they all expressed that they needed the guidance to start using new skills, tools, and resources, but they had been reluctant to do it because they had not felt confident to start on their own. They all agreed that the tasks during the course were a challenge for them as they were producing them for the first time. The participants also expressed that they realized that the development of the skills and literacies made them delve into the way their students live, get information, and learn.

DISCUSSION

As part of the findings, the study identified that college teachers are aware of the need to make changes in teaching and learning and that teachers' transformation is needed. In the first forum, some of them expressed their concerns regarding technology, as they felt they would not feel confident doing something in their classroom which they did not fully understand, but they knew these multimodal practices would have a positive impact on their students´ academic achievements following Coyle et al. (2010).

From their subsequent tasks, it can be said that this group of college teachers were willing to engage in this transformation by engaging in CPD through learning and developing skills for the new literacies. The development of skills for the 21st century may help college teachers connect with their students in spite of the present and future challenges that the surrounding environment conditions may impose on education by becoming designers of pedagogies or "designers of processes and learning environments, not only bosses who dictate what the people under their charge must think or do" as the New London Group had already affirmed in 1996 (p. 19).

During ERT, college teachers had to learn to feel comfortable within the new literacies. They became techno and computer literate by integrating their technological and cognitive skills. The participants might also start creating tasks which could increase learners thinking as most of the participants mentioned in their reflections following Son et al. (2011, p. 27), who defined computer

literacy "as the ability to use computers at an adequate level for creation, communication and collaboration in a literate society" (p. 27) as the communities created during ERT. One of the insights the teachers most expressed was the need to transform their own teaching by learning the new modes or literacies encountered.

The participants of the study proved that college teachers are ready to develop different ways of working with the new technologies. However, they are not all prepared for the new literacies that had emerged from virtual environments. Regarding the research question of the study: How can a CPD course help a group of Mexican college teachers develop skills to approach 21st-century literacies during Emergency Remote Teaching? It can be said that a CPD course like the one in this research could provide teachers with a guided and safe environment where they can try and develop new skills and, at the same time, analyze the new literacies needed in this century, especially during ERT. College teachers know that they need to apply digital resources and tools for their educational goals so that they can engage learners in more updated environments; however, they need to be assisted. Teachers' computer literacy is one of the most relevant objectives in the 21st century to turn teachers into technology-proficient educators (Hubbard, 2008). When teachers are well prepared, they can also empower their students to use technology for more effective and appropriate learning.

The CPD course described in this study proved that these college teachers were also willing to innovate, experiment, and create new ways to connect and engage their students as long as they were also guided in the initial transformation of their teaching to multimodal contexts. The results of the in-depth description of the case study in this research confirm what Ledward and Hirata (2011) pointed out when they claimed that 21st-century skills are a blend of content knowledge and expertise, which will allow college teachers to perform successfully by feeling confident within the new literacies.

CONCLUSION

Back in 1996, the New London Group (1996) argued that practices which are associated with academic literacy should align with the digital and multimodal literacy practices in which younger generations engage in their daily lives. ERT during the pandemic has forced educators and students to learn that to explore and perform well in the new literacies, they need new skills. This way, educators can be in a better and more informed position, in spite of their own limitations and concerns, transform their teaching practices and appropriately reach younger generations.

College teachers, at least in Mexico, may need support to feel confident and empowered while developing 21st-century skills so that they can implement and integrate digital and multimodal teaching practices in their classrooms. Virtual environments require multimodal instruction that may be more adequate, motivating, and engaging for their learners. Teachers may benefit from opportunities to develop these skills and to learn about the new literacies, such as the course workshop described in this study. The number of teachers who successfully finished the course (eight of fifteen professors registered) suggests that the process of developing 21st-century skills and becoming literate in new modalities and literacies might still be difficult for some teachers. However, it is a feasible endeavor for college teachers who were not used to performing teaching in virtual environments.

Considering the challenges of ERT, it is worth pointing out the efforts that some institutions such as BUAP have developed to enable their teachers during the pandemic. This situation requires

a quicker and more urgent transition from traditional face-to-face instruction to hybrid or online modalities where new literacies emerge. From the results of the study, it is necessary to be aware that college teachers need guidance and support to competently perform in multimodal contexts and provide multimodal pedagogies so that the classroom, physical and virtual, becomes a better and more effective environment for teaching and learning.

Acknowledgements

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