

## Virtual Reality as a Tool in the Classroom: What is the Perception of Students of the Public Accounting Program?

**Orlando Carmelo Castellanos Polo<sup>1</sup>, Yessica Del Carmen Torres Copete<sup>2</sup>, Carlos Horacio Salas Riviere<sup>3</sup>, David Alberto García Arango<sup>4</sup>**

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<sup>1\*</sup>Fundación Universitaria Católica del Norte, School of Economic, Administrative and Accounting Sciences. Medellin Colombia  
Occastellanosp@ucn.edu.co

<sup>2</sup>Fundación Universitaria Católica del Norte, School of Economic, Administrative and Accounting Sciences. Medellin Colombia  
yctorresc@ucn.edu.co

<sup>3</sup>Fundación Universitaria Católica del Norte, School of Economic, Administrative and Accounting Sciences. Medellin Colombia  
chsalasr@ucn.edu.co

<sup>4</sup>Corporación Universitaria Americana, School of Economic, Administrative and Accounting Sciences. Medellin Colombia  
agarcia@coruniamericana.edu.co

### Abstract

Virtual reality has been the object of study from various fields from the business field, study centers and researchers, in the educational area its implementation in the classroom has gained strength; as a didactic aid tool in the different subjects of the different business administration and public accounting undergraduate programs, therefore the perception of the students enrolled in the different programs offered by the universities selected in the sample, it is necessary to know it Faced with the implementation of virtual reality in the classroom as an assisted tool is a point that must be taken into consideration, in the processes that are currently being carried out in the different institutions, to understand the perception of the students. The research was carried out through a phenomenology study, with the use of semi-structured surveys with 34 students. The results analyzed in the surveys suggest the need for virtual learning environments, as well as the review of the current technological infrastructure conditions. Among the universities and students surveyed, students perceive that the new virtual environments can visualize learning generating more capacity for understanding and remembering, however, they recognize that they have not had direct contact with these new scenarios in the institutions where they are enrolled, therefore the universities have challenges

**Keywords:** Virtual Reality, Metaverse, Education, Classroom, Accounting.

### 1. Introduction

Virtual reality has advanced considerably during the last 10 years, involving advances in the different disciplines of science, such as the business and educational fields. The goal of creating new tools that change teaching and learning. For this, the competencies related to the use of technologies and the creation of new educational content adapted to the target group have been captured. Technological changes have led to a digital transformation, creating new spaces, tools and platforms to share, search and create information. One of the latest technological innovations has been virtual reality, which is capable of showing any type of content and reality in three dimensions, achieving total immersion of the person participating in the activity. This creation has managed to change certain aspects of education as we knew it until now. For this reason, different applications that virtual reality currently has in the field of education will be exposed to show the great benefits it has. The contents must be adapted to their abilities, so the incorporation of digital tools is beneficial for them, since it allows them to capture the information in a more simplified and visual way..

The public accounting career has provided an approach to the use and management of new technologies linked to the field of education. According to Grajales et al, (2022), the Ministry of Education has regulations for HEIs, the qualification and operation of educational programs are governed by this regulation. The operation of universities is regulated. During the classes, the power and impact that technological development has on our lives has been shown since everything around us has begun to revolve around social networks and the media. Throughout our lives, we have been aware of how reality has been changing to adapt to these new changes, creating a digital world in which we are constantly connected. They have gone from looking up words in the dictionary to looking them up on Google, text messages have become obsolete with the arrival of WhatsApp or Twitter has become the new personal diary for adolescents. In short, new technologies have generated a great impact on society and therefore, they must adapt and begin to incorporate these new tools and digital media into their educational processes, seeking to promote both culture and leisure. In the same way, these technologies give us the opportunity to generate any type of multimedia content adapted to the context where we are going to work. This approach to the group has given me the opportunity to learn about the educational model they have, giving me the opportunity to appreciate the shortcomings and virtues that each of the users have.

The article is organized as follows: Section II presents the literature review, Section III presents the experimental method. In section IV the results are examined and in section V the Conclusions

## **2. Previous Research and Theoretical Foundations**

The main milestones in the development of virtual reality can be found between 1989 and 2000, including the Rend386 software, which allows rendering 3D objects in real time using the VR386 engine (Clark, 2015). This period also saw the appearance of software that marked the development of augmented reality using ARToolKit. It is closely related to promoting the development of augmented reality applications. This is free software under the GNU General Public License. For users who require custom or premium support, commercial licenses are administered by ARToolworks Inc., Seattle, USA (Lamb, 2003). Other important facts reinforce the history of virtual reality.

Learning through the use of simulation systems is currently implemented in the world as a didactic element that allows reducing costs and, in turn, improving skills and results compared to traditional teaching (Munte, 2019). Thanks to the above, better monitoring and evaluation by the instructors is achieved. All these changes have modified reality as we knew it, bringing us closer to a futuristic and innovative world, in which we are interconnected, generating a culture of connectivity (Van Dijck, 2013). The Rae defines Virtual Reality (VR) as "representation of scenes or images of objects produced by a computer system, which gives the sensation of their real existence"

### **3D graphics**

Some three-dimensional graphics that allow us to have the most real sensation possible of what we see through the virtual reality glasses. There are many types depending on the type of work to be done.

These advances within the educational system allow students to experience learning in immersive scenarios and thus break with geographical and temporal barriers as we know them, and can be used in all existing subjects of the educational stage (Domínguez and Llorente, 2009). . The work of Sherman and Craig (2002) shows us how virtual reality can be approached. VR can be used to solve problems in a variety of fields, making it clear that VR isn't just about entertainment. Virtual reality can add an interactive dimension to traditional teaching and learning processes. Therefore, The tendency of schools to use new technologies and create a hybrid model may provide a potential link between how students learn to become investors and their use of technology. This combination of educational models includes the use of digital spaces as well as creative physical spaces (Morán, 2015).

It is a fact that virtual reality favors a study method with less effort since it is based on the creation of experiences and is currently being used to address issues such as: Traveling without leaving class, time travel. professional orientation, education, empathy and values. The promotion of the use of technologies in the field of higher education is promoted by universities such as the Massachusetts Institute of Technology (MIT 2014), National

Autonomous University of Mexico (2021), includes recommendations in the final reports the exploration and promotion of learning based on games as part of the extension of new pedagogical approaches.

### 3. Methodology

The research was carried out through a phenomenology study, using surveys conducted by Smith et al. (2009), the applied methodology has evolved to analyze the perspectives of participants in research studies on people and social interactions, Crotty (1998). The participants chosen for this study belong to public accounting students. The sample contains 34 public accounting students, among which were: 6 students from the Fundación Universitaria Católica del Norte, and 28 students from the American University Corporation. Participants are all over 18 years of age.

**Table 1.**Demographic characteristics of respondents

University	Number of Public Accounting students surveyed
Northern Catholic University Foundation (Virtual University)	6
American University Corporation (University face-to-face)	28
<b>Overall, students</b>	<b>3. 4</b>

**Fountain:**Own elaboration of the authors

### Research Issues

In the research, the importance of virtual reality in the educational field in public accounting programs and the advances that are expressed in the profession have been socialized.The general objective is to investigate the importance of virtual reality in the classroom.A first activity was carried out that consisted of socializing what virtual reality and the metaverse are, a second moment the participation of students in the virtual environment in a class on the platform. and finally, surveys were carried out on public accounting students to determine their perspective on the metaverse in the educational field once the dynamic was finished.

#### *First session*

In this first session we worked on Virtual Reality, defining what it is and what it consists of, the materials that are used to make it possible, a brief and concise explanation of what Virtual Reality is, showing the tools that are used to Immerse yourself in the experience and see in which situations it is currently being used and we will see the real experiences for students from the 7th to the 9th academic semester, so that they have a prior idea of what we are going to work on, they will be explained how to enter the virtual environment so they can interact with the teacher.

#### *Second session*

A fixed time for the activity was determined, where the teacher and student will interact as a class tutor on the platforms.hubsY3Dmeet,Once the activity is finished, a survey will be carried out on the students' experience of virtual reality as a development tool in the classroom.

Listed below are the questions asked in the questionnaire to specific public accounting students.

**RC1***Do you know about the use of virtual reality and the Metaverse?*

**RC2***Have you previously had experience with virtual reality in university education?*

**RC3***Is it good to use virtual reality for education? Justify your answer*

**RC4**Would you like to receive training on this topic?

**RC5**Do you have the necessary tools to use virtual reality in your home?

**RC6**What do you think of the use of virtual reality in education?

**RC7**How do you evaluate the virtual reality activity carried out and the students with the use of technology at home? Justify your answer

**RQ8**Do you think that virtual reality can be implemented in university classes? Justify your answer

**RQ9**What is it that makes these virtual settings interesting and attractive?

### Conducting the survey

All the surveys were carried out during the second semester of 2022 by the researchers. The time spent on these additional questions ranged from a few minutes to 20 minutes, the participants were asked to respondents that once the virtual reality socialization activity is finished, they will take 20 minutes to answer the questionnaire.

First, we describe the general objective of the research, the interest in incorporating virtual reality in the classroom, the purpose of data collection and the use that would be made of them. Second, the participants were assured that their responses would be anonymous.

## 4. Results

### Virtual Reality Socialization

The students of the public accounting program were invited to participate in a talk on virtual reality that consisted of 20 minutes of socialization on the subject, the second stage consisted of the students participating in a virtual environment class on the subject of auditing and Thirdly, a survey was carried out to determine the perception on the subject in the educational field.



**Figure 1** Teacher interaction  
Source: hubs



**Figure 2** Virtual classroom  
Source:3Dmeet



**Figure 3** Professor Avatar  
Fountain:3 Dmeet



**Figure 4** Professor Avatar  
Fountain: 3Dmeet

Faced with the advances in virtual reality, the Fundación Universitaria Católica del Norte To continue on the path of innovation, research and prediction in the year 2022, inaugurated the Virtual Reality Laboratory, a space where the experience of exploring the metaverse begins through as the latest information and communication technologies ICT exist in today's world. . The purpose of the laboratory is to allow the opening of educational scenarios in which institutions can envision many possibilities in this field, especially in local communities interested in deepening the process of creativity and innovation. In conjunction with the UCN congregations, the project is coordinated with the North Research and Innovation Area, Faculty of Engineering, Departments of Engineering and IT, Technology,



**Figure 5.** Virtual reality interaction.

**Fountain:**UCN Virtual Reality Laboratory

### Survey analysis

In the analysis of the results of the surveys carried out on the students of the public accounting program of the different private universities are the following:

#### ***RC1 Do you know about the use of virtual reality and the Metaverse?***

Faced with the knowledge and experience of virtual reality and metaverse, in front of the students surveyed from the two universities, about 23 of the total answered that they have knowledge on the subject and 11 students do not know the subject, taking into account the age of the participants in the study. They range between 18 and 32 years of age, for which a non-significant percentage of knowledge of virtual reality is presented.

#### ***RC2 Have you previously had experience with virtual reality in university education?***

Regarding the students surveyed, a margin of 10 students responded that they have had an experience in virtual reality, prior to the activity carried out in the virtual class of the investigation, and 24 students respond that they have not had an experience on virtual reality. metaverse virtual reality

#### ***RC3Is it good to use virtual reality for education? Justify your answer?***

The answers were favorable about the importance of using virtual reality in the classroom, among the respondents the number N°3, answers that "Yes, I think that carrying out digital simulations is a great tool to delve into what you want to be as a professional"

Respondent No. 4, "Yes, since it makes it easier for us to access it, sometimes due to time factors it is very difficult to attend a face-to-face classroom"

Respondent No. 9, *"Yes, since they would have more interaction in virtual reality as a practice for when they are carrying out some activity in the reality of a company or construction or even in a surgery they can carry it out successfully."*

Respondent No. 30, *"Yes. Time is saved in travel, having broader resources for queries, collaborative work with other people with a common interest, agile methodologies, and availability of class repositories to repeat if required."*

**RC4 Would you like to receive training on this topic?**

All 34 students surveyed respond that it is extremely important to receive training on the metaverse for interaction in the metaverse.

**RC5 Do you have the necessary tools to use virtual reality at home?**

32% of students surveyed do not have the necessary tools to interact in virtual reality, 18% of students have tools, but with limitations, and 50% have tools to interact comfortably.

**RC6 What do you think of the use of virtual reality in education?**

The different opinions about virtual reality are favorable among the participants, leaving as a note that the participant (student) must adapt to the new technological changes and concentration in the environment where they are, as noted in the following responses from the respondents.

Respondent No. 16, *"Its positive effects between how teaching is given and how to learn is more dynamic, without leaving aside the importance of the teacher."*

Respondent No. 24, *"It seems very important to me since it can transform education through more dynamic processes, if we take into account that we can simulate reality, it can be much more interesting when it comes to interacting, recreating and simulating processes."*

Respondent No. 26, *"It depends on the student as such, the performance that he puts "*

Respondent No. 30, *"It is important to venture into these new technologies and improve education"*

**RC7 How do you evaluate the virtual reality activity carried out and the students with the use of technology at home? Justify your answer**

The evaluation of the activity developed in the virtual classroom on virtual reality is favorably accepted among students, as can be seen in the comments of the surveys.

Respondent No. 4 *"Good because this allows us to go beyond what we know, investigating and inquiring about these technologies that in the future will become even more part of our day-to-day life"*

Respondent No. 5 *"I think that, thanks to the UCN, as students we are immersed in the world of technology thanks to virtual education"*

Respondent No. 23 *"It seems to me that one gets distracted a lot since there are many distractors"*

Respondent No. 24 *"It is a very interesting exercise, but each student must have a very good sense of belonging so that the activity can be carried out and that the expected results are achieved"*

Respondent No. 30 *"It requires a greater commitment on the part of the student. Likewise, it is necessary to have quality technological resources to improve the experience."*

**RQ8 Do you think that virtual reality can be implemented in university classes? Justify your answer**

The implementation of virtual reality in the classroom is accepted by the students, where the university participants and students must carry out a training and execution plan as a follow-up to virtual reality on the classes that are taught on the topics of the different subjects. .

Respondent No. 3 *“There are virtual learning scenarios with the ability to keep the student's attention much longer than in a synchronous or asynchronous meeting, visualizing learning generates more capacity for understanding and remembering.”*

Respondent No. 4 *“Yes, since it would allow us to be much more immersed within the university in each given course.”*

Respondent No. 12 *“Yes, but it is important to make students aware of the responsibility that they must have with knowledge and disposition”*

### ***RQ9 What makes these virtual settings interesting and attractive?***

The attractiveness on the part of the students in front of the virtual reality refers to the comfort that they have when receiving the classes, for the time that they have in the work and student life.

Respondent No. 1 *“With the popularity of video games and virtuality, it is a challenge between virtuality and student.”*

Respondent No. 5 *“That education can go a step further, although we study online and do not have physical classrooms, better interactions with classmates and teachers can be created and the learning process would be much more enriching and fun at the same time.”*

Respondent No. 6 *“That shortens distances, adds capacities, skills and energizes knowledge, immerses us in learning different tools and makes it possible to acquire knowledge anywhere in the world and for more people”*

Respondent No. 29 *“The tools that teach us a more agile way and thus perform better at work and academics”*

## **5. Conclusions**

Virtual reality in the metaverse is becoming increasingly important in the education sector, therefore universities must be prepared with the new tools that will support the classroom in virtual environments, where student and teacher interact with the new dynamics, and acquire competent skills and abilities in each of the topics that are addressed in each of the subjects, however the context of the students must be evaluated if they have the necessary tools to participate in virtual reality, as well as the Support from universities to make students aware and allow students to interact, it is notorious among the students surveyed who agree with the implementation of virtual reality in the classroom.

This is a great challenge for teachers. There are higher education training proposals that are in practical environments. The practice in virtual reality is extensive, therefore universities must be active promoters of proposals and evaluation that favor the exchange of knowledge between students and professors together.

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## **Declaration of Interest Statement**

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