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DISTANCE EDUCATION AS AN INNOVATIVE TEACHING METHOD OF THE 21ST CENTURY

EDUCACIÓN A DISTANCIA COMO MÉTODO DE ENSEÑANZA INNOVADOR DEL SIGLO 21

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Distance Education as an innovative teaching method of the 21st Century

Educación a Distancia como método de enseñanza innovador del Siglo 21

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ABSTRACT

Distance education is becoming a common strategy in higher education and therefore, it is having a great impact inside the learning environments since the global pandemic. This paper is a call for the 21st-century educators to apply the use of digital tools within the virtual classroom so that learners achieve the skills and abilities required in a liquid society where information runs through the network and is delivered to users as fast as possible. MOOCs are helping virtual instructors to include citizens from all the hidden areas of the countries that are using it. Furthermore, LMS are being implemented so that educators keep track of the learning process of students. This essay discusses the possible risks of VR such as AD presented in a society where learners want to deliver their tasks just to get a good grade rather than acquiring the competencies that the follow up activities designed by the tutor intend to.

Keywords: Distant Education; MOOCs; Learning Management Systems; Virtual Education; Digital Tools; Academic Dishonesty.

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RESUMEN

La educación a distancia se está convirtiendo en una estrategia común en la educación superior y, por lo tanto, está teniendo un gran impacto en los entornos de aprendizaje desde la pandemia global. Este artículo hace un llamado a los educadores del siglo XXI para que apliquen el uso de herramientas digitales en el aula virtual, de manera que los estudiantes adquieran las habilidades y capacidades necesarias en una sociedad fluida donde la información fluye a través de la red y se entrega a los usuarios con la mayor rapidez posible. Los MOOC (cursos online masivos y abiertos) permiten a los instructores virtuales incluir a ciudadanos de todas las zonas remotas de los países que los utilizan. Además, se están implementando sistemas de gestión del aprendizaje (LMS) para que los educadores puedan dar seguimiento al proceso de aprendizaje de los estudiantes. Este ensayo analiza los posibles riesgos de la realidad virtual, como la deshonestidad académica (DA), en una sociedad donde los estudiantes se centran en entregar sus tareas solo para obtener una buena calificación, en lugar de adquirir las competencias que las actividades de seguimiento diseñadas por el tutor pretenden desarrollar.

Palabras clave: Educación a distancia; MOOC; Sistemas de gestión del aprendizaje; Educación virtual; Herramientas digitales; Deshonestidad académica.

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INTRODUCTION

We live in a world where information is delivered instantly. We do not have to wait for it the way we used to do in the times of yore. As a result, we live in a society of knowledge that allows humans to be informed and build their own capacities and skills. COVID19 contributed to the implementation of online tasks which have challenged today's educators to innovate and update their professions by using online learning platforms. To illustrate, Massive Open Online

Courses (MOOCs). They are massive because of the number of students that participate and open since they have no prerequisites for enrollment and offer certificate (Mata Fernndez, 2023). Furthermore, they were created to innovate traditional education now that they permit learners to participate in high-quality courses (Al-Rahmi et al., 2018 cited in Zou, Kuek, Feng & Cheng, 2025, p. 3).

Boltz et al. (2021) and Mays et al. (2021) cited in Despujol, Castañeda & Turró (2022), declare that “when COVID-19 forced a lock-down in many countries, MOOCs were used to train teachers for the sudden transition to online learning” (p. 2). In the same order Mata Fernndez (2023) says that “we want to learn, but we want to do it the fastest and most efficiently, whether to reinforce university studies, stay updated, aspire to a better job, or acquire new life skills” (p. 1). As educators of the current century, it is our duty to design materials which involve students actively in their learning process. Only in this way will learners be able to discover their own capacities and develop the autonomy that is required when learning in different environments that do not include face-to-face education.

Although the last pandemic rushed educational institutions to use digital and technological tools, many of these tools have been around since the last decade of the 20th century. Vergara, Lampropoulos, Antón-Sancho & Fernández-Arias (2024) state that “the versatility and adaptability of Learning Management Systems (LMS) make them ideal for a variety of educational scenarios” (p. 2). Nowadays we see how the new learners are the ones who make use of a variety of technological devices without any hesitation.

The quarantine was a period in which many educators struggle to deliver their lessons from home. In Colombia, for instance, some public schools went back to the traditional distance education and sent in lots of workshops and homework through students’ email accounts without accurate and clear instructional design. Other schools with higher budget had been used to applying these platforms in their lesson plans even before the lock-down. The LMS are

platforms such as Blackboard, Moodle, and WebCT that provide learning environments and help educators to keep track of students' progress (Zou, et al., 2025, p. 3).

Following the statements of Ngulube & Ncube (2025) "LMS must be reliable, adaptable, and user-friendly to effectively support the academic endeavours" (p. 2). Alternatively, Ahmed, El Sabagh & Elbourhamy (2025) debate that "many students do not use LMS platforms effectively, preferring to engage in activities outside these systems" (p. 2). Many educators understood that by using these systems in the right way, they would get the attention and engagement expected in a virtual learning environment.

The educator of the new era is beginning to make use of digital tools in their planning. Nonetheless, not all of them include this new educational trend due to the lack of updating in the use of modern methodologies. The global pandemic was an opportunity to see how many young and adult instructors are getting left behind. Even though there are schools with digital ecosystems due to the big budget, many educators refuse to adapt these tools to their lessons.

The consequence, learners nor tutors do not acquire digital skills for the present world. This is also sadly in public schools where the materials for a digital ecosystem are limited.

The use of MOOCs in Virtual Education (VR) means that students from remote places with lack of facilities for education are allowed to access information which builds their knowledge. To define VR, it is crucial to mention Vargas-Hernández, Robledo & Rojas Quiceno (2024) as they present it as a method which "allows access to courses and educational material at any time and place" (p. 2). The good news is that the role of educators and learners is being transformed and modified by using tools that contribute to implementation of the connectivism and constructivism approach. Educators are being turned into facilitators leading learners to the building of their own knowledge. This means they need to have technological skills that fulfil students' requirements for the world we live in today.

In consonance with González, Sánchez, Pujol & Díaz (2025), "the integration of advanced technologies, including AI and VR, into educational methodologies is interesting for

meeting the diverse needs of modern learners" (p. 4). For improving this motivation to learn, it is ideal to use a student-centered approach since Khoury (2022) cited in Kerimbayev, Umirzakova, Shadiev & Jotsov (2023) explains that "the student-centered approach has a positive impact on student motivation, active engagement and improved learning outcomes, especially in online and distance learning settings" (p. 2). Distance Education (DE) refers to the absence of traditional classrooms where asynchronous learning models have garnered attention for their flexibility and ability to cater to diverse learner needs (Kizilcec et al., 2017 cited in Roa González, Sánchez Sánchez, Seoane Pujol & Díaz Palencia, 2025, p. 4).

Additionally, students become more independent and develop autonomy that leads them to build their knowledge at their own pace. In this way, the learning process is endured and permanent and becomes equal now that based on Arkaifie & Shaban (2024) "the integration of technology in education is not just to make education accessible to individuals geographically divided but to also equip students with skills that would ensure they cope and take advantage of digital technologies used at the workplace" (p. 4). This paper discusses the strong relationship between DE and MOOCs inside the virtual environments which have been designed for educational purposes and how modern methodologies contribute to the development of important skills for the liquid society we live in. The classroom for virtual learners and educators becomes a place where digital resources play a fundamental role in the development of skills that bring the best out of students who belong to the new era where solution to different problems can be approached by working in team.

DEVELOPMENT

Distance education is an innovative teaching method which few educators trusted as it started to develop in the last decades of the 20th century. Back then in the 1990's its development was as silent as it could be. Little was known about Digital and Distance Learning,

so few people made use of it. No one knew it would be the essential tool 20 years later when the whole planet went through a global pandemic. Ignacio et al. (2022) cited in Zou et al. (2025) declare that “the importance of digital learning has been particularly highlighted by the global COVID-19 pandemic, which necessitated an abrupt shift from face-to-face instruction to remote learning” (p. 2).

Even though VR has had more than two decades of evolution, 2019 showed that most of us are not quite ready yet for using technological tools that enhance the way we teach and learn. The fact that a lot of public schools had to close due to the lack of digital resources was devastating back then. Schools should never forget the time when educators were sent home because they were shut, and the lessons had to be virtual. Some educators went home with a lot of ideas in their minds while others were completely shocked. The ones who had studied in virtual environments knew some digital strategies that would be useful for approaching DE. Unlike others who had never applied ICT tools in the classroom.

One of the biggest issues was Instructional Design (ID) which refers to the variety of materials for teaching that are relevant educational tools that influence instructional practices (Bouckaert, 2018; Hattie, 2023 cited in Garay Abad & Hattie, 2025, p. 1), and Teacher Development (TD) which is related to professional development programs that improve teachers to engage with and apply materials to fit their teaching contexts (Garay Abad & Hattie, 2025, p. 8). Most of the students were not used to doing activities on their own. In fact, activity guides and evaluations rubrics were not something common inside the learning environments. As a result, instructions were not given as clearly as they were supposed to be. Instead, students were at home, and every time they got connected, they felt overwhelmed because the teachers continued to do the same as though they were delivering face-to- face education.

We realized then the importance of professional development and the influence of the instructional practices whiting the virtual classrooms. As it is explained by Garay Abad & Hattie (2025), “classroom confidence refers to teachers’ perceived sense of preparedness,

effectiveness, and self-assurance in using instructional materials to support their teaching" (p. 8). However, this was not what the students felt. They saw teachers confused giving lessons in an environment they were not familiar with. That is when it was found out how students were ahead of teachers in the use of technological devices, so it was not motivating enough.

Educators who went through virtual education could manage to give an appropriate instructional design due to the fact that they got used to understanding by themselves the activity guides designed by the professors when they were in the university, so they did the same for their teaching task. Whereas other colleagues struggled when planning their lessons. This is the reason why Garay Abad & Hattie (2025), argue that "the impact of instructional design is highest for trainees and decreases slightly as teachers become more experienced" (p. 9). This is the reason why updating knowledge for the new education trends is necessary and fundamental for the current challenges society is facing.

DE requires the use of ICT tools that allow learners and educators to interact inside the virtual learning environments. It is crucial to use appropriate platforms that allow students to meet with their instructors and keep a flexible learning by themselves. Alam (2018); Murcia et al. (2018) cited in Zou et al. (2025) mention that "digital learning tools, including online courses, virtual classrooms, and educational software, have made learning more flexible and accessible" (p. 2).

In order for a virtual classroom to be successful it is essential to apply Digital Learning (DL) which has become "a cornerstone of modern education" (Hemajothi and Kumar Jain, 2022 cited in Zou et al., 2025) as well as "the integration of technology into the curriculum" (Sahin et al., 2022; Vachkova et al., 2022 cited in Zou et al., 2025). DL brings the interaction of the learner with different virtual platforms which end up providing meaningful experiences while building personal knowledge. For Hemajothi and Kumar Jain (2022) cited in Zou et al. (2025) DL is "characterized by the integration of information and communication technologies (ICT) into

educational practices" (p. 1). The digital tools must be adequate so that the learning process becomes something permanent that allows students to develop autonomy.

Due to the impact of these tools inside the learning spaces, LMS have been used since the very beginning of this current century. Zou et al. (2025) explain that "LMS facilitate communication between instructors and learners" (p. 3). Nevertheless, in countries like Colombia there is still a digital gap now that few people have access to these resources. Another relevant implementation has been the use of MOOCs, which facilitates permanent learning. According to Rulinawaty et al. (2023) cited in Zou et al. (2025), "MOOCs have also been instrumental in promoting lifelong learning, allowing individuals to acquire new skills and knowledge throughout their lives" (p. 4). It is imperative that these digital strategies be applied to the new learning styles.

Learning measurement is the next topic to discuss in this paper. It is fundamental to change the way learners are evaluated for the most important thing is not the content but the skills they acquire to adapt to a digital society that goes through rapid technological changes related to the fourth industrial revolution. Archer, Young, Grover & Khalil (2025) discuss that "the rapid evolution of artificial intelligence in education is reshaping how learning is measured and redefining the theoretical and methodological foundations of assessment" (p. 1). The rubrics along with the activity guides have got to be designed in a clear way so that learners know for sure the tasks they will perform and the abilities they are expected to acquire. This is the reason why Levy-Feldman (2025) claims that "learning, teaching, and assessment are interconnected components of the educational process, forming a fundamental triad" (p. 1). Formative assessment recommended by Levy-Feldman (2025), brings the correct evaluation providing that it gives students accurate feedback. Hence, it improves not only learning but also teaching. Gamification also plays an outstanding role in DE since it brings out the best of learners. Important skills such as collaborative learning and digital learning are an essential part of the modern world. However, it should be applied responsibly so there is not a wrong use of the

concept of playing all the time without a learning target in mind. Instructors ought to update their knowledge as Ramírez Ruiz, Vargas Sanchez & Boude Figueredo (2024) highlight the “lack of teacher training and continuous support from educational entities to implement these strategies in the classroom and achieve a greater impact” (p. 6).

Are MOOCs distance education?

It is emblematic to agree with the fact that MOOCs are DE since both concepts depend on the use of the internet. When it comes to this type of education, we refer to the idea of separation between the teacher and student. It could be whether in place or time now that online education has both synchronous and asynchronous approaches. DE requires instruction which is designed by the tutor whose role turns into facilitator of the knowledge students need according to their needs. For this to happen, it is fundamental to apply MOOCs to innovate on their individual learning and improve their digital skills in the AI era we are getting through. As Mata Fernndez (2023) debates “AI will also allow moving towards more personalized learning for students since teachers can design classes with instruction oriented towards the needs of each student” (p. 9).

The student of the new generation is a person who wants to get information as fast as possible with the objective of achieving the skills that are needed in this technological society where most of the daily problems are being solved by the ICT tools. Therefore, it is crucial for educators to approach students with new teaching methods and strategies that allow them to build their own knowledge.

We live in the knowledge society and information society which is pushing us to learn in an autonomous way. The pandemic we went through more than five years ago made us teachers shake from the habitual and MOOCs were used, according to Boltz et al., 2021; Mays et al., 2021 cited in Depujol et al. (2022) “to train teachers for the sudden transition to online learning” (p. 2).

The reason MOOCs define DE is that they complement each other. Online learning has been a great opportunity for people who live far from the learning places to be able to access information through Open Education Resources (OER) which attract as (Saykili, 2018) argues “a wider audience of learners” in a democratic way now that as reported by Gunawardena & McIsaac (2004) cited in Saykili (2018) “DE is regarded as a more democratic form of education since it aims to reach all and every parts of the society” (p. 2). As a result, it involves students from different social backgrounds and cultures; all connected with one thing in mind, learning not only individually but also in a collaborative way, but most importantly, at their own pace. For this to happen, it is fundamental to apply MOOCs in which the instructional design is given in the clearest way so that students can work efficiently on their tasks by using the proper materials and taking advantage of the correct sources. The role of the educator in this situation is to show learners the door to their needed skills and make them figure out how to walk through it by themselves.

Another reason why these two concepts support one another is the connectivity they both demand. On one hand, DE makes use of asynchronous learning models and Moore et al. (2011) cited in Roa González et al. (2025) discuss that “asynchronous learning environments provide opportunities for students to engage with content at their own pace” (p. 3). MOOCs on the other hand, are an excellent approach to providing students with competencies required in the use of modern technological trends, such as Artificial Intelligence (AI). For instance, Mata Fernndez (2023) utters that these trends “are triggering renewed momentum in the innovation and transformation of educational models as we know them” (p. 1). We cannot ignore the fact that education has been transformed due to the use of digital tools brought about by industry 4.0. Nevertheless, there is still a digital gap we have not solved yet which unbalances the chance to access those open courses and causes a negative impact in certain remote areas where government does not place its glance much often. A perfect example for this is the rural areas of the outstanding country Colombia, there are still several places where the lack of

internet connection blocks the learning path to many communities that daily struggle to make ends meet. Here is when the concept of democratic learning faces its cons and encourages modern educators to make sure our communities are including all individuals as it is demanded in our constitution and most significantly, make sure training teachers of the new era are acquiring the skills that make students able to participate in a permanent learning process by implementing digital ecosystems in their learning campuses so that the educational community can evolve into the new roles taken by students and teachers.

Ethical/legal considerations in virtual learning

Technology has been developing and evolving since the last decade of the 20th century. Consequently, society of the 21st century has gotten used to using technological devices that are connected to the internet 24/7. For this reason, Chiu (2023); Glaser (2023); Yusuf et al. (2024) cited in Huang, Shao, Wu & Yang (2025) suggest that “the rapid development of artificial intelligence technologies, such as ChatGPT, could fundamentally change how we acquire information and interact with AI in our daily lives” (p. 2). AI is defined as a phenomenon where humans get their tasks done by machines (Sharma & Panja, 2025).

Information is like a liquid that runs rapidly towards people. As a result, we live in an information society where we are more informed than 20 years ago. Unfortunately, much of the information we receive every day comes from unreliable sources. Blau & Eshet-Alkalai (2017) cited in Huang et al. (2025) state that “while the internet has made information exchange more convenient, it has also established conditions that are conducive to the misuse of information resources” (p. 2). This causes a lot of chaos on the net. For instance, people with bad intentions in their minds take advantage of it just to sell lies or simply make money out of the content they post.

Another important and evident issue that is happening inside the learning environment is the Academic Dishonesty (AD). According to Sendir & Maxwell (2020) cited in McDonnell & Tantong (2023). AD refers to “any behavior intended to falsely represent one’s academic work

as original, and can take many forms, including deception, unauthorized resources, collusion and plagiarism" (p. 3). Following this declaration, Huang et al. (2025) say that "academic misconduct, as a significant learning challenge in the digital age, deserves attention" (p. 2). Honesty, as a matter of fact, is being questioned since it is customary for some 21st-century students to get their homework done by AI. Samaranayake (2024) declares that "the rapid pace of technological advancement has challenged 21st-century society to evaluate the ethical implications of actions in the digital space as educators and institutions must guide students on using technology ethically" (p. 2).

The use of digital tools that can do activities that are supposed to be done by learners are becoming a problem for educators when it comes to the assessment of the output of learners. With the use of generative artificial intelligence, the internet user is becoming even more dependent on some digital tools that perform any writing task for different academic purposes. Accordingly, Lendis (2014) cited in Samaranayake (2024) demands that "transparent ethical practices, chains of responsibilities, and accountability must be integrated consistently into technological teaching and learning practices" (p. 2). It is crucial for educators to make students aware of an integrated formation in which values and principles are established as the correct behavior expected when surfing the net. The new era brings a lot of challenges along with it. From one particular point of view, information is a powerful weapon that can be harmful when it is used in the wrong way and for bad purposes that act against the rights of individuals. Nevertheless, it is the solution to many problems we are facing today providing that we look it up in the correct place. The network is an outstanding place that has got to be explored with caution because only in that way will users participate actively in the ICT era where we can learn 21st-century skills that contribute to the development of society and most importantly, the development of autonomy and therefore, a permanent leaning experience.

CONCLUSIONS

The most important elements for DE are a well-structured instructional design that allows students to learn at their own pace and the application of suitable platforms such as Moodle/H5P, active digital strategies, AI, LMS and VR. This permits constant interaction between instructors and learners and develops collaborative work and autonomy through the gamification and the support students need for a permanent learning process; finally, an adequate assessment of the knowledge so that students get the skills and abilities needed in the 21st century.

It is not forbidden to say that no matter how hard it is for some educators to apply the use of digital resources in some areas where the educational budget is limited, the ones that are helping students to acquire the skills needed in the new world are making the difference by exploring new teaching methods and understanding the way new generations acquire as well as build their own knowledge. Here is the ideal mixture to help those who depend on DE, the fuse of interactive learning using OER and MOOCs.

These paradigms gave us the idea of the traditional campus-based education which seemed impossible for a lot of citizens with lack of time due to their duties of the everyday life and lack of financial support. Now, with the overcoming of the digital gap and the reduction of the AD, more students around the world are achieving their goals by enrolling in virtual universities and getting the degrees they have chosen based on their necessities in a technological society that changes faster every day as our planet revolves around the sun.

Declaration of conflict of interest

The author declares no conflict of interest related to this research.

Declaration of authorship contribution

Elvis Humberto Tabares Quintero: visualization, writing of the original draft, review, and editing of the writing.

Artificial Intelligence usage statement

The authors declare that they used artificial intelligence as support for this article, and also that this tool does not in any way substitute for the intellectual task or process. After rigorous reviews with different tools that confirmed the absence of plagiarism, as evidenced, the authors state and acknowledge that this work was the product of their own intellectual labor, and that it has not been written or published on any electronic or AI platform.

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