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Comparative Effectiveness of Narrative and Informational Content for Audience Engagement in Educational Social Media: A Systematic Literature Review

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Abstract

This systematic literature review examines the comparative effectiveness of narrative-based versus traditional informational content in fostering audience engagement across educational social media platforms. Findings consistently indicate that narrative-based and visually engaging content outperforms traditional, text-based formats regarding likes, shares, comments, and overall audience retention. Posts incorporating personal stories, interviews, and dynamic visuals on Facebook and Instagram attracted significantly higher interaction than expository or lecture-style formats. Similarly, on Twitter, visual abstracts and infographics yielded 2.75 and 2.06 times greater engagement than traditional text-based posts. YouTube videos employing storytelling techniques demonstrated improved audience retention, while experimental and dynamic formats on TikTok outperformed static, lecture-style content. Notably, content that used interactive elements such as emojis and question prompts often saw over 100% increases in user interaction, and sequencing strategies that placed narrative elements before informational segments boosted full-video viewing by a factor of ten in some cases. The review also reveals platform-specific trends, with Facebook emerging as the most frequently studied and consistently favoring narrative and visual content. Overall, the evidence underscores the superior effectiveness of narrative, dynamic, and interactive formats in enhancing engagement with educational content on social media.

Keywords*: Social Media Engagement, Educational Content, Narrative Communication*

INTRODUCTION

In recent years, social media has become a prominent channel for disseminating educational content, offering unprecedented opportunities to reach diverse and global audiences. As educators and institutions increasingly leverage platforms such as Facebook, Instagram, Twitter, and YouTube, the question of how best to structure content to optimize audience engagement has gained scholarly attention. Among the various content strategies, a central debate concerns the comparative effectiveness of narrative-based versus traditional informational formats in fostering user interaction and sustained attention.

Narrative-based content, characterized by storytelling, personal anecdotes, and emotionally resonant elements, has been theorized to elicit deeper cognitive and emotional engagement compared to expository or didactic styles. In contrast, traditional informational formats emphasize clarity, structure, and factual accuracy, aligning more closely with formal pedagogical approaches. Understanding how these divergent

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strategies perform on social media is crucial, given the platforms' unique dynamics, including limited attention spans and the preference for visually and emotionally engaging content.

This systematic literature review synthesizes findings from 16 peer-reviewed studies to assess how content format influences user engagement in educational social media contexts. The studies encompass a range of methodological approaches, including observational research, experimental designs, and randomized controlled trials (Acquaye et al., 2023). Facebook emerged as the most frequently examined platform, featured in 10 studies, followed by Instagram and Twitter, which appeared in 6 and 5 studies, respectively. This distribution reflects the platforms' widespread use in educational outreach and the academic interest in understanding their communicative efficacy.

The present review contributes to the growing body of literature on digital engagement by offering a consolidated evaluation of how narrative and informational content styles affect interaction metrics such as likes, shares, comments, and viewer retention. It also provides practical guidance for educators, science communicators, and content creators aiming to maximize the effectiveness of their outreach strategies. By elucidating which content formats perform best in informal, online learning environments, this research informs evidence-based decision-making in the design and dissemination of educational materials across social media platforms.

LITERATURE RTEVIEW

Defining Narrative-Based content

Narrative-based content refers to the presentation of educational material through storytelling techniques, personal experiences, or emotionally engaging narratives rather than through structured, didactic exposition. This approach emphasizes relatability, emotional resonance, and contextual meaning, making it particularly effective in digital environments where user attention is fragmented and content consumption is voluntary and dynamic.

The effectiveness of narrative-based content is underpinned by several interrelated theoretical frameworks. Narrative Transportation Theory (Green & Brock, 2000) posits that individuals become more cognitively and emotionally engaged when they are immersed, or "transported", into a story world. This psychological absorption enhances message receptivity, recall, and persuasive impact. Within educational social media, where users scroll rapidly through content, storytelling mechanisms increase the likelihood of message retention by triggering affective and attentional engagement.

Additionally, Social Cognitive Theory (Bandura, 1986) offers further insight into the pedagogical potential of narrative formats. This theory emphasizes observational learning, whereby individuals learn behaviors, attitudes, and knowledge by modeling others. Narrative content often features characters or real individuals whose experiences act as relatable models, enabling audiences to vicariously process and internalize educational messages (Gabarron et al., 2020). On platforms such as YouTube and Instagram, the inclusion of personal testimonies or interviews reinforces this vicarious learning process, encouraging viewers to connect educational content with their own lived experiences.

Finally, Constructivist Learning Theory (Oviatt & Reich, 2019) supports the view that learners build understanding by integrating new information into their existing cognitive frameworks. Narrative-based content fosters this meaning-making process by situating educational concepts within familiar or emotionally salient contexts. In the informal learning environments of social media, where learners are more likely to encounter content casually and sporadically, the contextual richness of narratives enhances the construction of personal relevance and sustained engagement.

Thus, narrative-based formats align strongly with the cognitive, emotional, and social dimensions of learning. Their success on platforms like Facebook, TikTok, and YouTube is not coincidental but grounded in these robust theoretical foundations that explain why such content captures and sustains user attention.

Defining Traditional Informational Content

In contrast, traditional informational content refers to the communication of knowledge through formal, structured, and expository formats, such as lecture-style videos, textual summaries, or bullet-pointed infographics. This style prioritizes clarity, linearity, and factual precision, often mirroring conventional academic or institutional modes of instruction.

The theoretical justification for this approach begins with Cognitive Load Theory (Sweller, 1988), which emphasizes the importance of managing the mental effort required to process information. Traditional content aims to reduce extraneous cognitive load by presenting well-organized, concise, and logically sequenced material. In educational social media settings, this structure is especially useful when communicating complex or technical information, ensuring that users can process key messages without being overwhelmed by irrelevant details.

Complementing this is the Information Processing Theory (Atkinson & Shiffrin, 1968), which models learning as a sequential flow from sensory input to long-term memory. Traditional formats support this process by emphasizing declarative knowledge, logical structuring, and repetition, all conducive to efficient encoding and recall. For instance, text-based posts or slide-deck videos on platforms like Twitter and LinkedIn are often designed to facilitate the straightforward transfer of facts and definitions, maximizing clarity and retention.

However, traditional content also operates within the broader context of Constructivist Learning Theory, albeit with a different emphasis than narrative approaches. While it does not inherently encourage contextual or emotional engagement, traditional formats can still support meaningful learning when learners integrate presented facts into their own conceptual frameworks. Nevertheless, in the fast-paced and interaction-driven environment of social media, this mode of delivery may fall short in fostering the active engagement necessary for deep learning.

Relevance in Educational Social Media Contexts

The contrast between these content types is particularly salient in the context of educational social media. On platforms characterized by algorithmically curated feeds, short attention spans, and a preference for visually and emotionally stimulating content, the limitations of traditional formats become more pronounced. While traditional informational content offers clarity and structure, its static and non-interactive nature may hinder its effectiveness in such dynamic environments. Conversely, narrative-based content aligns well with the affordances of social media, promoting emotional resonance, user interaction, and sustained attention.

The integration of these theoretical frameworks allows for a nuanced understanding of how different content strategies function within digital educational outreach. By linking content type to cognitive, emotional, and social mechanisms of learning, the present review provides a foundation for evaluating which formats are most likely to succeed in engaging learners across diverse social media platforms.

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METHOD

This study adopts a systematic literature review (SLR) approach, consistent with the research objective of synthesizing empirical evidence on the comparative effectiveness of narrative-based versus traditional informational content in promoting audience engagement with educational content on social media platforms. As a qualitative synthesis of empirical studies, the SLR methodology provides a structured, transparent, and replicable process for identifying, evaluating, and integrating findings from prior research (Silchenko, 2023). This methodological choice directly aligns with the study's theoretical grounding in Narrative Transportation Theory, Social Cognitive Theory, and Constructivist Learning Theory, enabling a critical examination of how different content formats function within dynamic, learner-centered environments such as social media.

Systematic Review Procedures

The SLR followed a multi-phase process that included (1) comprehensive literature search, (2) study screening based on explicit inclusion and exclusion criteria, and (3) structured data extraction using a large language model (LLM). The methodology of this systematic literature review followed a structured process encompassing paper search, screening, and data extraction shown in Figure 1.

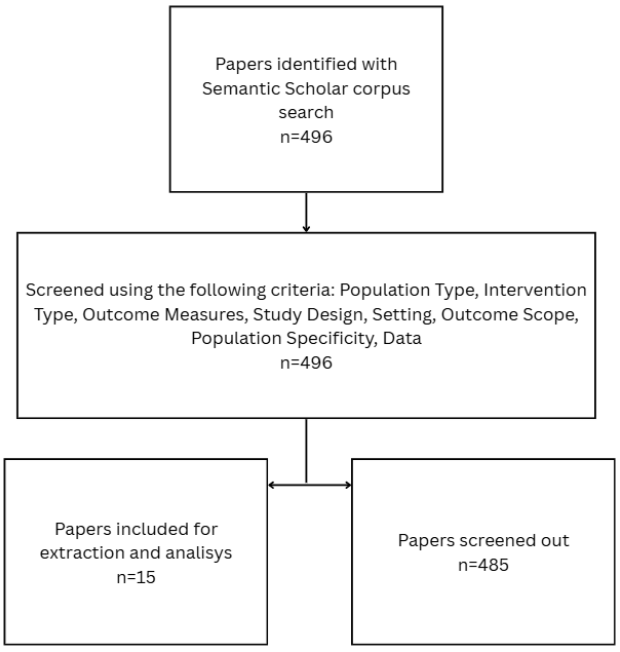

Figure 1. The systematic literature review workflow

1. Search Strategy:
   The initial literature search was conducted using the Semantic Scholar corpus, which comprises over 126 million academic publications. The search was tailored to identify studies addressing the following research question: "What is the comparative effectiveness of narrative-based versus traditional informational content in driving audience engagement across different educational social media platforms?". A total of 496 records were retrieved based on keyword relevance and citation metrics.

2. Screening and Eligibility:
   A two-stage screening process was employed to determine the eligibility of studies. Each title and abstract was reviewed, followed by full-text analysis of potentially relevant papers. The following inclusion and exclusion criteria were applied:

a. Study Context:
   Inclusion: Studies must examine educational content on social media platforms. Rationale: Ensures relevance to informal, digitally mediated learnin environments. Exclusion: Studies focusing solely on entertainment, marketing, or non-educational communication.

b. Content Type:
   Inclusion: Studies must provide a direct comparison between narrative-based and traditional informational content formats. Rationale: Central to answering the research question and aligning with theoretical constructs. Exclusion: Studies addressing only one content type or lacking operational definitions of each.

c. Outcome Measures:
   Inclusion: Studies must report at least one quantifiable engagement metric, such as likes, shares, comments, watch time, or viewer retention. Rationale: Allows for comparative analysis of content effectiveness based on measurable audience interaction. Exclusion: Studies using purely qualitative or anecdotal engagement indicators without empirical data.

d. Study Design:
   Inclusion: Only methodologically robust designs were included—specifically experimental, quasi-experimental, observational, systematic review, or meta-analytic studies. Rationale: Ensures analytical rigor and validity of findings. Exclusion: Case studies based on single content instances, opinion papers, or editorials.

e. Evidence Base:
   Inclusion: Studies must present or synthesize empirical data derived from real-world platforms or user interactions. Rationale: Guarantees the findings reflect actual user behavior and engagement patterns. Exclusion: Theoretical or conceptual discussions lacking empirical grounding.

f. Recency of Data
   Inclusion: Only studies published in the last five years were included. Rationale: Reflects current platform algorithms, user behaviors, and content practices in a rapidly evolving media landscape. Exclusion: Older studies that may not align with present-day social media affordances.

Data Extraction Process

Following study selection, a large language model (LLM) was employed to extract and structure key data from the full texts of included studies. The LLM was guided by a predefined schema to ensure consistency and replicability. The extracted variables include:

1. Type of Study Design:
   a. Coded based on explicit classification in the methods section (e.g., randomized controlled trial, comparative experiment, longitudinal observational study).
   b. Purpose: To assess the methodological strength and comparability across studies.

2. Social Media Platforms Investigated:
   a. Names and types of platforms analyzed (e.g., Facebook, Instagram, TikTok, Twitter, YouTube).
   b. Purpose: To identify platform-specific trends and contextual factors affecting engagement.

3. Content Comparison Approaches:
   a. Operational definitions of narrative-based versus traditional informational content, as described by the study authors.
   b. Purpose: To ensure consistency in how content types were conceptualized across studies.

4. Engagement Measurement Methods:
   a. The specific quantitative metrics used to evaluate audience interaction (e.g., likes, shares, comments, watch time, completion rates).
   b. Purpose: To support cross-study synthesis and effect size estimation.

5. Key Engagement Outcomes:
   a. Summary of main findings regarding the performance of narrative vs. traditional content, including statistical comparisons, effect sizes, and interpretive conclusions.
   b. Purpose: To extract evidence regarding which format demonstrated greater engagement, under what conditions, and to what extent.

All extracted data were compiled and tabulated to enable structured comparison across studies. Descriptive synthesis was used to identify cross-cutting patterns, and where possible, quantitative effect estimates were noted to assess the magnitude of engagement differences.

RESULT AND DISCUSSION

Characteristics of included studies

The included studies in this synthesis displayed diverse methodological approaches and focal areas. Among the 16 studies analyzed, observational designs were the most prevalent, with seven studies adopting this approach. Four studies employed experimental designs, while three conducted comparative analyses. Additionally, there were two randomized controlled trials, one quasi-experimental study, and one case-control study. In terms of platforms, Facebook emerged as the most frequently studied, appearing in ten studies. Instagram and Twitter followed with six and five studies, respectively, while YouTube and TikTok each featured in two. One study explored video-based platforms without specifying the platform, and another was not based on any social media. The most commonly studied content comparison was between narrative and non-narrative formats, found in three studies. Interviews and personal stories, as well as infographics, each appeared in two studies, while a variety of other formats, including hedonic versus utilitarian and static versus dynamic content, were examined in single instances. For engagement metrics, likes or reactions and shares were the most commonly used, each cited in seven studies. Comments appeared in six studies, while views and engagement rates were analyzed in three and two studies respectively. A few less frequently used indicators, such as clicks, saves, and watch time, were reported in individual studies, and two abstracts did not specify any engagement metrics.

Table 1. Included Studies

Study	Study Design	Platform(s) Studied	Content Type Comparison	Primary Engagement Metric
Acquaye et al., 2023	Observational study	TikTok, Twitter, Instagram,	Expert interviews, storytelling through	Views, likes, shares, comments,

		Facebook, YouTube	illustration, bulleted lists	clicks to forwarded links
Avelino et al., 2024	Observational study	Facebook, Instagram	Hedonic vs. utilitarian content	Likes, replies, shares
Barlow et al., 2020	Observational study, Comparative study	Twitter	Infographics vs. peer-reviewed journal articles	Engagement rates
Cuesta et al., 2017	Experimental study, Comparative study	Facebook	Narrative vs. non-narrative formats	Transportation, identification, similarity, wishful identification, parasocial interaction, liking
Gabarron et al., 2020	Observational study	Facebook, Twitter, Instagram	Interviews/personal stories vs. other content types; videos/emojis vs. text-only	Number of likes, comments, shares
Gabarron et al., 2020	Observational study	Facebook, Twitter, Instagram	Interviews/personal stories vs. other content types; videos/emojis vs. text-only	Number of likes, comments, shares
Habibi and Salim, 2021	Comparative study, Observational study	Instagram, TikTok	Static vs. dynamic content; lecture-style vs. experimental videos	Likes, comments, shares, saves, views, average watch time
Lochner et al., 2021	Experimental study, Comparative study, Observational study	Facebook	Infographic posts vs. webpage link posts	Reactions, comments, shares, people reached
Ly et al., 2024	Randomized controlled trial, Comparative study	YouTube	Traditional vs. storytelling pre-lecture videos	Audience retention data, skipping behaviour
Martinez et al., 2018	Experimental study, Comparative study	Facebook	Narrative vs. non-narrative formats	Not Specified
Martínez Martínez et al., 2018	Experimental study, Comparative study	Facebook	Narrative vs. non-narrative (expository) formats	Not Specified
Meisel et al., 2016	Randomized controlled trial	Email newsletters (not social media)	Narrative vignettes vs. traditional summary text	Unique visitors, gross visits
Oviatt and Reich, 2019	Observational study	Facebook, Instagram	Various content types (e.g., relatable, emotional support)	Number of likes, comments, shares

Quesnelle and Montemayor, 2020	Comparative study, Observational study	Facebook	Question-type posts vs. statement-type posts	Page engagement, post likes, post comments
Schuh et al., 2023	Quasi-experimental study, Comparative study	Video-based platforms (not specified)	Personal narrative vs. other formats; racial/ethnic congruence	Length of time viewing, proportion of video viewed, Likert scale evaluations
Wu et al., 2020	Prospective case-control study	Twitter	Visual abstracts vs. textual reports	Views, engagement rate

The pattern of study designs and platforms underscores the dominance of observational research in current scholarship on educational social media engagement, possibly reflecting researchers' reliance on naturally occurring data in digital contexts. Facebook's prominence may be attributed to its longstanding presence and multifunctionality, which allows for a broader range of educational content formats and audience interactions. The focus on narrative versus non-narrative comparisons signals a growing interest in how storytelling shapes cognitive and emotional engagement, consistent with narrative transportation theory. Meanwhile, the emphasis on quantifiable metrics such as likes, shares, and comments aligns with platform-native indicators of engagement, although the limited use of deeper behavioral metrics (e.g., watch time or retention) suggests potential gaps in measurement sophistication. Overall, these patterns reflect a research field that is expanding in scope but still maturing in methodological diversity and analytic depth.

Engagement Metrics Across Platforms

Across the analyzed educational social media platforms, narrative, visual, and experimental content formats consistently demonstrated higher engagement metrics compared to traditional text-based or lecture-style formats. This trend was most clearly quantified in studies focused on Twitter, where visual abstracts yielded 2.75 times higher engagement (95% CI: 1.83 to 3.67) and infographics achieved 2.06 times greater engagement (10.97% vs. 5.33%) relative to standard textual reports. However, despite the consistent qualitative evidence supporting the superiority of dynamic and narrative-based content, the reviewed literature did not consistently report engagement ratios for other platforms such as Facebook, Instagram, YouTube, and TikTok, either within abstracts or full texts, indicating a need for more standardized and comparative reporting across studies and platforms.

Table 2. Engagement Metrics Across Platforms

Platforms	Narrative/Visual Content Performance	Traditional Content Performance	Engagement Ratio
Facebook	Higher engagement for narrative and visual content	Lower engagement for non-narrative and text-based content	No mention found
Instagram	Higher engagement for utilitarian and visual content	Lower engagement for hedonic content	No mention found
Twitter	Higher engagement for visual abstracts and infographics	Lower engagement for textual reports and peer-reviewed articles	Visual abstracts: 2.75× (CI 1.83–3.67);

			Infographics: 2.06× (10.97% vs 5.33%)
YouTube	Higher retention for storytelling videos	Lower retention for traditional videos	No mention found
TikTok	Higher engagement for experimental videos	Lower engagement for lecture-style videos	No mention found

From the table, Several content-specific factors emerged as influential in driving user engagement across educational social media platforms. Personal stories and interviews stood out as powerful engagement tools. For instance, (Gabarron et al., 2020) found that such content received substantially more likes (111%), comments (106%), and shares (112%) compared to generic posts, all with high statistical significance (P<.001). This finding supports the theory that narrative coherence and emotional resonance can enhance cognitive processing and social sharing behavior. Narratives often allow users to connect personally with the material, activating affective pathways that lead to deeper engagement and action. In contrast, impersonal, information-heavy content may lack the psychological cues that trigger sharing and feedback behaviors.

Incorporating visual and interactive elements also appears to amplify user response. (Gabarron et al., 2020) additionally demonstrated that posts with both videos and emojis were nearly seven times more likely to be liked (P<.001), suggesting that multimedia formats cater more effectively to the attention economy of social media. Emojis alone, though simple, significantly boosted likes by 71% and shares by 144%, likely due to their emotional expressiveness and visual salience. Similarly, (Quesnelle & Montemayor, 2020) found that question-type posts nearly doubled engagement rates (8.5% vs. 4.1%) compared to statement-type posts. This finding aligns with dialogic theory in communication, which posits that interactive cues invite user participation and foster a sense of involvement, thereby increasing responses.

The importance of content relatability and emotional support was further affirmed by (Oviatt & Reich, 2019), whose study revealed that making topics more relatable (OR = 4.21) and providing emotional reassurance (OR = 4.62) significantly elevated content popularity (P<0.01). This reinforces the idea that emotionally relevant and empathetic content is more engaging because it aligns with users' identities and lived experiences. Finally, (Habibi & Salim, 2021) highlighted the benefits of dynamic, experimental content over static formats, noting a significant increase in user engagement (P<0.05). This may reflect the cognitive stimulation and novelty effect introduced by interactive and evolving content forms, which are more compatible with the fluid and fast-paced nature of digital learning environments.

Across platforms, these findings suggest a consistent trend: narrative-based and visually enriched content outperforms traditional text-based or lecture-style formats. While Twitter provided concrete engagement ratios (e.g., visual abstracts achieving 2.75× higher engagement and infographics 2.06×), similar performance patterns were observed qualitatively on Facebook, Instagram, YouTube, and TikTok. On YouTube, storytelling videos yielded higher retention, while on TikTok, experimental videos outpaced traditional lecture formats. Instagram showed increased engagement for utilitarian and visual content, and Facebook posts with emotional or narrative elements consistently outperformed more neutral formats. Although exact engagement ratios were not always reported outside of Twitter, the converging evidence underscores the effectiveness of dynamic, emotionally resonant, and user-centered design strategies for educational content on social media.

Content-Specific Performance Factors

Several studies highlighted distinct content-specific factors that significantly influenced user engagement on educational social media platforms. (Gabarron et al., 2020) reported that posts featuring personal stories and interviews received 111% more likes, 106% more comments, and 112% more shares than miscellaneous posts, all with strong statistical significance (P<.001). Furthermore, posts combining videos and emojis were nearly seven times more likely to be liked, while posts containing only emojis still saw a 71% increase in likes and a 144% rise in shares. Similarly, Quesnelle and Montemayor (2020) found that question-type posts outperformed statement-type posts in both engagement rate (8.5% vs. 4.1%) and like rate (1.7% vs. 0.4%) ($p<0.005$). Oviatt and Reich (2019) emphasized the power of relatable content, showing that posts designed to make pregnancy more personally relevant had an odds ratio of 4.21 ($P<0.01$) for higher popularity, while emotionally supportive content had an even higher odds ratio of 4.62 ($P<0.01$). Finally, (Habibi & Salim, 2021) concluded that dynamic and experimental content formats significantly enhanced engagement over static alternatives ($p<0.05$).

These findings underscore the theoretical relevance of narrative transportation and social presence in digital learning environments. The effectiveness of personal stories and interviews suggests that audiences respond more favorably to content that fosters emotional connection and authenticity. Such formats may evoke identification with the characters or storytellers, which enhances cognitive engagement and prompts social interaction, as predicted by narrative transportation theory. When users perceive stories as relatable and personally meaningful, they are more likely to engage with and share the content, creating a ripple effect that boosts its visibility and pedagogical reach.

The role of emojis, videos, and interactive elements further reflects the increasing demand for multimodal communication on social platforms. Emojis can function as emotional amplifiers, enabling users to quickly interpret tone and sentiment, which reduces cognitive load and enhances the user experience. The sharp increase in engagement for emoji- and video-enhanced content may thus be attributed to their capacity to humanize digital communication and draw users' attention in crowded, fast-scrolling feeds. This aligns with media richness theory, which posits that richer communication media, those offering multiple cues and immediate feedback, are more effective in complex or affect-laden contexts such as education and health communication.

Additionally, the higher engagement observed in question-type posts supports dialogic communication theory, which values reciprocal interaction over one-way information delivery. By posing questions, content creators invite responses and signal openness, fostering a sense of involvement and agency among audiences. Likewise, the findings on relatability and emotional support reinforce the importance of relevance and empathy in digital content. When users perceive content as speaking to their experiences or emotions, they are more likely to feel seen and valued, factors closely linked to platform stickiness and repeated interaction.

Finally, the performance of dynamic and experimental content over static formats emphasizes the pedagogical advantage of novelty, interactivity, and adaptive presentation. Dynamic content introduces variability and surprise, which can stimulate attention and reinforce learning, particularly in short-form and mobile contexts like TikTok or Instagram Reels. These results suggest that effective educational content design on social media must go beyond accurate information delivery; it must also strategically incorporate narrative, emotional, and interactive elements to align with user behavior and platform affordances.

Demographic and Context Influences

Several studies have underscored the role of demographic and contextual factors in shaping user engagement with educational content on social media platforms. Notably, (Schuh et al., 2023) identified racial and ethnic congruence between content providers and viewers as a significant predictor of video engagement. Specifically, viewers who shared the racial or ethnic background of the presenter were more likely to watch the entire video (adjusted odds ratio [OR]: 1.89, $p < 0.01$) and to evaluate the video's influence on others positively (adjusted OR: 1.14, $p = 0.03$). Additionally, the study found that older adults and unvaccinated individuals were less likely to give a favorable evaluation of the video. Gender also played a role, with female viewers showing greater odds of positive evaluation than male viewers. Finally, sequencing content by placing a personal story before an informational video was shown to increase the likelihood of full video viewing by a factor of 10 ($p < 0.01$), further reinforcing the impact of content structure.

These findings point to the significant influence of demographic alignment in enhancing content resonance and trust. The concept of racial and ethnic congruence may function as a proxy for perceived relatability and cultural competency, which are critical in health communication and education. When viewers see themselves reflected in the content creator, they may feel a stronger sense of belonging and credibility, which in turn enhances their willingness to engage with the material. This aligns with social identity theory, which posits that individuals are more receptive to messages from in-group members. For content creators and educators, this suggests the strategic value of culturally matched representation in maximizing reach and impact, particularly in diverse or marginalized communities.

The role of age and vaccination status in shaping user perception highlights how pre-existing attitudes and sociopolitical identities intersect with educational content. Older adults and unvaccinated individuals may approach health-related content with higher skepticism or lower digital literacy, which can reduce engagement and perceived relevance. This suggests the need for differentiated communication strategies that account for such attitudinal and generational differences. Tailored messaging and interface design that simplify access and build trust could help bridge these gaps and increase content effectiveness among harder-to-reach populations.

Gender differences in evaluative responses further indicate the importance of considering user identity in content design. The greater likelihood of positive evaluations from female viewers could be linked to differences in communication preferences or emotional responsiveness, as supported by existing gender communication research. This insight implies that empathetic and emotionally intelligent content may resonate more strongly with certain demographics, offering an additional lever for improving user engagement.

Finally, the substantial impact of content sequencing, particularly the placement of personal stories before informational material, demonstrates the value of narrative priming in digital education. Personal stories can serve as emotional entry points that humanize abstract information, making the subsequent content more digestible and compelling. This finding supports dual-process theories of persuasion, such as the elaboration likelihood model, which emphasize the importance of emotional and cognitive routes to engagement. Thus, structuring content to begin with emotionally resonant elements may be a powerful strategy to enhance attention, retention, and overall impact.

Narrative Structure Impact

Several studies have examined the impact of narrative structures on user engagement and behavioral outcomes, particularly in educational and health-related contexts. (Quesnelle & Montemayor, 2020) (Cuesta et al., 2022), and (Martínez Martínez et al., 2018) all found that narrative formats were more effective than non-narrative formats in influencing attitudes and behaviors, especially in health-related content. (Meisel et al., 2016) highlighted that narrative vignettes in email newsletters led to higher engagement with clinical guidelines. (Oviatt & Reich, 2019) observed that posts aiming to make pregnancy-related content more relatable or offering emotional support were more popular. Finally, (Ly et al., 2024) found that storytelling videos on YouTube experienced higher average retention rates and less skipping behavior compared to non-narrative content.

The findings of these studies underscore the importance of narrative structure in fostering deeper engagement with educational and health-related content. Narrative formats inherently capture attention and facilitate emotional investment, which can lead to greater involvement and behavioral change. According to narrative transportation theory, individuals are more likely to change their attitudes and behaviors when they become mentally and emotionally immersed in a story. This immersion allows users to identify with the characters and situations presented, which in turn strengthens cognitive and emotional engagement. The positive effects of narrative structures observed in health-related contexts, such as those by (Cuesta et al., 2022) and (Martínez Martínez et al., 2018) suggest that storytelling not only enhances engagement but also has the potential to influence health-related behaviors in a meaningful way.

The effectiveness of narrative vignettes in email newsletters, as reported by (Meisel et al., 2016), further illustrates the power of storytelling in contexts where the primary goal is knowledge dissemination. Unlike traditional information presentation, which may be perceived as dry or impersonal, narrative formats provide a relatable and humanized approach to content delivery. This format fosters connection, making complex or clinical information more accessible and engaging for the reader. The findings of (Oviatt & Reich, 2019) regarding pregnancy-related posts highlight how relatable narratives can make content more emotionally resonant and, as a result, more likely to be shared or acted upon by the audience. This observation aligns with the broader trend in digital communication, where emotionally supportive content is more likely to generate sustained engagement.

Finally, the higher retention and reduced skipping behavior associated with storytelling videos, as noted by (Ly et al., 2024), reflect the effectiveness of narrative in holding viewers' attention in dynamic, short-form video environments such as YouTube. In contrast to static or informational videos, storytelling videos appeal to viewers' desire for entertainment and emotional connection. These findings align with the principles of cognitive load theory, which suggests that learners are more likely to engage with content that is presented in a way that reduces extraneous cognitive load while enhancing intrinsic motivation. In this way, narrative structures not only serve to engage viewers but also optimize learning outcomes by fostering sustained attention and reducing disengagement(Lochner et al., 2021).

Content Format Optimization

Several studies have provided valuable insights into optimizing content formats for increased user engagement across social media platforms. Visual content consistently outperformed text-only content across various platforms, emphasizing the importance of incorporating visuals to capture user attention. Interactive elements, such as questions or emojis, significantly enhanced engagement, highlighting the effectiveness of prompting user interaction. Posts that featured personal stories, interviews, or content that made

topics more relatable also demonstrated higher engagement rates, indicating the appeal of emotionally resonant and authentic content. Additionally, dynamic and experimental content formats, especially on platforms like TikTok and Instagram, outperformed static or traditional lecture-style formats. Finally, (Schuh et al., 2023) found that content sequencing, such as placing personal stories before informational content, could significantly influence engagement, underlining the importance of how content is structured and presented.

The consistent superiority of visual content across platforms reflects the growing importance of engaging users in a visually stimulating environment. In today's digital landscape, where users are often bombarded with vast amounts of text, visual content serves as a highly effective tool for capturing attention and conveying information quickly and memorably. This is particularly important in the context of social media, where users are more likely to scroll through content rapidly. Visual elements, such as images, infographics, and videos, not only stand out in a crowded feed but also enhance information retention by presenting data or stories in an easily digestible format. The preference for visual content aligns with dual coding theory, which suggests that people process information more effectively when presented with both verbal and visual stimuli. Interactive elements, including questions and emojis, have been shown to significantly increase user engagement, suggesting that social media users respond positively to content that invites participation. This aligns with social presence theory, which posits that users are more engaged when they perceive a sense of connection and interactivity with the content. By including interactive elements, content creators can foster a sense of community and encourage reciprocal communication (Barlow et al., 2020). For instance, question-type posts not only invite users to respond but also create a dialogue that enhances engagement and promotes further interaction. Emojis, on the other hand, provide an emotional cue that can increase users' emotional investment in the content, making them more likely to like, share, or comment on the post.

The higher engagement observed with personal and relatable content underscores the importance of authenticity in digital communication. Posts that feature personal stories, interviews, or content that resonates with users' experiences tend to create an emotional connection, which can lead to increased sharing and engagement. This finding supports narrative transportation theory, which argues that people are more likely to engage with and be influenced by content that they perceive as personally meaningful or emotionally impactful. By making content more relatable, creators can cultivate a sense of empathy and belonging, which encourages users to actively engage with the content.

Dynamic and experimental content formats, particularly on platforms like TikTok and Instagram, highlight the preference for innovation and novelty in social media engagement. Unlike static or traditional lecture-style content, dynamic content, whether through videos, challenges, or interactive elements, tends to capture users' attention more effectively, particularly in fast-paced environments. The success of experimental content on platforms like TikTok aligns with the concept of flow theory, where users become deeply immersed in content that is engaging, novel, and offers an element of surprise or creativity. As such, creators on platforms like TikTok and Instagram are encouraged to experiment with new formats and trends to maintain user engagement and capitalize on the platform's interactive features.

Finally, (Schuh et al., 2023) demonstrated that the sequencing of content presentation plays a crucial role in engagement. Placing personal stories before informational content, for example, can create a narrative arc that captures the audience's attention and prepares them for the more factual or informative elements that follow. This sequencing technique taps into cognitive load theory, which suggests that structuring content in a way that flows

logically and gradually increases in complexity can improve user understanding and retention. By presenting content in a well-organized and engaging sequence, content creators can optimize user experience and maximize engagement.

CONCLUSION

This systematic review of 16 empirical studies demonstrates that narrative-based, visually rich, and interactive content formats consistently outperform traditional informational approaches in driving engagement with educational content on social media. Storytelling elements, visual abstractions, and interactive prompts were found to significantly enhance user interaction and retention across platforms, with visual abstracts on Twitter achieving 2.75 times greater engagement than text-based reports (Wu et al., 2020) and personal stories yielding over 100% increases in likes and shares. Platform-specific trends further emphasize the need for tailored strategies: Facebook users responded best to narrative and question-based posts (Quesnelle & Montemayor, 2020), Instagram favored visual and practical content (Avelino et al., 2024), YouTube audiences retained more information through storytelling videos (Ly et al., 2024), and TikTok viewers preferred dynamic, experimental formats (Habibi & Salim, 2021). Effective optimization techniques included sequencing narratives before informational segments to boost video completion rates by a factor of ten (Schuh et al., 2023), and aligning content with the cultural and demographic identities of target audiences to enhance resonance and engagement. Collectively, these findings offer compelling guidance for educators and content creators aiming to maximize the reach and impact of educational messages in digital environments.

The findings of this review offer clear, actionable guidance for educators, science communicators, and instructional designers aiming to enhance engagement on social media. Practitioners should prioritize narrative formats over static, expository content, especially on platforms where emotional resonance drives interaction. Incorporating visual elements—such as infographics, video abstracts, emojis, and animations—can significantly boost message retention. Additionally, interactive structures like questions, polls, and sequenced storytelling help sustain user attention and encourage dialogue. Content should be adapted to the conventions of each platform: dynamic, short-form content for TikTok; visually-rich posts for Instagram; and interactive, text-visual formats for Facebook and Twitter. Finally, understanding audience demographics and cultural identities is crucial for creating content that resonates effectively.

Building on this evidence base, future research should explore the long-term impact of narrative and interactive formats on learning outcomes through longitudinal studies. Cross-cultural investigations are also needed to understand how content effectiveness varies across diverse populations. Given the growing influence of recommendation algorithms, further inquiry into algorithmic mediation and content visibility is warranted. Moreover, user-centered co-creation models—where audiences actively contribute to educational narratives—present a promising direction for increasing both engagement and learning efficacy.

By continuing to explore these dimensions, future scholarship can further refine our understanding of how content design, audience psychology, and platform ecology intersect to shape the effectiveness of educational communication in digital spaces.

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