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The Philosophy of Openness in Terms of Accessibility through Virtual Worlds: The Case of Distance Education

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Abstract: This article aims to investigate the role of virtual worlds in enhancing the philosophy of openness in terms of accessibility in distance education. A bibliographic research was conducted, based on specific sampling criteria, to search and collect contemporary and

topic-related literature, emphasising the last ten years. Articles and books on openness, accessibility, distance education, and virtual worlds were collected through research sources, such as Google Scholar, HEAL-Link and ERIC, utilising relevant keywords. This information was then organised and synthesised to show the importance of using virtual worlds to enhance accessibility in Open and Distance Education. According to the literature, Second Life is the most prevalent virtual platform within the educational community, thanks to its openness and the diverse opportunities for creating interactive virtual learning environments that foster the skills necessary for contemporary education. It is also noteworthy that virtual worlds, like Second Life, increase accessibility for people with disabilities, breaking down many physical barriers and providing significant opportunities for socialisation and learning. In conclusion, in the context of Open and Distance Education, virtual worlds like Second Life offer: a) an interactive, creative and collaborative environment with numerous possibilities and diverse sensory stimuli; b) accessible environments without spatiotemporal constraints; c) inclusive environments for users with disabilities and other vulnerable social groups, d) virtual visits to historical and art projects, workshops, and more, e) the creation of personalised learning experiences of high aesthetic value, and f) the democratisation of knowledge, since virtual communities, projects and activities in the virtual environment, can be open without spatiotemporal and economic constraints most of the time. Utilising virtual worlds increases accessibility, a strong indicator of openness in any educational context.

Keywords: Openness, Accessibility, Open and Distance Education, People with Disabilities, Virtual Communities, virtual worlds

Introduction

The establishment of the Open University in 1969 led to the birth and dissemination of the term openness in education (Peter & Deimann, 2013). Openness functions as a philosophical umbrella term without having a clear definition. It mainly refers to removing any barriers that learners encounter and must overcome to access education (Baker, 2017; Lane, 2009). These barriers relate to lack of accessibility due to gender, age, cultural background, location, disabilities, learning profile, financial status, prior academic success, etc. (Baker, 2017; Lane, 2009). The philosophy of openness is equal to democracy and equity in an elaborated form, which – nowadays – includes using many digital tools to serve this purpose.

Openness, as a philosophy, strategy and policy, changes, adapts and redefines itself according to social, economic and political conditions (Baker, 2017). The current era is characterised by the fourth industrial revolution and its changes at all levels (Ossiannilsson, 2018). Education is no longer a carrier of information; it focuses on students' self-activity and the creation of knowledge that will lead to further progress and development (Lionarakis, 2006; Ossiannilsson, 2018). UNESCO (2015, as cited in Ossiannilsson, 2018) stresses the accessibility in education and the participation of anyone interested. Consequently, the debate on openness – especially in terms of accessibility- remains more relevant than ever, and its implementation at a practical level is imperative (Baker, 2017).

Distance Education is a potential answer to this context and openness requirements. Distance Education is a multimodal and flexible educational process that presents an integrated pedagogical and educational framework. It is based on teaching learners 'how to learn' while promoting lifelong learning (Lionarakis, 2005, 2006; Manousou, 2008). The main advantage of implementing Distance Education is that it provides equal and open access to education for all, regardless of time and space constraints. It allows learners to actively participate and follow their learning pace (Lionarakis, 2006). Distance Education is connected to the philosophy of openness, as both are primarily founded on the universal right to education, so the fact that we often refer to them combined or interchangeably comes as no surprise.

Technology and the use of digital media are prerequisites and an integral part of Distance Education (Lane, 2009). Stakeholders, especially teachers, have been striving to enhance practices related to the use of digital media in Distance Education. As a result of these efforts, Learning Communities have been formed. These communities are groups with common interests who meet online to exchange knowledge and practices. These communities are precious for teachers as they offer training in effective educational practices, develop their knowledge, and support collaborative learning, especially in Distance Education (Anastasiadis & Manousou, 2017; Houridou & Manousou, 2017). Interaction in Distance Education is crucial, as effective learning is only achieved when the learner is actively involved, engaged in the process, and communicates within a collaborative environment (Lionarakis, 2009). Virtual learning environments can provide a collaborative, interactive, and creative setting that enriches the learner's experience and cultivates essential skills in the era of Education 5.0, which refers to the fifth industrial revolution in education by leveraging digital technologies, including virtual environments, to eliminate barriers to learning and enhance learning methods (Ahmad et al., 2023). These virtual environments include virtual worlds, which are three-dimensional, computer-generated settings where many users, represented as avatars, can freely navigate and explore, manipulate objects, create new content, and interact with other users through various communication methods, such as text and sound.

As virtual worlds have recently become widely popular, there is a research gap related to their use in Distance Education. Most Distance Education institutions use digital platforms and tools to support all their students' learning. However, no relevant research indicates whether and how People with Disabilities respond to these digital demands. Moreover, there is no relevant research on using virtual worlds in education to show whether or not they can improve accessibility and, hence, openness. Therefore, this research paper aims to add to the existing literature and fill in the gap regarding the use of virtual worlds in Distance Education. Considering the points above, this article aims to investigate the role of virtual worlds in enhancing accessibility as an indicator of openness in Distance Education while concurrently examining the case of People with Disabilities in virtual worlds. In the context of the research methodology, a literature review was conducted, in which contemporary and topic-related literature was explored. Peer-reviewed articles on the philosophy of openness, accessibility, distance education, and virtual worlds were exploited. Below, we examine the case of Virtual Learning Communities in virtual worlds, focusing on the benefits of using virtual worlds for people with disabilities. Disabilities include physical, behavioural, developmental, sensory, and other disabilities (e.g., multiple). The rest of the paper is organised as follows: in the first

section, reference is made to Virtual Learning Environments in the context of Open and Distance Education, while in the second section, the enhancement of accessibility through the digital body is examined. The last two sections discuss the findings and conclude. Also, suggestions for future research are made.

Methods

This article aims to investigate the role of virtual worlds in enhancing the philosophy of openness in terms of accessibility in Distance Education. For this purpose, bibliographic research was conducted based on the following sampling criteria: a) search for contemporary studies and research with emphasis on the last ten years, b) use of keywords such as: ''openness'', ''accessibility'', ''distance education'', ''virtual learning environments'', ''virtual worlds'', ''people with disabilities'', ''vulnerable social groups''. Published books, journals, reports and articles were searched through authoritative research sources such as Google Scholar, HEAL-Link and ERIC and then explicitly selected based on the criteria set. The collected data was then used to create a creative analysis and connection through the authors' critical perspective.

Virtual Learning Environments as a tool for enhancing openness in the context of Distance Education

As we are entering the era of Education 5.0, learners are required to develop essential skills such as critical thinking, creativity, adaptability, problem-solving, teamwork, collaborative learning, digital media management, self-regulation of learning, emotional intelligence, judgement and decision-making (Bakkar & Kaul, 2023; World Economic Forum, 2022). Distance Education offers flexibility and adaptability to learners' needs, enhancing personalised learning. In this context, teachers must improve their skills and teaching methods in using digital media to foster active participation and interaction among learners. Moreover, openness in Distance Education is paramount, focusing on using various digital media to improve learners' accessibility to the educational process and enrich their learning experience. Virtual environments, particularly Virtual Reality (VR) and virtual worlds can offer opportunities to enhance this kind of openness.

There are significant differences between VR and virtual worlds, especially regarding openness. Most VR platforms require specific equipment to facilitate immersion in VR. In contrast, virtual worlds do not require this equipment and can often be accessed via other devices such as desktops, laptops, tablets, and mobile phones. Moreover, VR equipment is not always accessible or usable by people with disabilities. At the same time, virtual worlds can often be adapted to the user's personalised needs, allowing the integration of their supporting equipment.

A common challenge in Distance Education is the lack of interactivity and interaction (El Kabtane et al., 2020). Virtual environments address this by allowing users to navigate a 3D virtual space, which provides freedom of movement and interaction with the environment and exposes users to more complex sensory information (Rupp et al., 2019; Wu et al., 2020). According to a recent study by Battal and Taşdelen (2023), who conducted a literature review of 2,978 published articles on the use of virtual worlds in education, there has been significant

interest from the educational community in using virtual learning environments to enrich learners' experiences from 2020 to the present. Furthermore, it has been found that virtual environments reduce participation anxiety and offer opportunities for socialising with other users, especially for people with difficulties that hinder their participation in social and learning processes (Bai, 2022; Boellstorff, 2020; Lozano-Durán et al., 2023).

The term "Metaverse", a multi-user environment combining physical reality with VR, has been exciting in recent years. It is based on the convergence of technologies such as VR, augmented reality, and mixed reality and allows for the interaction between individuals in virtual environments and digital objects (Novak, 2022). In education, Metaverse has the potential to address the limitations of traditional e-learning tools and offer rich, hybrid learning experiences in virtual worlds, giving a democratic factor to education and allowing global participation without geographical restrictions (Mystakidis, 2022). Specifically, three Metaverse platforms are focused on education: the Universe by ViewSonic, the Eduverse by Avantis Education, and the Roblox Metaverse. However, SL is the virtual platform most utilised by the educational community in the context of Distance Education —and, in some cases, hybrid education—highlighting its interactive environment, collaboration opportunities, and creation tools, especially in higher education courses (Karabatak, 2020; Linganisa et al., 2018; Ozonur et al., 2022). In addition, SL also seems to be suitable for problem-solving learning activities (Sancar-Tokmak & Dogusoy, 2023). SL offers a suitable virtual environment for art and design courses (Ceylan-Dadakoglu, 2022). The use of SL in the context of blended learning is also noted (Saev, 2019); furthermore, due to the many possibilities of virtual worlds, mainly SL, it is noted that it is particularly exploited in higher education (Baytak, 2023), and occasionally, in preliminary school education (Erbay et al., 2019). It is further noteworthy that due to the interactive environment of SL, it has been used in the context of university counselling (Yu et al., 2017). Furthermore, SL features appear to be an effective interactive learning environment for developing English as a Foreign Language (EFL) learners' communicative skills in English (Jehma, 2020).

Created in 2003 by Linden Lab, SL is an online 3D multi-user virtual environment which remains the most popular virtual worlds platform, boasting more than 70 million total users and about 200 thousand daily users (Galov, 2023). It functions as an online platform comprising various virtual worlds/spaces, offering spaces for entertainment, communication with other users, opportunities to work and create businesses, and educational communities. Several researchers have explored the connection between SL and Metaverse, noting that although SL is an "old" virtual platform, it remains actively used and has laid the foundational elements for newer Metaverse platforms (Martins et al., 2022; Richter & Richter, 2023; Sparkes, 2021). Remarkably, it has its digital currency, Linden, which can be converted into the currency of the user's country. Moreover, SL hosts arts-related communities that implement various visual arts, photography, cinema, music, literature, poetry, and more projects. Many university lecturers use SL in academic courses and host several Virtual Learning Communities, where seminars, lectures, workshops, conferences and academic courses are organised in virtual auditoriums, universities, or other specially designed educational spaces (Katsouda, 2023). A Virtual Learning Community is a community operating within virtual environments or worlds. Members of these communities communicate, collaborate, and engage in various activities

entirely through a virtual platform. It is worth mentioning that within the Virtual Learning Communities, apart from organised open activities, weekly open meetings are organised to discuss and reflect on educational issues and issues related to openness and learning opportunities. Virtual worlds are a common meeting place for people from many different countries and fields of employment, and these virtual communities share a common vision of open learning. They can involve people without geographical and other constraints (Katsouda, 2023).

Accessibility opportunities through the digital body

Throughout various studies, the 'digital body' or avatar has been highlighted as significantly improving the quality of life for users, especially those with disabilities. Literature shows that virtual worlds promote mental health by allowing users to develop interpersonal contacts and participate in communities and activities (Lan et al., 2018; Park & Kim, 2022; Wexler, 2018). Furthermore, the participation of users in virtual worlds and activities helps them to overcome the barriers of everyday life that lead to marginalization (Boellstorff, 2019, 2020; Boellstorff & Rysuľová, 2022; Davis & Boellstorff, 2016). The Internet and its various technologies can offer various opportunities and possibilities, especially for People with Disabilities (Ginsburg, 2020). It is also worth mentioning that SL is also used by people with autism, with significant benefits (Stendal & Balandin, 2015). The possibilities of students with disabilities utilising virtual worlds are notable (Bai, 2022). Also, the benefits of using SL for neurodiverse college students are highlighted (Flink, 2019). Moreover, Han and Garner (2019) emphasise the cultural component of virtual worlds in their book, noting SL as a viral platform among artists with various disabilities.

Davis and Boellstorff (2016) have extensively researched the use of virtual environments by people with disabilities. Their project, 'Virtual Worlds and New Cultures of the Embodied Self,' supported by the National Science Foundation, focuses on the experiences of users with disabilities in SL and how the 'digital body' enhances their social, work, and personal lives. This research underscores how virtual worlds break the physical constraints of everyday life, improving social interactions and perceptions of the body and the internet's role in daily life (Boellstorff, 2019, 2020; Davis & Boellstorff, 2016). A documentary titled 'Our Digital Selves: My Avatar is Me' illustrates these findings with personal stories from 13 users, most with disabilities, showcasing how they navigate their 'real' and 'digital' lives. The documentary is available on YouTube.

The findings from Davis and Boellstorff's (2016) research illuminate several benefits of virtual worlds for people with disabilities, aligning with the themes discussed in previous sections. These benefits include the supportive role of Virtual Communities that organise creative and informational activities. SL provides professional employment opportunities for those facing challenges in the 'physical' world and offers avenues for creative expression and access to recreational, cultural, and historical sites that might be inaccessible. Moreover, individuals with disabilities often experience a greater sense of comfort and emotional safety in virtual worlds compared to the physical world, reducing the fear of exposure and facilitating greater social engagement. Boellstorff (2019, 2020) concludes that virtual worlds, due to their accessibility, are often more practical than other VR platforms for people with disabilities. He

argues against distinguishing 'real' from 'digital' life, suggesting that both realms complement each other, providing opportunities to overcome the obstacles of physical reality and thus enhancing the overall quality of life. In SL, there are some Virtual Learning and Support Communities for vulnerable social groups, People with Disabilities or chronic health issues, including mental health problems, which organise open learning, support, and awareness-raising activities (Katsouda, 2023). These Virtual Communities exploit the virtual environment and its opportunities, breaking the physical boundaries and obstacles of the real world. Additionally, it is emphasised that particularly in cases of individuals with disabilities or other issues that hinder their participation in various activities related to socialisation, education, and the professional sector, virtual worlds provide a new dimension through the opportunities they offer, enhancing openness and accessibility. Specifically, regarding Distance Education, virtual worlds, such as SL, offer various opportunities for individuals with disabilities or other health issues in a highly interactive environment and access opportunities that would not be possible in similar situations in 'real life'.

To conclude, it is notable that the documentary 'Our Digital Selves: My Avatar is Me' received awards in 2018 and 2019 (further details can be found below the video). Additionally, a similar documentary, 'Login2Life,' was released in 2015. This documentary features individuals with disabilities discussing their experiences within virtual worlds.

Discussion

This article attempts to link the use of virtual worlds with the enhancement of openness and accessibility, placing some focus on people with disabilities in Distance Education. Openness first appeared in the 1960s with the establishment of the Open University of Great Britain (Peter & Deimann, 2013). Open and Distance Education, in its primary form, used correspondence as a tool and, later, television and radio (Peter & Deimann, 2013). Gradually, technology development and utilisation became inextricably linked to Open and Distance Education and enhanced accessibility for People with Disabilities (Davis & Boellstorff, 2016; Lane, 2009). The existence of accessibility is a prerequisite, an indicator and an essential issue in the philosophy of openness (Baker, 2017). Therefore, openness is directly influenced by the degree of accessibility and the tools at hand (Lane, 2009).

We are now entering the era of Education 5.0. Technological developments are rapid, and the educational community is trying to explore the most effective ways of using virtual learning environments and virtual worlds. In virtual worlds, users can be members of groups and communities through avatars, interact, collaborate, create and learn (Karabatak, 2020; Linganisa et al., 2018; Ozonur et al., 2022). Virtual worlds, therefore, can act as an essential tool for enhancing accessibility to education for people whose physical condition is limiting, either due to disability or chronic illness (Bai, 2022; Boellstorff, 2019; de Vries McClintock et al., 2016). Therefore, participation in virtual worlds offers these people the choice and opportunity to participate in the educational process through their digital bodies. It, therefore, has the potential to act as a supportive factor in terms of the openness of an educational system and, in this case, Distance Education, which is intertwined with and already utilises technology, thus offering fertile ground (Bayne et al., 2015; Lane, 2009).

Openness, as already mentioned, has a changeable and adaptable nature (Baker, 2017). It accepts significant influences from technology and is in constant dialogue with developments in the field (Jones, 2015). For an educational environment to be considered open, it must meet specific, albeit changing, conditions and criteria (Croft & Brown, 2020; Lionarakis, 2008). Concerning technology, its use is imperative to promote, among other things, participation, innovation, creativity, sharing of resources and ideas, community connection and communication, and the self-directedness of student users (Hegerty, 2015, as cited in Croft & Brown, 2021). In open and distance institutions, using technology in this way is part of their pedagogical framework as an educational practice of openness and takes place at four levels (Cronin, 2017; Jones, 2015):

- macro (global level), relating to participation or not in an open network
- meso (community), relating to the individuals who we choose to share anything with
- micro (individual), relating to personal digital identity and, in the case of virtual worlds, the personal avatar
- nano (interrelation), dealing with sharing specific items online and relating more to developing personal relationships.

Virtual worlds meet the abovementioned criteria for their use in open and distance learning environments and cover the four levels of technology use for pedagogical purposes. Virtual Communities created in digital environments, such as SL, provide users with a range of possibilities, from simply participating in an online course to establishing interpersonal relationships within the community where they are equal and accepted members (Lane, 2009). University institutions' use of virtual worlds can address their consistent inadequacy in meeting the needs of all students, including those with disabilities and chronic conditions (Lee, 2021). Moreover, through virtual worlds, educators and learners can be transferred to educational destinations and projects that would otherwise not be possible due to a lack of financial resources or accessible infrastructure. Virtual worlds are a technological development that can be a valuable educational tool for any educational system. However, their characteristics and the possibilities they offer align with the principles of Open and Distance Education, both theoretical and practical. In Distance Education, where technology is compulsory, integrating virtual worlds could potentially enhance the accessibility of People with Disabilities and contribute to democratising the learning process, creating an environment of acceptance and equal opportunities.

This paper contributes to the enrichment of the existing literature on the use of technology in open and Distance Education. At the same time, however, it fills part of the research gap due to recent developments in digital and virtual environments and their potential function as educational tools. More specifically, this article provides a first overview of Virtual Communities and the connection between virtual worlds and Open and Distance Education. However, this paper has a theoretical basis, which limits the generalisation of the results. No previous research has been recorded, so no empirical findings support the value of using virtual worlds in Distance Education. So, while literature supports the significance of this exploitation and looks pretty optimistic, one should be cautious regarding this matter. Despite the limitations, this paper can serve as a stimulus for empirical research, in which virtual worlds as an educational tool in Open and Distance Education will be studied at a practical level.

Conclusions

Openness has become necessary in the continuously changing educational systems, supporting the universal human right to education (Sakkoula, 2022). Learning communities play a catalytic role in opening up education by facilitating the exchange of good practices. As mentioned previously, some virtual learning communities utilise virtual environments, especially virtual worlds like SL, where open meetings, training seminars on the use of virtual worlds and annual conferences are organised. Specifically, Virtual Learning Communities in SL create various scientific projects, workshops, and open meetings to discuss various issues. At the same time, there are also Virtual Learning and Support Communities for People with Disabilities and other vulnerable social groups, which carry out open actions to support participants and raise public awareness (Katsouda, 2023). This virtual platform remains popular due to its openness and the various possibilities for creating interactive virtual environments that support the skills required in contemporary education. It is also noteworthy that virtual worlds increase accessibility for People with Disabilities, where the 'digital body' appears to break down many barriers, providing significant opportunities for socialisation, learning, and professional employment. SL remains popular due to its openness, offering a) a creative, interactive and collaborative environment with numerous possibilities and diverse aesthetic stimuli, b) accessible environments without spatiotemporal constraints, c) inclusive environments for users with disabilities and other vulnerable social groups, d) virtual visits to historical and art projects, workshops and more, e) the creation of personalised learning experiences of high aesthetic value, and f) the democratisation of knowledge, since SL, its virtual communities, their projects and activities are open without spatiotemporal and economic constraints most of the time. Based on all the above, it is worthwhile to explore the potential of virtual worlds and the learning opportunities and possibilities they can offer in Open and Distance Education. On the other hand, it should be considered that access to virtual worlds requires technological equipment (computers, etc.) and internet connection, which are not readily available in some countries and regions and remain inaccessible to people with serious financial problems. We must not forget that virtual worlds are merely tools in the educators' hands, responsible for finding appropriate and effective educational practices for their students and designing learning activities based on their individualised needs. In conclusion, utilising various educational practices and digital tools that promote openness and inclusivity is crucial. Virtual worlds have shown great potential in enhancing accessibility and enriching the learning experience, making education more open.

Suggestions for Future Research

Using virtual worlds seems to enhance accessibility and, thus, openness at a theoretical level. To further substantiate this thesis, it is proposed that empirical research using qualitative methodology be conducted to explore the use of virtual worlds by teachers and students in Distance Education with or without disabilities. Participants can navigate with their avatar in the virtual communities, participate in activities and projects, and then be interviewed to describe their experience. As accessibility is fluid, recording the experiences of People with Disabilities will be of great importance for the value of using virtual worlds and, in particular, for enhancing openness as a philosophy in education.

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Conflict of Interest

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