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The Impact of Metaverse Technologies on Communication and Marketing Schools: A Systematic Analysis

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Abstract: **-** The communication and marketing industry is currently undergoing a profound technological transformation due to the utilization of metaverse technologies. Numerous research papers have been conducted to examine the potential impact of these technologies on this industry in the future. Consequently, this study aims to explore how communication and marketing schools can adapt their educational practices to align with this emerging trend and effectively keep pace with the inevitable changes in the mass communication and marketing professions.

Based on a systematic review of 96 research papers from 2020- 2023, the study results have conclusively established that Metaverse technologies can be viewed as catalysts for significant transformations in communication and marketing academic schools and as a tool to facilitate the digital revolution in the higher education sector in general.

The study presented a range of valuable insights and recommendations for communication and marketing academic programs seeking to integrate Metaverse technologies. These recommendations cover key areas such as curriculum design, teaching and learning approaches, assessment methods, infrastructure development, curricular and extracurricular activities, and ethical guidance.

Keywords*:* Metaverse, education, communication, and marketing, systematic analysis

1. Introduction

The communication and marketing industry is currently experiencing a major transformation due to the rise of cutting-edge technologies like the metaverse. As a result, there has been a surge in research focusing on the potential effects of metaverse technologies on communication and marketing professionals in the future. In light of this, educators in communication and marketing schools are proactively exploring ways to modify their curricula to integrate these emerging technologies and provide students with the necessary skills needed to succeed in the rapidly evolving fields of communication and marketing.

During the COVID-19 pandemic, the adoption of e-learning as a teaching method has resulted in the emergence of new educational models in higher education. As a result, educators and students have faced challenges in sustaining student engagement during online lectures [1]. One emerging technique to improve student social interaction is the integration of metaverses into the educational framework [2].

This study aims to review and analyze the impact of the metaverse on the communication and marketing sectors. Additionally, it seeks to examine how these changes and opportunities are reflected within higher education institutions, with a particular focus on communication and marketing schools. Essentially, the study aims to explore the most appropriate educational practices for integrating the metaverse into communication and marketing schools.

Despite gaining considerable attention and being introduced in fictional works approximately 30 years ago, the Metaverse is still considered to be in its nascent phase [3]. Defining the Metaverse presents a challenge as its definition varies significantly in literature, primarily due to its status as a concept that is constantly evolving and future oriented. Nevertheless, the Metaverse is experiencing rapid growth. The term itself combines "meta" and "universe" to describe an alternate reality where users, represented by avatars, engage in virtual interactions with other participants and elements within this universe [3].

According to Sun et al., the metaverse is defined as "a space where individuals interact with the world, objects, people, and even the real world by using an avatar representing themselves in a three-dimensional virtual world" [4, p.56]. Hennig-Thurau & Ognibeni defined the metaverse as a computer-mediated environment in which people interact with others in virtual, 360-degree worlds [5]. Khan, Raza, and Zaman stated that the Metaverse combines “5G network technology with advanced virtual technology and innovative presentation devices to revolutionize display technology” [6, p.345].

The metaverse is often portrayed as a forward-looking platform that employs contactless and virtual reality to facilitate communication between communicators and target audiences. Various enabling technologies contribute to the transition from the current Internet to the metaverse, including artificial intelligence (AI), blockchain, computer vision, internet of things (IoT) and robotics, edge and cloud computing, user interactivity, and immersive technologies such as virtual reality (VR) and augmented reality (AR) [7]. These technologies are extensively used in various digital activities and have garnered significant interest, particularly since 2020 [8]. The projected economic value of the metaverse is expected to exceed $824 billion by 2030 [9]. As a result, it is crucial for communication institutions and businesses to actively explore how to leverage the potential of this technology. Therefore, integrating the metaverse into communication and marketing education is crucial to equip students with the necessary skills and knowledge to thrive in this evolving digital landscape.

2. Method

This study relies on a meta-analysis of 96 relevant studies published in the past four years in the the Metaverse, education, communication, and marketing fields. Meta-analysis, as a qualitative method, aims to systematically analyze the findings of multiple studies focused on a specific topic to generate explanations and future implications in addition to “involving the identification, analysis, and reporting of qualitative data, which contributes to achieving the objectives of the study” [10, p.2995]. Similarly, Garrod defines this type of critical review as a “self-contained academic work that reviews the literature on a specific subject or theme using a critical-thinking approach” [11]. In this study, a systematic and critical literature review has been conducted to examine the integration of Metaverse technologies into communication and marketing schools. Additionally, it aims to identify areas of knowledge that require further investigation.

The author conducted numerous test searches using specific keywords, such as "metaverse," along with related terms like "immersive media," "communication," "journalism," "television," "radio," "public relations," "marketing," "social media," and "advertising." To gain a comprehensive understanding, the study involved an extensive review of relevant articles published from 2015 to 2023. However, the actual sample of analyzed studies focused on articles published between 2020 and 2023 (as seen in figure 1).

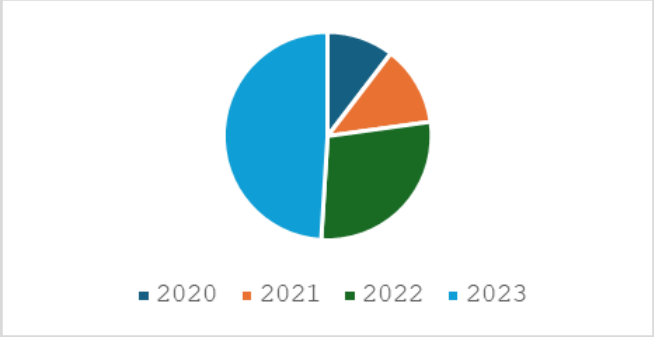

Figure 1 The distribution of the study sample across the study period (2020- 2023).

During the analysis process, the author utilized the "Leximancer" software to identify the main themes within the analyzed articles and explore their relationship to the Metaverse, as well as their impact on communication and marketing professions and the higher education sector. The selection criteria for the study sample (analyzed articles) are presented in Table 1.

Table 1 Criteria Applied to Select the Study Sample

Criteria	Inclusion criteria	Exclusion criteria
Article Type	Published in journals.	Theses/papers, peer reviews, books, abstracts, conference papers, and short survey.
Article Resource	Fully accessible and reviewed through ProQuest, EBSCO, Emerald Database, and ResearchGate.	Excludes other databases not mentioned.
Article Language	Only research published in English.	Excludes research published in languages other than English.
Article Focus Areas	The analyzed studies encompass two primary areas of focus. The first area of focus in the analyzed studies is the impact of the Metaverse on education. The second area explores the influence of the Metaverse on communication and marketing, covering topics such as immersive media, journalism, television production, marketing, advertising, public relations, and social media.	Articles that have metaverse in titles, but don't concentrate on its relation to communication, marketing, and education.
Time of Publishing	Starting from January 2020 to December 2023.	Before 2019.

Presenting results and explanations:

The study employed a qualitative meta-analysis method, involving several steps:

Primary search: Relevant sources were selected from the mentioned databases, resulting in a collection of 182 articles.

Primary analysis: The collected articles were carefully read and analyzed to identify those directly relevant to the study aims, leading to a final selection of 96 articles.

Coding stage: The main themes representing the key ideas within the selected articles were identified and categorized.

Synthesis stage: Common topics across the collected studies were identified, allowing for the analysis of relationships and connections between different themes.

Result presentation: The findings were presented in a narrative style, complemented by quantitative data. Conclusions and recommendations were drawn based on the synthesized information.

3. The Study's Questions

The study aims to answer the following main questions:

Q1: What are the impacts of using Metaverse technologies in education?

Q2: What are the effects of using Metaverse on communication and marketing professions?

Q3: How will the Metaverse potentially impact communication and marketing schools? (Based on the understanding of the previous two questions, the study can examine the expected effects of using Metaverse on communication and marketing schools).

4. Results

Based on the systematic analysis of the included studies, the main findings are presented in three sections as follows:

A. The impacts of using Metaverse technologies in education:

There has been notable growth in Metaverse research since 2020, particularly in the education field [12] [13]. The Metaverse offers significant opportunities across various application domains [14], such as medicine, finance, virtual commerce, business transactions, advertising, virtual education, social networks, digital technologies, communication and marketing [1]. It is worth mentioning that some international leading universities have demonstrated a strong interest in implementing Metaverse technologies in disciplines specialized in arts and humanities [15].

In this regard, research findings unequivocally demonstrate that Metaverse technologies have the potential to significantly enhance the quality of education, particularly in the communication and media fields [16] [17] [18]. Professionals and academics widely recognize the importance of integrating immersive journalism into mass communication and journalism schools, both in theory and practice [19]; [20], as it leads to a complete enhancement of education quality [21] and provides a deeply experiential approach [22]. Generally, successful utilization of immersive learning in education requires a combination of well-designed pedagogical approaches [23], robust technical infrastructure [24], comprehensive training for both instructors and students [25], and effective support strategies [26]. According to [27], the most commonly addressed question in studies related to the Metaverse and education is how Metaverse technology can be effectively utilized in the education sector.

A higher percentage of the analyzed studies have focused on highlighting the effects of the Metaverse on the education sector, particularly in terms of learners' experiences. Several articles have investigated the impact of the Metaverse as an innovative teaching method on students' attitudes [28]. Hwang & Koo discovered that the Metaverse platform had a significant impact on students, making them active participants in the learning process [29]. Jeon emphasized that learners perceive the Metaverse as a tool for simplifying the management of the learning environment [30]. Kaddoura & Husseiny found that using the Metaverse in education promotes active participation, interactivity [31], visual imagery [32], and holding inverted classrooms [33].

Furthermore, the Metaverse has the potential to facilitate collaborative learning by allowing learners from different geographical regions to engage in real-time interactions [34]; [35]. Moreover, integrating the Metaverse into the educational context enables customization of the curriculum to meet students' individual needs [36]; [37]. Tlili et al. discovered that the use of immersive learning positively impacts both pedagogical and technical support provided during the education process [34]. It also fosters teamwork among students, promotes skill development [38], and empowers students to become dynamic, collaborative, interactive, and motivated learners, ultimately leading to an enhancement in the quality of education [34].

Some other analyzed studies have explored the technical structure of the Metaverse and its role in enhancing the teaching and learning process. Technically, the Metaverse is built upon three main components: hardware resources such as Graphical Processing Units (GPU), base communication networks like Sixth-Generation network (6G), and AI-enabled models [5]. AI can contribute to the Metaverse by providing various features such as face tracking, segmentation, sentiment recognition, object detection, voice control, and more [1].

Kaddoura and Husseiny outlined important Metaverse technologies for higher education, including “VR, Multi-User Virtual Environment (MUVE), Mixed Reality (MR), AR, and technologies that act as gateways and allow us to immerse ourselves in Metaverse environments” [31, p.25].

Simultaneously, the use of the Metaverse in education involves integrating institutional learning management systems (LMS) such as HotPotatoes, Moodle, Massive Open Online Courses (MOOCs), Eduquito, Teleduc, and Sloodle, in order to enhance students' knowledge [39]. Other studies have focused on immersive learning environments that utilize AR, VR, and 360-degree techniques to create interactive 3D spaces for communication between message sources and participants [40];[39]; Huda et al. emphasized the importance of establishing a

suitable digital environment for instructors to effectively utilize Metaverse technology within the higher education context [41].

Other research papers have explored the use of the Metaverse to merge teaching with enjoyment. Within this context, numerous studies have examined gamification as an instructional approach, which is widely employed in higher education settings [42], transforming education into an organized video game like experience [31]; [42]. This approach has been found to enhance student performance and improve task completion [43]. The prevalence of virtual gamification is increasing due to the growing availability of games that provide players with control [34]. In this regard, Feng et al. suggested the use of a game mechanism that combines spiral narratives and prompt feedback to support reflection-in-action and reflective redo within a problem-based gaming approach [44].

Another perspective addressed in the analyzed studies was the comparison between traditional and virtual education through the Metaverse. The results showed that integrating the Metaverse into education surpasses traditional education in several aspects, including students' engagement [45]; [46], the achievement of intended learning outcomes [47], and providing students with an interesting learning experience [30]. Furthermore, it exposes students to authentic and hands-on experiences, which serves as a motivation for their participation in classes [45]. As a result, the virtual education system has evolved to become more intelligent, interactive, humanistic, collaborative, and immersive [48]. On the other hand, Han & Noh found that teachers tend to integrate the Metaverse with traditional methods of delivering lectures, rather than using the Metaverse as the sole method of education [49]. Tlili et al. proposed that integrating Metaverse technology with traditional education can help address the challenges faced by professors and students in online learning [34].

The literature review revealed that numerous studies dedicated to immersive learning, which are increasingly being utilized by many universities. Immersive learning refers to the use of VR by students, creating an experience that makes them feel as if they are actually in a real environment, interacting with each other using specialized equipment such as VR goggles and motion controllers, regardless of the physical distance between them [50]. In a similar vein, Sánchez Laws found that immersive journalism had a positive impact on the education process by enhancing awareness and understanding [51]. Others have highlighted its beneficial role in improving cognitive and practical experiences [52]. Some researchers have argued that immersive learning is primarily limited to training in high-risk environments, such as dangerous situations or surgical training [53]; [54].

Another aspect that emerged from the systematic review of the analyzed studies was the potential and future applications of the Metaverse in the higher education sector. De Felice et al. discovered that the Metaverse holds great promise for educational innovation, particularly in fields that require practical experience, such as communication and marketing disciplines [9]. According to Zhong & Zheng, the integration of the Metaverse into education will lead to virtualized learning and a future that is more digitalized and intelligent [55]. Furthermore, it is anticipated that the use of the Metaverse in the educational context will transform the relationship among students, making it more cohesive and inclusive, while also providing access to various applications that can be utilized during the learning process [56].

A final perspective that emerged based on the reviewed articles focused on the challenges associated with the use of the Metaverse as a teaching tool in higher education institutions (as seen in figure2). Javed et al. identified several barriers, including “financial obstacles, self-efficacy, interactive capability, online surveillance, automated attendance tracking, training programs, and network and data safeguarding measures” [57, p.97]. On the other hand, factors such as accessibility, internet quality, infrastructure preparedness, usability, privacy concerns, and faculty support were found to have a minimal impact on the adoption rates of this technology in these institutions [58]. Javed et al. also highlighted additional obstacles, such as infrastructure unreadiness, insufficient training for both instructors and students, and low levels of digital literacy among students [57]. Wei & Yuan pointed out other issues, including a shortage of teaching and learning resources, the challenge of conducting formative assessments with VR technology, and the lack of guidance in vertical education [59]. Additionally, it is worth noting that excessive use of Metaverses can be extremely harmful and

lead to serious health problems [60]. Finally, the ethical considerations surrounding the use of the Metaverse in the educational context are still being established [61].

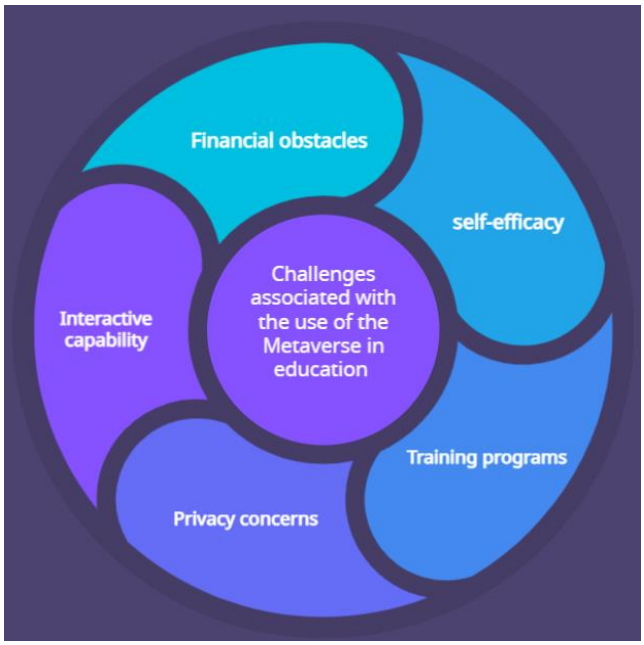

Figure 2 Some challenges of using Metaverse in education context

B. The impact of utilizing the Metaverse on communication and marketing professions

B.1 The impact of metaverse on communication field:

The reviewed studies on applying the Metaverse on the communication context revealed a significant focus on using immersive journalism. It is a novel form of journalism that utilizes immersive and reality technologies to present news stories, aiming to deeply engage and immerse the audience in these narratives. The integration of the Metaverse into media and journalism has facilitated its presence in the online world through various immersive technologies, including VR, XR, AR, MR, and 360-degree techniques. This enables news and visual reports to be experienced virtually within the Metaverse [62]. Susana & Benítez emphasized that immersive journalism is still in the experimental stage of development, despite a small number of initial experimental pieces being created by prominent media organizations [19]. Leading media institutions, such as the New York Times, The Guardian, the BBC, EuroNews, and RTVE, have been at the forefront of utilizing immersive media since 2015 [14].

Steinfeld emphasized that immersive news has the potential to make journalistic content more engaging and consequently more effective in increasing understanding and awareness [62]. It can also have a significant impact on target audiences across various social, political, economic, cultural, promotional, and environmental topics. Furthermore, the emergence of immersive media storytelling has given rise to immersive documentaries, which serve as an "empathy machine" for promoting social change by connecting the audience with the subjects being portrayed [63]. Immersive journalism has also been found to generate greater interest and opinions on important issues, as well as increase willingness to engage in environmental initiatives in the future [64]. In this context, the audience's role transcends the passive user, as they become active participants who actively explore immersive stories.

Additional studies that were analyzed have indicated that immersive journalism can elicit a stronger emotional impact due to the heightened sense of realism and engagement it provides. This, in turn, leads to increased interest and can result in changes in opinions and behavior on topics related to the immersive content [65]. Furthermore, other research has emphasized the importance of audience perception in gaining a deeper understanding of the emotional responses triggered by immersive journalism [66].

Other researchers have examined the limitations of immersive journalism. The most common drawback is the requirement for specialized devices such as VR glasses and smartphones, which are not easily accessible to everyone [19]. Another challenge lies in the time-consuming nature of producing immersive journalism pieces, considering the various stages involved in the production process, including pre- and post-production, narrative design, and final consumption [67]. Integrating immersive journalism into citizen journalism also presents difficulties [68]. Furthermore, there are obstacles related to technological accessibility, specifically the need for immersive reports to be transmitted through different communication channels to reach a wider audience; otherwise, only a limited number of people will have the opportunity to watch them [67]. Susana & Benítez also highlighted the issue of publishing immersive reports on social media platforms and the potential impact of algorithms in distributing them in non-transparent ways [19].

B.2 The impact of metaverse on marketing sector

Regarding the integration of the metaverse into the marketing context, the analyzed studies indicate that the metaverse has the potential to revolutionize the marketing field through the utilization of technologies such as VR, AR, AI, and ML. Raza & Panwar underscored that companies incorporating the metaverse into online marketing employ VR, virtual marketplaces, data security, and 3D modeling tools to establish a fully virtual economy where users can explore virtual worlds using avatars [69]. Currently, the costs associated with implementing metaverse technology in marketing activities limit its accessibility to affluent international companies. However, experts are optimistic that the widespread adoption of metaverse technologies will extend beyond exclusive entities and permeate the entire marketing and advertising industry in the near future [70]; [71]. Consequently, only large companies with substantial financial resources can afford the expenses of this technology [72]. Nevertheless, experts predict that this technology will become more affordable and accessible in the near future, enabling a wider range of market players to incorporate it into their marketing and advertising strategies [70].

Furthermore, other studies examined the utilization of the metaverse as a tool for data analytics and consumer behavior analysis [12]. This technology allows marketers to create realistic virtual marketplaces and gather valuable insights into consumer preferences and decision-making processes [71]. By obtaining accurate data on consumer behavior and interactions, businesses can identify emerging trends and make highly accurate predictions about future consumer behavior [73]. Ultimately, this enables the development of more effective marketing strategies [74].

The findings of the analyzed studies also highlighted a research trend focusing on understanding the factors that influence consumer behavior in relation to the use of the metaverse. These factors encompass parasocial relationships, the credibility of social media influencers, consumers' neuroticism [6], and their openness to the metaverse experience. Additionally, Yu and Fan found that a significant percentage of consumers who have explored virtual e-commerce stores within the metaverse have made purchases, particularly within video games. This indicates that brands should consider making their products available for sale in the metaverse [75]. Moreover, it is projected that the metaverse will fundamentally reshape retailing in the digital world, allowing consumers to navigate virtual spaces and interact with avatars representing retail personnel and fellow consumers [76].

Other analyzed studies have focused on examining the relationship between the metaverse and the advertising industry. Some researchers argued that utilizing the metaverse in advertising and digital marketing contexts emphasizes the importance of creativity and user experience [77]; [78]. Consequently, advertising and storytelling should adapt to this multidimensional technology by becoming more dynamic [79]. Metaverse-based promotional content can be utilized as innovative communication strategies that offer a richer audience experience [80]. In light of this, advertising agencies must keep pace with the rapid development of the metaverse and its vast potential [81]. In general, integrating the metaverse into the advertising context can enhance brand value [82], encourage purchase decisions [83], and enable businesses to respond to changes in consumer behavior [77].

It is worth mentioning that the analyzed studies on the use of the metaverse in public relations activities are considered insufficient. However, it is widely recognized that having a skilled team of metaverse public relations experts is crucial for effectively engaging with customers and implementing innovative promotional activities [29]. Giovana Goretti Feijó found that the metaverse can be utilized as a powerful promotional tool to raise awareness and enhance an organization's image through public relations efforts [84]. For instance, Seoul strategically utilized the metaverse to position itself as the first metaverse global city, thus promoting tourism within the city. Hui et al. also concluded that using the metaverse for tourism promotion is considered one of the most effective communication strategies in public relations, leading to the desired behavioral outcomes [80].

Another research focus that appeared during the systematic analysis process was related to using metaverse within digital platforms [85]. For example, Facebook included the metaverse into its social media ecosystem to provide new experiences to its young users, who are the source of advertising revenue [86]. Mark Zuckerberg's announced that the Facebook will be rebranding to Meta in October 2021 [87]. Tik Tok, Google Arts & Cultures, Twitch, and Minecraft platforms provide mixed reality settings like those related metaverses [88]. This merging would have radical effects on changing how consumers interact with these platforms.

Generally, the analyzed studies have provided valuable insights into different key aspects of the metaverse and its impact on marketing. These areas encompass remote marketing, event marketing, and consumption decisions [89]. Additionally, researchers have investigated brand communication, consumer behavior, testing advertisements in a consumer environment, consumer experiences, and the exploration of trading spaces [86]. Furthermore, the studies have explored the utilization of creative advertising strategies and interactive storytelling techniques that captivate consumers through spatial, temporal, and emotional dimensions [89].

The final research direction that emerged from the systematic analysis process focused on the obstacles and ethical considerations associated with using the metaverse in communication and marketing contexts. Researchers have noted that the utilization of the metaverse in these contexts is still in the developmental phase [90], emphasizing the need for the development of robust digital infrastructure [91].

In terms of ethical boundaries, it has been found that the use of the metaverse can give rise to certain ethical problems, such as the lack of standardized regulations to govern its use [92], privacy concerns [93]; [94]; [95], and the absence of legal frameworks in many countries to regulate its usage [68]. For instance, one ethical issue associated with the use of the metaverse in various sectors is the potential detachment of users from reality [96]; [97]; [98]; [99]; [100]; [101]. Kaur et al., have provided further elaboration on these ethical issues, including their impact on self-perception, the protection of personal freedom, the potential harm to well-established ethical principles within communities, and their influence on ethical codes and rules [102].

C. The potential impact of Metaverse on communication and marketing schools

To address this issue, it is essential to consider the overall indications and insights gathered from the responses to the previous two questions. These indications can provide valuable insights into the potential impacts of the Metaverse on communication and marketing schools as follows:

Program Content Design

Embedding Metaverse technologies into communication and marketing schools will significantly impact curriculum design and development. In this case, the study plan should maintain a balance between theory and practice. The curriculum design should showcase a progression of learning, starting with the fundamentals of immersive media planning and advancing to more detailed, advanced, and critical knowledge and skills on practical usage of immersive media in various forms of communication production. Therefore, the curriculum design needs to incorporate training in areas like VR/AR content creation, 3D modeling, virtual collaboration, and spatial design. By including these skills in communication and marketing academic programs, students can be better prepared for the evolving industry demands.

Based on the systematic review conducted, various areas of interest have emerged that could be integrated into communication and marketing academic programs. These areas include immersive media production, immersive

VR news, PR in the Metaverse, immersive film documentary, metaverse gamification, communication strategies in virtual contexts, creating immersive social media content, virtual marketing campaigns, Metaverse Marketplace, social media management in the metaverse, data analytics in the Metaverse, advertising in the Metaverse, brand communication in the metaverse, VR and AR in marketing, Metaverse technology application, consumer behavior in the metaverse, ethics in the metaverse, and event marketing in the metaverse.

Moreover, as the Metaverse blurs boundaries between disciplines and industries [103] [104], the curriculum design of communication and marketing programs can include modules that embrace interdisciplinary perspectives. Simultaneously, it can foster cross-disciplinary collaboration by incorporating courses or projects that encourage collaboration with individuals from diverse backgrounds such as computer science, design, psychology, economics, and business. Such collaboration fosters innovative solutions and enhances students' understanding of the interdisciplinary nature of the Metaverse.

Additionally, the Metaverse presents numerous research opportunities that can enhance learners' understanding of the application of the Metaverse in communication and marketing contexts. The curriculum design can include research-focused courses or projects that allow students to explore topics such as user experience in virtual environments, the impact of immersive storytelling on consumer behavior, the effectiveness of virtual advertising campaigns, the influence of Metaverse technologies on PR activities, or the effects of immersive video reports on target audience attitudes...etc. By incorporating these research opportunities, students can actively engage in cutting-edge research and contribute to the advancement of knowledge in this field.

Teaching and learning methods

Metaverse can serve as a valuable teaching and learning method in communication and marketing schools by implementing the following approaches:

- Creating immersive virtual environments: Students can engage in realistic marketing scenarios, such as designing and implementing marketing campaigns, conducting market research, or producing documentaries and visual reports.

- Forming group collaboration in virtual spaces: Students can work together in groups to collaborate on projects within a virtual environment.

- Conducting virtual internships: Students can gain practical experience through virtual internships in media and marketing agencies operating within the Metaverse.

- Creating interactive multimedia content: Including virtual tours, interactive presentations, and immersive storytelling, can be utilized to enhance student engagement, and understanding.

- Furthermore, integrating VR, AR experiences, and 360-degree video technology into coursework can provide students with immersive simulations, virtual tours of newsrooms, or interactive storytelling. For instance, students can explore virtual environments to study media effects, practice public speaking, or engage in role-playing exercises. This approach allows for the design of immersive experiences that effectively convey messages, evoke emotions, or explore complex topics in journalism, advertising, or public relations.

Assessment methods

Integrating Metaverse technologies into communication and marketing education can introduce innovative assessment methods. For instance, virtual assessments can be implemented, allowing students to participate in authentic immersive communication forms like designing and executing advertising campaigns, conducting market research through virtual in-depth interviews with relevant individuals, developing marketing strategies for virtual companies, analyzing consumer behavior within virtual marketplaces in addition to producing immersive reports, news stories. VR campaigns, AR applications, or 360-degree documentaries …etc. This integration can also lead to other new assessment methods, such as virtual participation and virtual case studies. It also facilitates group projects and collaborative assessments, allowing students to work together on projects or solve marketing challenges in virtual teams.

In terms of evaluating students' performance, the Metaverse can provide accurate measurements as it generates detailed analytics and data on students' performance within virtual communication simulations. Instructors can use this data to assess students' decision-making processes, critical thinking skills, and overall performance, thereby providing a more comprehensive evaluation of their abilities.

In summary, immersive assessments in the Metaverse provide opportunities for multimodal assessment methods where students can showcase their work using diverse communication formats, including videos, interactive presentations, or virtual exhibitions or marketplace…etc. This broadens the range of assessment methods and caters to various learning styles and preferences. These methods also allow instructors to offer real-time feedback during assessments, fostering continuous learning and development. Overall, the Metaverse presents innovative and immersive assessment approaches that effectively evaluate students' practical skills, critical thinking, creativity, decision-making competencies, and adaptability in the dynamic field of communication and marketing.

Infrastructure

As previously mentioned, the Metaverse comprises three main components: hardware resources, base communication networks, and AI-enabled models. Therefore, it is crucial for communication and marketing schools to integrate these technological resources and features into their infrastructure. It is worth noting that the cost of 360° video cameras is decreasing, making them more accessible and affordable for these schools. To effectively integrate the Metaverse into communication and marketing education, key infrastructural elements are needed as follows:

- Hardware: This includes VR headsets, AR devices, and computers capable of running immersive applications.

- Software tools and platforms: Specifically designed for Metaverse applications, these tools are essential for creating and experiencing immersive content.

- Reliable internet connectivity: A stable and high-speed internet connection is crucial for seamless interaction within the Metaverse, enabling real-time access to online resources.

- Virtual Environments: that cater to the unique requirements of communication and marketing programs. These environments should offer interactive features, communication tools, and customizable options for teaching, learning, and collaboration.

- Content creation tools: such as 3D modeling software, animation tools, audio/video editing software, and gamification platforms, which empower students to develop immersive experiences within the Metaverse.

The Metaverse has the potential to address the limitations commonly associated with both asynchronous tools like Moodle and synchronous e-learning systems such as Zoom, Microsoft Teams, and Google Meet. These traditional platforms can negatively impact the educational process by contributing to low self-perception, isolation, inactivity, and limited emotional expression. In contrast, the Metaverse offers a multiuser 3D environment that blends physical reality with the virtual world, bridging gaps in the educational landscape. Through its unique features, the Metaverse offers an innovative approach to education that fosters engagement, collaboration, and a more enriched learning experience in communication and marketing schools.

Curricular and extracurricular activities

By incorporating the Metaverse into communication and marketing education, various curricular and extracurricular activities can be implemented to enrich students' learning experiences. These activities may include internship at media institutions and marketing agencies that utilize Metaverse technology, organizing virtual conferences and field visits, inviting guest speakers virtually, and hosting networking events using immersive platforms…etc. Such initiatives provide students with invaluable opportunities to connect with industry professionals, explore cutting-edge technologies, and engage in meaningful discussions. Additionally, these activities increase students' awareness of this innovative technology and provide hands-on training, aligning them with the latest industry advancements. To ensure faculty members and students are adept at utilizing Metaverse technologies, institutions should offer training programs and ongoing support through

workshops and tutorials. Furthermore, communication and marketing schools can establish partnerships with companies operating in the Metaverse space, providing students with opportunities for internships, industry projects, and mentorship. This collaboration ensures that the curriculum remains relevant and up to date with the latest trends and demands in the field, preparing students for the dynamic job market.

Ethical Guidelines

Ethical considerations are of utmost importance when integrating the Metaverse into an educational context. It is crucial for communication and marketing schools to establish guidelines and policies concerning data privacy, digital identity, security, and responsible use of immersive technologies within educational settings. These considerations should be integrated into the curriculum, ensuring that communication and marketing students are educated about responsible and ethical practices. Incorporating these ethical considerations into the curriculum promotes responsible and mindful use of the Metaverse in communication and marketing education.

5. Conclusion

Despite the growing interest in using Metaverse within communication and marketing professions, there is a lack of research papers dedicated to investigating the future of embedding Metaverse technologies into communication and marketing schools. Based on the analyzed studies and articles, media practitioners have been promised that the Metaverse would revolutionize their work. However, the specific details of how and when this revolution will occur remain uncertain, as the reviewed and analyzed study sample did not provide predictions about a specific time frame. Therefore, the objective of this study was to explore how the radical change in communication and marketing professions, resulting from the use of the Metaverse, will affect communication and marketing schools. This study primarily focuses on addressing the question of "how" rather than "when."

The study results indicated that students are increasingly recognizing the advantages of the Metaverse as an innovative tool that can enhance their educational experience. However, there is still a need to further raise awareness through various methods, including workshops, offering additional grade incentives, organizing student conferences, providing incentives for both students and teachers to utilize the Metaverse, conducting training sessions and seminars, and inviting guest speakers and experts to emphasize the significance of integrating the Metaverse into communication and marketing schools.

Most of the analyzed studies have focused on the numerous benefits of integrating the Metaverse into the educational context, particularly highlighting its impact on interactivity. This integration significantly affects students' perception, autonomy, and overall learning experience, as well as their sense of presence. However, some researchers argued that the metaverse's potential influence on curriculum development in education has been largely overlooked until now. Other studies have explored the combination of gaming and education, utilizing the Metaverse as an exceptional tool for teaching that enhances student engagement with the content being delivered. Consequently, this study proposes that entertainment will play a crucial role in education when using the Metaverse in the learning process.

The analyzed studies focused on exploring the relationship between the Metaverse and education, particularly regarding students' engagement and immersion. However, limited research has investigated how the use of Metaverse technology as a teaching and learning method can foster creativity and innovation, especially in creative academic programs like communication and marketing. The findings also highlighted the power of immersive media in recreating an eyewitness effect and enhancing emotional engagement in current events. It is crucial for educators in communication and marketing schools to dedicate resources and time to explore the potential of immersive technology for learning.

Based on analyzed studies, the challenges of implementing the Metaverse in communication and marketing education include enhancing VR/AR techniques for immersive experiences, understanding the psychology of

perceiving the VR/AR environment among today's youth, and developing a clear framework for balancing real-world knowledge with VR/AR-based learning.

Generally, the examination of how Metaverse technology is being applied in communication and marketing schools has revealed the need for significant technological updates in infrastructure, curriculum design, curricular and extracurricular activities, as well as teaching, learning, and assessment methods. These updates are crucial to create an immersive educational experience that can effectively respond to the significant changes in the communication labor market resulting from the widespread adoption of the Metaverse in media workplaces.

6. Future Research Recommendations

Based on the study results, several recommendations and future research studies can be suggested as follows:

- None of the analyzed studies have specifically focused on the use of the Metaverse in educating students with disabilities. This area requires further attention and research to shed light on the potential benefits, challenges, and best practices for utilizing the Metaverse as an educational tool for students with diverse abilities.

- Understanding how individual traits such as personality, attitudes, motivations, and cognitive processes interact with the Metaverse can provide valuable insights into consumer adoption and engagement with virtual environments. This research direction can contribute to developing targeted strategies and personalized experiences that cater to different psychological profiles within the Metaverse.

- Establishing guidelines for the use of the Metaverse in communication and marketing schools, taking into account the traditions of each community, is crucial for maintaining a balanced relationship between teachers, students, and parents. These guidelines ensure that the integration of the Metaverse aligns with cultural norms and respects the values of all stakeholders involved in the educational process.

- In light of the necessity to establish laws or regulations governing the content in communication and marketing that relies on the Metaverse, ensuring accuracy and preventing distortion, it is important to research the governance of immersive communication. This research approach can help develop effective frameworks and guidelines that promote responsible practices, maintaining the integrity of the Metaverse and providing accurate information that reflects reality.

- Seeking current capabilities of universities are inadequate for utilizing Metaverse technology in communication and marketing schools, particularly in developing countries, seeking funding sources becomes crucial. Therefore, it is important for future studies to focus on exploring the potential for funding the effective utilization of this technology.

- Researching the role of the Metaverse and immersive communication in enhancing innovation and creativity among students in the field of communication and marketing is crucial since these fields heavily rely on creativity.

- Most of the analyzed research focused on the perspectives of academics regarding embedding the Metaverse in the education context, rather than practitioners. Therefore, future studies can concentrate on the perspective of communication practitioners regarding this issue.

- Researching the return on investment (ROI) derived from using Metaverse technology in the communication and marketing fields, including the profits it generates, is important. Additionally, studying the ROI of incorporating this technology into education, particularly as a promotional tool for universities to attract students passionate about modern technology, is also significant.

- Most of the reviewed studies have focused on factors promoting the use of the Metaverse, but there is a lack of research examining students' desire to engage in the Metaverse and the variables that influence their decision. Future studies should address this gap by exploring the factors that drive students' motivation and willingness to participate in the Metaverse. This understanding can inform the development of effective strategies to encourage student engagement and adoption of Metaverse technologies in educational contexts.

7. Limitations

As metaverse technology and its impact on the communication, marketing, and education sectors continue to rapidly evolve, it is crucial to acknowledge the study limitations and predict future research in this area. Another limitation is the technology gap between countries in terms of the speed of technology adaptation and implementation, as well as access to high-speed internet and required software for using the metaverse. This limitation may exclude certain countries and populations from the study results. Finally, considering the limitation of the number of studies selected as the main sample for this study, a broader sample could offer additional insights into the relationship between the Metaverse and the communication profession, as well as its impact on schools specializing in communication and marketing.

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