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Ethical Challenges with Personalized Avatars in Higher Education of the Metaverse Era

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Abstract

One of the first revolutions of Web 3.0 technology has been the metaverse, which is an alternative world formation where people can experience three-dimensional virtual realities through their avatars. The only way for higher education to survive in the metaverse era is to do an in-depth examination of the current situation and create strategies, regulations, and policies for all segments of this novice field considering also the ethical challenges it will bring to humanity. In a metaverse environment, there will be personalized avatars that represent real people, and in a university setting with virtual classes held in the metaverse, many ethical dilemmas and moral concerns can develop due to the utilization of avatars. The study narrowed its attention to examining these ethical issues raised by avatar customization and potential solutions to design a healthy metaverse in higher education. The study conducted an in-depth exploration with fourteen higher education lecturers, who are also key people specialized in the metaverse and web 3.0 technologies. The data obtained from the interviews were clustered under seven thematic nodes including anonymous identities; socially equal & diverse avatars; avatar policy; honesty & transparency; non-resemblance with the physical realities; avatar clothes codes; and avatars' intellectual property.

Key Words: Avatar, Ethics, Metaverse, Higher Education, Metaverse Universities

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Metaverse Çağının Yükseköğretiminde Kişiselleştirilmiş Avatarlarla İlgili Etik Zorluklar

Öz

Web 3.0 teknolojisinin ilk devrimlerinden biri, insanların avatarları aracılığıyla üç boyutlu sanal gerçeklikleri deneyimleyebildikleri alternatif bir dünya oluşumu olarak görülebilecek olan metaverse olmuştur. Yükseköğretimin metaverse çağında ayakta kalabilmesinin tek yolu, mevcut durumun derinlemesine bir incelemesini yapmak ve insanlığa getireceği etik zorlukları da göz önünde bulundurarak bu yeni alanın tüm segmentleri için stratejiler, düzenlemeler ve politikalar oluşturmaktır. Bir metaverse ortamında, gerçek insanları temsil eden kişiselleştirilmiş avatarlar söz konusudur ve metaverse'de sanal derslerin yapıldığı bir üniversite ortamında, avatarların kullanımı nedeniyle birçok etik ikilem ve ahlaki kaygı gelişebilir. Çalışma, avatar özelleştirmesinin ortaya çıkardığı bu etik sorunları ve yükseköğretimde etik temelli, sağlıklı bir metaverse tasarlamak için potansiyel çözümleri incelemeye odaklanmıştır. Çalışma, aynı zamanda metaverse ve web 3.0 teknolojileri konusunda uzmanlaşmış kilit kişiler olan on dört yükseköğretim öğretim görevlisi ile derinlemesine bir araştırma yürütmüştür. Görüşmelerden elde edilen veriler, anonim kimlikler; sosyal eşitliliğin ve çeşitliliğin saplandığı avatarlar; avatar politikası; dürüstlük ve şeffaflık; fiziksel gerçekliklerle benzerlik göstermeme; avatar kıyafet kodları ve avatarların fikri mülkiyeti olmak üzere yedi tematik düğüm altında kümelenmiştir.

Anahtar Kelimeler: Avatar, Etik, Metaverse, Yükseköğretim, Metaverse Üniversiteler

'One of the definitions of sanity is the ability to tell real from unreal. Soon we'll need a new definition.'

Alvin Toffler

Introduction

The first metaverse experiences, when humanity could only interact with legless cartoon avatars for a limited range of activities, are evolving into extraordinary meta-universes in time when they can engage in more complex activities, where realistic human-looking avatars can interact more, create virtual environments with smell, feel, and sound, and push the boundaries of imagination. The metaverse technology, which is advancing at an unstoppable pace in this direction, will not only affect humanity in many dimensions such as social life, business life, entertainment style, and trade method, but also will have the potential to force a serious transformation in education life, to trivialize the concepts of time and space, and to change learning contents and methods, and to spark revolutions that perhaps even completely alter how people view education.

The integration of computers into our lives has changed how people access information, and how they conduct their academic lives. The long and relatively sluggish educational journey of human beings from stone tablets to computer screens has gained a dizzying pace and has undergone radical changes after technological advances such as computers and the internet. Moor (2001), one of the pioneers of computer ethics, stated that the computer revolution must be divided into three phases: The first one of these is the period that Moor calls the entry stage,

covering the post-World War II period and the 1970s when only the upper class in developed countries had access to technological tools that were not very user-friendly and could be considered experimental. The author asserts that the second stage, stretching from the 1980s to the 2000s, was the period of expansion when computer technology was more accessible to the public, and having these tools became a necessity and prestige, and computer tools and equipment entered our homes and classrooms. According to Moor, after the two stages we left behind, the third phase, the power stage, which is the most significant and interesting part of the computer revolution, was achieved in the 2000s and the test of humanity with technology has just begun. The author emphasizes that the power stage brings many contradictions, uncertainties, and large-scale social, political, legal, and ethical questions and issues. Now, the ethical problems that computer and internet technologies will cause in education have become much more complex and critical.

With the metaverse technology, where the boundaries between reality and virtual are removed, this ethical contradiction and complexity will increase even more. In the later stages of the metaverse, more realistic, more human-like avatars, and more machine-like humans lost in virtual worlds will gradually lift the veil between reality and fiction, physical and virtual universe by creating deep ethical problems. The growth of the metaverse and its influence on educational organizations are regarded to pose challenges for institutions in a broad range of areas, encompassing integrity, privacy, security, accessibility, equality, perception of identity, and sociability (Brunnbauer, 2022; Li et al., 2022). As numerous researchers concurred that a metaverse era devoid of rules, moral and ethical codes would be detrimental to society (Kshetri, 2022; Zallio & Clarkson, 2022; 2023; Bibri & Allam, 2022; Spence, 2008; Brunnbauer, 2022; Fernandez & Hui, 2022; Kaddoura & Al Husseiny, 2023; Li et al., 2022; Dayarathna, 2022) the only chance of surviving the metaverse originated crises for educational institutions is to do a thorough analysis of the present scenario and devise plans, rules, and policies for metaverse platforms.

Literature Review

The Metaverse

It is pertinent to emphasize that there is no uniform definition of the term ‘metaverse’ that is acknowledged by all entities and associations. Instead, diverse definitions are provided by various institutions and organizations in accordance with their own viewpoints, remarks, and visions. In a comparable vein district academic communities are far from coming to an agreement, and their interpretations of the metaverse vary depending on whether they approach it from a technical or theoretical angle (Li et al., 2022; Cho et al. 2023; Lee et al., 2021; Clemens, 2022). The metaverse is a technological realm that is generally comparable to the World Wide Web but does not have a single owner, definition, or founder (Ball, 2022). To Geping (2022), the metaverse is the pinnacle of virtual immersion technology and this online world space parallel to the real world is gradually opening up a more practical environment for human advancement. Clemens (2022) asserted that the metaverse, which could be characterized as virtual spaces where individuals can interact and communicate, is an open system where people can create and share content without regard to any particular format. While Nadella, the CEO of Microsoft, defined the metaverse as "a platform that will turn the whole world into an application tent", Zuckerberg, The CEO of Meta, addressed it as an

inclusive virtual reality that offers individuals the opportunity to experience social life together in an environment where physical distance is not an obstacle (Clemens, 2022, p.30). Especially in the first years of the metaverse studies, it was a word used instead of virtual universes in the literature, but in some researches in the following years, the metaverse has a more complex meaning far beyond virtual universes (Cho et al., 2023). To Cho, the metaverse is not just a virtual world, but a new world that expresses the combination of physical and virtual worlds as a result of artificial intelligence, augmented reality, and the Internet of Things, a reflection of advanced, immersive technologies.

It is possible to observe the disparities in the definition of the metaverse while determining its birth and history. Similarly, pertaining to whether they approach the metaverse from a technological, philosophical, literary, sociological, or economic perspective, many researchers give various dates as the inception of the metaverse. Lee et al. (2021) took Dungeons & Dragons, an interactive board game from the book of the same name published in 1974, as a starting point, also stating that the metaverse went through four different periods until it reached its present form. The authors who put forward the metaverse have reached the current infrastructure by passing through four transformation phases including "the era of literature, the era of text-based interactive games, the era of virtual open worlds & multiplayer online games(mmog), and the era of immersive virtual environments in mobile phones & wearables" (p.5) stated that the event that triggers each transition phase is a new technological advancement such as the discovery of the internet, dissemination to large masses or 3D graphic design.

On the other hand, there are also researchers who take some technological revolutions as a birth in the historical adventure of the metaverse. Huynh-The et al. (2022) and Frey (2021) take the year 1991, the invention of the internet, as the starting point in the time map of the metaverse. Another author, who looks at the history of the metaverse from a technological perspective, Marr (2022) states that the metaverse actually started in the 1970s, long before the advent of the internet, when the MIT company created Aspen Movie Map, which allowed its users to participate in a virtual tour created by computer simulation. The author emphasized that this event marks the first time people used virtual reality technology. Tekin (2022), on the other hand, approaching the invention of the metaverse with a similar point of view, but taking the initial phase back about a century and a half, claimed that the stereoscope device, which was invented by British physicist and mathematician Chares Wheatstone in 1838 and can create 3D images, actually laid the foundation for today's metaverse technologies such as augmented reality, virtual reality and mixed reality.

The phenomenon of the metaverse, which sometimes creates the imagination of a utopian paradise and sometimes a dystopian hell, has entered our dreams and minds long before it entered our lives with the pens of science fiction writers and the shots of master directors. Although the universal definition of the metaverse, its starting point, and whether it is a devil or an angel is a debated topic in academic circles, the common point that all parties agree on is the belief that the metaverse will be the "big bang of the digital age" (Lee et al., 2021, p.1).

Avatars

The Sanskrit term avatar which was originally used in Indian culture for temporary characters that Gods from heaven take on while roaming on earth (Kahraman,2022) has currently been employed to refer to digital personas, alter egos, or web-based identities that are created by the users for their online self-representations in virtual environments allowing them to establish presence through social interaction and agency (Tseng et.al.,2013; Owens, 2012; Davis et. al., 2009; Peterson,2005; Araullo, 2013; Nowak,2004). Through the avatars, individuals behind the screens have the power to represent their physical entities in three-dimensional cyberspace. The avatar serves as a conduit between the user and the community and a tool for social interaction, customizing an avatar and using multidimensional ways to interact are supplementary features that affect social awareness and presence in the virtual worlds as also incorporating a visual cue for the physical location of that presence in virtual cyberspace (Bailenson, 2008; Hayes Jr, 2014; Dickey, 2005; Nisiotis,2015;).

The contemporary usage of the term avatar meaning online identities was first coined in 1986, within an online game 'Habitat' which was defined as a 'multi-participant online virtual environment' and after several years, in 1992, was reutilized in the well-known novel 'Snow Crash' of Neil Stephenson, who is eponymist of the metaverse (Ball, 2022,p.18-19; Stephenson,1992). An avatar was originally conveyed via text, notably names, in earlier iterations of virtual worlds and users applied names like Digitalman or Daurtvayder to identify themselves (Araullo,2013). In comparatively more modern versions of avatars, three-dimensional cartoon avatars with a limited band of actions were created. Following the second level, avatars got more potential as they had a wider range of activities including walking, running, jumping, flying (Hew & Cheung, 2010), and using facial expressions showing their feelings (Wankel & Kingley, 2009; Moore et al.,2007; Tseng et.al, 2013). In the present situation, avatars are more realistic and human-like and have more social and physical abilities to engage in virtual environments. Perhaps the most significant technological advance will take place when avatars can travel seamlessly between the realms and every person in the actual world will be required to have at least one avatar representation (Wankel & Kingsly, 2009; Moor, 2001). The evolution of avatars will gain a pace in the following years precluding distinguishing digital twins of users in the metaverse from physical human beings in the real world, and the difference between the first, experimental avatars and the meta-human avatars of the future will be like the gap between primitive australopithecus africanus and modern homo-sapiens.

Deindividuation Theories and Proteus Effect

The term deindividuation which was coined by Festinger, Pepitone, and Newcomb (1952) was initially used to refer to a situation where persons exhibit antisocial and uninhibited behaviours in groups when they are anonymous and are not considered separate individuals. Following Festinger et. al., a few deindividuation theories were introduced comprising Diener's (1977) model which profounds the lack of self-awareness and self-evaluation in a deindividualized situation lead to increased uninhibited behaviours as people are not aware of their actions' results and have no feeling of responsibility; and Reicher's (1995) Social

Identity Model of Deindividuation Effects (SIDE) theory which suggests three primary root causes for deindividuation including group absorption, anonymity, and diminished identifiability (self-awareness and self-regulation).

Although the deindividuation theories could be slightly differentiated to the researchers who developed them, the common ground that all the deindividuation studies had a consensus on was that the increased anonymity and undifferentiation have a high relationship with non-restrained, antisocial, unethical, and uninhibited actions (Fengister et.al., 1952; Zimbardo, 1969; Cannavale et. al. 1970; Watson, 1973, Diener, 1977; Reicher, 1995; Nadler et.al.,1982). In other words, the more identifiable the individuals are, the more conscious behaviours they act in society; otherwise, if people know that they can conceal their identity, they are more likely to perform implacable, irresponsible, and nonrestraint acts. Johnson & Downing's (1979) study on the effects of deindividuation on human behaviour is one the well-known examples revealing how individuals can exhibit more brutal actions when they are anonymous. In their study, the subjects in clothes similar to Ku Klux Klan outfits in which they could conceal their appearances gave considerably longer electro-shocks than those wearing nursing uniforms.

In brief, various samples in the literature approve that deindividuated people are more inclined to commit socially unacceptable, harmful, and unconstrained acts as the mental process that would ordinarily restrain their conduct in social situations and force them to comply with social norms has been eliminated. Online platforms and avatars that provide high anonymity, on the flip side, are like the digital counterparts and gloomy rooms that create deindividuated situations for individuals and as a consequence have the potential to spark off unethical and incontinent actions (Yee & Bailenson, 2007).

Another theory that needs to be addressed within the scope of avatar-focused ethical debates is the proteus effect that argues our behaviour and identities in the real world are significantly influenced by the appearance or conduct of avatars. The notion of 'Proteus' is originally coming from the God Proteus in Greek mythology, who has the ability to change his form within a range of limitless variations such as a tree, a king, a divine, a river, or an ordinary human being (O'Nolan,1960). Similarly, in the metaverse world, every user is a God Proteus in line with that anybody can be whatever he desires to be including an animal, an object, a celebrity, a historical figure, or an ordinary human; besides one can wish to have multiple self-representations of himself and customize more than one avatar. Also, with Unreal Engine technology, currently, it is currently possible to create various highly realistic digital meta-human characters in the metaverse, which are nearly indistinguishable from real human appearances, so one can create hundreds of avatars of himself by altering the body shapes and reproducing the facial features (Unreal Engine, 2023).

In cyberspace settings, avatars are our full self-representations and serve as the main identity indicators, so we can anticipate that how we behave online is significantly influenced by our avatars, and people who get deindividuated in virtual surroundings might stick with an avatar-based new identity aligning themselves to the presumptions and stereotypes of the character of their avatars (Yee & Bailenson, 2007). The proteus effect theory is employed to refer that human attitudes, self-perceptions, and behaviours are shaped by virtual avatar

identities (Patsantaras,2020; Fox et Al.,2013; Pena et Al., 2009). Different experimental studies supported this theory among which revealed that individuals who were assigned more masculine avatars in a platform performed more self-confident, and decisive acts; the ones assigned more attractive avatars were more intimate and interpersonal; taller avatars acted more confidently and motivated; or avatars with the users' own faces showed more increased cardiac frequency (Gawlik-Kobylinska, 2023; Yee & Bailenson,2007; Yee et. al.,2009; Navarro et.al.,2022). In this sense, avatar choice in the metaverse platforms is not something that can be ignored by higher education institutions when the possible proteus effects on students and lecturers are taken into consideration.

The Research Questions

There will be customized avatars in a metaverse ecosystem that symbolize genuine individuals, and in a university setting with virtual classes conducted by the metaverse, various ethical challenges and moral issues can arise owing to the employment of avatars. To explore these ethical challenges related to avatar personalization and possible solutions, the study focused on two research questions:

1. What are the avatar-based ethical issues in higher education institutions in the metaverse?
2. How can the universities minimize the avatar-based ethical problems to design a healthy metaverse in higher education?

Methodology

Research Approach & The Study Group

The interpretative phenomenological design, an outcome of the social cognitive paradigm and cognition-oriented approach, was employed as the research design and was considered compatible with the purpose of the study in light of the setting of focusing on phenomena that have been recognized but lack a comprehensive understanding. In interpretive phenomenological research, the investigators work with people who have observed a phenomenon or who have comprehension, opinions, or perceptions about it; and, instead of focusing on confirming or refuting the theories in the literature, they aim to establish a question-rich ground that can be revisited in subsequent studies on the phenomenon (Seggie & Bayyurt, 2015; Brocki & Warden, 2006). The IPA bases its roots on hermeneutics, ideography, and phenomenology, and concentrates on discovering how individuals make sense of a phenomenon (Smith,2011). Since this study aims to carry out an in-depth exploration of how the higher education lecturers specialized in metaverse and web 3.0 technologies perceive, interpret, and make sense of avatar-based problems in the foreseeable future of metaverse universities based their experiences, the IPA is considered to coincide with the nature of the research.

Utilizing the maximum variation and criterion sampling techniques from purposive sample methods, the study's participants were selected. Maximum variation sampling, commonly referred to as heterogeneous sampling, is employed to collect as many different viewpoints as is practical. It was intended to take into account the perspectives and experiences of all potential stakeholders when selecting the participants in order to create novel understandings

of the issue. To be able to present varied viewpoints and a wider, deeper, and enriched eyesight in this study the participants were also required to be strict representatives of their respective fields. To choose the best group for the study's objectives, a criterion sampling technique was also utilized. The sample included in the study group should have experience in metaverse universes and ethical challenges in higher education associated with the scope of the research. In this situation, the study's epistemological foundation is dependent on authoritative data (Kivunja & Kuyuni, 2017). An ideal group of representatives was obtained including academics and professionals not just in science and technology like AI and Data engineering or XR/ VR/AR technologies, but also in humanities like cyber safety experts in psychology or computer ethics in philosophy.

The participants were reached via personal e-mail addresses or LinkedIn accounts to determine whether they would be interested in participating in the study after conducting detailed web research to contact the key people in the domains of metaverse and ethics, as the expert people specialized in this relatively novice field are sparse and it is quite hard to find and reach them. Participants were informed of the study's purpose and requested consent to have the interviews taped in order to prevent data loss. The demographic data of the fourteen participants who consented to participate in the study is shown in Table 1.

Table 1. Participants' demographical information.

Participants' Code	Specialized Field(s)	Years of Experience
p1	Extended reality & 3D modelling	9
p2	Data visualization, data & ethics in the metaverse	8
p3	Virtual reality & augmented reality	10
p4	Artificial intelligence & educational metaverse	18
p5	Virtual reality, blockchain & NFT	7
p6	Healthcare metaverse & artificial intelligence, humanism & futurism in the metaverse	30
p7	Computer ethics & moral philosophy	24
p8	Digital health & bioethics	9
p9	Educational metaverse & ethics	14
p10	Cyber safety & psychology	25
p11	Virtual reality, 3D modelling & augmented reality	8
p12	Electronics & communication technologies, extended reality	15
p13	Distance learning & metaverse technologies	27
p14	Hyper-humanism, context engineering, embodied cognition, hybrid technologies	20

Data Collection Tools & Procedure

Semi-structured or unstructured interviews, which offer an unrestricted, open-ended, and systematic stream of data with the participants to uncover their perceptions and interpretations of the phenomenon, are the most fundamental data collection technique in phenomenological research (Patton, 2014; Smith, 2011; Baker et al., 1992). A semi-structured interview form was employed in the study to gather information about the ideas and experiences of the participants on the topic, giving each participant the chance to express themselves freely and in-depthly. The semi-structured interview protocol was created in accordance with the related literature to develop the interview questions and then forwarded to four experts—two metaverse technology professionals, a higher education expert, and a language expert—for editing and guidance.

Together with each of the volunteer participants, the day, time, and location of the interview were scheduled throughout the data-collecting procedure. After receiving permission from the participants, the interviews were recorded to prevent data loss. Because many of the participants were from a variety of countries and others were in remote locations despite living in the same country, the majority of the interviews were carried out through Zoom meetings, which usually took between one and two hours, while a few of them were conducted through the metaverse platform Spatial.

Data Analysis

Beginning with the transcription of all the participant-provided video recording files to the computer without any alterations or missing data, the researchers started to analyze the data. By deciphering the data that was transmitted to the written medium, the second phase was successfully completed. Before analysing the data, the obtained video recordings and transcriptions had previously been listened to and reviewed repeatedly before moving on to the coding and category-building processes. For the open encoding and axial encoding of the data, Nvivo 14 was used. The open encoding phase for the content analysis was completed once the data was divided into manageable chunks and all connected chunks were placed into the appropriate codes. The axial encoding procedure resulted in the creation of themes by basing the relationships between the codes in a dynamic, cyclical, and non-linear process, on the extent of pertinent material (Strauss & Corbin, 1998; Williams & Moser, 2019).

Results and Discussion

The codes obtained from the interviews with different experts via semi-structured questions based on the related literature were clustered under seven thematic nodes. This part of the study which also includes some underlying quotes from the participants holds forth the findings of the research under these seven main nodes. The basic nodes collected under personalized avatars in higher education are demonstrated in Figure 1:

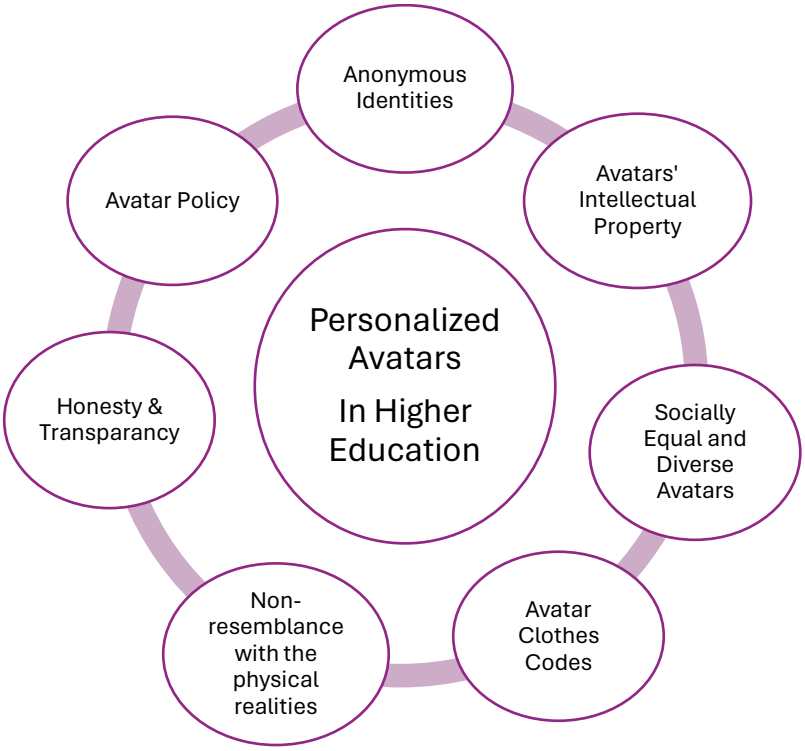

Figure 1. The thematic nodes under personalized avatars in higher education emerged from the interviews.

Anonymous Identities

The participants highlighted that anonymous people in a virtual classroom are more likely to commit harmful and socially unacceptable acts and tend to feel less responsibility for unethical actions they do in the metaverse platforms compared to the physical environment as they employ their avatars like a mask to hide their real identities behind the screens. The anonymity in a deindividualized situation contributes to people's non-restrained and antisocial behaviours as the mental process that would ordinarily restrain their conduct in social situations and force them to comply with social norms has been eliminated, leading to uninhibited behaviour (Zimbardo, 1969; Watson, 1973, Diener, 1977; Reicher, 1995; Gergen et.al.,1973). Some of the participants put their worries into words as follows

> `It's easier to watch over a physical person, you know, than an avatar and who is behind the glasses. So, I think you have to find a way to ensure that it's the right person and not his brother or neighbour or whatever, whomever he is. `(P11)

> "They can exhibit the properties they hide in the physical environment there. You know, that person can be a sign of unlimited freedom for individuals" (p6)

> ` That other piece of the avatar is risky also in the bad stuff because you can be whomever you want, you can be a bad guy, you can, or even if you think now about, sexual harassment on kids and stuff like that, you know, and all that things, which are already happening today without the metaverse, but they even could increase with the metaverse, that's the point, because it's you can hide whomever you want behind the avatar.`(p10)

When entering the metaverse, universities must guarantee that both their students and instructors are safe. Additionally, the students and the instructors themselves can be sometimes the target or sometimes the performers of inappropriate actions via their avatars. It is a common misconception in society that technology breakthroughs and computing-based products lead to chaos, corruption, and issues; however, humans who misuse these products, not the technologies, are to blame (Johnson, 2015). In light of this, universities should develop strategies and plans of action that take into account the fact that both the victims and the perpetrators of cyberbullying, harassment, and attacks that result in physical or mental health issues, as well as any other security threats that might emerge based on the metaverse, are people themselves.

Avatar Policy for Higher Education

The majority of the participants agreed that in order to prevent avatar-related issues, the university needed to establish an avatar policy that was consistent with their philosophy, point of view, and goals. Here are some of the participants' statements on the need for an avatar policy in higher education:

> "I think the same policy that you apply in your real university should also be applied in the metaverse university." (p10)
>
> "However, you express your identity after all if there is a crime or harassment or an unlawful act, there will be an intervention there as well, so there will be an avatar regulation." (p11)
>
> `In the sense that this university, or another have different philosophies have different one is more conservative, the other is more liberal one. So according to these decisions are made, these types of decisions become political to a certain extent and… You know, will we be allowed to be somebody, you know, we feel like or do we have to be like how we are truly, physically? Yeah. Again, this is something that the university, according to its philosophy, will need to decide. `(p8)

To the respondents, the aforementioned policy must include the items as in the following:

1. How different avatars could be chosen? For instance, can the students change their gender, their age, or their physical appearance?
2. Is there a clothes code for the avatars in the virtual classroom?
3. Can the students use the avatars out of the university or can they use them when they graduate?
4. Can the avatars be only human or can the students choose non-human avatars? If so, what are the limits?
5. Can the students change their avatar during their education or do they have to go on with the same avatar until they graduate?
6. Will the university or the lecturers giving the course decide to let the different avatars participate in the virtual classrooms or will the students be free to be whatever they want?
7. Do the students own their avatars as digital property or is it a property of the university/or platform?

8. What are the regulations for the avatars' intellectual property in the metaverse?
9. Who would be responsible if the avatars commit an offense? The persons, the university, or the platform? And, how could we detect the person behind the avatar?

Avatars' Intellectual Property

The metaverse's basic technology depends on the continuous recording of all actions, personal information, social interactions, biometric data, and behavioural metrics that take place in these digital realms, with no regard to location time, or status in society, in other words, educational metaverse platforms base their technology on the big data and these platforms will acquire a stream of data of a variety and amount that was unavailable in earlier technologies thanks to the metaverse's foundational Web 3.0 technology (Joye, 2016; Li et al., 2022; Zallio & Clarkson, 2023). The participants declared that all the words, lectures, actions, studies, and ideas that the students' and lecturers' avatars uttered or performed will be recorded in the metaverse platforms and so, their personal data and more importantly intellectual properties will be in the hands of some private firms. That would be a huge risk because the persons who built the instructional metaverse platforms are also employees hired by certain business entities and there is no guarantee that prevent them from using or selling these intellectual properties. In accordance with this argument, higher education institutions must take into account intellectual data and privacy as crucial concerns in the metaverse era.

> "They may get my ID number, that's not a problem for me, but if I get my plans, projects, or strategies stolen, my whole 20-year, 30-year plans will be garbage. Now both the States and the universities, everyone has their own plans. Everyone has their own academic strategies, so it's a big problem when they're stolen. It is difficult to configure from scratch. Information theft rather than identity theft, that is, the mental artifact we call that intellectual entity, if it is stolen, it is difficult to replace the second one." (p9)

> "What the Avatar say and speak are stored. After all, do they belong to you or not? There is a suspense there. These guys are clever men. They will record all the seminars that I do under the umbrella of my own brand and keep them in the Cloud. It is necessary to question whether it is ethical or not on that part." (p5)

Socially Equal and Diverse Avatars

Higher education's metaverse must be a place where social justice, inclusivity, and equality are upheld, and cultural diversity and richness are protected. The metaverse is not intended to be a melting pot where people of all nationalities from across the world seem similar and cultural richness vanishes. At this juncture, higher education institutions need to be able to maintain diverse textures and cultural variety within their metaverse universes while promoting social equality and justice.

As the metaverse itself generally creates a world where all users are equal after they have entered the metaverse, and it typically does not convey the illusional discriminations and privileges of the physical universe like economical differences, hierarchical classifications, or other superiorities, the social equality and diversity part will be the least challenging zone to the majority of the participants. A few of the contributors, however, objected, arguing that

even in metaverse platforms, certain benefits are given to excessively wealthy persons, like in the case of CryptoPunks and Bored Apes avatars. Some of the participants asserted that, especially in the first decades of the metaverse, people will try to convey the mentality of the real world to virtual worlds and they will succeed as we will see various examples of vanity, showing off, and condescending of economical superiority. Therefore, it shouldn't be allowed for students or professors to employ these kinds of exorbitantly expensive avatars or NFTs on campus in order to preserve the equality of an ethical metaverse in higher education. To the participants, if we do not spoil the nature of this new world as we did in the physical one, the metaverse has the power to serve humanity a more equal world.

> `So some people are born in wheelchairs, so they don't know what is walking, and some people, they get sick or have an accident. So for them, they want to go back into the metaverse and be able to walk, to run, to stand up, and to sit. So that's what I'm saying. You know, there's always can be a positive side and can be a negative side. And, and, but I say it's the same today in real life. The difference is just that I think technology allows all that stuff maybe to be quicker and easier. So the bad things can also be quicker and easier.`(p10)

> "As I mentioned, in the metaverse, it doesn't matter where you were born, it doesn't matter what family you were born in." (p14)

> "If we are talking about a device at a price that everyone can access, then equality is not a problem in terms of fairness, that is, it does not happen in the metaverse itself. Right now, for example, someone comes to a university by sports car, the other may come on foot, one's clothes may be very expensive, the other's may be cheap, but in the metaverse, such things disappear. So if we can choose the avatar offered by the university, then we are just that avatar and everyone is equal in a sense."(p5)

Maintaining cultural diversity and preventing the uniformization of communities is another issue of utmost importance in an ethical metaverse because, thanks to metaverse technologies, higher education institutions will be able to accept more universal students from various nations, cultures, religions, and ethnicities. On that point, the avatars that the universities provide must be as universal, diverse, and inclusive as the world itself. On the other hand, it is important to note that many online spaces do not offer a really varied selection of avatars. For instance, users can only create young avatars, and it is not very possible to see elderly avatars in the social online community on most of the social platforms (Yee & Bailenson, 2007). Besides, it is not very common to see disadvantaged avatars, like in a wheelchair. Although we come across avatars from different nations like Chinese, Indian, or African, still it is not very diverse comprising the nations in the whole world, and does not have an equal range. Also, the dressing options of the avatars do not mirror all the cultures in the world again. So the institutions must consider that and provide a wider range of avatar and dressing options as much as possible to represent more cultures.

"So it depends on the person's preference. But there is so there has been a report, I think two years ago, by Meta, that they realized that most games were made for white men."(p3)

Honesty & Transparency

Whereas the youthful generation is more enterprising, imaginative, and independent thanks to new technologies, this freedom can also make them more disrespectful, intolerant, dishonest, and cruel, and also more likely to engage in immoral acts. Many unethical behaviors, including cyberbullying, cheating, plagiarism, hacking of data, and stealing virtual identities have been seen in universities as a result of the development of technology (McNally, 2012; Gilmore, 2008; Li et al., 2022; Wankel & Wankel, 2012). Through the metaverse, honesty problems can increase in higher education, especially because we do not know the real identity of the person behind the avatar. Some of the participants declared their worries in the following sentences.

> "But you also don't know if he is himself in the metaverse. For example, the people you see do not reflect the real person because they are 3D people. I can impersonate you, you can impersonate me, that's one of the biggest problems" (p3)

> "The age of hackers has dropped to 10 in China, and children are doing that just for fun. That's a terrifying portrayal." (p12)

> "I would say honesty can be broad when you are yourself, you know, just physically, talking philosophically. So if you're behind an avatar in another location, and for me, it increases incomplexity. So that doesn't necessarily bring transparency, which for me, it's very linked to honesty. So this is a very difficult thing to assess, it makes it more complex. And therefore, it's made to bend reality. So do you want to be yourself or you want to be somebody else? But where is the honesty in all this process?" (p8)

On the other hand, the participants agreed that the war between good technology to bad technology will be pursued also in the metaverse age, and there will be lots of ways to protect humans from harm besides detecting the identity of the person using the avatar will be much easier within time. The point is that universities must always master the technology and get superior to people who intend to abuse it.

> "Maybe a biometric method can be created to ensure the right student is behind the avatar. So, for example, the user wears glasses. Maybe retinal recognition can be done or maybe a biometric verification can be done with a different equipment that may be connected to the body, such as palm verification. Since sensor technology has developed in today's technology, obviously a solution can be found for this as well, or there can be another camera that can recognize itself, you know, which recognizes your face and body. In this way, there can be a recognition system. There are actually many ways to verify. (p2)

> "For example, there is a brain internet interface that Elon Musk is in the development process, and they can make people online with an apparatus they connect to the brain. Maybe biometric identification can be made with such a device. But the system will have vulnerabilities. Because it's a human-made thing."(p6)

Non-resemblance with the physical realities and Identity Crisis

In point of fact, avatars are not something like a uniform or just a digital property we have, instead, they are the entire self-representations of us, and the appearance or actions of avatars have a huge effect on our behaviors and identities in the real world, which is also known as proteus effect in the literature (Yee & Bailenson, 2007; Patsantaras,2020; Fox et. Al.,2013; Pena et. Al., 2009; Szolin et.al. 2023). In other words, the malfunctioning of your avatar seems to activate the same neurological circuits as the malfunctioning of the actual you (Li et al., 2022). To the participants, the leading problem based on the avatars in higher education is the non-resemblance of the avatars to real, physical persons that they represent since having a completely independent avatar can lead to an identity crisis. That can also create a manipulation problem among the students and the lecturers. To give a specific example, a fifty-year-old male student may choose an eighteen-year-old female avatar, or vice versa, and that can manipulate the other students in the classroom and the lecturers.

Another issue for the participants that must be debated is whether they will be allowed to choose non-human avatars, half-human half-animal avatars, or celebrity avatars. Approximately all the participants considered that this kind of situation can lead to some challenges in educational institutions. Especially picking celebrity avatars like political or historical figures can increase the tension among the students who have different political perspectives or can cause false sympathy or prejudice among the lecturers and the students. Although there have been some experimental studies revealing the proteus effect of choosing physically indifferent human avatars from reality (Gawlik-Kobylinska, 2023; Yee & Bailenson,2007; Yee et al.,2009; Navarro et al.,2022), there is still no adequate evidence showing the effects of non-human avatars or celebrity avatars on self-perceptions and identities. Some of the participants declared their ideas on the appearance of avatars in higher education:

> "The system itself would cause identity confusion. Yes, avatars are a branch of these in a system. Because as you know, man is a spiritual being rather than a material being. It's about your perspective. The avatars we use in this system will cause many different challenges in terms of insatiability and pushing curiosity, dissatisfaction, gaining new experiences."(p1).

> "There could be some examples of identity confusion or a choice of another identity because maybe these people were bullied. They had certain issues in real life, so maybe they want to adopt another identity."(p3)

> "It should still be more like you, but then there's a point, If you don't like your image, you might want to be nicer and, you know, put filters and other things and whatever. So of course, I think you cannot avoid that, it should be very credible and similar to what you really are." (p10)

> "Usually, people create an avatar as they want to be, rather than what it is. Maybe this way it can cause a psychological problem. Maybe he likes that avatar more, you know, he tries to transform his own body into that avatar. Maybe he can experience such a psychological disposition."(p6)

In addition to all these, the real crisis of humanity will perhaps begin with the fact that young people can become the person they want to be in their dreams via the avatars they create and

lose their sense of reality completely, getting lost in virtual universes and disconnecting from the physical world. Also, some of the participants suggested that in the registration process of the students, an avatar that they can use during their university education can be assigned to the students based on their physical properties to avoid avatar crises at universities.

Avatar Clothes Codes

In the very beginning years of the metaverse, some controversial issues may arise based on that the new residents of this nascent world cannot adopt or can push the limits and violate the borders of other individuals as they exploit the lack of established rules and regulations in different educational platforms. The participants had a consensus that this new universe of humanity must be more democratized, liberal, and free away from the fictional patterns and captivity of the old world. However, it also should not let the violation of personal rights, or the humiliation of ideas, beliefs, and cultures. The participants worried about the fact that people can prefer clothes that offend political, religious, cultural, or ethnical values for avatars and that could drag the higher education institution into another crisis, also, they asserted that there must be some regulations protecting the rights of other users but not so strict as to restrict personal freedoms.

> "That's why platforms have to prevent this, especially when they want to insult things like country flags, cultural values, religious beliefs. Because otherwise, people's flags can be used on the genitals of animals, on the ground under their feet, or in places that will never be."(p1)

> "If there is an illegal situation, a case of harassment, bullying, or harassing someone, yes there can be a regulation. In other words, with much shorter, clear simple definitions, with frameworks such as entering someone else's border and hurting someone else." (p11)

'Technological progress is like an axe in the hands of a pathological criminal.'

Albert Einstein

Conclusion & Future Implications

The metaverse age, which is not within the direction of scientific inquiry and which has not been molded in critical thinking pod, especially on the issues related to ethics which influence society broadly, can be catastrophic in the domains of higher education and can cause concerns such as harassment, abuse, bullying, social isolation and mental health disorders which are already known to be based on social media and informatics, to worsen (Schonning et al., 2020). The requirement to base the metaverse universes on ethical principles with a deliberate and joint venture and the need for regulations and strong strategies in higher education will become clear when considered on a wide scale.

It is a prerequisite to engage in discussions pertaining to avatars because they could lead to a crisis in higher education in the metaverse system. With the rapid development of technology,

avatars will evolve into more realistic meta-humans and will be capable of moving effortlessly between platforms, making the possession of at least one avatar a necessity for everyone, and also making it impossible to distinguish from physical bodies (Moor, 2001; Wankel & Kingsly, 2009; Arıcak, 2015). The formal, intellectual, and professional process in higher education may be challenged by the topic of avatars, which could necessitate laws. Higher education may experience issues and frivolity depending on if the people who create the avatars are who they say they are; whether the avatars accurately represent their genuine physical characteristics; whether we will be able to create culturally diverse and socially equal avatars or not; how we can preserve the intellectual property; how people will react with the existence of non-human avatars or manimals, and even what the avatars have on.

Avatars are no longer just another digital image wandering around; rather a purposeful portrayal, a self-representation of what the human using the avatar wants others to perceive and the appearance of avatars is a part of individuals' embodied social presence (Owens,2012). That is, the body is the center of communication, and an embodied representation, such as an avatar, impacts people's perceptions by enticing them to engage cognitively at a deeper level in their shared activities and communication actions; so in a virtual setting, that self-representations will affect how people perceive themselves, who they are, and how they act in relation to that representation (Mennecke, 2011; Biocca, 1997). Similarly, in the metaverse era of higher education, avatars will be our primary identities and will have a big impact on how we behave in educational platforms.

We may prefer to decorate them, to make them taller, stronger, or more beautiful if we believe that will affect us positively as in the studies of proteus effects (Yee & Bailenson,2007; Gawlik-Kobylinska, 2023); or we may choose to turn into a mythological creature like a turnskin, a manticore or a harpy in a Greek mythology class; or a professor can lecture in an avatar of Aristotle or Descartes in a philosophy class. The metaverse technology has the power to create a more life-like, more qualified, more immersive, more inclusive, and more customized learning environment for higher education. However, it also has the power to dispossess humanity of what it has made an endeavour to reach for ages like freedom, social justice, tolerance, and integrity. Therefore, if we want to shape healthy and good metaverse universities, we need to fix our attention to produce more metaverse research, especially on social sciences; thus, we can have a deeper insight and wider perspective on how we can regulate this emerging world in education. To give some instances, we still do not have subsequent scientific data on how employing non-human or celebrity characters will affect the behaviours in a virtual classroom; or we do not know how much anonymity for avatars can be permitted in meta campuses; or we should investigate how we can provide a full honesty and transparency in the metaverse. In this case, more research and experimental studies should be conducted revealing the possible impacts of avatar choices and educational implementations in the metaverse.

In the past seventy years, proto-metaverses have developed from text-based messaging systems to dynamic ecosystems of virtual universes with human inhabitants and economies, and as decades go on, the current trend will increase the realism, variety of experiences, involvement cultural influence, and value of virtual universes, while eventually bringing the

metaverse that Stephenson and others have conceived; as a result, this metaverse will be the scene of numerous conflicts for power and will be waged through hardware, technological standards, and devices along with information digital wallets, and virtual identities between technology behemoths and rebellious start-ups, with a drive beyond than simply the prospect for profit or the desire to survive in the metaverse (Ball, 2022). With no doubt, this race will take hold of the educational arena and possibly push some educational institutions to jump off the deep end with the motive of seizing a place in this fierce metaverse competition environment without thinking over all the probable outcomes of the system and ethical challenges. However, the educational metaverse should be under the control and guidance of social science and the humanities such as sociology, psychology, philosophy, and educational sciences, not the capital and technology giant companies. Only in this case, we can hold the power to create a better metaverse for future generations based on the principles of justice, diversity, tolerance, respect, consideration, freedom, and integrity.

Author contributions

The corresponding author conducted the research, analysed the data, wrote the sections of introduction, literature review, and methodology, co-wrote the results and discussion, and the conclusion. Co-author of the study reviewed and edited all the sections, co-wrote the results and discussion, and the conclusion, and supervised the whole study.

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No potential conflict of interest was reported by the authors.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author, [N.G.]. The data are not publicly available.

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