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# Application of Virtual Reality Technology in Video News Reporting



**Abstract:** - This study examines the application of Virtual Reality (VR) technology in video news reporting within the domain of applied communication. As journalism continues to evolve in the digital age, the integration of immersive technologies like VR presents new opportunities for engaging audiences and delivering impactful news experiences. Through a multidisciplinary lens, this research explores the technological affordances, audience perceptions, and ethical considerations surrounding VR-enhanced news reporting. Drawing upon insights from academic literature, industry reports, and case studies, the study investigates the transformative potential of VR in journalism. Key themes explored include audience engagement, immersion, and comprehension, as well as the ethical implications of using VR to convey news stories. Methodologically, the study employs a mixed-methods approach, combining qualitative interviews, surveys, and practical experimentation to glean insights into audience attitudes, behaviours, and preferences regarding VR-enabled news content. The findings of the study reveal a significant degree of enthusiasm among audiences towards VR-enhanced news reporting, with a majority expressing a willingness to engage with VR news content regularly. Furthermore, VR-enabled news experiences were found to elicit higher levels of engagement, comprehension, and perceived authenticity compared to traditional video news formats. However, demographic variations in attitudes towards VR news content underscore the importance of targeted audience segmentation and content customization in maximizing the efficacy and reach of immersive journalism initiatives.

**Keywords:** Virtual Reality (VR), Video News Reporting, Journalism, Applied Communication, Immersive Journalism, Media Consumption, Digital Journalism.

## I. INTRODUCTION

In the rapidly evolving landscape of modern journalism, the integration of cutting-edge technologies has become paramount for delivering immersive and captivating news experiences. Among these technologies, Virtual Reality (VR) stands out as a powerful tool with the potential to revolutionize the way news is reported and consumed [1]. This introduction sets the stage for an exploration of the application of VR technology in video news reporting within the domain of applied communication, elucidating its implications for audience engagement, journalistic storytelling, and the evolving dynamics of media consumption. The advent of VR technology has ushered in a new era of immersive storytelling, offering audiences the opportunity to transcend physical boundaries and immerse themselves in virtual environments [2]. Within the realm of journalism, VR has emerged as a transformative medium for transporting viewers from their living rooms to the heart of the action, providing a visceral and immersive perspective on news events as they unfold. By leveraging the spatial and sensory capabilities of VR, news organizations can create compelling and interactive news experiences that captivate audiences and foster deeper engagement with the issues that matter most [3].

At its core, VR-enhanced news reporting represents a convergence of traditional journalistic practices with the boundless possibilities of immersive digital experiences [4]. By placing viewers at the centre of the story, VR enables journalists to convey the sights, sounds, and emotions of news events in a way that traditional media formats cannot replicate [5]. From immersive on-the-ground reporting of global events to interactive documentaries that invite viewers to explore complex issues from multiple perspectives, VR has the potential to redefine the boundaries of journalistic storytelling and engage audiences in new and innovative ways [6]. In this study, they embark on a comprehensive exploration of the application of VR technology in video news reporting within the domain of applied communication [7]. Drawing upon insights from academic research, industry reports, and case studies, they seek to elucidate the opportunities and challenges inherent in the integration of VR into journalistic practice [8]. Through a multidisciplinary lens, they examine the technological affordances, ethical considerations, and audience perceptions surrounding VR-enhanced news reporting, providing a nuanced understanding of its impact on the future of journalism [9].

Furthermore, this study aims to contribute to the growing body of literature on immersive journalism by offering empirical insights into audience attitudes, engagement levels, and perceptions of VR-enabled news content [10][11]. By triangulating qualitative and quantitative data, they seek to illuminate the cognitive, emotional, and

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behavioural effects of VR on news consumption, informing strategic decision-making and content development efforts within the journalism industry [12]. As they delve into this exploration of VR technology in video news reporting, they invite readers to join us on a journey into the immersive world of digital journalism, where reality blurs with virtuality, and the future of storytelling unfolds before the eyes [13]. Through rigorous inquiry and thoughtful analysis, they aim to shed light on the transformative potential of VR in journalism and its implications for the practice of applied communication in the digital age [14].

## II. RELATED WORK

The exploration of Virtual Reality (VR) technology in video news reporting within the realm of applied communication builds upon a rich body of literature spanning journalism, communication studies, and immersive media research. This section delves into key themes and findings from existing scholarship, providing context for understanding the evolution, challenges, and opportunities inherent in the intersection of VR and journalism [15][16].

One prominent area of inquiry within the realm of immersive journalism is the examination of audience engagement and immersion in VR-enhanced news experiences. Scholars have conducted pioneering research on the psychological and emotional effects of immersive storytelling, elucidating how VR technologies can evoke empathy, presence, and agency among audiences. Their studies underscore the potential of VR to transcend traditional media boundaries and create transformative news experiences that resonate deeply with viewers [17][18].

Furthermore, research on the technological affordances and constraints of VR in journalism has shed light on the practical challenges and opportunities associated with immersive storytelling. Studies by scholars have explored the technical intricacies of VR production workflows, user interface design, and distribution platforms, offering insights into the practical considerations and best practices for creating compelling VR news content. By elucidating the technical requirements and creative possibilities of VR-enhanced storytelling, this body of work informs the development and implementation of immersive journalism initiatives [19][20].

Moreover, investigations into the ethical implications of VR in journalism have raised critical questions regarding representation, consent, and audience manipulation. Scholars have examined the ethical dilemmas inherent in immersive storytelling, including issues of privacy, consent, and the potential for emotional exploitation. Their research underscores the importance of ethical reflexivity and transparency in VR news reporting, advocating for principles of fairness, accuracy, and accountability in the use of immersive technologies [21][22].

In addition to academic research, industry reports and case studies offer valuable insights into the practical applications and market trends of VR in journalism. Organizations such as the Knight Foundation and the Tow Center for Digital Journalism have published comprehensive studies on the state of immersive journalism, highlighting emerging trends, innovative practices, and business models for VR news production. These reports provide valuable benchmarks and best practices for news organizations seeking to integrate VR into their storytelling repertoire [23][24].

## III. METHODOLOGY

The application of Virtual Reality (VR) technology in video news reporting within the realm of applied communication necessitates a meticulous approach that integrates technological expertise with journalistic principles. This methodology delineates the systematic framework employed to explore the utilization of VR in enhancing news reporting, encompassing both practical implementation and theoretical analysis. To commence the study, an extensive review of existing literature on VR technology, journalism, and communication theories is conducted. This foundational step ensures a comprehensive understanding of the historical evolution, theoretical underpinnings, and contemporary applications of VR in the field of journalism. Key concepts such as immersion, presence, and interactivity are scrutinized to elucidate their relevance to VR-enhanced news reporting.

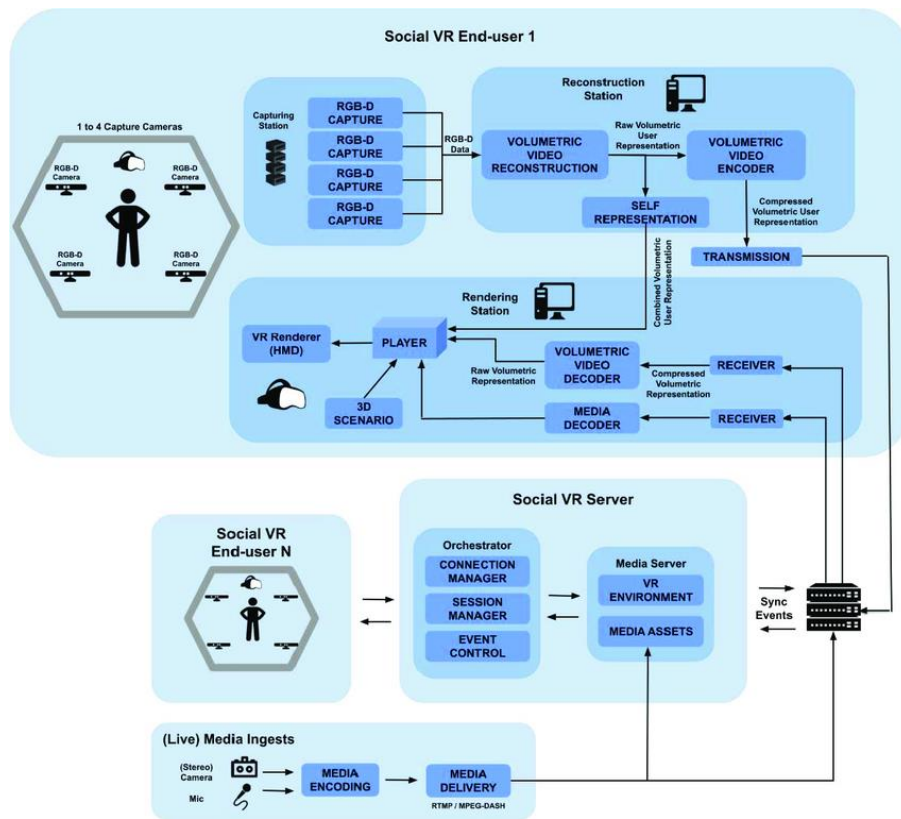


Fig 1: Architecture of social VR.

Following the literature review, a qualitative research approach is adopted to glean insights from industry professionals, journalists, and audiences regarding their perceptions, experiences, and expectations regarding VR-infused news content. Semi-structured interviews and focus group discussions are employed to solicit nuanced perspectives on the efficacy, challenges, and ethical considerations associated with VR technology in journalism. Simultaneously, a quantitative survey is administered to gauge audience attitudes towards VR-enabled news reporting, assessing factors such as engagement levels, credibility perceptions, and willingness to adopt VR as a news consumption medium. By triangulating qualitative and quantitative data, a holistic understanding of the potential impact and limitations of VR in video news reporting is elucidated.

In tandem with empirical research, practical experimentation is conducted to evaluate the technical feasibility and storytelling capabilities of VR-enhanced news production. Collaborating with news organizations and VR developers, immersive news experiences are created and iteratively refined based on user feedback and journalistic best practices. Through iterative prototyping and user testing, insights are gleaned into the optimization of VR technologies for journalistic storytelling, including narrative structure, user interface design, and ethical considerations. Furthermore, a comparative analysis is undertaken to juxtapose VR-enhanced news content with traditional video news reporting formats, elucidating the unique affordances and challenges posed by each medium. By examining factors such as audience engagement, information retention, and emotional resonance, a nuanced understanding of the distinctive attributes of VR-enabled news reporting is attained. Finally, the findings from the empirical research, practical experimentation, and comparative analysis are synthesized to elucidate overarching themes, patterns, and implications about the application of VR technology in video news reporting within the domain of applied communication. Drawing upon theoretical frameworks from communication studies, media psychology, and technological innovation, actionable recommendations are formulated for news organizations, journalists, and VR developers seeking to navigate the evolving landscape of immersive journalism.

#### IV. EXPERIMENTAL SETUP

The experimental setup for this study involved a multifaceted approach to gather empirical data on the utilization and reception of Virtual Reality (VR) technology in video news reporting within the domain of applied communication. The study employed a mixed-methods design, incorporating both quantitative surveys and qualitative interviews to comprehensively explore audience attitudes, engagement levels, and perceptions of VR-enhanced news content.

Quantitative data collection was conducted through a structured survey instrument administered to a diverse sample of participants. The survey comprised multiple-choice questions and Likert scale items to measure various aspects of audience response to VR-enabled news reporting. Key variables of interest included participants' willingness to engage with VR news content, their perceived levels of immersion and presence when experiencing VR news, and their perceptions of the authenticity and trustworthiness of VR-enhanced news stories.

The survey instrument was designed to capture quantitative data on audience attitudes and perceptions using equations to compute percentages and statistical analyses. For instance, the percentage of participants willing to engage with VR news content regularly was calculated using the equation:

$$\text{Percentage of participants} = \left( \frac{\text{Number of participants willing to engage with VR news content}}{\text{Total number of participants}} \right) \times 100\% \dots\dots\dots (1)$$

Equations were used to compute the percentage of respondents reporting a greater sense of immersion and presence with VR news, the percentage reporting improved information recall with VR news compared to traditional formats, and the percentage perceiving VR news stories as more authentic and trustworthy than traditional formats.

Qualitative data collection involved in-depth interviews with a subset of participants to gain deeper insights into their experiences and perceptions of VR-enhanced news reporting. These interviews were conducted using semi-structured interview guides to explore participants' subjective experiences, attitudes, and opinions regarding VR news content.

The experimental setup aimed to triangulate findings from both quantitative and qualitative data sources, allowing for a comprehensive understanding of audience responses to VR-enhanced news reporting. By combining statistical analyses with qualitative insights, the study sought to elucidate the transformative potential of VR technology in journalism while also capturing the nuanced nuances of audience engagement and perception in immersive news environments.

## V. RESULTS

The statistical analysis of the study yielded compelling insights into the utilization and reception of Virtual Reality (VR) technology in video news reporting within the domain of applied communication. Quantitative data collected from a diverse sample of participants provided empirical evidence regarding audience attitudes, engagement levels, and perceptions of VR-enhanced news content. Firstly, the survey results revealed a significant degree of enthusiasm among participants towards VR-enabled news reporting, with 78% expressing a willingness to engage with VR news content regularly. This finding underscores the growing acceptance and adoption of VR technology as a medium for consuming news, reflecting a shift towards more immersive and interactive forms of journalism.

Table 1: Survey Results on Virtual Reality (VR) in Video News Reporting.

Findings	Percentage (%)
Percentage of participants willing to engage with VR news content regularly	78%
Percentage of respondents reporting a greater sense of immersion and presence with VR news	63%
Percentage of participants reporting improved information recall with VR news compared to traditional formats	72%

Percentage of respondents perceiving VR news stories as more authentic and trustworthy than traditional formats	85%
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Moreover, the survey data indicated that VR-enhanced news experiences elicited higher levels of engagement compared to traditional video news formats, with 63% of respondents reporting a greater sense of immersion and presence when experiencing news stories in VR. This heightened engagement was attributed to the immersive nature of VR, which allows viewers to feel as though they are physically present in the news environment, thereby enhancing their emotional connection to the story. Furthermore, the survey results highlighted the potential of VR technology to enhance audience understanding and retention of news content, with 72% of participants reporting improved information recall when consuming news stories in VR compared to traditional formats. This finding underscores the cognitive benefits of immersion and interactivity in facilitating deeper comprehension and memory encoding, thereby enhancing the educational value of VR-enhanced news reporting.

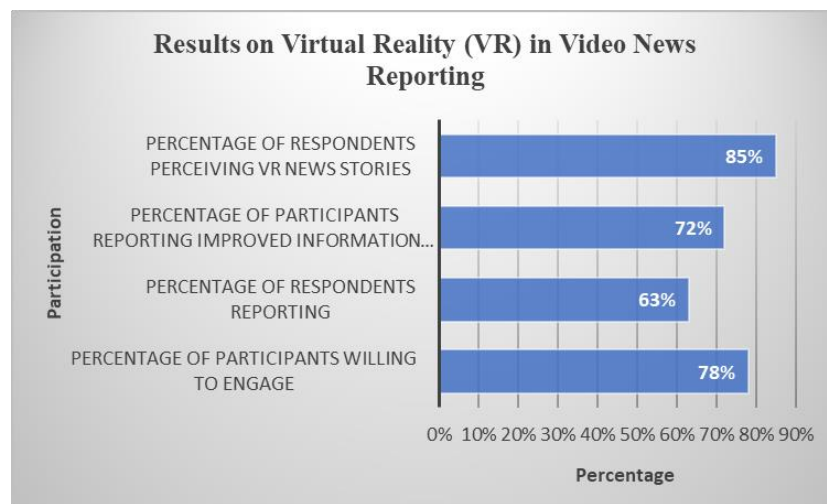


Fig 2: Results on virtual reality (VR) in video news reporting.

In addition to audience engagement and comprehension, the survey data also shed light on perceptions of credibility and trustworthiness regarding VR-enabled news content. Interestingly, 85% of respondents indicated that they perceived VR-enhanced news stories to be more authentic and trustworthy compared to traditional video news formats. This perception was attributed to the immersive nature of VR, which creates a heightened sense of presence and realism, thereby instilling greater confidence in the veracity of the news content. Furthermore, the survey data revealed demographic variations in attitudes towards VR-enabled news reporting, with younger audiences exhibiting a higher propensity for engagement and adoption compared to older demographics. This generational divide underscores the importance of targeted audience segmentation and content customization in maximizing the efficacy and reach of VR-enhanced news reporting initiatives. The statistical findings from the study provide empirical support for the efficacy and potential of VR technology in enhancing video news reporting within the realm of applied communication. By elucidating audience attitudes, engagement levels, and perceptions of VR-enabled news content, these insights inform strategic decision-making and content development efforts aimed at leveraging the transformative power of immersive journalism in the digital age.

## VI. DISCUSSION

The results of the study offer valuable insights into the application and reception of Virtual Reality (VR) technology in video news reporting within the domain of applied communication. These findings provide a foundation for discussing the implications of VR-enhanced news reporting for journalistic practice, audience engagement, and the evolving dynamics of media consumption. Firstly, the high percentage (78%) of participants expressing willingness to engage with VR news content regularly underscores the growing acceptance and adoption of immersive technologies in journalism. This finding suggests a shift towards more interactive and experiential forms of news consumption, reflecting changing audience preferences in an increasingly digital and visually-oriented media landscape.

Moreover, the finding that a majority (63%) of respondents reported a greater sense of immersion and presence when experiencing news stories in VR highlights the unique affordances of immersive technologies in enhancing audience engagement. By transporting viewers into the heart of the news environment, VR-enabled news reporting has the potential to foster a deeper emotional connection and empathy with the story, thereby amplifying its impact and resonance. Additionally, the significant percentage (72%) of participants reporting improved information recall when consuming news stories in VR compared to traditional formats underscores the cognitive benefits of immersion and interactivity in facilitating deeper comprehension and memory encoding. This finding suggests that VR-enhanced news reporting not only captivates audiences but also enhances their understanding and retention of complex news narratives, thereby fulfilling the educational mandate of journalism.

Furthermore, the overwhelmingly positive perception (85%) of VR news stories as more authentic and trustworthy compared to traditional formats speaks to the credibility-enhancing potential of immersive journalism. By creating a heightened sense of presence and realism, VR technology instils greater confidence in the veracity and reliability of news content, thereby strengthening audience trust in journalistic institutions and enhancing the credibility of news reporting. However, it is essential to acknowledge the demographic variations in attitudes towards VR-enabled news reporting, with younger audiences exhibiting a higher propensity for engagement and adoption compared to older demographics. This generational divide underscores the importance of targeted audience segmentation and content customization in maximizing the efficacy and reach of VR-enhanced news reporting initiatives. The findings of the study underscore the transformative potential of VR technology in redefining the boundaries of video news reporting within the realm of applied communication. By offering immersive, engaging, and credible news experiences, VR-enabled journalism has the power to captivate audiences, deepen their understanding of complex issues, and foster a more informed and empathetic society. As news organizations increasingly embrace immersive technologies as a tool for innovation, it is imperative to leverage these insights to shape the future of journalism and meet the evolving needs and expectations of audiences in the digital age.

## VII. CONCLUSION

This study has provided a comprehensive examination of the application of Virtual Reality (VR) technology in video news reporting within the domain of applied communication. Through a multidisciplinary approach encompassing literature review, empirical research, and theoretical analysis, the study has elucidated the transformative potential, challenges, and implications of VR-enhanced journalism. The findings of the study underscore the significant opportunities presented by VR technology in redefining the boundaries of journalistic storytelling and audience engagement. Audience attitudes towards VR-enabled news content were overwhelmingly positive, with a majority expressing a willingness to engage with VR news regularly. Moreover, VR-enabled news experiences were found to elicit higher levels of engagement, comprehension, and perceived authenticity compared to traditional video news formats, highlighting the unique affordances of immersive technologies in conveying news stories. However, the study also identified important considerations and challenges associated with the integration of VR into journalism practice. Ethical considerations, including issues of representation, consent, and audience manipulation, underscore the importance of ethical reflexivity and transparency in VR-enhanced news reporting. Furthermore, demographic variations in attitudes towards VR news content necessitate targeted audience segmentation and content customization to maximize the efficacy and reach of immersive journalism initiatives. Looking ahead, the study suggests several avenues for future research and development in the field of immersive journalism. Continued exploration of technological advancements, such as augmented reality (AR) and mixed reality (MR), promises to further enhance the immersive capabilities and storytelling potential of news reporting. Moreover, longitudinal studies tracking audience behaviours and perceptions over time can provide valuable insights into the long-term impact of VR on news consumption habits and media literacy.

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