The Impact of Technology on Pictorial Communication: A Comparative Study of Emoji and Traditional Pictorial Symbols in the Digital Age

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ABSTRACT

The use of technology in pictorial communication has undergone significant evolution with the emergence of emojis as a new form of traditional pictorial symbols. This research aims to investigate the impact of technology on pictorial communication by comparing the use of emojis and traditional pictorial symbols in the digital era. The research method was conducted through a careful literature review to understand the development and changes in the use of emojis and pictorial symbols, as well as their impact on pictorial communication. The research findings indicate that the use of emojis tends to be more frequent than traditional pictorial symbols in everyday communication in the digital era. Furthermore, this study also reveals that emojis have the potential to convey richer and more complex meanings than traditional pictorial symbols, especially in the context of expressing emotions and specific nuances. This research investigates the implications of these findings in terms of changes in human communication behavior, cultural adaptation to technology, and the role of emojis in facilitating cross-cultural communication. This study yields a deeper understanding of the role of technology in shaping how we communicate visually and highlights the importance of adapting to digital developments in understanding the evolution of human communication. Emojis are not only becoming a significant social and cultural phenomenon but also offer great potential as effective and efficient communication tools in expressing nuances of emotions and complex meanings in the current digital era. Further research is needed to explore the role of emojis in the broader context of human communication and their impact on culture and society.

INTRODUCTION

Pictorial communication has been an integral part of human life since ancient times, playing a role in conveying messages, emotions, and information. In the current digital era, technology has significantly transformed the landscape of pictorial communication, introducing various innovations and new tools that influence how humans interact and convey meaning through images. One of the most prominent innovations in digital pictorial communication is the use of emojis, a set of small images used to convey emotional expressions and ideas in online conversations (Alshenqeeti, 2016). On the other hand, traditional pictorial symbols, such as icons and graphical symbols, also remain an important part of pictorial communication, especially in specific contexts such as the workplace or public guidance (Haupt & Alant, 2002).

The primary role of pictorial communication is to facilitate understanding and exchange of information without relying solely on verbal language (Houts et al., 2006). Through the use of pictures, graphics, and symbols, humans can convey complex information quickly and effectively without depending solely on spoken or written language. In interpersonal communication contexts, images and graphics are often used to clarify ideas, convey emotions, and build connections between individuals (Schill, 2012). In the context of mass communication, images and symbols are frequently utilized in advertisements, posters, and other print media to grab attention, convey messages, and shape public opinion (Fahmy & Wanta, 2007). At a higher level, pictorial communication is used in science and technology to present complex data and information in forms easily understood by diverse audiences. Pictorial communication plays a crucial role in expanding human communication capabilities, especially in situations where verbal or written language is not effective or available in limited supply.

With the development of digital technology, the way we communicate through images has undergone fundamental changes.

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Alongside advancements in photography, computer graphics, and social media, images are no longer merely static representations of an object or concept but have evolved into dynamic and interactive communication media. In ancient times, pictorial communication involved the use of traditional symbols such as Ancient Egyptian hieroglyphs or Chinese ideograms (Öztay & Koç, 2020). Traditional pictorial symbols have been used by various cultures worldwide for thousands of years as a means of communication, conveying meaning, and recording history. In the context of prehistoric art, these pictorial symbols are often found on cave walls, artifacts, and other artworks, providing valuable clues about the life and beliefs of past societies. The role of traditional pictorial symbols is also significant in understanding the culture and identity of a society, as they reflect the values, beliefs, and myths held by that society (Šifta & Chromý, 2017). Furthermore, traditional pictorial symbols have the ability to bridge language and cultural gaps, as they can be recognized and understood by various societal groups regardless of their linguistic or cultural backgrounds (Lemke, 1998).

In the modern era, traditional pictorial symbols continue to play a significant role in art, design, and visual communication, both as decorative elements, symbols of cultural identity, and as a means to effectively convey complex messages to a wide audience. Although technology has transformed the way humans interact and communicate, traditional symbols still hold a strong appeal. The presence and use of these symbols in the digital age indicate adaptation and the preservation of rich cultural values. Traditional symbols often reflect local wisdom, stories, and the identity of a community (Kurwidaria et al., 2019).

On the other hand, with the advancement of digital technology, especially with the emergence of social media platforms and instant messaging applications, we have witnessed the emergence of new forms of pictorial communication. A prominent example of this transformation is the increased use of emojis and stickers in online conversations, allowing users to express emotions and ideas in a more visual and creative manner. In the current digital era, the role of pictorial communication is gaining attention due to the emergence of new

technologies such as emojis. By using emojis, individuals can quickly and easily express complex emotions and meanings in online communication (Elder, 2018).

Emojis are a set of graphic characters used to convey emotions, expressions, or ideas in digital conversations. The term "emoji" originates from Japanese, where "e" means picture and "moji" means character (Maryam et al., 2020). The use of emojis has become a widespread phenomenon worldwide in online communication, especially on social media platforms and instant messaging. However, the history of emojis did not begin in the modern digital era; instead, its roots can be traced back to the early 1990s when Japanese engineer Shigetaka Kurita created a series of small characters called "emoji" to be used in the NTT DoCoMo's pager message system (Crystal et al., 2021). Kurita described emojis as a way to convey emotions and information in a more visual manner within the constraints of limited characters. Since then, the popularity of emojis has continued to grow rapidly, crossing cultural and linguistic boundaries, becoming an integral part of online communication worldwide. With the growth of digital platforms and the increasing use of mobile devices, emojis have evolved into an indispensable part of digital language, adding emotional and expressive dimensions to online conversations. Along with technological advancements, emojis have also evolved into various symbols, including human faces, animals, food, objects, and more, giving users more options to visually express their thoughts and feelings (Bai et al., 2019).

Emoji, originally introduced as simple symbols of emotion, have now become a language of their own that can convey various nuances of feelings and expressions in online communication (Völkel et al., 2019). The role of emoji in digital communication is significant as they enrich text messages by providing a richer emotional context that is easily understood by message recipients. Additionally, emoji also help overcome the limitations of digital communication, which often lacks the ability to express the same emotional nuances as face-to-face communication (Tang & Hew, 2019). Thus, the use of emoji not only enhances communication efficiency but also helps strengthen social

bonds among users in digital environments that often feel physically unbound.

The popularity of emoji has significantly increased in recent years, with millions of users using them daily on various social media platforms, instant messaging apps, and even emails. Various studies have been conducted to understand the role and influence of emoji in online communication. Although the original form of emoji is simple, over time, they have evolved into diverse and complex forms, encompassing a wide range of expressions, objects, and symbols. Platforms such as Facebook, Twitter, Instagram, and WhatsApp provide a variety of emoji used by users worldwide (Veytia-Bucheli et al., 2020).

Emoji and traditional pictorial symbols have some similarities as well as significant differences in the context of their usage. One major similarity between the two is their role in conveying messages or emotions visually. Both emoji and traditional pictorial symbols are used to express feelings, concepts, or ideas without the need for words. Both types of symbols also share similarities in their usage in digital communication, whether through text messages, social media, or other communication platforms. However, behind these similarities, there are striking differences between emoji and traditional pictorial symbols. One major difference is their origins and evolution. Emoji, although rooted in traditional pictorial symbols, have evolved into broader and more complex representations of various emotions, objects, and concepts (Wicke & Bolognesi, 2020). Meanwhile, traditional pictorial symbols tend to have more rigid meanings and may be tied to specific cultures or contexts. Additionally, the use of emoji is often more subjective and open to different interpretations, while traditional pictorial symbols tend to have more stable and uniform meanings among different cultural groups.

Furthermore, factors influencing user preferences in selecting pictorial communication include cultural context. Culture plays a significant role in determining symbols and visual representations accepted by society (Iftikhar et al., 2021). An image or icon that holds positive meaning in one culture may have different or even controversial meanings in another culture. Additionally, individual psychological

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factors also play a role in user preferences for pictorial communication (Amit et al., 2013). For example, individual aesthetic preferences, perceptions of clarity and accuracy of visual information, as well as the level of experience and familiarity with certain types of pictorial communication. Moreover, the context of use is also an important factor to consider, such as communication goals, target audience, and the platform or media used to convey pictorial messages.

This research aims to investigate the impact of technology on pictorial communication, with a specific focus on comparing emojis and traditional pictorial symbols in the digital era. The author will examine how the use of emojis has changed the way humans communicate online, as well as influencing the interpretation and perception of visual messages. Additionally, the author will explore whether traditional pictorial symbols still hold the same relevance as before, or if the presence of emojis has shifted their role in digital pictorial communication.

METHOD

This research use a literature review method to explore the impact of technology on pictorial communication, particularly in the comparison between emojis and traditional pictorial symbols in the digital era. The literature review approach was chosen because it allows the author to gather information from various reliable sources, including scholarly journals, books, articles, and relevant online publications on the research topic. The data collection process began with the identification of relevant literature through online searches using keywords pertinent to the research focus, such as "emoji", "traditional pictorial symbols", "pictorial communication", "digital technology", and the like.

Once the relevant literature has been collected, a comprehensive analysis of the content is conducted to understand the differences and similarities between the use of emojis and traditional pictorial symbols in pictorial communication. The analysis also aims to identify technological developments that influence how humans communicate visually in the digital era. The use of the literature review method in this research is

expected to provide an understanding of changes in human communication behavior related to the use of technology in conveying messages visually. Additionally, this method enables the author to make a systematic comparison between emojis and traditional pictorial symbols, offering new insights into pictorial communication trends in the digital era.

In line with that, this research refers to the research method developed by Miles et al. (2014), which consists of four main stages: data collection, data reduction, data presentation, and drawing conclusions. For the first stage, which is data collection, this research conducts a search and identification of relevant literature through various sources of information such as scholarly journals, books, articles, and online publications. The search is focused on topics related to the use of emojis and traditional pictorial symbols in pictorial communication, as well as the development of digital technology influencing how humans interact visually.

The second stage in this research method is data reduction. After relevant literature has been gathered, the next step is to analyze and filter the most relevant and significant information in the context of the research. This data reduction involves the process of reading, examining, and summarizing the information found in the literature, as well as identifying patterns or important findings related to the use of emojis and traditional pictorial symbols in pictorial communication in the digital era.

Once the data is reduced, the next stage is data presentation. At this stage, the collected and analyzed information will be presented systematically according to the established research framework. The final stage in this research method is to conclude the findings obtained from the data analysis. Based on the results of the analysis and data presentation conducted, this research will draw conclusions that explain the impact of technology on pictorial communication, comparisons between the use of emojis and traditional pictorial symbols, and the implications of these findings in the context of pictorial communication in the digital era.

ANALYSIS

The analysis in this research can be conducted through comparing the usage of emojis and traditional pictorial symbols, one of which is the frequency of usage, which involves analyzing how often emojis are used compared to traditional pictorial symbols in digital communication. Frequency analysis is important to understand the extent to which humans rely on symbols to convey messages. With the emergence of emojis and digital technology, traditional pictorial symbols such as hieroglyphs, ideograms, or even culturally specific symbols tend to experience reduced usage in everyday communication.

Another aspect is in the context of usage, examining the situations or contexts in which humans are more inclined to use emojis or traditional pictorial symbols. Through the analysis of situations or contexts in which humans are more inclined to use one of these types of symbols, we can gain deeper insights into the dynamics of modern communication.

Humans use emojis and traditional pictorial symbols to convey emotions, concepts, and messages quickly and intuitively. However, behind their usage, there are significant differences in meaning and interpretation between emojis and traditional pictorial symbols, which affect how these messages are understood and received by the recipient. Analysis is conducted on meaning and interpretation, comparing the meanings and ways of interpretation between emojis and traditional pictorial symbols in digital communication.

In terms of humans' perceptions of emojis and traditional pictorial symbols, visual impressions can be analyzed regarding how humans perceive visual diversity between emojis and traditional pictographic symbols. This analysis highlights differences in how users interpret and respond to emojis and traditional pictorial symbols in the context of digital pictorial communication.

Analysis of emotional expression is also conducted by identifying whether users consider emojis to be more expressive in conveying emotions than traditional pictorial symbols. In addition, contextual appropriateness is analyzed to assess whether humans consider emojis or

traditional pictorial symbols more suitable for specific communication contexts. In this context, it is important to examine how humans choose between emojis and traditional pictorial symbols depending on the situation or message they want to convey. Appropriate usage according to the context can enhance communication effectiveness and reinforce the messages conveyed.

The influence of technology on preferences and usage of emojis and traditional pictorial symbols is also analyzed, including the impact of technological advancements, such as identifying how technological developments affect user preferences in choosing emojis or traditional pictorial symbols. In an era where technology is rapidly advancing, humans have broader access to various communication platforms and digital tools that enable them to interact in a more dynamic and multifaceted manner. This phenomenon not only affects how humans communicate but also alters how humans understand and use various forms of visual expression such as emojis and traditional pictorial symbols.

This research also analyzes usage factors such as speed, convenience, and compatibility with digital communication platforms that influence the usage of emojis and traditional pictorial symbols. Furthermore, it examines implications on interpersonal communication, by investigating how the use of emojis and traditional pictorial symbols can affect the quality and effectiveness of interpersonal communication in the digital era. In interpersonal communication, the use of emojis and traditional pictorial symbols has the potential to influence the quality and effectiveness of communication between individuals.

RESULTS

From the analysis conducted, it can be found that the research results indicate that the frequency of emoji usage is generally higher compared to traditional pictorial symbols in digital communication. This shows a tendency for humans to choose expressions that are simpler, more direct, and universal in conveying messages. Emoji, with its easily recognizable and understood characteristics across various demographics,

provide advantages in the efficiency and effectiveness of online communication (Tang & Hew, 2019).

However, the usage of traditional pictorial symbols still remains relevant in certain contexts. For instance, in formal communication or within specific cultural contexts, traditional pictorial symbols may hold deeper meanings and symbolic values compared to emojis (Hirschheim & Newman, 1991). Therefore, despite their potentially lower frequency of use, traditional pictorial symbols still have their place in the digital communication ecosystem.

The research results also reveal that humans tend to use emojis in informal or casual situations, such as conversations among friends, group chats, or social media. Emojis are often utilized to express emotions, convey humor, or add nuances of confidence in such informal conversations (Riordan, 2017). Conversely, traditional pictorial symbols are more frequently employed in formal or professional communication contexts, such as official letters, business presentations, or written instructions. Humans opt for traditional pictorial symbols because of the formality and professionalism they convey, as well as their ability to deliver messages clearly and unequivocally without any ambiguous nuances.

There is an exception where users use emojis in the context of formal communication to add a personal touch or convey a message more lightly without diminishing the essence of the message. For example, in an email to a colleague, a user might insert a smiling emoji to show appreciation or a thumbs-up emoji to emphasize approval.

The widespread and easily recognizable use of emojis makes them considered highly expressive tools in conveying feelings and emotions. However, the meaning of each emoji is not always clear to all users, especially due to differences in interpreting facial expressions or certain symbols. For instance, a smiling face emoji seen by one individual might be perceived as an expression of joy, while others might interpret it as a sign of confusion or discomfort (Jaeger et al., 2019). This indicates that emoji interpretations are not always consistent and can vary

depending on the communication context and personal experiences of each individual.

On the other hand, traditional pictorial symbols, such as symbols in sign language or iconic symbols used in certain visual communication systems, often have more standardized and clear meanings (Patel et al., 2007). This is due to the widespread adoption and understanding of the meanings of these symbols in society. For example, a circle symbol with a cross line in the middle is generally known as a prohibition or prohibition symbol, both in the context of roadways and digital environments. Therefore, these symbols tend to have more consistent meanings and are easily understood by various parties involved in communication.

Although traditional pictorial symbols may be more easily understood universally, they also tend to be less flexible in conveying emotional nuances or message complexity (Vlassis, 2004). Unlike emojis, which have very subtle variations in facial expressions or gestures, traditional pictorial symbols tend to have simplicity in form and meaning, limiting their ability to convey nuanced emotions or more complex concepts. For example, in conveying deep concepts like love or profound happiness, emojis often can convey richer variations in emotional expression, while traditional pictorial symbols may only be able to convey such messages in a more limited and less diverse manner.

Furthermore, the differences in shape, color, and facial expression between emojis and traditional pictorial symbols affect how humans interpret the messages conveyed. Emojis offer more variety in conveying emotions, situations, and other concepts compared to traditional pictorial symbols, which are often more limited in their availability and visual variety (Völkel et al., 2019). The visual diversity between emojis and traditional pictorial symbols also influences the suitability of messages with the user's culture or background. Some emojis may be more relevant or easily understood by users in certain cultures or languages, while traditional pictorial symbols may be more universal in their use worldwide (Lu et al., 2016).

This research also indicates that emojis have an advantage in expressing emotions directly and clearly. Compared to traditional pictorial symbols, which tend to have broader meanings and can depend on specific contexts, emojis offer greater availability in terms of emotional expression variations. For example, one can easily select a specific emoji that matches their feelings, such as a smiling face emoji, a sad one, an angry one, or even one expressing love, with just a few taps of the finger.

In addition, the use of emojis is often considered more intuitive in conveying emotions, especially for users accustomed to digital technology. With appealing designs and direct visual representations, emojis can be quickly understood by various user groups, including those who may have language or cultural limitations in understanding certain symbols. This makes emojis a popular choice in digital communication, which often requires quick and effective responses (Sampietro, 2020).

However, there are cases where traditional pictorial symbols may be more suitable or expressive in conveying specific emotions, especially in cultural or specific situational contexts (Hoye & Kaiser, 2007). For example, in certain cultures, traditional pictorial symbols such as those from classical Chinese writing systems or religious symbols carry deep emotional and spiritual meanings for the respective users. The use of these symbols may contain more complex and profound meanings compared to emojis, which may feel too simplistic or shallow.

Each pictorial symbol has a more traditional or specific context of usage. For instance, symbols like the crescent moon icon are widely used to represent Islam, or the heart symbol symbolizing love and affection. Meanwhile, emojis have various interpretations and uses that can vary depending on the digital communication platform used. This gap in usage context becomes an important consideration for users when choosing between emojis and traditional pictorial symbols.

Equally important is the understanding of cultural and social contexts in the use of emojis and traditional pictorial symbols. Each symbol carries cultural associations that can vary among different user groups. For example, the thumbs-up gesture may be seen as a sign of

approval or support in Western culture, but in some other cultures, it may have a different meaning or even be considered impolite (Togans et al., 2021). Therefore, the use of emojis and traditional pictorial symbols should take into account sensitivity to diverse cultural contexts.

Abusch (2015) states that the pictorial semantics suggest that this approach is an intriguing intersection for various disciplines such as art history, comic studies, computer science, linguistics, philosophy, and psychology. Pictorial semantics are related to theoretical frameworks for analyzing and understanding the role of technology, particularly emojis, in modern pictorial communication.

Pictorial semantics may provide information on how researchers approach the interpretation of emojis and traditional pictorial symbols, considering factors such as perspective-centered semantics and pragmatic interpretation. The interdisciplinary nature of this approach suggests a comprehensive examination of the subject, integrating insights from various fields to understand the impact of technology on pictorial communication.

Research by Maier (2024) reveals the nature of visual communication and its relationship with linguistic theory, particularly focusing on comics and how they convey meaning through sequences of images. The research also discusses the comparison between traditional pictorial symbols and modern pictorial communication forms such as emojis, within the context of digital communication.

Emojis and traditional pictorial symbols as forms of pictorial communication are highly relevant, as they reflect the impact of technology on how individuals convey meaning and emotions in digital interactions. Furthermore, the comparison between comics and films as forms of pictorial discourse highlights how technology has influenced storytelling techniques and narrative structures in the digital era. The research provides a theoretical framework and context for understanding the impact of technology on pictorial communication, which can inform studies comparing emojis and traditional pictorial symbols in the digital age.

Furthermore, Grosz (2023) states that expressiveness in communication, particularly emojis, is used as a pictorial tool to encode expressive meanings in digital written communication. This defines expressiveness as the communication of feelings, affects, or emotions.

Emojis, as modern pictorial symbols, serve as a means to express emotions and affects in digital communication, much like traditional pictorial symbols used in various forms of communication throughout history. Both emojis and traditional pictorial symbols are deemed effective in conveying emotions and have a significant impact on digital communication practices in the modern era.

Emojis can substitute for the loss of non-verbal cues such as facial expressions, hand gestures, and intonation when transitioning from face-to-face communication to written text in a digital context. This research is relevant for comparing emojis with traditional pictorial symbols in terms of effectiveness, communicative power, and adaptability in the digital era. Lexical and pictorial analyses are suitable for understanding emojis as contributions to a broader understanding of their linguistic and semiotic characteristics, which can be compared and contrasted with traditional pictorial symbols.

Maier (2023) states that the semantics and pragmatics of emojis emphasize their role as pictorial elements in communication. This investigates various aspects such as the formal semantics of emojis, their pragmatic enrichment through inference of cohesive relationships, metaphors, and metonymy, as well as their integration with text to form multimodal discourse.

In this research, emojis function as a form of pictorial communication in the digital era. The semantic and pragmatic aspects of emojis are crucial components of the comparative study between emojis and traditional pictorial symbols. Furthermore, this research discusses the dynamic nature of communication in the digital era, where emojis play a significant role in enhancing text communication with visual elements. This aspect aligns with the examination of the impact of technology on pictorial communication, comparing the use of emojis with traditional pictorial symbols in various contexts.

CONCLUSION

The conclusion of this research indicates that the use of emojis is generally higher compared to traditional pictorial symbols in digital communication. This suggests a tendency for humans to opt for expressions that are simpler, more direct, and universally understood when conveying messages. Emojis, with their easily recognizable and comprehensible characteristics across various demographics, offer advantages in the efficiency and effectiveness of online communication. However, the usage of traditional pictorial symbols remains relevant in specific contexts, such as formal communication or within particular cultural settings, where they may carry deeper meanings and symbolic values compared to emojis.

The research findings also reveal that emojis are predominantly used in informal or casual situations, such as conversations among friends, group chats, or on social media platforms. They are often employed to express emotions, convey humor, or add nuances of confidence in such informal conversations. On the contrary, traditional pictorial symbols find more frequent usage in formal or professional communication contexts, such as official letters, business presentations, or written instructions, owing to the formality and professionalism they convey, as well as their ability to deliver messages clearly and unambiguously without any potential misunderstandings.

Furthermore, the research highlights that emojis have an advantage in expressing emotions directly and clearly compared to traditional pictorial symbols, which often have broader meanings and may depend on specific contexts. Emojis offer greater availability in terms of emotional expression variations, allowing users to easily select specific emojis that match their feelings with just a few taps. However, there are cases where traditional pictorial symbols may be more suitable or expressive in conveying specific emotions, especially in cultural or specific situational contexts, where they carry deeper emotional and spiritual meanings compared to emojis, which may feel too simplistic or shallow.

Each pictorial symbol has its own traditional or specific context of usage, while emojis have various interpretations and uses that can vary depending on the digital communication platform used. This distinction in usage context becomes an important consideration for users when choosing between emojis and traditional pictorial symbols. Equally important is the understanding of cultural and social contexts in the use of emojis and traditional pictorial symbols, as each symbol carries cultural associations that can vary among different user groups.

Finally, both emojis and traditional pictorial symbols have their roles and values in the digital communication ecosystem. Users need to consider their own contexts, purposes, and preferences when choosing between these two types of symbols. Awareness of the differences in interpretation and usage of these symbols is also crucial to ensure effective and open communication in the current digital era.

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