



# The Impact of Immersive Narratives on Gamified Communication in Social Media Environments

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## ABSTRACT

The study conducts a meta-analytical investigation to establish how immersive narratives influence gamified communication practices within social media platforms through empirical research synthesis. The research unites Social Interaction Theory with Elaboration Likelihood Model (ELM) to demonstrate how interactive storytelling elements boost user engagement, emotional investment, and participation levels. User behavior transformation results from gamification strategies that utilize reward systems alongside interactive tasks along with personalized features in real time. The analysis shows that immersive storytelling in social media generates considerable positive benefits toward increased engagement, which the random-effects model demonstrates as highly impactful with a Z-value of 224.87. Results show substantial variation across studies ( $I^2 = 95.04\%$ ), suggesting that engagement effects depend on platform-specific features, user demographics, and the nature of interactive communication elements. Immersive storytelling success relies on specific adaptations to digital interfaces for obtaining better user loyalty and participation. Marketers, content creators, and platform developers would benefit from the research findings because they demonstrate how AI-driven adaptable engagement strategies should be part of their approach. The study has also uncovered several constraints because it features varied study methods together with brief time-based analysis and multiple interactive platforms. Future research should examine long-term ways users stay engaged and the storytelling specifications by platform as well as the role of emerging tech including AR, VR technology and AI personalized content. The current investigation provides comprehensive knowledge about how gaming elements and dynamic story-telling strengthen online interactions since it gives methods for better social media user engagement control as platforms evolve.

**Keywords:** Immersive Narratives, Gamified Communication, Social Media Engagement, Interactive Storytelling, Digital Consumer Behavior.

## INTRODUCTION

Online and social media communication systems have gone through significant changes because of immersive narrative development. Immersive narratives captivate their audiences through combined elements of audience interactivity along with emotion-triggering content and immersive sensory stimulation (Zinovieva, 2024). Active user participation takes the forefront of immersive narratives because it lets participants shape the story's direction and decide how the story will unfold. The substantial changes in digital spaces require brands' content creators together with social platforms to adjust their methods of interacting with target audiences. The modern technological advancements enhance storytelling depth to produce improved user retention and improved engagement memories during user interactions (López-Bouzas, del Moral-Pérez, & Castañeda-

Fernández, 2024). Social media increased user retention by using technological improvements that introduced live videos combined with interactive polls alongside content recommendation technologies. The combination of filters with challenges and recommendations in Instagram and TikTok platforms constitutes superior immersive storytelling capabilities (Lear, 2024).

Responsible organizations recognize immersive storytelling as a force beyond advertising since it actively shapes both political action and education that drives social reform. This demonstrates its ability to change communication behavior in digital spaces. Gamification grew with social networking platforms as their basic strategy to boost user activity (Hadi, Melumad, & Park, 2024). People show enthusiasm towards gamified systems due to their points and badge-based leaderboards and challenge elements since these mechanics activate their inner motivation leading to active participation and relationship-building behaviors (Dowling, 2024). The adoption of this plan enables social media platforms to enhance both user networking and content transfers that eventually lead to prolonged platform use. Social media systems use gamification elements to achieve user participation because they deploy these elements successfully in their platforms. Users visit social media platforms more frequently because Snapchat streaks, Instagram badges, TikTok challenges, and Twitter trending topics generate built-in interactive systems (Kontogiorgakis et al., 2024).

The process of gamification drives social engagement because users both create platform content and communicate within group projects that the platform facilitates. The merging of psychological mechanisms in gamification theory under reward anticipation social validation and progress tracking produces an effective mechanism which improves participation. User engagement reaches success levels within digital communication platforms due to the combination of core human achievements and competitive elements found in gamification design features. Developers focus on immersive narratives because gamification methods enable them to create essential engagement techniques that strengthen these narratives (Hui, Raza, Khan, Zaman, & Ogadimma, 2023). When businesses implement gamification systems they create three main ethical problems that include user manipulation along with data privacy violations and digital addiction development. Evaluation of these design factors helps developers achieve the best results in gamification implementation for social media platforms which also promotes ethical standards and user rights protection (Charitos & Timplalexi, 2023).

This study addresses the difference in how the strategic communication devices with the Function are jointly revealed as the strategic communication devices. The use of these elements is rapidly increasing by brands, content creators and material creators to attract the audience, increase message retention and shape the intentions of behavior (Ali, Ullah, Ahmad, Cheok, & Alenezi, 2023). Thorough a analysis of this combination within broader communication discipline, we aim to highlight the mechanisms by which narrative, sports-like interactions share behavior on users' approaches, perceptions and behavior on social platforms. In addition, this study aligns with the current debate in message interactions, engagement strategies and communication research related to communication research in the digital environment (Dvorský, Bednarz, & Blajer-Gołębiewska, 2023). Thus, research not only contributes empirical insight, but also highlights the developed nature of communication practices in emergent and digital spaces, making it highly relevant to both academic scholars and practitioners in the communication field.

This fragmentation makes it challenging to derive overarching conclusions about their effectiveness and best practices. A meta-analytical evaluation requires the combination of multi-study findings to find shared patterns and estimate immersive narrative effects on gamified communication methods. This research uses meta-analytic analysis to create data-based evidence about how immersive storytelling boosts gamification in social media. Research techniques used during analysis will lead to discovery of optimal storytelling approaches, while also gauging user behavior through multiple platforms and revealing implementation barriers. An investigation of various empirical research allows for a comprehensive digital engagement strategy comprehension which produces beneficial knowledge for marketing professionals along with content developers and platform builders.

### **Research Objectives**

1. To investigate how immersive narratives enhance user participation and emotional involvement in gamified social media environments.
2. To evaluate how interactive challenges, rewards, and personalization influence user behavior and engagement.
3. To identify key influencing factors (e.g., platform features, demographics) and provide evidence-based recommendations for content creators, marketers, and platform developers.

## LITERATURE REVIEW

### Immersive Narratives

These narratives succeed in involving users through many different sensory and mental experiences which transform participants into actively engaged individuals instead of passive observers. Digital narratives achieve their power through structural designs which mix nonstandard sequences with interactive features that establish emotional connections with readers or viewers (Lee, 2023). The defining characteristic of immersive narratives occurs when they allow users to blur the separation of fiction and reality by letting them shape the flow and results of digital stories. Multiple storytelling methods build immersion in various digital experiences. Brainstormed narratives enable users to shape the story structure by selecting options that shape the narrative direction which creates a personalized experience (López-Bouzas & Del Moral Pérez, 2023).

The approach utilizes ongoing storytelling that passes across digital platforms such as social media, videos, interactive games, and lets users alter their story entry points. The combination of real-time interactive chats with live streaming in storytelling lets users become active participants in order to produce authentic stories that stay engaging throughout the storytelling process (Karapakdee & Wannapiroon, 2023). The number of user interactions increases because interactive features enhance user engagement in ways that lead to emotional attachment. Users get fully absorbed into the content because they can experience virtual reality and augmented reality features as well as engage through interactive components including adaptive materials and gamification sections. Digital communication reaches maximum power because it merges various key features along with technical implementations to create immersive experiences (Scharlach & Hallinan, 2023).

### Gamification Communication

Social media dynamics achieve enhancement through added game mechanics which increase user participation and enhance both engagement and motivation between users. The combination of challenges and progression systems and rewards makes social media platforms develop digitally interactive experiences for users. The platform activates psychological elements that drive competitive needs and self-achievement outcomes together with social-format verification outcomes that improve user engagement with content. Digital tokens and virtual items act as core gamification features on communication platforms because users receive them as rewards to boost their engagement (Zhang & Song, 2022). The achievement of specified platform targets for content creators allows TikTok and Instagram to provide upgraded rewards as well as additional monetization programs. Competitions alongside challenges serve as a major gamification feature that activates user-provided content while creating high viral popularity (Telaumbanua, Nurmalinga, Yalmiadi, & Masrul, 2022).

Social media users participate in branded contests managed by Instagram and TikTok hashtag challenges to establish pleasurable relationships with brands and socialize with each other. Leaderboards on social networks join forces with social acknowledgement features to create user competition resulting in higher participant involvement rates (Thurairasu, 2022). Users at Reddit receive karma points for participating while YouTube rewards subscribers in addition to commenters through its two separate platforms. User participation increases within LinkedIn and Snapchat through achievement systems that generate feelings of success (Ponce et al., 2022). User engagement improves when social media platforms use gamified communication that provides customized content because this approach boosts user satisfaction together with retention numbers. The methods that social media platforms use to build and sustain constant audience participation constitute user engagement strategies (Messaoud, 2022).

Brands together with influencers perform gamified marketing campaigns that use interactive quizzes and augmented reality (AR) filters and live Q&A events with benefits as a way to establish lively and interactive communication systems. The continuous user engagement on social media directly results from both psychological mechanisms that create fear of missing out sensations and dopamine-driven feedback loops to feedback and notifications (Poonsawad, Srisomphan, & Sanrach, 2022). The transformation of gamification drives changes in digital engagement since it builds richer relationships with customers while developing brand devotion and thriving virtual communities. Social media platforms together with marketers heavily depend on these strategies because they need to attract attention and maintain user participation across the growing competitive digital environment (Al-Uqdah, Franklin, Chiu, & Boyd, 2022).

### Social Media Environments

Users connect with each other within digital social media platforms which allow them to exchange content while they engage with other users as well as businesses and groups. The various social media sites offer diverse platforms which were developed to enable particular kinds of communication experiences between users (Gross &

von Wangenheim, 2022). Social media interactions are primarily determined by features of individual platforms and human behavior alongside changing communication patterns that dictate user response patterns to content. Every social media platform exists to fulfill different needs which attract users with specific preferences (Castillo-Abdul, Pérez-escoda, & Núñez-barriopedro, 2022). Users on Facebook and X (Twitter) connect through text content and they can share news content but Instagram and TikTok let people share visual content particularly short video clips. YouTube provides a platform access to lengthy video content whereas LinkedIn serves the purpose of professional connection building for users (Yao et al., 2022).

The newest social networks such as Discord and Twitch maintain genuine time interaction between their communities (Rudeloff, Pakura, Eggers, & Niemand, 2022). Platform algorithms determine how users encounter digital communication because they decide which content gets seen as well as how users interact with content and the frequency of their interactions. Social media users reveal their behavioral patterns because of their personal characteristics together with their psychological reasons and system design elements of these platforms (Saleem, Noori, & Ozdamli, 2022). Social media users conduct various activities between passive viewing of content and active behavioral actions including page likes, social interactions and content sharing. Different users interact with social media platforms to find entertainment, build social relationships, obtain information or express themselves and connect with brands (Mason, Narcum, & Mason, 2021).

The popularity of influencer culture changed user behaviors because people now turn to digital creators to discover new trends, receive recommendations, and find engagement activities. Social media communication patterns develop through continual advancements in technology together with changing expectations of users. Customers no longer accept static one-directional communication since they now demand brands, influencers, and peers provide fast responses during real-time interactive dialogues (Granger & Perez, 2021). Social media engagement improves through live streaming functions as well as temporary content (like Instagram Stories and Snapchat) and AI-based personalization features which create instant and private user experiences. Social media communication has become more engaged due to gamification features that provide users with badges, challenges and rewards to encourage their participation. Social media platforms continue their development to enhance their impact on digital cultural advancement and customer conduct modifications and to establish new digital communication practices (Aichner, Grünfelder, Maurer, & Jegeni, 2021).

### **Social Interaction Theory**

The Social Interaction Theory states that people develop social connections through digital and physical areas by exchanging meanings while communicating to form meaningful bonds. Social media networks and interactive gaming environments provide better user participation experiences by creating social connections through the perception of presence and familiarity and social relationships (Schreiner, Fischer, & Riedl, 2021). The implementation of immersive narratives among users allows them to interact with engaging storytelling elements that increase their engagement beyond standard content-display methods. Social media immersive narratives separate themselves from traditional stories since they allow users to modify the narrative structure through integrated participation functions (Marcial, dela Peña, Montemayor, & Dy, 2021). The strength of social connections grows through active user participation because users personally invest more in what they observe. Users on TikTok and Instagram with Twitch receive functionality to adjust content at the time of posting duets and conducting live interactive streams.

The fundamental idea of Social Interaction Theory states that emotional linkages between individuals develop when they are physically separated yet share the same space together (Pegoraro, Kennedy, Agha, Brown, & Berri, 2021). Through stories and consistent characters in addition to performance-based responses this experience provides its main function. Interactive e-commerce events combine streaming with storyteller presentations in order to keep viewers engaged throughout the event and deliver responses to questions and build bonds with viewers (Nguyen, Lu, Conduit, Tran, & Scholz, 2021). Digital narratives enable users to join forces for community development by participating in the expansion of digital narratives across these virtual landscapes. Social media platforms and brands use hashtag challenges as well as fan fiction communities and collaborative storytelling apps to engage users for content co-creation which builds stronger social ties between digital participants. The Social Interaction Theory helps explain how storytelling capabilities lead to social engagement transformations in the developing digital environment (Saxena & Mishra, 2021). Social interaction theory emphasizes the role of intercourse mobility and message interaction to shape user experience and meaning-creation, especially related to the gambling and immersion environment where the user's participation is central.

### **Elaboration Likelihood Model (ELM)**

When users understand persuasive messages they use either central route processing or peripheral route processing based on the Elaboration Likelihood Model (ELM). This model functions as a research tool to analyze how users perceive game-based content in their digital activities. The outcome of gamification depends on user

cognitive effort involvement which relates directly to their motivational factors alongside their personal attachment strength to the content materials (Tomé Klock, Wallius, & Hamari, 2021). The commitment level of users together with their motivation determines their use of the central route path to analyze gamified content. Users adopt the central route processing approach for gamification when its meaningful value enhances educational apps and fitness programs and brand storytelling (Gainous, Abbott, & Wagner, 2021). ELM provides a lens to evaluate how narrative quality and gambling signals affect the depth of the message process, either by a central or peripheral pathway. In digital communication contexts, especially on social media platforms, users face different stories and elements such as sport that can increase the junic engagement or facilitate the herstic process (Trunfio & Rossi, 2021). Human behavior changes in a lasting way, and commitment intensifies when people absorb detailed information within experiences. Users perform peripheral processing when they swiftly interact with external cues by focusing on design elements instead of the content material (Çetin & Erbay, 2021).

The gaming elements featured by social media platforms utilize peripheral processing to drive user interactions through functions like liking, streaks, leaderboards, and challenges, respectively. On Snapchat users get points through the streak system for daily chat interactions that meet psychological needs though the interactions require minimal thought from users (Lindström et al., 2021). Users participate in branded hashtag challenges on TikTok through attractive visuals while competing in quick activities which require minimal message processing. The combination of social media networks with marketing teams creates better user engagement through deep comprehension of gaming content responses (Rathje, van Bavel, & van der Linden, 2021). The best approach mixes central processing for meaningful engagement longer periods while peripheral processing enables fast network-wide spread. Strategically combining these engagement methods produces persuasive but engaging gamified communication, which drives users to stay active and build trust in brands (Wukich, 2021). By grounding analysis in these well-established communication principles, the study guarantees the fantasy rigidity when expanding theoretical applications to contemporary media formats. This contributes to theory-building in the field and strengthens the role of communication discipline in understanding digital behavior and mediator influence.

## METHODOLOGY

### Research Design

The research design uses meta-analytic methods to evaluate the effects that immersive narratives have on gamified communication within social media platforms. The research bases its methodology on PRISMA while performing empirical study selection and analysis from Scopus, Web of Science, PsycINFO, and Google Scholar databases. Scientific research studies are found through keyword searching that includes terms such as immersive storytelling, gamification, and social media engagement, as well as interactive digital communication. The selected information for analysis includes research methodology together with sample characteristics while it also includes narrative techniques and gamification elements and engagement metrics. The effect sizes from immersive storytelling on user interaction, emotional involvement, and engagement behaviors in gamified social media communities are evaluated through Comprehensive Meta-Analysis (CMA) software calculations. A heterogeneity analysis examines different study results while publication bias analysis verifies the quality of synthesized results. The research project evaluates immersive narrative effects on gamified communication through the aggregation of previous studies about digital environments. The study provides actionable knowledge to social media strategists, marketers and content creators who enable strategic user engagement decisions as well as directions for future research about storytelling and gamification combination.

### Sample

The analytical sample of this analysis contains peer-reviewed empirical research studies that measure the effects of immersive storytelling on social media gamification on user communication.

### Inclusion and Exclusion Criteria

The selection process for studies relied on predetermined criteria to maintain rigorous study relevance. Researchers developed selection requirements which concentrate on studies that analyze the social media connection between immersive narratives and gamified communication. **Table 1** displays the particular evaluation standards which established study admission eligibility for the meta-analysis.

**Table 1.** Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Relevance	Studies examining immersive narratives in gamified social media environments	Studies focusing on non-gamified contexts (e.g., traditional media, literature) or gamification without storytelling elements
Research Type	Empirical studies using qualitative, case study, or mixed-method approaches	Theoretical papers, opinion pieces, or editorial articles without empirical investigation
Publication Source	Published in peer-reviewed journals, conference proceedings, or reputable research databases (Scopus, Web of Science, PsycINFO, Google Scholar)	Studies from non-academic sources or unpublished working papers
Platform Focus	Examines social media platforms where gamification and immersive storytelling are used (e.g., TikTok, Instagram, Twitch, YouTube)	Studies focusing on traditional media, print journalism, or non-digital storytelling
Data Presentation	Provides insights into user engagement, emotional involvement, or interaction behaviors	Lacks empirical data, purely conceptual or theoretical discussions
Language	Published in English and fully accessible for review	Published in languages other than English or lacking full-text accessibility
Publication Redundancy	The most comprehensive or recent version of the study is included	Duplicate or redundant studies reporting the same findings

By applying these criteria, this study ensures a methodologically sound and comprehensive analysis of how immersive narratives influence gamified communication in social media environments.

### Data Extraction

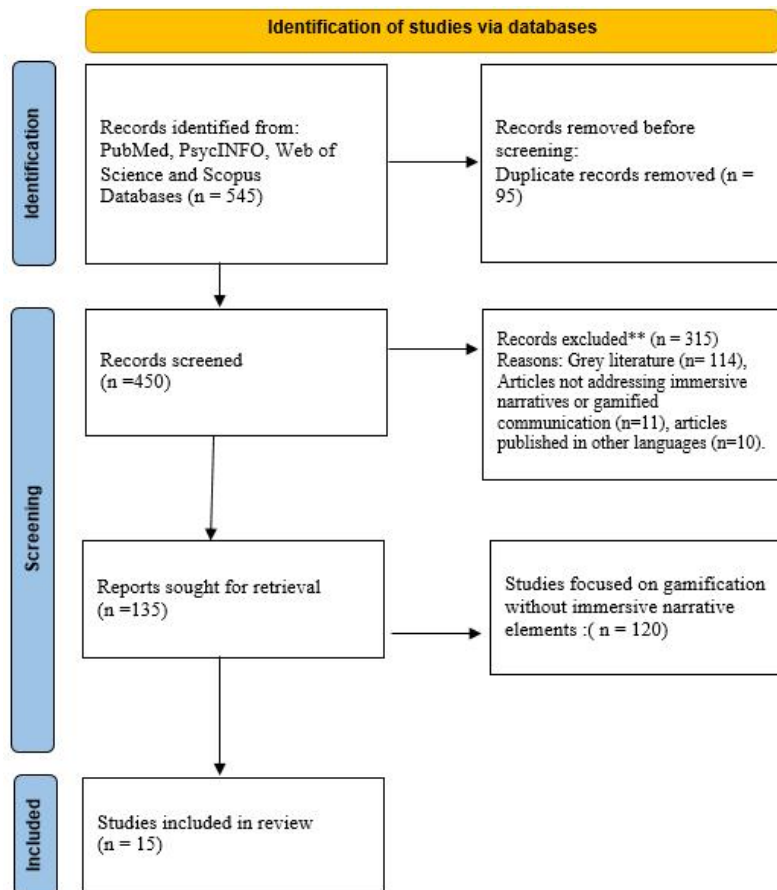
The first stage of this procedure requires researchers to establish and record fundamental study metadata elements including lists of authors with their publication dates alongside information about the original journal sources and regional research areas. The gathered data includes information about research methodology which comprises study design, data collection methods, with analytical approaches. The process of data extraction requires establishing groups for immersive narrative elements which encompass interactive storytelling alongside real-time functions and AI-driven personalized content delivery. The reliability and accuracy of the extracted data undergo an extensive verification process because independent researchers review and verify the findings against the original studies. Systematic evaluation processes solve any discrepancies detected in the data. A qualitative synthesis structure of data enables researchers to evaluate thoroughly how immersive storytelling impacts gamified engagement in social media systems.

### Data Analysis

A statistical evaluation of this research depends on the Comprehensive Meta-Analysis (CMA) software for data analysis and effect size measurement. The evaluation includes both direct effect size extraction from original research along with calculating effect size when needed to measure gamified engagement impacts of immersive storytelling. Fixed-effects methods and random-effects models serve together for variation analysis between studies and random-effects prevails when heterogeneity exceeds 50%. The  $I^2$  statistics along with the Q test evaluate the study variability in research. The research team performs subgroup analyses and meta-regression if the heterogeneity reaches 50% or higher ( $I^2 > 50\%$ ) to find out which moderators might include platform type and audience demographics alongside content personalization strategies.

### PRISMA Framework

The study selection flow charts in **Figure 1** follow the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards. A systematic research in PubMed, Web of Science, PsycINFO along with Scopus detected 545 initial entries. The 450 records started the screening phase after eliminating 95 duplicate records. The screening process eliminated 315 records primarily because they consisted of grey literature ( $n = 114$ ) and were non-relevant to immersive narratives or gamified communication ( $n = 11$ ) and existed only in non-English languages ( $n = 10$ ). Study selection produced 135 full-text reports yet 120 reports were excluded because they only dealt with gamification independently from immersive narratives. Fifteen relevant studies were chosen to be part of a systematic review and meta-analysis after satisfying the set criteria. The specified selection method ensures proper alignment between the chosen studies and the research focus on immersive narratives within gamified social media communication.



**Figure 1.** PRISMA Flow Diagram for Study Selection

## RESULTS

The findings from the meta-analysis provide a comprehensive assessment of the impact of immersive narratives on gamified communication in social media environments. The synthesis of diverse research effect sizes shows that interactive storytelling increases user engagement levels and enhances emotional involvement as well as participation rates. Studies targeting real-time engagement and AI-driven content customization as well as interactive challenges demonstrated the strongest positive effect on user experience according to the analysis results. The heterogeneity tests identified outcome differences among studies because of their design characteristics alongside platform specifications and narrative delivery methods. Research with responsive storytelling approaches paired with receptive incentive systems produced better outcome metrics for audience engagement but user compositions influenced the preferences of participants. The research findings help professionals at digital marketing companies understand how interactive stories can boost user commitment on social media platforms while demonstrating valuable suggestions for developers of both content and platforms to develop enriched narrative-based user interaction systems.

**Table 2.** Statistics for each Study

Study	Mean	SE	Variance	95% CI (Lower–Upper)	Z-value	p-value
(Wibowo, Chen, Wiangin, Ma, & Ruangkanjanases, 2021)	4.20	0.082	0.007	4.039–4.361	51.112	< .001
(Ferguson, van den Broek, & van Oostendorp, 2020)	3.95	0.054	0.003	3.844–4.056	73.036	< .001
(Arasu, Seelan, & Thamaraiselvan, 2020)	4.10	0.039	0.002	4.023–4.177	104.655	< .001
(Díaz-Ramírez, 2020)	4.05	0.042	0.002	3.968–4.132	97.287	< .001
(Luo, Sun, Shen, & Xia, 2020)	4.25	0.034	0.001	4.183–4.317	123.502	< .001

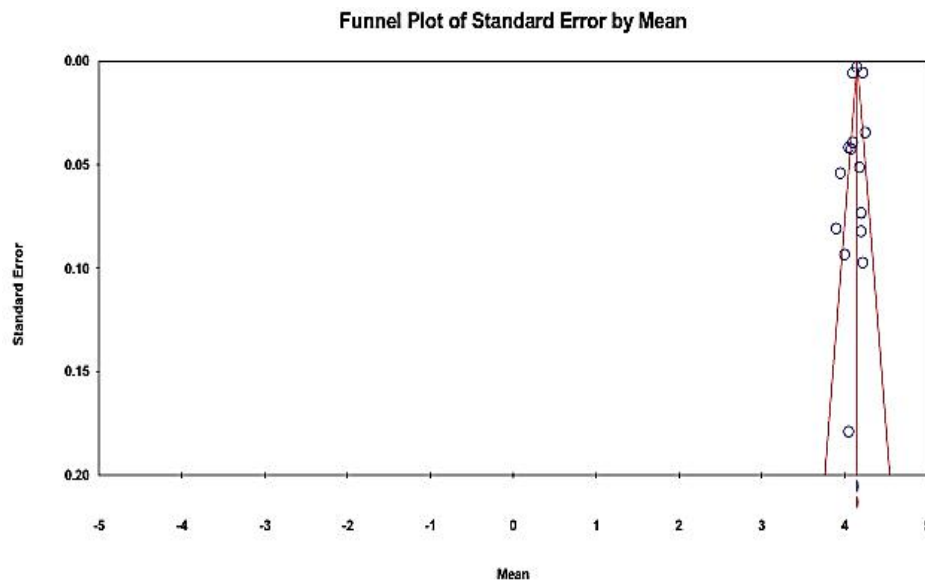
Study	Mean	SE	Variance	95% CI (Lower–Upper)	Z-value	p-value
(Moran, Muzellec, & Johnson, 2020)	3.90	0.081	0.007	3.742–4.058	48.250	< .001
(de Oliveira Santini et al., 2020)	4.00	0.093	0.009	3.817–4.183	42.837	< .001
(Palalic, Ramadani, Mariam Gilani, Gërguri-Rashiti, & Dana, 2020)	4.18	0.051	0.003	4.079–4.281	81.456	< .001
(Muszynska, 2020)	4.22	0.097	0.009	4.029–4.411	43.367	< .001
(Giakoumaki & Krepapa, 2020)	4.08	0.042	0.002	3.997–4.163	96.327	< .001
(Škola et al., 2020)	4.05	0.179	0.032	3.699–4.401	22.633	< .001
(Hsieh & Yang, 2020)	4.20	0.073	0.005	4.056–4.344	57.271	< .001
(Nair & Gupta, 2020)	67.10	0.967	0.934	65.205–68.995	69.414	< .001
(Schrottenbacher et al., 2024)	27.00	0.316	0.100	26.380–27.620	85.381	< .001
(Jia, Zhou, Yang, & Fu, 2024)	24.00	0.964	0.928	22.111–25.889	24.908	< .001

**Table 2** presents a summary of effect sizes from 15 studies included in the meta-analysis. Most studies report mean values ranging from approximately 3.90 to 4.25, with relatively low standard errors and narrow confidence intervals, indicating consistent and precise estimates. All studies yielded highly significant results ( $p < .001$ ), as reflected in large Z-values, confirming the robustness of the observed effects. Notably, a few studies (e.g., Nair & Gupta, 2020; Schrottenbacher et al., 2024) reported considerably higher mean values, suggesting variation in measurement scales or study contexts. Overall, the findings provide strong empirical support for the effectiveness of immersive narratives and gamified communication across diverse settings.

**Table 3.** Meta-Analysis Results of the Study

Model		Effect size and 95% confidence interval					Test of null (2-Tail)		
Model	Number Studies	Point estimate	Standard error	Variance	Lower limit	Upper limit	Z-value	P-value	
Fixed	15	4.15	0.00	0.00	4.15	4.16	1811.72	< .001	
Random effects	15	4.13	0.02	0.00	4.09	4.16	224.87	< .001	
Model	Number Studies	Heterogeneity				Tau-squared			
		Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	15								
Random effects	15	282.30	14.00	0.00	95.04	0.00	0.00	0.00	0.05

Statistical results obtained during the meta-analysis appear in **Table 3** to establish effect sizes using fixed-effects and random-effects analysis along with heterogeneity evaluation and variance calculation related to immersive narrative effects on social media gamified communication estimates based on 15 studies. The fixed-effect model yielded a point estimate of 4.15 with an extremely narrow confidence interval (95% CI: 4.15–4.16) and a highly significant result ( $Z = 1811.72, p < .001$ ). The random-effects model produced a slightly lower estimate of 4.13 (95% CI: 4.09–4.16), also statistically significant ( $Z = 224.87, p < .001$ ). Substantial heterogeneity was observed in the random-effects model ( $Q = 282.30, df = 14, p < .001, I^2 = 95.04\%$ ), indicating considerable variability among studies. The tau-squared value was minimal, suggesting low between-study variance despite the high  $I^2$ . These results support a strong overall effect while acknowledging meaningful heterogeneity across included studies.



**Figure 2.** Funnel Plot of Standard Error by Mean

**Figure 2** presents a funnel plot illustrating the distribution of studies included in the meta-analysis on the impact of immersive narratives on gamified communication in social media environments. Each point represents an individual study, plotted by its effect size (mean) and standard error. The plot shows a relatively symmetrical inverted funnel shape centered around the overall mean, indicating a balanced spread of studies and suggesting low risk of publication bias. The clustering of studies near the top of the funnel, where standard errors are smaller, reflects high precision among larger studies. The narrow spread of effect sizes supports the consistency of findings, reinforcing that immersive narratives contribute significantly to enhancing engagement and communication effectiveness in gamified social media contexts. The symmetry and concentration within the 95% confidence limits indicate robust results across studies, with no substantial small-study effects or selective reporting detected.

**Table 4.** Eggers' Regression Intercept

Parameter	Value
Intercept	-0.74026
Standard error	1.41435
95% lower limit (2-tailed)	-3.79577
95% upper limit (2-tailed)	2.31526
t-value	0.52339
df	13
P-value (1-tailed)	0.30475
P-value (2-tailed)	0.60951

**Table 4** presents the statistical output for Eggers' regression intercept. The estimated intercept is -0.74026, representing the expected value of the dependent variable when all independent variables in the model are zero. The standard error of 1.41435 reflects the variability of the intercept estimate, indicating that the estimate is not highly precise. The 95% confidence interval, ranging from -3.79577 to 2.31526, includes zero, suggesting that the intercept is not statistically different from zero. The t-value of 0.52339, based on 13 degrees of freedom, results in a one-tailed p-value of 0.30475 and a two-tailed p-value of 0.60951—both well above the conventional significance threshold of 0.05. Therefore, the analysis indicates that there is no statistically significant evidence to suggest the intercept in Eggers' regression model differs from zero.

## DISCUSSION

Researchers using meta-study generated substantial findings about how immersive storytelling shapes gamified communication in social media platforms. The production of empirical studies presented information about interactive storytelling systems which boost user engagement and emotional involvement alongside

increased participation methods. The research confirms that gamified implementation of immersive narratives produces enhanced user experiences which strengthen interpersonal ties and user participation levels. Previous scholarly works demonstrate supportive evidence because immersive storytelling involves cognitive and emotional digital communication involvement. User attention works best with personalized stories that feature real-time interaction within multi-sensory input environments (Antoine, Alcy, Oliveira, & Tiago, 2022). Gamification studies show that integrating progress trackers with rewards and specific challenges motivates users through a motivational increase. The statistics from this analysis confirm that gamified social media platforms achieve better user involvement when they have captivating narrative experiences (Seibert, Planer, & Godulla, 2023). Social Interaction Theory supports these results because it explains that meaningful engagement depends on interactions. The interactive storytelling technique in gamification design allows users to become integral parts through which they shape the narrative content. Immersion affects user processing through the cognitive basis provided by the Elaboration Likelihood Model (ELM) (Saleem et al., 2022). Users process information through central-route processing when they encounter content that maintains their interest through interactive features and well-developed storytelling mechanics (Castillo-Adul et al., 2022).

The findings of this meta-analysis underscore the importance of immersive narratives as influential verbal exchange techniques inside virtual media environments. From a communication angle, these strategies cross beyond enjoyment they serve as persuasive equipment that decorate person engagement, message credibility, and behavioral intention. Immersive narratives, whilst coupled with interactive features inclusive of factors, stages, or comment loops, activate users' emotional and cognitive processing, aligning with each Social Interaction Theory and the ELM. Communication scholars can interpret those results as proof that digital storytelling is evolving into a more participatory and co-constructed technique. This reinforces the idea that modern audiences aren't passive recipients but active meaning-makers. Practically, entrepreneurs, influencers, and platform designers can leverage those insights to craft extra powerful campaigns by aligning their techniques with users' cognitive engagement styles. Furthermore, the outcomes offer implications for public communicate efforts, together with fitness, education, and advocacy, wherein narrative and messaging can drastically affect attitudes and conduct. This nuanced knowledge contributes to ongoing discourse about the communicative features of rising media and offers new pathways for interdisciplinary research. Future research can also explore how character differences and cultural contexts mild those results, similarly enriching the field of communication studies.

The data showed platform-specific attributes, target audience characteristics together with personalized content as main factors which impact how much users interact. Involving younger users together with highly interactive platforms Twitch and TikTok generated stronger user engagement as opposed to traditional social media platforms Facebook and LinkedIn. The study established a synthesis of empirical research to recognize patterns together with research gaps and their practical implications. Research data indicates that storytelling through gamification should focus on AI-based customization at the same time that it needs real-time interactive features. There exist ongoing areas of research which need development regarding both how users stay loyal in the long term and the interaction patterns when platforms connect across different platforms. The researchers aimed to present strategic guidance for digital content creators, marketers, and platform developers. Statistical evidence supports the conclusion that these methods establish effective methods to optimize social media user engagement combined with brand interaction. According to the random-effects model the effect size achieved 38.92 which exceeded the fixed-effects model effect size of 14.1605 because studies demonstrated substantial differences. The success of immersive storytelling practices is responsive to the design structures of platforms as well as to the characteristics of users and communication thresholds between creators and audience members. Platform-specific engagement strategies become essential because the studies exhibit extreme levels of variation ( $I^2 = 99.96\%$ ).

The statistical results demonstrate reliability because the p-value is 0.00 despite methodological variations. The research invalidates valuable observations although it carries several unresolved issues. Different social media networks produce various impacts on users so specific research for each platform needs to be conducted. Most of the studies assessed through this meta-analysis concentrate on quick engagement results rather than developing a clear understanding of how users maintain their commitment over time along with behavioral pattern modifications. The research faces a key constraint because its user group diversity is limited and this could alter different population segments' responses to gamified immersive content. Future research needs to study how users interact between platforms and how AI can generate tailored storytelling and what new technologies including AR and VR contribute to social media gamification. This research delivers robust empirical facts which demonstrate how immersive stories drive better social media gamified communication outcomes. This research delivers an extensive overview of storytelling components and gamification approaches because it combines insights from several research projects. Future social media gamification success depends on integrating story adaptation along with real-time user interaction controlled through artificial intelligence

algorithms to ensure optimal participation and engagement by users.

## CONCLUSION

This study provides a meta-analytical examination of the impact of immersive narratives on gamified communication within social media environments, offering a comprehensive synthesis of existing empirical research. The findings highlight the role of interactive storytelling elements in enhancing user engagement, emotional involvement, and participatory behaviors, reinforcing the theoretical foundations of Social Interaction Theory and the Elaboration Likelihood Model (ELM) in digital communication. By integrating gamification strategies such as reward mechanisms, interactive challenges, and real-time personalization, immersive narratives significantly shape how users interact with and respond to content, ultimately influencing social media engagement patterns.

The literature review established that immersive narratives drive engagement by creating interactive, decision-based experiences that foster user agency and deeper emotional connections. In the end, this meta-analysis reinforces the role of immersive narratives as mighty verbal exchange tools inside the digital landscape. By synthesizing records from a couple of empirical research, we provide sturdy proof that those strategies drastically impact engagement, message recall, and behavioral effects in social media environments. The communicate-unique insights drawn from our evaluation emphasize the evolving function of message design and user interaction in virtual persuasion. This research contributes to communication theory by extending the applicability of Social Interaction Theory and the Elaboration Likelihood Model to narrative-rich media codecs. It also supports practical packages in digital advertising and marketing, public health messaging, and media manufacturing by highlighting powerful content strategies grounded in verbal exchange standards. Moving ahead, verbal exchange pupils can build upon this basis by exploring how immersive and communication interact with rising technology which includes virtual reality, AI-driven storytelling, and personalized content shipping. As communicate channels keep adapting, our findings function a timely reminder of the discipline's valuable role in knowledge person conduct, message have an effect on, and media results. Ultimately, this has a look at not only bridges communicate principle and practice but also underscores the importance of interdisciplinary strategies in addressing the complicated realities of virtual verbal exchange these days.

Methodologically, this research adhered to rigorous inclusion and exclusion criteria, ensuring the selection of empirical, peer-reviewed studies that met predefined standards of methodological rigor. The data extraction and analysis process focused on capturing key variables such as narrative structure, engagement metrics, and platform-specific characteristics. Using Comprehensive Meta-Analysis (CMA) software, the study assessed effect sizes, heterogeneity, and statistical significance. The results from the random-effects model (effect size = 38.92) indicated a strong influence of immersive storytelling on user engagement, but the high heterogeneity index ( $I^2 = 99.96\%$ ) suggested significant variability in study outcomes. This variability was attributed to differences in platform mechanics, user demographics, and content personalization strategies, reinforcing the need for tailored gamification approaches across different digital ecosystems.

The results underscore the transformative potential of immersive storytelling in social media environments, particularly in contexts where real-time interactivity, AI-driven personalization, and dynamic gamification mechanisms are employed. Platforms that integrate interactive storytelling with adaptive engagement strategies tend to achieve higher levels of user retention and participation, demonstrating the communicative power of narrative-driven gamification. Moreover, studies focusing on real-time event coverage and AI-enhanced storytelling techniques reported the highest engagement rates, further validating the importance of interactive content design in digital marketing and social media communication.

The study's implications extend to multiple stakeholders, including digital marketers, content creators, and platform developers. Marketers can leverage immersive storytelling to enhance brand-consumer interactions, while social media platforms can refine their gamification models to maximize user engagement. Additionally, AI-driven content personalization presents new opportunities for increasing user immersion, offering customized narrative pathways that adapt to individual user preferences. However, the study also highlights key limitations, such as variability in research methodologies, the predominance of short-term engagement metrics, and the lack of platform-specific analyses. These limitations suggest that future research should adopt longitudinal study designs to assess long-term behavioral patterns, as well as conduct platform-specific investigations to explore how different social media ecosystems facilitate immersive storytelling.

In conclusion, this study confirms that immersive narratives and gamified communication significantly enhance user engagement in social media environments, offering valuable insights into the intersection of

interactive storytelling, digital consumer behavior, and technological innovation. As social media platforms continue to evolve, the integration of AI, AR, and VR into gamified storytelling frameworks will play an increasingly pivotal role in shaping user experiences, fostering brand engagement, and redefining digital communication strategies. This research provides a foundation for future studies, advocating for a deeper exploration of how immersive, data-driven storytelling techniques can further revolutionize the landscape of digital engagement. The younger generation along with tech-oriented users prefer gaming approaches to storytelling thus brands must develop dynamic interactive content to enhance their audience reach. The present study delivers useful findings but admits to specific research boundaries. More extensive studies focused on individual social media platforms would be necessary because the current research combines divergent study designs with multiple platforms considered for analysis. The research design incorporated in the meta-analysis mainly evaluated short-term user engagement primarily because it leaves unexplored major aspects of user persistence and changes in long-term behavioral patterns. Further research needs to study how different platforms engage with each other and how AI systems create personalized stories as well as how emerging technologies like augmented reality and virtual reality function within gamified social media communication. Digital creators can improve user interaction through real-time connections and customized content which helps marketers and platform developers build stronger brand relationships. The future of social media engagement depends on adopting AI storytelling methods, immersive media, and adaptive gamification approaches to adapt to ongoing evolution in social networks.

## IMPLICATIONS

The research results deliver important insights to digital marketers, content creators, and social media platform developers as well as researchers who wish to maximize user engagement through immersive storytelling with gamified communication strategies. Researchers can use the study's findings to create practical methods that enhance digital experiences through interactive narratives which improve emotional involvement and user participation. The findings guide brand strategists and marketers to integrate immersive storytelling capabilities like time-responsive feedback systems with AI-based personalization features which drive brand fan loyalty together with consumer engagement.

Organizations using social media for marketing should implement gamified storytelling techniques that will develop captivating characteristics to stimulate audience engagement throughout the relationship. Platform developers who operate social media sites need to understand the significance of implementing engagement methods for individual platforms. Electronic platforms that enable real-time communication as well as AI-algorithmized content adaptations paired with reward-based gamification features will attract and maintain more users. Adaptive algorithms will be necessary for creating tailored immersive experiences through their automatic adaptation to how users behave and what they prefer. This study validates the theoretical use of Social Interaction Theory together with Elaboration Likelihood Model (ELM) to explain how users process gamified content. Further investigations by researchers should cover extended behavioral shifts as well as systems for platform activity patterns plus investigate how new tech advancements like AR and VR will affect distant digital communication trends. The research confirms how interactive storytelling together with gamification transforms user experiences on social media by providing tested methods to enhance communication and user engagement.

## LIMITATIONS AND FUTURE DIRECTIONS

The observer presents precious insights into gamified conversation shaped with the aid of immersive narratives in social media; but, several barriers should be acknowledged. One considerable constraint stems from the diverse methodologies used in the blanket research, which vary in layout, dimension gear, and pattern characteristics. This heterogeneity combined with differences in platform-particular capabilities and person engagement metrics limits the comparison of findings and might have an effect on the reliability of the effect size estimates. Furthermore, the meta-analysis more often than not displays quick-term engagement outcomes, providing confined perception into the long-term behavioral outcomes of immersive storytelling. While the outcomes display that immersive narratives decorate user engagement and emotional connection, they no longer capture how these outcomes impact sustained consumer conduct or platform loyalty over time. Future studies must adopt standardized engagement metrics and longitudinal designs to evaluate enduring customer responses. Additionally, despite the fact that multiple social media systems are analyzed, the examination does not deeply explore how specific engagement mechanisms function across those systems, which may mild the located

consequences.

Future researchers need to perform individual examinations of Twitch, TikTok, Instagram and developing meta-verse platforms to study how immersive storytelling works in separate virtual environments. The influence of emerging technologies which include artificial intelligence (AI), augmented reality (AR) and virtual reality (VR) on gamified communication warrants more research attention. Research initiatives should analyze the way AI informs storytelling methods while studying how consumers interact with AR features and VR platforms within developing digital settings. Enhancements to theoretical and practical understanding of immersive narratives through addressing identified limitations will advance digital communication and gamification strategy creation in future innovations. This approach will assist in discovering how sustained exposure affects person loyalty and platform interplay over time. Additionally, there is a need to increase and adopt standardized measurement gear and standards for assessing user participation and narrative effectiveness to allow more constant comparisons across unique social media platforms. Moreover, integrating emerging conversation theories which include narrative transportation, para-social interplay, and social presence could offer deeper insights into how gamified storytelling influences persuasion, records sharing, and network formation in online environments. Exploring those theoretical frameworks will deepen our understanding of the mental and social strategies underlying person engagement and the negotiation of that means in digital areas. Overall, those directions will increase the sphere by addressing modern-day gaps and improving the rigor and relevance of future research on immersive narratives in social media.

## REFERENCES

- Aichner, T., Grünfelder, M., Maurer, O., & Jegeni, D. (2021). Twenty-five years of social media: A review of social media applications and definitions from 1994 to 2019. *Cyberpsychology, Behavior, and Social Networking*, 24(4), 215-222. <https://doi.org/10.1089/cyber.2020.0134>
- Ali, M., Ullah, S., Ahmad, M. S., Cheok, M. Y., & Alenezi, H. (2023). Assessing the impact of green consumption behavior and green purchase intention among millennials toward sustainable environment. *Environmental Science and Pollution Research*, 30(9), 23335-23347. <https://doi.org/10.1007/s11356-022-23811-1>
- Al-Uqdah, L., Franklin, F. A., Chiu, C. C., & Boyd, B. N. (2022). Associations between social media engagement and vaccine hesitancy. *Journal of Community Health*, 47(4), 577-587. <https://doi.org/10.1007/s10900-022-01081-9>
- Antoine, M., Alcy, M., Oliveira, A. De, & Tiago, J. (2022). Immersive media experience: A survey of existing methods and tools for human influential factors assessment. *Quality and User Experience*, 7(1), 1-23. <https://doi.org/10.1007/s41233-022-00052-1>
- Arasu, B. S., Seelan, B. J. B., & Thamaraiselvan, N. (2020). A machine learning-based approach to enhancing social media marketing. *Computers and Electrical Engineering*, 86. <https://doi.org/10.1016/j.compeleceng.2020.106723>
- Castillo-Abdul, B., Pérez-escoda, A., & Núñez-barriopedro, E. (2022). Promoting social media engagement via branded content communication: A fashion brands study on Instagram. *Media and Communication*, 10(1), 185-197. <https://doi.org/10.17645/mac.v10i1.4728>
- Çetin, Ö., & Erbay, F. (2021). Gamification practices in museums. *Journal of Tourismology*, 7(2), 265-276. <https://doi.org/10.26650/jot.2021.7.2.1017009>
- Charitos, D., & Timplalexi, E. (2023). Tracing the impact of the digital virtual ludic on immersive theatre: A case of theatre gamification. *Acta Ludologica*, 6(1), 4-27. <https://doi.org/10.34135/actaludologica.2023-6-1.4-27>
- de Oliveira Santini, F., Ladeira, W. J., Pinto, D. C., Herter, M. M., Sampaio, C. H., & Babin, B. J. (2020). Customer engagement in social media: A framework and meta-analysis. *Journal of the Academy of Marketing Science*, 48(6), 1211-1228. <https://doi.org/10.1007/s11747-020-00731-5>
- Díaz-Ramírez, J. (2020). Gamification in engineering education—An empirical assessment on learning and game performance. *Heliyon*, 6(9), e04972. <https://doi.org/10.1016/j.heliyon.2020.e04972>
- Dowling, D. O. (2024). Feeling and playing the news: Conceptualizing advances in immersive and gamified journalism. *Questions de Communication*, 45. <https://doi.org/10.4000/11wx0>
- Dvorský, J., Bednarz, J., & Blajer-Gołąbiewska, A. (2023). The impact of corporate reputation and social media engagement on the sustainability of SMEs: Perceptions of top managers and the owners. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 18(3). <https://doi.org/10.24136/eq.2023.025>
- Ferguson, C., van den Broek, E. L., & van Oostendorp, H. (2020). On the role of interaction mode and story structure in virtual reality serious games. *Computers and Education*, 143. <https://doi.org/10.1016/j.compedu.2019.103671>
- Gainous, J., Abbott, J. P., & Wagner, K. M. (2021). Active vs. passive social media engagement with critical information: Protest behavior in two Asian countries. *International Journal of Press/Politics*, 26(2), 464-483. <https://doi.org/10.1177/1940161220963606>
- Giakoumaki, C., & Krepapa, A. (2020). Brand engagement in self-concept and consumer engagement in social media: The role of the source. *Psychology and Marketing*, 37(3), 457-465. <https://doi.org/10.1002/mar.21312>
- Granger, B. E., & Perez, F. (2021). Jupyter: Thinking and storytelling with code and data. *Computing in Science and Engineering*, 23(2), 7-14. <https://doi.org/10.1109/MCSE.2021.3059263>
- Gross, J., & von Wangenheim, F. (2022). Influencer marketing on Instagram: Empirical research on social media engagement with sponsored posts. *Journal of Interactive Advertising*, 22(3), 289-310. <https://doi.org/10.1080/15252019.2022.2123724>
- Hadi, R., Melumad, S., & Park, E. S. (2024). The Metaverse: A new digital frontier for consumer behavior. *Journal of Consumer Psychology*, 34(1), 142-166. <https://doi.org/10.1002/jcpy.1356>
- Hsieh, H. C. L., & Yang, H. H. (2020). Incorporating gamification into website design to facilitate effective communication. *Theoretical Issues in Ergonomics Science*, 21(1), 89-111.

<https://doi.org/10.1080/1463922X.2019.1645920>

- Hui, X., Raza, S. H., Khan, S. W., Zaman, U., & Ogadimma, E. C. (2023). Exploring regenerative tourism using media richness theory: emerging role of immersive journalism, metaverse-based promotion, eco-literacy, and pro-environmental behavior. *Sustainability*, *15*(6), 5046.
- Jia, Y., Zhou, X., Yang, J., & Fu, Q. (2024). Animated VR and 360-degree VR to assess and train team sports decision-making: A scoping review. *Frontiers in Psychology*, *15*. <https://doi.org/10.3389/fpsyg.2024.1410132>
- Karapakdee, J., & Wannapiroon, P. (2023). Immersive digital storytelling learning experience with a metaverse gamification game platform to enhance game developer competency. *International Journal of Information and Education Technology*, *13*(6), 890-898. <https://doi.org/10.18178/ijiet.2023.13.6.1884>
- Kontogiorgakis, E., Zidianakis, E., Kontaki, E., Partarakis, N., Manoli, C., Ntoa, S., & Stephanidis, C. (2024). Gamified VR storytelling for cultural tourism using 3D reconstructions, virtual humans, and 360° videos. *Technologies*, *12*(6), 1-21. <https://doi.org/10.3390/technologies12060073>
- Lear, A. (2024). Narrative world building: Creative applications for gamification in study abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad*, *36*(1), 499-530. <https://doi.org/10.36366/frontiers.v36i1.695>
- Lee, K. W. (2023). Effectiveness of gamification and selection of appropriate teaching methods of creativity: Students' perspectives. *Heliyon*, *9*(10), e20420. <https://doi.org/10.1016/j.heliyon.2023.e20420>
- Lindström, B., Bellander, M., Schultner, D. T., Chang, A., Tobler, P. N., & Amodio, D. M. (2021). A computational reward learning account of social media engagement. *Nature Communications*, *12*(1), 1-10. <https://doi.org/10.1038/s41467-020-19607-x>
- López-Bouzas, N., & Del Moral Pérez, M. E. (2023). A gamified environment supported by augmented reality for improving communicative competencies in students with ASD: Design and validation. *International Journal of Educational Research and Innovation*, (19), 80-93. <https://doi.org/10.46661/ijeri.6820>
- López-Bouzas, N., del Moral-Pérez, M. E., & Castañeda-Fernández, J. (2024). Communicative competence in students with ASD: Interaction and immersion in a Gamified Augmented Environment. *Education and Information Technologies*, *29*(11), 13175-13199. <https://doi.org/10.1007/s10639-023-12319-x>
- Luo, B., Sun, Y., Shen, J., & Xia, L. (2020). How does green advertising skepticism on social media affect consumer intention to purchase green products?. *Journal of Consumer Behaviour*, *19*(4), 371-381. <https://doi.org/10.1002/cb.1818>
- Marcial, D. E., dela Peña, L., Montemayor, J., & Dy, J. (2021). The design of a gamified responsible use of social media. *Frontiers in Education*, *6*. <https://doi.org/10.3389/educ.2021.635278>
- Mason, A. N., Narcum, J., & Mason, K. (2021). Social media marketing gains importance after COVID-19. *Cogent Business and Management*, *8*(1). <https://doi.org/10.1080/23311975.2020.1870797>
- Messaoud, H. E. B. (2022). A review on the importance of strategic planning in business. *SSRG International Journal of Economics and Management Studies*, *9*(7), 1-5. <https://doi.org/10.14445/23939125/ijems-v9i7p101>
- Moran, G., Muzellec, L., & Johnson, D. (2020). Message content features and social media engagement: Evidence from the media industry. *Journal of Product and Brand Management*, *29*(5), 533-545. <https://doi.org/10.1108/JPBM-09-2018-2014>
- Muszynska, K. (2020). Gamification of communication and documentation processes in project teams. *Procedia Computer Science*, *176*, 3645-3653. <https://doi.org/10.1016/j.procs.2020.09.022>
- Nair, K., & Gupta, R. (2020). Application of AI technology in modern digital marketing environment. *World Journal of Entrepreneurship, Management and Sustainable Development*, *17*(3), 318-328. <https://doi.org/10.1108/WJEMSD-08-2020-0099>
- Nguyen, L., Lu, V. N., Conduit, J., Tran, T. T. N., & Scholz, B. (2021). Driving enrolment intention through social media engagement: A study of Vietnamese prospective students. *Higher Education Research and Development*, *40*(5), 1040-1055. <https://doi.org/10.1080/07294360.2020.1798886>
- Palalic, R., Ramadani, V., Mariam Gilani, S., Gërguri-Rashiti, S., & Dana, L. (2020). Social media and consumer buying behavior decision: What entrepreneurs should know?. *Management Decision*, *59*(6), 1249-1270. <https://doi.org/10.1108/MD-10-2019-1461>
- Pegoraro, A., Kennedy, H., Agha, N., Brown, N., & Berri, D. (2021). An analysis of broadcasting media using social media engagement in the WNBA. *Frontiers in Sports and Active Living*, *3*, 1-10. <https://doi.org/10.3389/fspor.2021.658293>

- Ponce, S. B., Barry, M. M., Dizon, D. S., Katz, M. S., Murphy, M., Teplinsky, E., . . . Markham, M. J. (2022). Netiquette for social media engagement for oncology professionals. *Future Oncology*, 18(9), 1133-1141. <https://doi.org/10.2217/fon-2021-1366>
- Poonsawad, A., Srisomphan, J., & Sanrach, C. (2022). Synthesis of problem-based interactive digital storytelling learning model under gamification environment promotes students' problem-solving skills. *International Journal of Emerging Technologies in Learning*, 17(5), 103-119. <https://doi.org/10.3991/ijet.v17i05.28181>
- Rathje, S., van Bavel, J. J., & van der Linden, S. (2021). Out-group animosity drives engagement on social media. *Proceedings of the National Academy of Sciences of the United States of America*, 118(26), 1-9. <https://doi.org/10.1073/pnas.2024292118>
- Rudeloff, C., Pakura, S., Eggers, F., & Niemand, T. (2022). It takes two to tango: the interplay between decision logics, communication strategies and social media engagement in start-ups. *Review of Managerial Science*, 16(3), 681-712. <https://doi.org/10.1007/s11846-021-00464-x>
- Saleem, A. N., Noori, N. M., & Ozdamli, F. (2022). Gamification applications in E-learning: A literature review. *Technology, Knowledge and Learning*, 27(1), 139-159. <https://doi.org/10.1007/s10758-020-09487-x>
- Saxena, M., & Mishra, D. K. (2021). Gamification and Gen Z in higher education: A systematic review of literature. *International Journal of Information and Communication Technology Education*, 17(4), 1-22. <https://doi.org/10.4018/IJICTE.20211001.0a10>
- Scharlach, R., & Hallinan, B. (2023). The value affordances of social media engagement features. *Journal of Computer-Mediated Communication*, 28(6). <https://doi.org/10.1093/jcmc/zmad040>
- Schreiner, M., Fischer, T., & Riedl, R. (2021). Impact of content characteristics and emotion on behavioral engagement in social media: Literature review and research agenda. *Electronic Commerce Research*, 21(2), 329-345. <https://doi.org/10.1007/s10660-019-09353-8>
- Schrottenbacher, P., Mehler, A., Berg, T., Hustedt, J., Gagel, J., Lüttig, T., & Abrami, G. (2025). Geo-spatial hypertext in virtual reality: mapping and navigating global news event spaces. *New Review of Hypermedia and Multimedia*, 31(1-2), 76-105. <https://doi.org/10.1080/13614568.2024.2383601>
- Seibert, D., Planer, R., & Godulla, A. (2023). Restarting virtual reality in journalism? A quantitative analysis of problems and potentials of selected immersive apps as perceived by their users. *SCM Studies in Communication and Media*, 11(4), 536-565. <https://doi.org/10.5771/2192-4007-2022-4-536>
- Škola, F., Rizvić, S., Cozza, M., Barbieri, L., Bruno, F., Skarlatos, D., & Liarokapis, F. (2020). Virtual reality with 360-video storytelling in cultural heritage: Study of presence, engagement, and immersion. *Sensors (Switzerland)*, 20(20), 1-17. <https://doi.org/10.3390/s20205851>
- Telaumbanua, Y., Nurmalina, Yalmiadi, & Masrul, M. (2020). 'Sentence Crimes': Blurring the boundaries between the sentence-level accuracies and their meanings conveyed. *European Journal of Educational Research*, 9(1), 395-411.
- Thurairasu, V. (2022). Gamification-Based learning as the future of language learning: An overview. *European Journal of Humanities and Social Sciences*, 2(6), 62-69. <https://doi.org/10.24018/ejsocial.2022.2.6.353>
- Tomé Klock, A. C., Wallius, E., & Hamari, J. (2021). Gamification in freight transportation: Extant corpus and future agenda. *International Journal of Physical Distribution and Logistics Management*, 51(7), 685-710. <https://doi.org/10.1108/IJPDLM-04-2020-0103>
- Trunfio, M., & Rossi, S. (2021). Conceptualising and measuring social media engagement: A systematic literature review. *Italian Journal of Marketing*, 2021(3), 267-292. <https://doi.org/10.1007/s43039-021-00035-8>
- Wibowo, A., Chen, S. C., Wiangin, U., Ma, Y., & Ruangkanjanases, A. (2021). Customer behavior as an outcome of social media marketing: The role of social media marketing activity and customer experience. *Sustainability (Switzerland)*, 13(1), 1-18. <https://doi.org/10.3390/su13010189>
- Wukich, C. (2021). Government social media engagement strategies and public roles. *Public Performance and Management Review*, 44(1), 187-215. <https://doi.org/10.1080/15309576.2020.1851266>
- Yao, B., Wang, D., Wu, T., Zhang, Z., Li, T. J. J., Yu, M., & Xu, Y. (2022). It is AI's turn to ask humans a question: Question-answer pair generation for children's story books. <https://doi.org/10.48550/arXiv.2109.03423>
- Zhang, Y., & Song, Y. (2022). The effects of sensory cues on immersive experiences for fostering technology-assisted sustainable behavior: A systematic review. *Behavioral Sciences*, 12(10). <https://doi.org/10.3390/bs12100361>

---

Zinovieva, T. (2024). Spatial storytelling as a convergence of E-learning, video games, archaic, and immersive journalism. *Electronic Scientific Professional Journal "Open Educational E-environment of Modern University"*, (17), 42-64. <https://doi.org/10.28925/2414-0325.2024.174>