

# THE INCLUSIVE EDUCATIONAL POTENTIAL OF VIRTUAL REALITY FROM AN ETHNO-RACIAL APPROACH: DEVELOPING DIGITAL SKILLS FOR THE CONTEMPORARY WORLD

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## ABSTRACT

The theme of this study is about the potential of Virtual Reality in the process of ethno-racial inclusion in Education, as a technological resource to assist in training the individual to use fundamental digital technologies in the contemporary world. This is a basic, exploratory, field and web-based research, with a mixed-methods approach and phenomenological, ethnographic and survey methodologies. Involving university teachers and students, its overall objective is to analyse to what extent Virtual Reality involves pedagogical practices that can add value in the development of inclusive digital skills.

## KEYWORDS

Virtual reality, Ethnic and racial inclusion, Education, Pedagogical practices; Digital skills

## 1. PROBLEMS AND JUSTIFICATION

Developing digital competencies today is something urgent in all age groups and social strata, regardless of any differences between individuals, so that everyone can exercise their role in society and ensure their rights as citizens (Casero Béjar & Sánchez, 2022; Diz-Otero et al, 2022).

Digital resources have become increasingly accessible, either as a result of the popularization of technological artifacts (Tori & Hounsell, 2020) to some extent due to public policies, aimed at expanding access to the internet and training for the development of digital skills for the use of technologies (Sharata et al. 2022; de Cara et al, 2022).

Thus, if we can consider some positive aspect in the consequences arising from the tragic period of the Covid-19 pandemic, it is valid to point out that the need for confinement accelerated a process of virtualization of our daily lives in general (Belda-Medina, 2021). However, the remote learning adopted during confinement further increased the technological gap described by Castells (2005) in developing countries, as in the case of Brazil. Thus, despite the challenges, especially economic ones (Frolova et al., 2021), virtual environments have offered their users opportunities to interact differently from the face-to-face world. Individuals who feel more intimidated because they do not meet social standards, such as those belonging to some racial-ethnic groups, can relate on an equal footing, expressing themselves with more resourcefulness (Stoiciu, 2021). This possibility of reinventing themselves, breaking down barriers, can broaden participation and the construction of knowledge through access to academic and professional training, promoting self-confidence and self-realisation. This study project recognises the problems experienced by ethno-racial groups in Brazil, in a historical scope, which are the indigenous and the afro-descendants (de Oliveira et al. 2021), focusing, however, on the Afro-descendants, due to their more numerically significant representation of the population at the margins of Brazilian society, mistreated by low income and prejudice (Domingos & Nogueira, 2020; de Albuquerque Aquino, 2013). Moreover, the author of this study project is part of this group that, as a teacher and researcher, brings her own professional trajectory as an aggregator repertoire of reflections.

A brief first literature review conducted for the development of this study project (2013-2023) seems to reveal that studies involving issues related to the role of digital skills development in Education as a strategy for ethnic-racial inclusion are scarce. Google Scholar searches using the following formula - digital skills AND education AND racial inclusion AND virtual reality AND technologies AND Metaverse AND second life (in Portuguese); digital skills AND education AND racial inclusion AND virtual reality AND technologies AND Metaverse AND immersive AND second life (in English); compétences numériques ET éducation ET inclusion ET réalité virtuelle ET technologies numériques Et immersif Et second life (in French) - found only three items in Portuguese (two from Portugal and one from Cape Verde), 21 in English and none in French.

About inclusive ethno-racial pedagogical practices in Brazil involving concepts such as virtual reality, immersive resources and metaverse, nothing was found. Therefore, we believe that this project can shed light, providing students with more diverse, autonomous, and immersive educational experiences.

## **2. OBJECTIVES**

Flexibility of time and space are particularly important factors in studies regarding the feasibility and practicality provided by the use of virtual environments in education. However, it is worth to opportunize reflections on other factors that can make viable the Virtual Reality in Education as the ethno-racial inclusion, to the extent that the use of resources such as Augmented Reality, the metaverse and the creation of avatars can promote the re-signification of its users for themselves and for others with whom they interact. Thus, we propose as a hypothesis of this project that Virtual Reality environments can contribute to ethno-racial inclusion, because they can provide their users different types of interaction than those that occur in face-to-face, re-signifying the relationships. In other words, physical aspects can be reinvented in the virtual world, and the way of expressing and relating, either verbally or through actions, can also be reinvented, generating opportunities to highlight behaviours, points of view and intellect, reducing influences related to prejudice and ethno-racial discrimination. The re-signification of ethno-racial differences from Virtual Reality may imply the deconstruction of the hierarchy of values that brings transformations in relationships in hybrid and face-to-face environments.

Thus, this study aims to reflect on the inclusive educational potential of Virtual Reality from a racial-ethnic approach, analyse the interaction between students and their peers and between students and teachers in virtual learning environments, identify how digital skills can be developed by individuals of African descent through the adoption of Virtual Reality resources, based on pedagogical strategies such as a) representativeness: creation of virtual environments and avatars that reflect the diversity of the students' ethnic-racial origins; b) building empathy: using virtual reality to create immersive experiences that allow students to see the world from the perspective of someone from a different ethnic-racial background; c) tutoring: virtual guidance of individuals from different ethnic-racial backgrounds; d) self-knowledge: promotion of reflection on their own identities and cultural origins; e) collaboration: collaborative virtual projects that bring together students from different ethnic-racial backgrounds.

## **3. METHODOLOGY**

This research is based on Garrison, Anderson and Archer's (2000) CoI (Community of Inquiry Model), which focuses on the learning context and interactions that construct learning and specify social presence (learners identify their social and emotional presence during learning), cognitive presence (learners can establish the meaning of the learning experience) and teaching presence (instructors design, organise and facilitate the learning content).

A literature review will be conducted for the conceptualization and the relationship between the terms present in this study: Virtual Reality, Augmented Reality, Avatar, Immersive Process, Metaverse, Second Life, Digital Skills and ethno-racial inclusion. We intend, therefore, through the development of this research, to build knowledge, seeking to contribute with reflections on relationships still little explored between

ethnic-racial approaches and Virtual Reality. Thus, the monitoring of the pedagogical activities of the supervisor of this project, as well as the discussions and interactions between students and their peers and students and teacher, will be fundamental to the reflections and the realization of this study.

Through the content analysis of Bardin (2016), in a qualitative and quantitative perspective, fieldwork will be conducted on the internet, through the analysis of the interactions occurring in virtual learning environments of courses taught by the supervisor of this project.

## **4. THEORETICAL FOUNDATION**

New forms of sociability of cyberspace in virtual communities offer opportunities for remodelling the identity itself (Stoiciu, 2021) and re-signification of the subjects, especially in Virtual Reality environments, with or without the creation of avatars. This is a process that can serve students belonging to ethnic-racial minority groups conditions to reinvent themselves, and participate in discussions, free from the stigma of prejudice and discrimination arising from the standards imposed by society.

According to the research of Lorenzo et al (2012), in Spain, on the effectiveness of immersive multiuser environments for collaborative assessment tasks, the association with the community created in a virtual social space can neutralize isolation and may have a positive impact on learning outcomes, while the development of synchronous communication skills can promote an effective collaboration potential. For Tori (2022), the perception provided using the metaverse of being with other participants in the same space, even if virtual, makes us feel close and inserted in the same environment, generating important gains to the extent that it produces the sense of belonging and reduction of transactional distance. Koechli & Glynn (2014) show the effectiveness of an online role-playing educational website used in some classes at Ryerson University, Canada, demonstrating that Virtual Reality can serve as a tool to support learning.

The study by Rogerson-Revell et al (2012) in the UK on the uses of voice board and virtual world (Second Life) concludes that these resources can bring positive aspects such as reduced isolation, increased personalisation, improved support and feedback, as well as increased engagement, adding variety to the learning materials. Tori (2022) stresses the importance of the experience with Second Life, as an immersive virtual environment that is a precursor to other lighter and easier to navigate environments that have greatly enhanced this initial experience.

In a distance education aid program for First Nations (native) students at the Université du Québec analyzed by Rocheleau & Pouliot (2022), opportunities to collaborate with peers increased their sense of belonging to the group. The authors observed that team evaluations reduced the anxiety of the participating female students, allowing them to pool their strengths to meet the demands of the course. Being able to collaborate with people from different communities and with varied personal and professional experiences might allow the students to understand diverse realities.

The literature review in Dixon-Saxon & Buckley's (2020) study on how to support higher education student success in distance counselling in selection, development and retention suggests that several factors can enable student retention in online counsellor training: the admissions policy (broad access); the development of student and faculty digital competence; the creation of learning communities; faculty presence and engagement (quick feedback/comments, relevant and targeted opportunities, direct student follow-up, etc.). The authors propose the creation of a learning community to combat the feeling of isolation.

For Knittel et al (2022), the development of digital competences seems to be one of the main points for a more significant and successful support to the student, although in the Brazilian context, as well as in other developing countries, it is first necessary to invest in access to internet and quality equipment. Moreover, both in developing countries and around the world, well-planned teacher training can result in the adoption of teaching strategies that promote interactive and inclusive activities.

## **5. EXPECTED RESULTS**

Through the development of this project, our aim is to contemplate inclusive pedagogical practices that offer ample opportunities for enhancing digital skills among students. Our goal is to foster an awareness of the importance of self-regulation and prepare them to become well-rounded citizens equipped to tackle the

challenges of the contemporary world. In this era of growing prevalence of digital technological resources, virtual environments, virtual reality, and the concept of the metaverse, we strive to empower students with the necessary tools for success. Thus, we hope to comprehend the new forms of sociability that might be developed in cyberspace, and how the use of digital technological resources can provide students with situations in which they can express themselves and debate as equals with their peers, regardless of their ethnic-racial characteristics. Moreover, it is appropriate to reflect on how ethno-racial aspects, in a society as plural and diverse as the Brazilian one, can add value, contributing to awareness, reflection and inclusion and assisting in the deconstruction of prejudiced and discriminatory positions.

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