Reform and Innovation: Opportunities, Challenges, and Strategies of Metaverse-Empowered Journalism and Communication Education Postprint

Authors: Li Su Zeyu

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Abstract

In March 2021, the first metaverse concept stock was listed on the New York Stock Exchange in the United States; in May of the same year, the global social media giant Facebook announced its rebranding to Meta, transitioning into a metaverse company. As an increasing number of technology companies both domestically and internationally began shifting their investments toward metaverse infrastructure development, 2021 is widely regarded as the inaugural year of the metaverse. Following the surge in popularity of the metaverse concept, various sectors have rushed to adopt it to innovate their own development pathways and leverage this concept to attract greater attention. Since the introduction of the metaverse concept into graduate journalism and communication programs at universities, it has not only injected fresh vitality into educational innovation in these programs but also brought potential risks and challenges. Therefore, while actively focusing on the technological empowerment of the metaverse for graduate education in journalism and communication at universities, it is also imperative to adopt effective measures to address its risks and challenges.

Full Text

Reform and Innovation: Opportunities, Challenges, and Countermeasures for Metaverse-Empowered Journalism and Communication Education

(Beijing Institute of Graphic Communication, Beijing 103900)

Abstract: In March 2021, the first metaverse concept stock was listed on the New York Stock Exchange. In May of the same year, the social media giant

Facebook announced its rebranding to Meta, transforming into a metaverse company. As an increasing number of technology firms at home and abroad have begun investing in metaverse infrastructure development, 2021 has been recognized as the inaugural year of the metaverse [1]. Following the explosive popularity of this concept, various sectors have rushed to adopt the metaverse framework to innovate their development pathways and attract greater attention. Within graduate-level journalism and communication programs, the introduction of the metaverse concept has injected fresh vitality into educational innovation while simultaneously introducing potential risks and challenges. Therefore, while actively exploring how the metaverse can technologically empower graduate journalism and communication education, effective measures must be taken to address these associated risks and challenges.

Keywords: metaverse, journalism and communication, educational reform

I. Current State of Journalism and Communication Education

An examination of current cultivation programs reveals that universities have established competency requirements for graduate students. However, the foundational curriculum fails to achieve comprehensive improvement in the competencies required of journalism and communication master's students. Graduate education lags behind the development of the media industry, creating additional difficulties for journalism and communication graduates in their employment choices. Three primary problems exist:

(I) Outdated Talent Cultivation Models

Traditional journalism and communication theory remains the mainstream approach in current graduate foundational courses. This cultivation model is better suited to conventional industries such as publishing houses, newspapers, and television stations, but clearly cannot meet the demands of today's new media industry, resulting in a disconnect between academic learning and professional practice. Consequently, talent cultivation fails to satisfy the practical needs of the new media sector.

(II) Deficient Ideal and Belief Education

Ideal and belief education in most institutions remains superficial, failing to exert substantive influence on journalism and communication master's students. In the new media era, graduate students can easily access information and accept certain concepts and ideologies via the internet. However, corresponding media literacy has not developed synchronously. Existing foundational curricula rarely incorporate internet resources that graduate students find appealing for ideal and belief education. Therefore, media literacy education should be integrated as a crucial component into graduate ideological and political education systems,

cultivating critical thinking through in-depth discussion and exchange while enhancing students' ability to see through phenomena to the essence.

(III) Backward Teaching Equipment and Laboratory Conditions

The journalism and communication process has undergone significant transformation in the new media era. Previously, requirements for journalists primarily focused on gatekeeping published content, with news presentation dominated by images and text. Nowadays, producing and publishing short videos and live-streaming news scenes have become mainstream, with presentation forms trending toward digitization and visualization. This transformation imposes higher, more complex demands on journalists, requiring comprehensive capabilities and all-around development from journalism and communication master's students. However, among universities offering journalism and communication master's programs, there is a lack of practical courses that truly connect with industry standards and enhance students' comprehensive qualities. Equipment and hardware facilities vary significantly across university journalism schools, leaving students with limited access to actual news live-streaming environments and unclear understanding of new media production and editing processes [1].

II. The Era's Demand for Metaverse-Empowered Journalism and Communication Education

(I) Defining the Metaverse Connotation

Currently, there is no authoritative, widely accepted standard definition of the metaverse. The concept originated in 1992 from the virtual world "Metaverse" created by Stephenson in the science fiction novel *Snow Crash*, combining "Meta" (beyond) and "Universe" [2]. It refers to an artificial virtual universe that transcends real life. Contemporary academia generally agrees that the metaverse encompasses two levels of meaning. At the technical level, the metaverse is primarily constructed based on various high technologies including VR, AR, blockchain, and artificial intelligence, essentially representing an integration of digital technologies. Within the metaverse, a complete virtual economic system is built using blockchain technology, while virtual social systems and identity systems are established through VR virtual technology and artificial intelligence, providing a bridge for communication and integration between metaverse space and the real world. The ultimate development goal is to build a virtual world parallel to the real world. At the social development level, the metaverse represents the latest digital concept and a digital virtual space currently under construction, representing a product of technological development in human society. The metaverse inherits the existing digital and information world, representing an advanced evolutionary form of internet digitization and informatization. The metaverse world allows all users to engage in free production practices and world editing, meaning people can operate unconstrained by real-world conditions, providing vast space for various creative and practical

activities. The transformation and reform of production and economic systems brought about by its application and development have led some scholars to consider the metaverse as the future model of human social life [3]. Therefore, despite current developmental challenges facing the metaverse, the favorable prospects for its future development have become a consensus, as evidenced by initiatives from governments and enterprises worldwide.

(II) The Era's Requirement for Metaverse-Empowered Ideological and Political Education

Technology serves as a crucial driving force in the current development of the journalism and communication industry. As new technologies disrupt media business models, journalism and communication schools are unprecedentedly incorporating cutting-edge media technologies into their educational systems. Big data, cloud computing, virtual reality, and artificial intelligence have become "core" and "backbone" elements in journalism and communication education. Practice-oriented teaching centered on the metaverse as a new technology will occupy an increasingly important position in the future. Data literacy and cross-media narrative capabilities will become new dimensions for measuring journalism and communication professionals, and new media and media convergence curriculum systems centered on technology are expected to become important components of future journalism and communication teaching systems. Furthermore, the rapid development of metaverse technology provides fertile ground for interaction and cooperation among journalism and communication academia, educational circles, and the industry. How journalism and communication schools' practical education systems respond to accelerating technological changes and how to develop talent cultivation and business practices around metaverse technology have become important topics requiring urgent exploration.

III. Breaking New Ground: Transformative Application Scenarios of Metaverse-Empowered Journalism and Communication Education

The metaverse leverages core technologies such as big data, artificial intelligence, and extended reality to empower transformative changes in journalism and communication education application scenarios. By outputting and converting the metaverse's sense of presence and immersion through these core technologies, and by constructing realistic, rich, stable, and efficient application scenarios, the metaverse expands application prospects for precision teaching, smart learning, and immersive experiences in journalism and communication education.

(I) Metaverse Utilizing Cloud Computing to Promote Precision Teaching in Journalism and Communication Education

Benefiting from the development of new media technology and mobile terminals, internet access barriers have been lowered, enabling everyone to partic-

ipate in online information publishing. Learning cloud computing technology to alleviate anxiety caused by information redundancy has become increasingly important. Integrating big data awareness and cultivating big data thinking in journalism and communication education can help students grasp key points, quickly locate and obtain useful information, and develop multi-dimensional comprehensive abilities including knowledge collection and retrieval, true/false information discrimination, media literacy, information sensitivity, and information gatekeeping. These abilities represent important metrics in current industry talent evaluation. To maximize students' agency in the journalism and communication education process, it is necessary to deeply understand, analyze, and research learners' characteristics and patterns to provide more precise teaching. This requires data collection, analysis, and evaluation of learners in journalism and communication education. Cloud computing technology can mine and process patterns of ideological and behavioral changes among learners during the education process, optimize learning content, improve learning efficiency, and make journalism and communication education more precise and scientific.

(II) Metaverse Utilizing Artificial Intelligence to Promote Smart Learning in Journalism and Communication Education

Smart learning is a learning process where learners acquire knowledge, develop skills, and cultivate habits in a smart environment, representing a "new paradigm of technology-empowered education" [2] that can provide endogenous momentum for the digital transformation of journalism and communication education. Relying on artificial intelligence technology and starting from the smart needs of educational objects, journalism and communication education optimizes learners' learning behaviors and processes in smart learning environments to achieve the goal of improving learning outcomes. This represents both a smart learning process and the result of learners applying smart tools to journalism and communication education. Artificial intelligence optimizes the smart learning environment for ideological and political education. AI technology can maximize the positive role of the external environment on learners, using high-fidelity technology to enhance the interactivity of journalism and communication education learning scenarios, actively creating high-simulation learning environments that allow learners to experience the power of AI technology in the metaverse while timely adjusting their learning methods for high-simulation environments, thereby ensuring the quality of smart learning in journalism and communication education within AI environments.

(III) Metaverse Utilizing Extended Reality to Promote Immersive Experience in Journalism and Communication Education

Immersive experience shares remarkable similarities with the concept of flow experience in positive psychology, referring to a psychologically positive emotional experience where people become completely absorbed in an activity and achieve a state of self-forgetfulness [4]. The metaverse utilizes extended reality to fully

integrate real scenes with virtual elements, creating various conditions required for immersive experiences in journalism and communication education. By enhancing the immersiveness of the journalism and communication environment, it increases the attractiveness of educational content, enabling people to continuously obtain high-quality immersive experiences during the education process. Extended reality technology increases the frequency of immersive experiences in journalism and communication education. By employing realistic visual effects and authentic haptic feedback, extended reality strengthens multi-sensory stimulation for participants, providing interactive experiences that are interesting, attractive, and compelling during the education process. This increases users' interest and concentration in journalism and communication education activities, thereby enhancing the frequency of immersive experiences.

IV. Potential Dilemmas: Challenges of Metaverse-Empowered Journalism and Communication Education

Cultivating journalism and communication talent needed by the news media industry represents both the responsibility of university journalism and communication talent cultivation and the foundation for the survival and development of university journalism and communication education. However, in response to the news media industry's demand for journalism and communication talent against the backdrop of rapidly developing communication technologies, university journalism and communication talent cultivation faces difficulties in both software and hardware aspects: in software, a shortage of teachers who master metaverse technologies; in hardware, a lack of teaching facilities that meet the needs of metaverse technology application.

(I) Software Aspect: Shortage of Teachers Mastering Metaverse-Related Technologies

Currently, journalism and communication departments in Chinese universities generally lack teachers who master metaverse technologies. First, journalism and communication education has significantly lagged behind the development of journalism and communication technologies. Most teachers currently engaged in journalism and communication talent cultivation in Chinese universities majored in journalism and communication studies, and their education was essentially based on traditional media journalism and communication theories. Second, because most current teachers in journalism and communication talent cultivation majored in journalism and communication studies, they largely have not mastered internet and big data technologies, let alone metaverse technologies. Therefore, although they wish to learn metaverse technologies, they often feel powerless despite their aspirations.

(II) Hardware Aspect: Lack of Facilities Meeting Metaverse-Related Technology Teaching Needs

Journalism and communication is an applied discipline. The talent cultivated must possess not only systematic theoretical knowledge but also strong practical abilities. Therefore, unlike general humanities and social sciences, journalism and communication programs have relatively high requirements for teaching hardware facilities. Journalism and communication talent cultivation requires necessary teaching hardware facilities; otherwise, some courses cannot be conducted or can only remain theoretical. However, most teaching hardware facilities in Chinese university journalism departments are still based on the needs of traditional media talent cultivation, such as "newspaper editing laboratories," "photography laboratories," "video laboratories," and "simulated studios," primarily satisfying the teaching needs of traditional media news gathering, filming, editing, and broadcasting business skills.

V. Reflective Exploration: Countermeasures for Metaverse-Empowered Journalism and Communication Education

Faced with the news media industry's demand for journalism and communication talent under the background of rapidly developing communication technologies, as well as their own dilemmas in software and hardware such as teaching staff and facilities, some journalism and communication departments have adopted passive avoidance strategies. Regardless of how communication technologies develop or how journalism and communication practices change, they continue teaching according to traditional media-era content and methods. This talent cultivation strategy clearly represents blind production detached from market demand. The talent cultivated cannot meet the needs of the journalism and communication industry, only exacerbating the contradiction between employment difficulties for journalism and communication graduates and the shortage of new media and converged media talent in the news media industry. This cultivation model, to put it seriously, wastes educational and human resources and must be abandoned as soon as possible. As the saying goes, "The wise adapt to the times, and the knowledgeable adjust to circumstances." Cultivating journalism and communication talent in today's context of rapidly developing communication technologies requires keeping pace with metaverse-related technology development, staying close to the transformation of news media and the reform of news product production and dissemination methods, and vigorously cultivating talent capable of 胜任 new media and converged media journalism and communication work. Under current conditions where there is a general shortage of teachers who master metaverse-related technologies and teaching facilities that meet metaverse-related technology teaching needs, university journalism departments must collaborate with media organizations to cultivate talent jointly, leveraging media strengths and resources to compensate for their own deficiencies and resolve current dilemmas in journalism and communication talent cultivation.