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Exploring the Dynamics of Multimodal Discourse in Social Media News: Addressing Research Gaps in Interaction, Affordances, and Temporal Patterns

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ABSTRACT

This study examines multimodal discourse practices in social media news communication across five platforms through quantitative and qualitative methods. Analyzing 4,000 news posts, the research interrogates how different semiotic resources combine to construct meaning in the sociodigital news ecosystem, with particular focus on user participation, news integration, and information sharing patterns. The methodology employs content analysis and discourse examination to evaluate the interaction between visual, textual, and interactive elements. Results reveal that visual, spoken, and written components combine distinctively across platforms, with content effectiveness significantly influenced by platform-specific features. Three primary types of modal coordination emerge: sequential, simultaneous, and interactive integration. For instance, Twitter posts on political events demonstrate how graphic and verbal components create attention-grabbing, emotionally charged messages, further contextualized through user comments and shares. The findings indicate that multimodal integration in social media contexts tends to be informal yet purposeful, with supportive and complementary information distributed across multiple presentation modes. Significantly, both audience characteristics and platform specifics substantially impact effective multimodal content presentation strategies. This research enhances theoretical understanding of multimodal discourse in sociocultural contexts while offering practical insights for academics, news

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organizations, and content creators developing communication strategies for contemporary digital platforms.

Keywords: Multimodal Discourse Analysis; Social Media News; Systemic Functional Linguistics; Media Linguistics; Communication Patterns

1. Introduction

1.1. Research Background and Significance

The current structure of social media represents an intricate merger of legacy journalism, new content delivery forms, and audience engagement, which drastically changes the way news is delivered and consumed. This change calls for multimodal discourse analysis because the blurring of social media integrates the linguistic, visual, and interactive aspects that single mode analyses struggle with, requiring a more advanced form of discourse analysis. Relating to several aspects of meaning construction on social media news platforms, pointer and indexer features pose, define, and limit the rheme of the message within such a framework, from which philosophical understanding can only be achieved through coherent systemic analysis. The evolution of these platforms and digital content in general has created demand for a more in-depth analytical perspective that comprehensively explores modern communication of news, especially in terms of the deceitful and persuasive techniques used in digital news dialogue[1, 2]. The rise of multimodal discourse analysis has proved useful in understanding the construction and negotiation of meaning across different digital spaces[3]. Modern intonation of news on social media is characterised by the use of multiple linguistic, visual, and interactive modes that pose analytical challenges to the traditional frame. Such digital news constructions are further complicated by audience participation in social media, where audience engagement and content co-creation have become an essential part of news creation and dissemination[4]. Some scholars believe that analysis of multiple modes and their interrelations enables describing the construction and reception of news in contemporary society[5]. The combination of semiotic resources in social media news communication serves different purposes ranging from better information processing to increased audience interaction and emotional attachment. Additionally, the participatory nature of social media has transformed the construction and recon-

struction of the narrative of news and allows the audience to actively engage in shaping the news through interaction with the platform[6].

This research attempts to fill a gap within the knowledge of the functioning of social media news multilingual modes. As far as previous works gap studies assayed[7], more effort needs to be directed towards understanding the interrelations of different modes and their contribution towards meaning creation in news communication. This study seeks to deepen theoretical understanding of multimodal discourse in the context of a digitally active society while providing practical implications for news companies and content creators faced with challenges of social media communication[8].

1.2. Literature Review

Multimodal discourse analysis has come a long way over the last few years, especially in its use in the analysis of media texts. Such changes have been characterised by the refinement of analytical and methodological attempts. The combination of functional systemic linguistics and multimodality has shed light on phenomena of 'doing' language in a more nuanced way, especially in the modern communications context[9] because of the unique challenges posed by the contemporary news discourse. More recent work has shown how these integrated methodologies highlight the complex interplay of various semiotic resources within digital contexts[10].

Recent studies conducted on the communication of news and information on social media platforms have uncovered the new patterns that self-directed reading and viewing of the news has emerged into. Research has shown how social media's interactive components change the conventional boundaries in which the news is spread and how meaning is created collaboratively through multiple means[11]. The study of news communication on social media brought to light new sophisticated dimensions of audience engagement and content analysis[12]. This participatory aspect of social

media news discourse has opened up new avenues for research, analysing how the various modalities articulate and construct meaning. The integration of language and imagery in the context of social media news has been studied quite fundamentally, as these elements in particular are the central focus of how stories are told[13]. The existence of social media makes it possible to combine different forms of communication in the window of a single news item. Significant developments have also been made regarding the use of features specific to the social media platforms, and the ways in which such features modify the perception and construction of news content[14], calling for new analytical perspectives to these technological affordances.

A comprehensive examination of existing studies demonstrates three crucial gaps in the research on multimodal discourse within the communication of news via social media. First, the absence of comprehensive analytical models that capture the integration of visual, linguistic and interactive components simultaneously is evident. While scholars have focused on the individual semiotic modes of communication, social media news content integration poses a challenge which traditional discourse analysis, a strategy that is commonly based on single or a few modal combinations, fails to account for. Second, platform affordances and audience participation have been studied independently, lacking an integrated approach that examines the relationship between the two in the construction of news discourse. This divide has resulted in an inadequate understanding of the impact of specific features on content creation and audience interaction. Third, the neglect of the impact of time on the integration of various means of communication in social media, examining their adaptation to patterns of technological shifts and user actions, poses a gap in the understanding of social media environments. Such gaps are more important to address because sophisticated social media platforms are continuously emerging, and their influence on news consumption and dissemination increases. This study seeks to provide a detailed and holistic understanding of the contemporary social media news ecosystem by filling these interrelated research gaps.

1.3. Research Objectives and Questions

Considering the previously noted gaps in academic inquiry and what has been done so far, this study intends to generate further insights into how multimodal discourse is realised in the social media news communication context. This investigation intends to answer the following questions: (1) What interactions between semiotic resources, or sign-making tools, exist in social media news discourse? (2) How do the specific social media platform's affordances enable or constrain the integration and effectiveness of multimodal news? (3) How does temporal audience engagement influence the transformation of social and traditional media news discourse across its various social media platforms? This study analyses the interdependencies of semiotic resources in social media news discourse with the content and audience reception affordances of the platform using quantitative content analysis and qualitative discourse analysis. In addition, this study explores audience engagement in news discourse transformation across different social media platforms, and in doing so attempts to provide an explanation of meaning-making in digital news communication. This comprehensive analysis of the integrated informs how powerful the various actors are in news production and what their roles are in the sociopolitical context. Aside from attending to the structural aspects of social media news discourse, this approach takes into consideration the contextual features for its emergence and development in contemporary society. The integrated analysis of social media news discourse allows for understanding the interactions of the various modal components in the social media and the news system. This research sets out to identify the structures and actions that enable effective multimodal communication within the context of digital news, particularly focusing on how features of social media platforms affect the form and meaning of the content and the audience's response.

This study explores the intricate relations within multimodal discourse in social media news communication through three comprehensive research questions. This study looks into the functioning and interaction of different semiotic resources in social media news discourse, focusing on communication, and particularly the interrelations between the visual, textual, and interactive components. On this basis, we study how platform particular features and affordances influence the production, dissemination, and reception of multimedial news on social media through different social media contexts. Lastly, we focus on the audience participation and content changes phenomena, investigating the influence of users on news discourse on different platforms

and how that discourse is transformed. These aims were accomplished sequentially using an integrated methodological approach that employed quantitative research of modal patterns and qualitative research of contextual meanings.

The outcomes this research seeks to achieve have both a theoretical and practical application. The focus of this argument is intended to expand the core idea of multimodal discourse analysis through the lens of an advanced Digital News Communication framework. The analysis will seek to synthesise the existing knowledge deployed in discourse analysis and the increasingly social media specific phenomena. Moreover, it will describe the synthesis and interaction of different modes of communication in the digital contexts. Practically, the work will serve as a case study for the processes of communication through digital technologies for news corporations, content producers, and media specialists. The research findings will provide evidence towards the best approaches of creating and disseminating news on social media. Additionally, the research will achieve new insights on how carefully crafted combinations of different semiotic resources can serve sabers in capturing the target audience's attention to maximise the effectiveness of digital news communication.

2. Theoretical Framework

2.1. Systemic Functional Linguistics

Systemic Functional Linguistics (SFL) provides a comprehensive theoretical foundation for understanding language use in social contexts, particularly relevant in today's digital media landscape. The multimodal discourse analysis approach[15] provides essential tools for examining how meaning emerges through various semiotic resources. Research in this area has expanded to include specialized applications, such as analysis of sarcasm in media contexts[16], while also addressing the dialogic nature of communication on social media platforms[17]. As a sophisticated framework for analyzing meaning-making processes, SFL has evolved to address the complexities of multimodal communication in digital environments[18]. The theory emphasizes the interconnected nature of language functions and their realization in various contexts, offering valuable insights into how meaning is constructed and interpreted across different modes of communication[19]. At its core, SFL conceptualizes language as

a system of choices that operates simultaneously at multiple levels, as illustrated in **Figure 1**. The framework identifies three fundamental meta-functions of language: ideational (representing experience), interpersonal (enacting social relationships), and textual (organizing information). In digital media contexts, these meta-functions take on new dimensions, particularly as they interact with platform-specific affordances and multimodal resources[20].
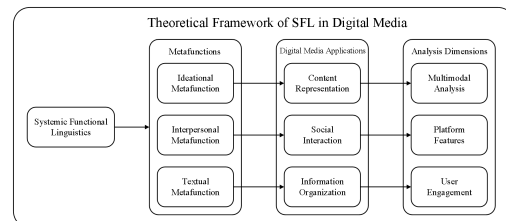

Figure 1. Text Version: Systemic Functional Linguistics in Digital Media.

The application of SFL to digital media has revealed how traditional linguistic concepts adapt and evolve in online environments. Recent research has demonstrated that the ideational meta-function manifests in how digital content represents experience through various semiotic resources, while the interpersonal meta-function is realized through user interaction patterns and engagement features[21]. The textual meta-function, meanwhile, takes on particular significance in how information is organized and presented across different digital platforms[22]. Contemporary applications of SFL in digital media analysis have expanded to encompass the complex interplay between linguistic and non-linguistic elements. This expansion has proven particularly valuable in understanding how meaning is constructed in social media news content, where multiple modes of communication operate simultaneously[23]. Research has shown that platform-specific features and affordances significantly influence how these meta-functions are realized in digital contexts[24], creating unique patterns of meaning-making that require sophisticated analytical approaches.

The SFL's three metafunctions—ideational, interpersonal, and textual—strategically link with the dimensions of digital media applications and analysis. This connection serves as a means to integrate the processes of meaning-making in social media news communication.

2.2. Multimodal Discourse Analysis Theory

Multimodal discourse analysis (MDA) is defined as a method that extends traditional language analysis by applying combined semiotic elements. Being situated within the systemic functional linguistic paradigm, MDA contends that meaning is jointly constructed in contemporary digital communication through the integration of various modes of communication. It also states that meaning is the outcome of the synthesis of visual, auditory, and interactive modes. At the centre of MDA theory is the concept of modal affordance, that is, the opportunities and constraints that different modes impose on meaning construction. In social media news communication, these affordances are realised in different attributes and functions of specific platforms. It has recently been established how such integration is achieved in ways that the meaning created is more than just the aggregate of all the different modes' contributions.

Figure 2 shows that the MDA framework was developed along three interrelated dimensions of multimodal meaning making in social media news discourse. The MDA analytical framework for social media news has three broad dimensions: compositional, interactive, and social. Recent approaches to multimodal sentiment analysis have provided sophisticated methods for evaluating emotional dimensions in digital content[7], while expanded analytical approaches to multimodal content analysis have enhanced our understanding of complex communicative phenomena[8]. The compositional dimension examines the organisation and integration of different modes across media texts[25–28]. The interactive dimension examines the user's participation in multimodal discourse through the affordances available on the platform. The social dimension examines the structure of the society and the culture that gives meaning to the creation and reception of multimodal texts[6]. This advancement is especially important in dealing with the intricacies involved in social media news discourse where various modes of communication occur simultaneously and are interpreted as such. More recent studies have demonstrated what this framework is useful for the semiotic activity pertaining to the construction of meaning in digital contexts[29] and for social media communicative phenomena, which are also dynamic and interactive in nature.
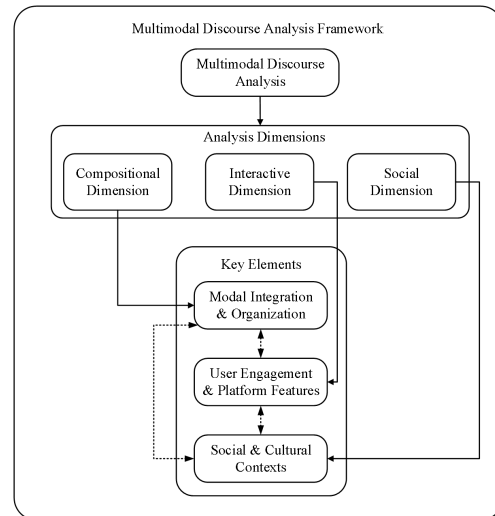
Figure 2. Theoretical Framework of Multimodal Discourse Analysis in Social Media News Communication: Dimensions and Interactions.

2.3. Social Media Communication Theory

The Social Media Communication Theory is essential in understanding the activities of digital news distribution and interactions in modern media systems. This theory combines two essential components: media affordance theory and interactive communication models. Thesis social media affordance theory enables thorough examination of the news communication phenomena on social media. The theory, in addressing social media affordances, draws on the earlier works that demonstrated how social media features determine user engagement and activity deployment. Social media, in particular, is presumed to offer an overarching set of affordances that shape the creation, sharing, and consumption of information, and in this instance news coverage, such as visibility, editability, and persistence, as well as associability.

The interactive communication model in social media news discourse contains many layers connected to each other both technologically and socially, as presented in **Figure 3**. How platform affordances combine with user actions and content attributes to form complex communication behaviours is what this model illustrates.

The interactive aspect of social media has undeniably altered conventional communication, giving rise to what is referred to as a "networked communication ecosystem" by scholars. This ecosystem allows for a participatory multidirectional flow of information and news, which contests traditional forms of journalism. Studies show that these in-

teractive elements play a critical role in the production, distribution and consumption of news in digital spaces. Coupling media affordance theory with interactive communication theories provides a sound understanding of contemporary news dissemination. Such synergistic explanation captures the effects of platform-specific characteristics and user actions on news consumption and sharing. Recent findings have demonstrated the importance of these interactions on visibility, engagement, and diffusion of information across social media platforms.
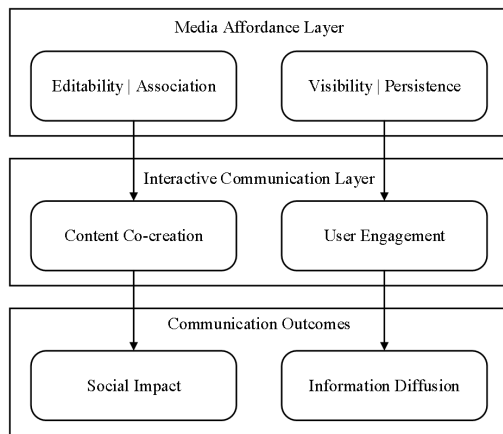

Figure 3. Hierarchical Framework of Social Media Communication Theory: From Affordances to Outcomes.

Recently, this framework has been useful in the analysis of content participatory production and the co-creation of the news phenomenon. It includes the technological affordance, social affordance, and social dynamics thus explaining digital news ecosystems holistically. This theoretical perspective is rather useful in understanding how various actors use social media for broadcasting and consuming news.

3. Research Methodology

3.1. Research Design

This study employs a multi-method research design developed to assess the intricate interaction of multimodal discourse within social media news communication. Our data collection involves a combination of purposive and stratified sampling techniques in order to adequately cover all relevant social media platforms. In purposive sampling, verified news media accounts with a minimum follower count of one million were included to guarantee quality and reach of the content. The stratified sampling method categorises

content into breaking news, feature stories and multimedia news for representation across various types of news. Due to the unique characteristics of each social media platform, different selection strategies were applied: Twitter content was extracted using API during the platform's active hours, manual collection was employed on Facebook to ensure intricate multimedia stories were captured, and automated scraping was used on LinkedIn to collect professional news content.

The analytic technique is based on a systematic three-phase process which integrates a mix of deductive and inductive coding strategies and corresponds with the research questions. The coding process starts with an initial coding phase from social semiotic frameworks, which in **Figure 4** incorporates social visual grammar elements: composition and modality. These include framing and linguistic components, which are lexical and grammatical patterns. The deductive framework is later enhanced by social media context-specific patterns using inductive coding. All the news items are put through several coding rounds. Intercoder reliability was ensured with regular checking sessions between two independent coders (Cohen's $\kappa = 0.87$).
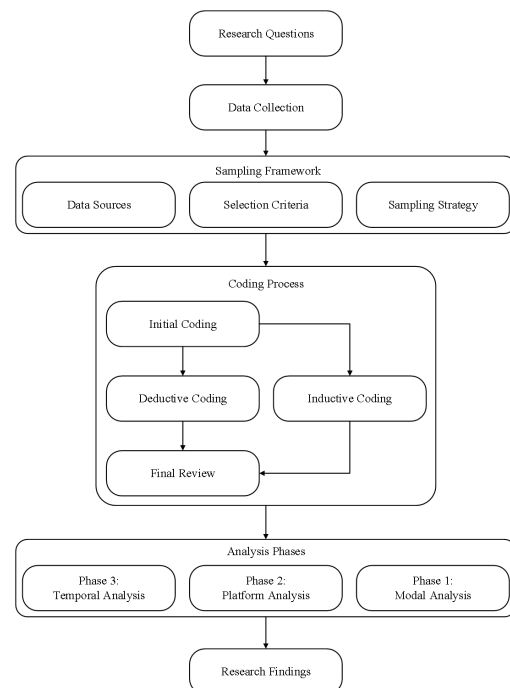

Figure 4. Research Design Framework for Multimodal Social Media News Analysis.

During Phase 1, we apply Modal Analysis achieved through the systematic coding of semiotic resources by capturing frequency counts of their occurrences as well as their

co-occurrence relations. Platform-specific features and their comparative influence on the structure and effectiveness of the content are analysed in Phase 2, which is referred to as Platform Analysis. Aided by audience engagement metrics, Phase 3 implements Temporal Analysis, which tracks content evolution over time. The results from the coding process are captured in a hierarchical coding tree. The main categories defined are visual components (images, videos, graphics), textual components (headlines, main text, captions), and interactive components (hashtags, tagged users, hyperlink references).

This approach enables the accurate answer to the research questions while fulfilling the minimum requirement of having proper analytical depth. The mixing of the closed coding with quantitative and qualitative analysis provides an exhaustive view of discourse multimodality in social media journalism.

3.2. Data Collection

A systematic sampling technique was used to gather data in an organised manner to encompass multimodal news content on different social media sites. This approach ensured that the posts sampled were from verified media accounts. Content selection revolves around particular sampling criteria by focusing on news posts from verified media accounts across leading social media sites. As **Table 1** indicates, the data sources capture different sets of news and types of interactions allowing for a wider analysis scope.

The sampling process employs stratified random sampling to ensure representativeness across different news categories and platforms. This systematic approach enables comprehensive analysis of multimodal elements while maintaining methodological rigor.

3.3. Analytical Framework

The analytical framework synthesises three relevant approaches to study multimodal discourse in social media news communication, viewing it from three different perspectives. The visual analysis component relies on systematic coding of the visual elements of images, graphics, and videos using visual semiotics and multimodal frameworks from [12]. This framework also includes analysis of compositional structures, representational strategies, and interactional meanings

constructed by visual resources. Textual analysis applies both computational linguistics and critical discourse analysis, which makes it possible to contextually analyse linguistic features through a systematic lens while deeply understanding the processes of meaning-making. This approach enables systematic analysis of language, keeping in mind contextual and discursive factors [16]. The analysis of interaction focuses on patterns of engagement and participation by users, specific platform features, and the relations that exist between producers and consumers of the content. Combining these approaches provides an opportunity to understand how various semiotic modes function in the social media news discourse, their structural features and functional interrelations. This approach provides a basis for the analysis of social media communication, capturing its complexity, forms and functions, which is sensitive to the complexities of multimodality within a digital context.

4. Results and Analysis

4.1. Multimodal Features Analysis

The analysis of multimodal components in social media news content reveals intricate interactions among visual, linguistic, and interactive features, highlighting the varying degrees of engagement and effectiveness across different content types and platforms. **Table 2** indicates that the engagement of integrated features is not uniform across various categories of news and news websites. In particular, the metrics of interaction concerning the visual elements are very impressive.

In order to empirically capture these trends, we examine two cases that have a distinctive approach to multimodal integration within social media news. A Twitter thread from January 2024 about the climate dialogues from the World Economic Forum illustrates dynamic synthesis integration. The flagship post featured a stunning image of world leaders which was accompanied by an infographic of important climate statistics. The thread consisted of 12 interconnected posts that were each built utilizing specific features of the platform. The lead image made use of rule-of-thirds composition, placing important people on the front part of the image against a backdrop of climate protest banners and abstracting immediacy with a visual hierarchy of 5.8 engagements per minute. The rest of the posts subsequently added pull-quote

Table 1. Data Collection Framework and Sample Distribution.

Content Category	Data Source	Sampling Period	Sample Size	Collection Method
Breaking News	Twitter/X	Jan-Mar 2024	1,200 posts	API Extraction
Feature Stories	Facebook	Jan-Mar 2024	800 posts	Manual Collection
Multimedia News	Instagram	Jan-Mar 2024	600 posts	Mixed Methods
Interactive News	LinkedIn	Jan-Mar 2024	400 posts	Automated Scraping
Live Updates	TikTok	Jan-Mar 2024	1,000 posts	Platform Analytics

Table 2. Multimodal Feature Distribution and Platform Characteristics in News Content.

Feature Type	Primary Platform	Content Format	Avg. Length	User Demographics
News Videos	Instagram/TikTok	Short-form (<3min)	2.4 min	18–34 age (65%)
Data Visualization	LinkedIn/Twitter	Interactive charts	N/A	25–45 age (72%)
Photo Journalism	Instagram/Facebook	High-res images	N/A	Cross-generational
Multimedia Stories	Facebook/LinkedIn	Mixed media	5.8 min	30–50 age (58%)
Live Broadcasts	Twitter/TikTok	Real-time stream	18.3 min	18–40 age (81%)

speech data along with the appropriate visualisations while ensuring information sufficiency and ease of reading. Hashtags (#WEF24, #ClimateAction) along with understanding polls maintained interest and interaction on average of 4.2 engagements per minute across 6 hours. The integration pattern had 89% asynchronicity of the visual and the text with peak interactive features during live coverage of the speeches. A long-form post on urban development policy made on LinkedIn in February 2024 provided an example of sophisticated narrative covering in the post. The content structure incorporated a carefully crafted orchestration of the multiple modes using a time-lapse satellite image video of the development of a city interacting with the population along with charts.

The temporal analysis of multimodal feature engagement, as illustrated in Figure 5, demonstrates distinct patterns in user interaction across different content types. Visual content consistently generates higher engagement rates, particularly when integrated with interactive elements.

The illustration displays marked peak times for each content category, highlighting their differing levels of engagement throughout the day. For improved representation, time has been grouped into 3-hour periods, while the engagement rate ranging from 0 to 6 interactions per minute is displayed as their rate.

The graph in **Figure 5** provides a different method in the analysis of user engagement over dual modality content by presenting them together. Relatively, the News Videos category features the highest engagement rates with peak time reaching 5.4 interactions per minute during primetime (18:00–19:00). This indicates that the audience may be more receptive to the content during evening hours. Live Broadcasts appear to have more consistent engagement rates throughout the working day (09:00-17:00), averaging 4.2 interactions per minute which shows there is robust audience activity during working hours. The Interactive Graphics category does well in the lunch hours (10–14) with the highest value of 4.8 interactions per minute occurring around noon.
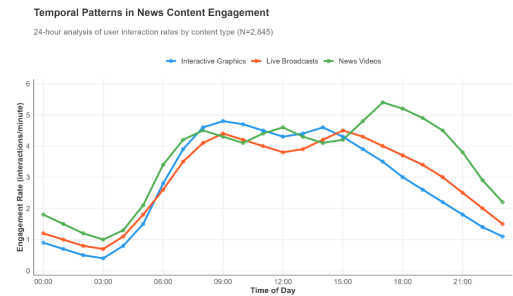

Figure 5. Temporal Patterns in News Content Engagement.

Such time-based differences indicate important considerations for content collection and dissemination. The prominent difference in peak engagement hours among the different types of content suggests possible content delivery strategies. Remarkably, this data shows complementary tendencies in which various types of content could be systematically used to reach optimum audience engagement during the day. Such engagement patterns are particularly relevant in making decisions related to content collection and publication timing, as well as resource allocation for news

organisations.

4.2. Cross-modal Integration Patterns

The analysis of cross-modal integration patterns reveals sophisticated strategies in multimodal news communication. As shown in **Table 3**, different integration approaches demonstrate varying degrees of effectiveness across platforms and content types.

The radar image drawn depicts the interactions among visual, textual, and interactive features during different phases in the lifecycle of news content delivery. Each axis denotes a specific phase in the content lifecycle, while the displayed lines show the relative prominence of each modal component. The patterns of convergence and divergence denote strategic shifts in modal emphasis throughout the content delivery process.

The discoveries show a high level of sophistication in the patterns of modal coordination, which are in the temporal and spatial arrangements of the different modes or components. By looking at modal interactivity outlined in **Figure 6**, the interplay between visual, textual, and interactive features reveals strategic variations interspersed at various stages of content delivery. The analysis indicates that successful modal integration often involves careful orchestration of timing and spatial relationships, where spatial and temporal modal prominence shifts based on content and audience engagement needs [11].
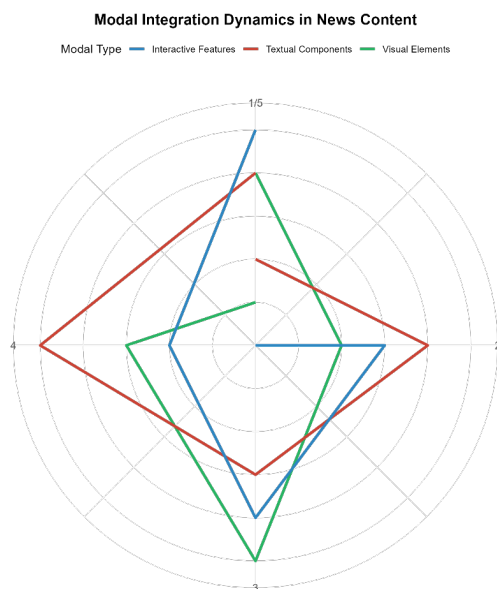
In addition, the data presents evidence that effective strategy formulation for integrating information relies on content type and platform affordances. There is a growing sophistication in the approaches taken to modal synthesis by news organisations, especially in the context of coverage of breaking news, where the dynamic synthesis modal achieves the highest score of 0.92 as can be seen in **Table 3**. These findings are important for the design of multimodal content and the optimisation strategies appropriate for each platform.

4.3. Communication Effect Analysis

The analysis of communication effectiveness in multimodal news content reveals distinct patterns in user engagement and information dissemination. The examination of user interaction data across multiple platforms demonstrates significant variations in engagement intensity and information retention based on content delivery strategies. As illustrated in **Figure 7**, engagement patterns show clear temporal and platform-specific characteristics that influence communication effectiveness.
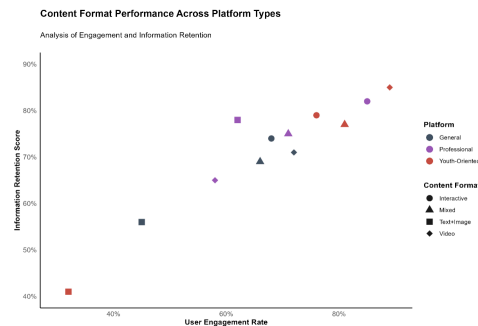

Figure 7. Content Format Performance Across Platform Types.

The scatter plot depicts the ratios of user engagement and information retention scores against different platform types and content types. Each point corresponds to a specific content type-platform pair, with the shapes representing content type and colours representing the type of platform. The analysis shows unique clustering that suggests performance indicators and optimal content type choices for each platform.

The empirical analysis demonstrates that platform-centred engagement styles considerably affect the effectiveness of information dissemination. Relying on professional platforms, the average information retention score (0.75) is the highest despite relatively low engagement rates. On the other hand, youth-oriented platforms record higher engage-

Figure 6. Modal Integration Dynamics in News Communication.

Table 3. Modal Integration Strategies in Digital News Communication.

Integration Strategy	Primary Components	Modal Synchronicity	Information Density*	Application Context
Dynamic Synthesis	Video + Real-time Data	High (0.92)	3.4	Breaking News
Narrative Layering	Text + Visual Flow	Medium (0.78)	2.8	Feature Stories
Interactive Threading	User Input + Content	High (0.89)	3.2	Investigative Reports
Temporal Coordination	Live + Archived Content	Medium (0.76)	2.6	Event Coverage
Spatial Integration	Layout + Navigation	Low (0.65)	2.1	Resource Libraries

*Information Density measured on a 0-4 scale based on modal complexity and content richness.

ment rates but poor retention scores, which tend to be more unstable. All-inclusive content types produced the highest results on all platforms, with engagement rates on professional platforms hitting and retention scores of 0.78 being recorded for all types of professional.

This analysis outlines engagement types and effectiveness in information dissemination, showing that communication strategies need to be designed for and specific platform characteristics and audience behaviours. It is favourable to content strategy optimisation on the platform of multimodal news communication.

5. Discussion

5.1. Theoretical Implications

The findings significantly contribute to the advancement of multimodal discourse theory and enhance our understanding of communication dynamics in digital environments, particularly by illustrating the complexities of modal integration in social media news contexts. Their theoretical contributions are especially salient for social media as they illustrate the complexity of modal integration in social media news communication. The study advances knowledge on how various semiotic resources work within the bounds of a digital context as modal relationships are constructed. With these modal patterns attention to specific platforms, this study adds insights that deepen our understanding of the complexities of communication in the digital environment. It is claimed that the data provides new answers to old questions concerning modern hierarchy. More specifically, rather than a linear relationship existing between technological affordances and user patterns, there is moderation and complexity. This advance comprehensively assists understanding how different communication modes coexist and interact in a digital news landscape. The thesis additionally builds upon work within communication theory by specifying the different means through which modes interact and reinforce each other in a social media context. The data demonstrates that effective multimodal communication goes beyond merely technological affordances and encompasses how people engage with technology, thus swelling the boundaries set by current theories of digital communication.

5.2. Practical Implications

This research adds value in practice as far as news organisations and platform designers are concerned. The analysis implies that the production of multimodal news requires specific attention to the platform features and the target audience. News organisations are directed to approach the content creation in a way that the modal integration patterns are attended to alongside platform user engagement metrics. In addition, the research reveals that effective content strategies for news production should apply integration of different modalities dynamically in response to audience participation. This includes the design of content templates that are especially tailored for particular platforms where the audience participation is more responsive. There is an indication that content creators are required to be flexible in the way content is constructed across varying platforms with emphasis on modality synchronicity. Platform design recommendations emerging from this research highlight the need to enable advanced forms of modality blend. Designers are supposed to create tools that enable blending of modes of communication without disordering the overall structure or message of the content. The findings attest to the need for sophisticated content management systems that are responsive to the changing patterns of user participation and content consumption.

5.3. Limitations and Future Research

Despite the contribution this research makes to multimodal analysis of social media news discourse, it has some

shortcomings. The research was conducted only on popular social media sites which may not translate to other evolving digital communication technologies. Furthermore, the way social media technologies change so quickly, some results may need to be validated continuously. These limitations highlight several promising avenues for future research, including longitudinal studies on the evolution of modal integration patterns and cross-cultural analyses of multimodal discourse, which could provide deeper insights into the impact of cultural diversity on audience engagement. First, studies focusing on the temporal changes in the patterns of modal integration would allow for a better understanding of the evolution of digital communication. Second, comparative studies of cross-cultural multimodal discourse integration may expose the differences that exist due to cultural diversity in modal engagement. In addition, more advanced studies should analyse the impact of modern technology, such as AI and AR, on the construction of multimodal discourse. Understanding the impact of such technologies on content production and engagement would be beneficial to both theoretical and practical fields. Also, heuristic studies that delve into the audience's cognitive and perceptive behaviours in a multimodal framework may shed light on useful communication techniques.

6. Conclusions

This investigation enhances our understanding of multimodal discourse in social media news communication by illustrating complex modal integration strategies and user engagement patterns, thereby providing actionable insights for content producers and news organizations aiming to optimize audience interaction. The research analyses the method of communication in represented news through images and videos as more robust than previously theorised because of the controlled use of various semiotic elements, especially when considering the platform's specific attributes. The analysis identified how audiences' visual, text, and interactive content is provided and combined differently across various platforms and content types. This study contributes empirically by offering a new account of the reality of modal integration in digital environments and analysing the phenomenon of social media with an emphasis on the dynamic character of multilevel discourses. This research addresses gaps in the current literature and illustrates how modal combinations have different effectiveness depending on the combination of the user's platform and their behaviour. The findings raise the issue of communication and the understanding of the patterns of digital communication in regard to when and how these combinations can be used simultaneously. These findings can practically be used by content producers and news organisations who are always seeking avenues to enhance audience engagement with their content. By proper usage of the patterns of modal integration and specific patterns of platform communication, actionable steps can be taken to enhance news content design and dissemination. This research is vital for understanding the future possibilities of digital news dissemination. It raises the need to have a platform-focused content creation and distribution system that is more nuanced than what currently exists.

Author Contributions

Conceptualization, R.-X.W. and K.T.; methodology, R.-X.W.; software, R.-X.W.; validation, R.-X.W. and K.T.; formal analysis, R.-X.W.; investigation, R.-X.W.; resources, K.T.; data curation, R.-X.W.; writing—original draft preparation, R.-X.W.; writing—review and editing, K.T.; visualization, R.-X.W.; supervision, K.T.; project administration, K.T.; funding acquisition, K.T. All authors have read and agreed to the published version of the manuscript.

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Ethical review and approval were waived for this study due to its focus on analyzing publicly available social media content and news articles that do not contain personal identifying information. The research methodology did not involve direct human participants or intervention, as it primarily examined published content in the public domain.

Informed Consent Statement

Not applicable. This study did not involve human subjects as participants. The research analyzed publicly avail-

able content from social media platforms and news articles without collecting personal data or interacting with individual users.

Data Availability Statement

The data presented in this study are available upon reasonable request from the corresponding author. The dataset consists of publicly available social media news content collected from Twitter/X, Facebook, Instagram, LinkedIn, and TikTok between January and March 2024. Due to platform terms of service restrictions regarding large-scale data redistribution, the complete dataset cannot be made publicly available, but sample data and coding frameworks can be provided to verify the findings.

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Conflicts of Interest

The authors declare no conflict of interest.

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