



Original Article

# Impact of Multimodal Digital Media Communication on Generation Z's Language Use and Literacy Practices



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## Abstract

*The impact of increased use of digital communication mediated through social media was observed during COVID-19, in particular, on students' language and its use in the classroom and their literacy practices. This led to an investigation of the use of multimodal digital communication in the language of Generation Z users at the focal university. Social-semiotic theory of multimodality in digital communication provided the theoretical framework for the study. A quantitative survey was done with 394 respondents on the frequency of use of different apps for different purposes, as well as students' perceptions of the impact of social media on their literacy practices. Subsequently, qualitative interviews were done to gain a more in-depth understanding of the survey results. The results of this mixed-methods study indicate that Generation Z users are well aware of the affordances and constraints of different social media platforms and apps and use this knowledge judiciously for varied purposes and audiences in their digital communication. This has also impacted their crafting and interpreting of digital multimodal messages. The study findings have implications for teaching English (and other languages); similarly, other disciplines also need to take into account students' changing literacy practices to enhance their learning outcomes.*

**Keywords:** Digital communication, Generation Z, Literacy practices, Multimodal communication, Social media apps

## INTRODUCTION

Recently, there has been an exponential increase in multimodal communication mediated through digital media. Facilitated by the use of various digital media platforms and apps, this trend has impacted the norms and conventions of language (grammar, vocabulary) and its use (appropriacy) during and post-pandemic, in particular (Lyons, 2018). A message, for instance, using a social media platform, usually employs more than one mode to get across to the target audience hence called a multimodal message. Similarly, the use of ways of the same message differs from one social media app or platform to another to suit its affordances and layouts as well as the expectations of its users. For example, WhatsApp and Facebook have text or captions preceding pictures, while the format of Instagram has the image in the foreground with the caption in the background, normally written below it. More importantly, it has been observed that the use of digital multimodal communication has affected Generation Z's literacy practices, wherein literacy is not a linear process anymore.

The present research aims to investigate the use of various modes employed in communication and mediated through social media to analyse the influence of digital multimodal communication on Generation Z's choice of modes concerning their purpose and intended audience. The Social-semiotic theory of multimodality in digital communication provides the conceptual framework for the study. The concept of multimodality has been perceived differently by linguists in various contexts about different theoretical frameworks that have been employed thus far to ascertain its use in and effects on semiotic configurations. Thus, it does not have one consistent or accepted definition. Following Kress and Van Leeuwen (2001), this study uses the concept of mode as one that comprises language, music, image, sound, gesture, and other such semiotic patterns to 'create' or 'read/interpret' a multimodal message mediated through technology or digital media more specifically (Kress, 2009, 2012).

Additionally, the study is inspired by New Literacy Studies, a fast-growing field in education highlighting how new literacies are different from traditional print literacy, while including images and their implications for learning and literacy education (Street, 1997, 2017). University students using different social media platforms or apps were taken as participants to investigate whether there are any changes in their language and its use due to different modes deployed in producing (crafting) and interpreting (reading) a multimodal text and the way the message is designed regarding the affordances and constraints provided by different social media platforms and apps. More specifically, the following research question guided the design and conduct of the study:

- How does multimodal digital communication affect Generation Z's language use and literacy

practices in the post-COVID-19 world?

## **LITERATURE REVIEW**

Since the concept of multimodality differs in its definition and understanding from one context to another, we start first with tracing its historical development and draw on Kress's line of reasoning to elucidate its conceptual significance to set the ground for using it as the basis for this study. Kress (2012), tracking down multimodal discourse analysis as an implication of sociolinguistics, asserts that the foremost stress in multimodal discourse analysis is on "understanding the link between environments of language use and features of the language use" (p. 35). Defining the orienting principles of multimodal discourse analysis in this light, he recounts the various and differing modes on which it relies: textual, speech, image, music, and others. According to Kress, it is the combination of these modes that, when drawn together along with other available semiotic resources, results in a unified and coherent whole. He puts a particular emphasis on two factors directly aligned with our current research problem while underlining the differences in principles of "coherence" from one cultural community to another.

First, the apt use of modes for the recognition of discourses in text in a particular situation; and second, language as just one mode among many other modes to make meaning; hence the different means of making meaning should be given equal importance and attention as language. It is the use of several available modes such as emojis, stickers, pictures, sounds, visuals, and speech apart from textual on social media apps and websites that instigates the use of language differently within different contexts because of the difference in situations and settings that Kress and other theorists have rightly identified with culture and community. Concluding the discussion with the significance that social semiotic multimodal discourse analysis continues to retain, he observes that the ceaseless transformation of social, political, and economic framings of this world is also continuing to bring a change in the domain of meaning-making.

Constantinou (2005) in his review of three relevant works on the concept of multimodality has identified two dominant approaches to multimodality. While one approach to multimodality is close to the Hallidayan concept of Systemic-Functional Linguistics, the other approach emphasizes discourse analysis and critical discourse analysis. In other words, any work driven by Systemic-Functional Linguistics focuses on the making and evolution of multimodal systemic theory no matter what its reference point is. In contrast, any work pursued within the paradigm of multimodal discourse analysis is more concerned with the object of analysis through the meaning-making process of multimodality. But instead of resisting or competing with each other, Constantinou (2005) argues that these two approaches straddle "to culminate in an unmistakable analytical and functional discourse" (p. 603).

A roundtable conference on the relationship between multimodal discourse analysis and technology was held at Georgetown University in 2002, soon after the publication of 'Multimodal Discourse' by Kress and Van Leeuwen (2001), to expound the relationship between discourse and technology within the domain of multimodality (Constantinou, 2005). Papers presented at the conference were collected and compiled by LeVine and Scollons (2004) in an anthology called *Discourse and Technology: Multimodal Discourse Analysis*. Reviewing the collection and stressing on the gaps left, Abdulfattah indicates that the selection of topics is too extensive to be consistent. For understanding and theorizing the relationship of technology and meaning-making, he goes on to recommend a far-reaching appreciation of technology, which it must be noted, indeed could not find its manifestation at the time due to the limited possibilities in technological advancements. He further suggests a marriage between semiosis and technology to incorporate the shaping constraints within a particular context. This became the central point for discussion concerning the use of social media apps and platforms in a study by Jovanovic and Van Leeuwen (2018) discussed earlier and has also informed the design of the present study.

Extending the concept of meaning as the choice that gave more weightage to interpretation than structures and processes of language, Kress and Van Leeuwen (2020) produced a seminal work called 'Reading Images: The Grammar of Visual Design', in which they theorized the visual as one among many modes of meaning-making having its grammar, thus laying the foundations of the theory of social semiotics in multimodality and completely renouncing the concept of what may now be referred to as

linear reading. Not only did this revolutionary change expand the scope of the idea of grammar and systems of language, but a sudden shift of mode to visual transformed the whole meaning-making process as well. Therefore, in one of their following works, 'Multimodal Discourse: The Modes and Media of Contemporary Communication' (2001), recognizing the shift from monomodality to multimodality on account of the emerging digitization, Kress and Van Leeuwen stressed how multimodal resources available within one socio-cultural setting qualify the making of meaning at all levels and in any mode.

Almost a decade later, Kress (2012) defined multimodality as “the normal state of human communication” in the age of globalization where more importance lies with image than the text itself in describing anything (p. 1-5). Developing a theory to demonstrate a connection between communication and learning, Bezemer and Kress (2015) together advanced the concept of social semiotic theory for multimodal communication to convince with more stress this time that present-day learning is also multimodal, where modes are taking shape in combination such as image, writing and design, or gesture, posture, and speech, recognizing far-reaching changes in the course of the preceding three decades in social and digital domains, thus inviting semiotic changes that are yet quiescent, but materializing with time. Kress and Van Leeuwen published the third edition of 'Reading Images' in 2021, acknowledging the fact that the changes brought about in the social and semiotic world have refashioned the environmental frames surrounding the mode of image that was once marginalized. Their grammar of visual design was now expanded to preconfigured affordances available in multimodal technologies such as Word and PowerPoint to illustrate normative social rules. They also pointed attention to how pictures and accompanying text and otherwise are carefully placed while, for instance, composing the layout of media such as newspapers.

Another growing field of study that sits beside the theory of multimodality, often titled the 'New Literacies Studies' also acknowledges the range of literacies beyond print, and digital literacy in particular, for effective communication in the 21st century (Gee, 2015). Chakrabarty's (2020) definition is beneficial in understanding the recent developments in the field of New Literacy Studies. According to her, these “. . . involve[s] the identification of multiple, multimodal, multilingual literacies changeable according to the varying space and time and challenged when relating to power” (p.1), hence, encompassing new types of literacy beyond print literacy, especially 'digital literacies' and literacy practices embedded in the ever-growing culture of social media platforms and apps. The 'New Literacy Studies' thus acknowledge different modes in addition to a language for meaning-making with far-reaching implications for learning and literacy practices using digital communication.

As stated earlier, with the rise in technological advancements over the last 25 years or so, it was observed that communication and learning are multimodal (Kress et al., 2001). This led to the realization of the need to move from page to screen to reshape English language teaching and acquisition in schools. As early as 1996, Jewitt shared an experiment carried out on students aged 14 and 15 at an inner London Secondary School while studying Steinbeck's novel 'Of Mice and Men' (1937) and its multimodal transformation to CD-ROM (1996) with video and observational data at play (Sakr, et al., 2016). The components of the novel as CD-ROM, biography, map, diary, and dossier, provided learners with two viewing options titled 'text' focusing on font and plain white background, and 'visual' accompanied with video clips having speech, voice, music, movement and gestures along with hyperlinks to texts with the latter set at default. It was noticed that students preferred the visual option. As students were supposed to write a day in the life of a character of their own choosing as part of their coursework, it was also observed that students focused on the characters of George or Lennie after merely its textual reading in contrast with a wide range of characters that they chose after using the CD-ROM. Confronting and resisting another abiding given that visual elements on the screen are the source of distraction for students, Sakr, et al., (2016) argued that writing, when shifted to the screen, also serves as a visual element because organizational rules of the screen are different from the administrative rules of the page. He concluded the study by challenging the common belief held at that time that learning English for students in a multimodal environment is “problematic” since the attention of their focus is shifted to more significant motivations.

The question of whether the use of digital media is changing our language or not was investigated

by Baron (2009). Based on her findings, she advocated that instead of focusing on vicissitudes that are normative and cyclical for a language to evolve, we should rather draw attention to our changing attitudes towards language, such as less focus on spelling and punctuation and no regard for apostrophes when writing abbreviations such as 'don't' or 'can't' induced by their use. The quantitative analysis of instant and text messages of college students in her study revealed that out of 11,718 words, only 31 were abbreviations, also referred to as online jargon, and 90 acronyms, of which 76 were 'lol', an acronym for 'laughing out loud' in instant messages, while only 47 abbreviations out of 1,473 words were found in these text messages. Highlighting two predominant attitudinal shifts, she pointed out the 'negative' impact of the use of technology in the name of creativity in the classroom. Consequently, she proposed that schools or teachers should be able to define their standards while engaging with writing. What Baron may have failed to recognize at the time while analysing instant and text messages was the sweeping or far-flung consequences of digital media communication that were to fashion language and its use, as specific features of modes, multimodal configurations, and their semiotic functions on digital media took centre stage in few years, and during and post-Covid 19, in particular, (Sakr, et al., 2016) to bring an unparalleled shift in contemporary discourse and communication patterns.

In a more recent study, Jovanovic and Van Leeuwen (2018) investigated the semiotic technological design of social media to discern its impacts on dialogue, both in its structure and its multimodal realization. The study has inferred that dialogues on several social media platforms, including Facebook, WhatsApp, Instagram, Snapchat, Twitter, Viber, and Flickr are bound within the 'affordances' and 'constraints' of pre-formatted or predetermined templates and that a multimodal framework on these platforms consisting of layout, typography, images and emojis allow the users to express nonverbal features of face-to-face conversation (p. 685). Jovanovic and Van Leeuwen further elaborate on the differences between user-to-user and system-to-user interaction to locate the aspects of multimodality within written and public communication to argue that systems also have the power to initiate and that users are left to react only in preset ways (p. 686, 693). It contended that although the use of visual semiotics can be observed on almost all social media platforms, their frequency is dependent on the kind of affordances and patterns the app or platform provides. While Instagram, Snapchat, and Flickr are used for posting or sharing pictorial media, apps such as Messenger and WhatsApp encourage the verbal mode for initiating a series of private or public evaluative as well as emotive responses or conversations (p. 687-88). Finally, the study concluded with an acknowledgement of users' ability to find their way into a real dialogue despite constrained and rigid structures.

The above literature review indicates that the social-semiotic theory of multimodality has led to some research studies, with the more recent studies focusing on its materialization and influence on digital media and its use. However, the above review also highlights the need for further research on the impact of multimodal communication mediated through digital media and apps on the way the meaning-making process takes place in language in the post-COVID-19 world, and for Generation Z users in particular. Hence, this study focuses on the impact of digital multimodal communication, necessitated by the imposition of lockdowns around the 'real world' in the wake of COVID-19, on Generation Z's language and its use and their literacy practices, more generally.

## **RESEARCH METHODOLOGY**

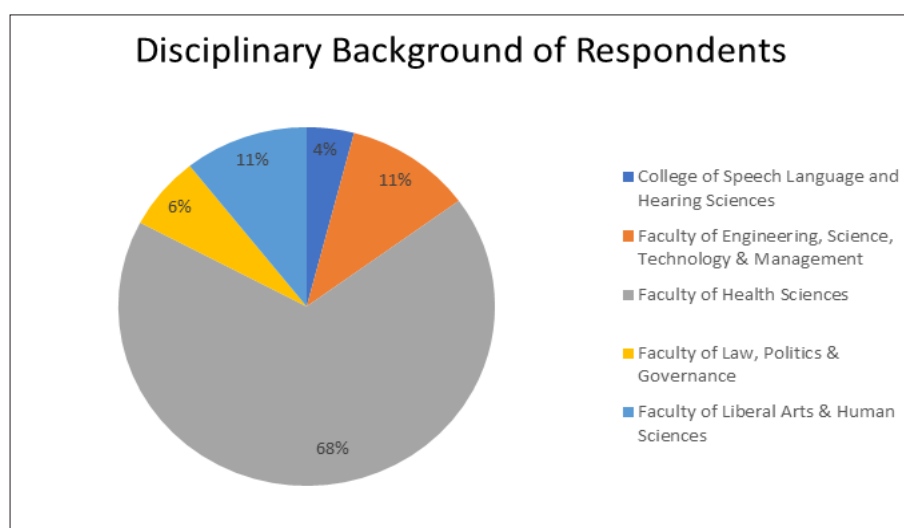
This is sequential mixed-method research. The aim is to map the use of different digital platforms and apps for multimodal communication by Generation Z students and their perceptions and experience of its impact on their use of language regarding the purpose and target audience of their message. For the quantitative part of the study, an online survey was distributed among students of Generation Z aged between 18 and 24 from at least one program of each faculty at a private sector university in Pakistan (hereafter called the focal university). Non-probability consecutive sampling was used for the quantitative part of the study. The sample size for the quantitative survey was calculated using open epi software for sample size for cross-sectional surveys. Prevalence (p) was taken at 50%, bond of error at 5%, and confidence level of 95%. The calculated sample size was 384, while we received 394 responses.

SPSS and descriptive statistics were used to analyse the survey data. Frequency and percentages were calculated for categorical variables such as gender, year of study, name of program and institution, while

numeric variables such as age were summarized by mean and standard deviation. For the qualitative part of the study, an interview guide was developed based on the survey responses to get an in-depth understanding of participants' socialization into the new modes of multimodal communication provided by digital media, particularly during the pandemic, and its impact on their language use and literacy practices for interpreting or 'reading' digital multimodal communication and producing or 'writing' a digital multimodal message for maximum audience uptake. For the qualitative part, five semi-structured interviews were conducted among the survey participants. The interviewees were randomly selected from those survey respondents who had agreed to a follow-up interview. The interviews were transcribed and analysed using thematic coding to identify themes and sub-themes in the data.

## FINDINGS & DISCUSSION

A total of 394 responses were received from undergraduate students aged between 18 and 24 against the required sample size of 384 participants for the quantitative part of the study. The respondents belonged to a variety of academic disciplines ranging from liberal arts and human sciences to engineering and medicine (see Figure 1).



**Figure 1:** Disciplinary background of survey respondents

To probe the impact on participants' reading and writing the think-aloud strategy (Carell, 1989) was used during the interview. The participants were shown the announcement of a poster competition in plain text with its font size and headings carefully considered, followed by a poster designed based on the same information with some visual elements integrated for students of the focal university. Subsequently, another sign was shown to the participants, meant for an international audience and designed for travellers on highways, with a baby with blue eyes and blond hair in its foreground, instructing them to be vigilant with seatbelts for children's safety. The sections that follow are organized into three fundamental thematic areas: Frequency and use of different social media apps, change in literacy practices, and impact of affordances and constraints in other apps on producing/writing and interpreting/reading multimodal messages mediated through digital media.

### Frequency and Use of Different Apps

To determine the frequency and use of social media apps, the participants were given five options—always, often, sometimes, never, and not-applicable—for their interactional engagement with social media apps that people most commonly have been found using in Pakistan, including Instagram, Twitter, Snapchat, Facebook, YouTube, and WhatsApp. The majority of respondents (84%) shared that they always use WhatsApp for communication, in contrast to only 5% using Twitter for this purpose (see Figure 1).

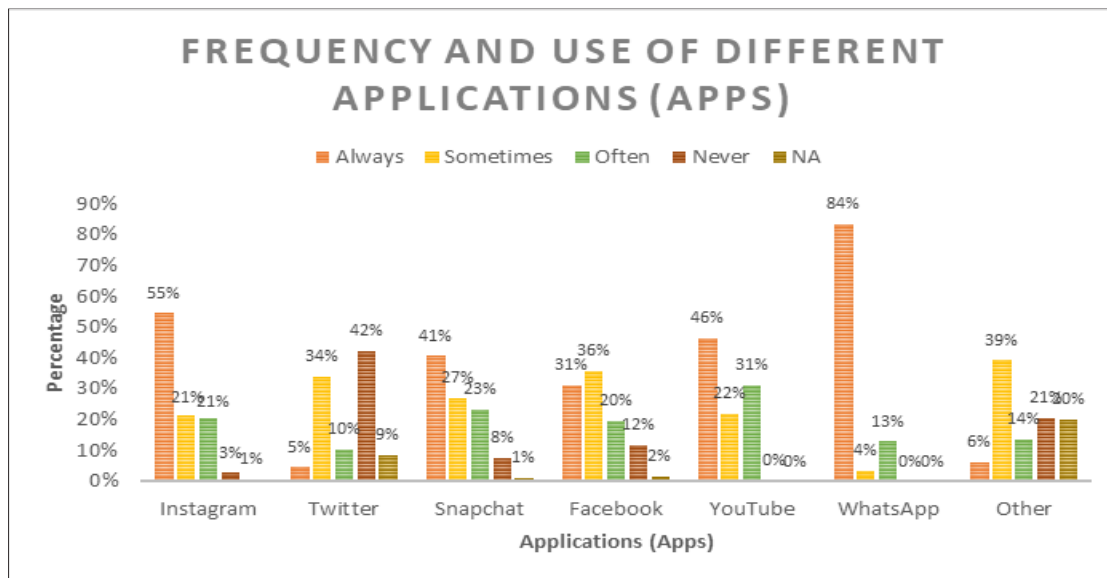


Figure 2: Frequency and use of social media apps for different purposes

It was found that the preference for social media platforms and apps changed considerably with a change in the purpose - for example, entertainment instead of communication. Hence, while 31% of participants said that they 'often' use YouTube for entertainment; 22% of participants reported using Facebook, while only 2% and 4% reported using WhatsApp and Twitter for entertainment (see Figure 3).

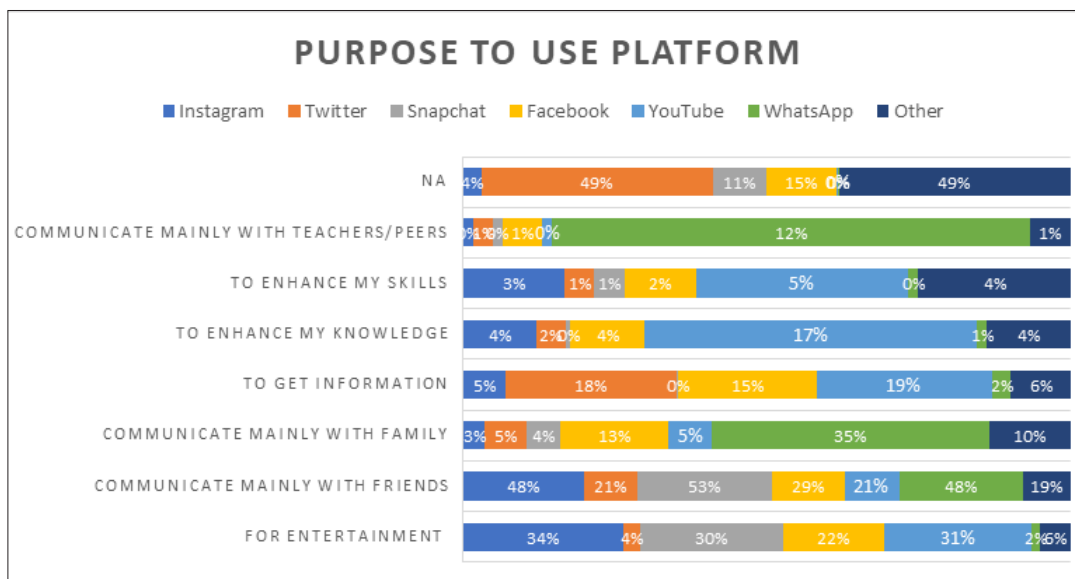


Figure 3: Purpose of using social media platforms

As mentioned earlier, WhatsApp was cited as the most frequently used app for communication despite the presence of so many other platforms of digital communication. This led us to probe the participants' preference for WhatsApp further during the qualitative interviews. Almost all the participants said that they use it mainly for communicating with friends and/or family members, citing a number of reasons for their preference, such as the availability of multiple options, including instant messaging, voice messaging, and video-calling with convenience, as well as its accessibility for everyone to have a 'heart-to-heart communication'. Sakr, et al., (2016) and Kress (2012) have pointed out that the meaning of anything is composed by people based on their selection and configuration of different modes. Accordingly, one of the participants shared her preference for using WhatsApp to communicate with friends in contrast to her preference for using Instagram, which in our survey is the second most frequently used app after WhatsApp. This is mainly because on WhatsApp 'it's easier to learn or grasp an idea of anything' even for the digital non-natives (Interview # 2).

A more recent shift was reported by these Generation Z users from WhatsApp to Instagram on account of the visual elements that the latter offers in its semiotic resources more than the former and for its spatial patterns and user interface primarily designed keeping this in view. The interviewees' preference for Instagram to communicate with friends explains their heavy reliance on multimodal ensembles emphasizing pictorial modes over text. This also explains why Twitter is the least frequently used app unequivocally, with its limitations of semiotic multimodal resources compared to Instagram. Users' interaction with YouTube and Snapchat also traces its dependence on all the other modes than the linear written text. However, their engagement on Snapchat is from one user to another user, while it is from the system to users on YouTube (see Jovanovic & Van Leeuwen (2018) for a detailed analysis of the relational aspects with regards to initiating conversations with the interplay of system and users). The analysis, however, makes it evident that the more multimodal the app, the broader its popularity with Generation Z users.

### Impact of Affordances and Constraints in Different Apps on Producing and Interpreting Digital Multimodal Messages

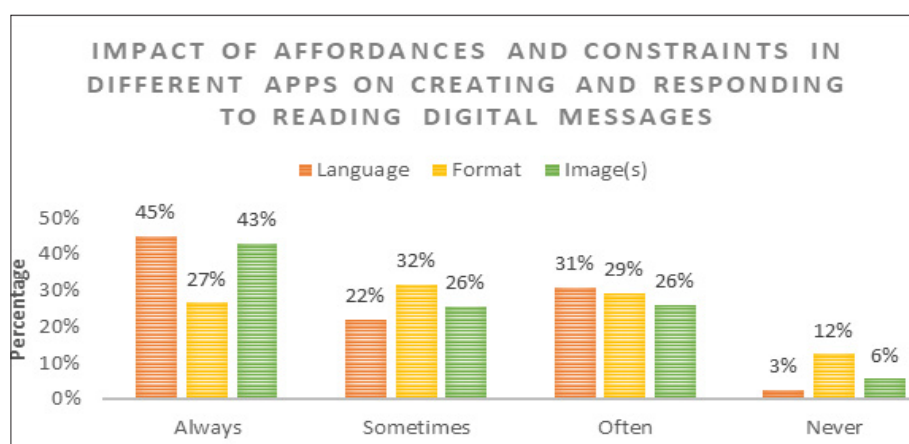
The specific impact of multimodal affordances and constraints in creating and responding to digital messages provided by different digital media platforms and apps was prefigured in the survey questionnaire with considerations of language and format such as font and size, bold and alignment, and images. Results show that 45% of participants always take into account the use of language, while 27% consider the format, and 43% focus on the use of images when 'writing' or producing messages compared to only 3%, 12% and 6% not concerned with the use of language, format or use of images respectively (see Figure 4). One of the interviewees shared that:

"SMS service has been a disaster. I send messages at this hour and the people will receive it at night or even, at times, they don't receive it. So that was the main reason I shifted to WhatsApp because I know the messages are being delivered immediately" (Interview #2).

Another participant stated:

"Instagram is used to sort of show off their life. You don't put something you don't want to show off- you will post it in your story but not on your handle- [if you don't want to show off] - so it [your post] goes- your story is gone- no one will remember it but if you take it off your handle people will know that you took it off your handle- people will know that you took it off- but the story is gone" (Interview # 5).

This indicates that Generation Z users are well aware of the affordances and constraints of different digital platforms and apps and, hence use them accordingly for communication and the target audience of their messages.



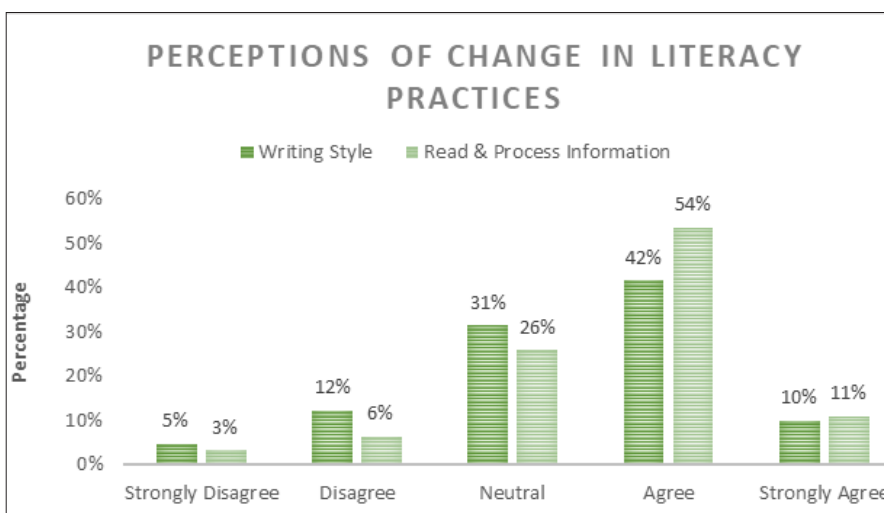
**Figure 4:** Use of language and other modes in producing and interpreting digital messages

During the interview, a discussion on 2-3 self-selected small extracts of conversations that the participants had recently had with their friends on their class WhatsApp group revealed the excessive use of emojis to validate their expressions and to mitigate the effects of sarcasm, the capitalization of certain letters of alphabets or words to accentuate whatever was to be said, use of pictorial modes

such as images and videos, and use of abbreviations that were coined on social media. A couple of participants had also made use of GIFs and voice notes in those extracts of their chats, pointing towards the increased use of multimodal communication. The selected use (and non-use) of different multimodal features provided by digital media and apps also seem to be conveying messages to their audience. For example, one participant shared that people consider her serious just because she does not employ the use of emojis often when chatting with people, while this is not the case. Similarly, all of them reported that their use of languages such as level of formality and use of code-switching or plurilingualism varies according to their relationship with their addressees. For example, the same message that they are to send to someone senior to them will be crafted differently concerning multimodality if sent from WhatsApp or Instagram as compared to an email, which comes with its prefigured semiotic constitutions. This indicates that there is a significant impact on users of affordances and constraints of different apps when designing messages.

### Change in Literacy Practices

To measure the change in literacy practices, if any, the participants were asked whether the use of social media platforms and apps had changed in any way they write and read messages (see Figure 5). Interestingly, 52% of respondents agreed that digital multimodal communication had impacted their writing process, while 31% remained neutral, and only 17% felt that this had had no impact on their literacy practices. Similarly, when asked whether the use of social media apps had changed the way they read and process information, 65% of participants agreed, and only 9% disagreed with this proposition.



**Figure 5:** Participants’ perception of the impact of digital multimodal communication on their literacy practices

In response to an open-ended question in the survey allowing them to elaborate on their responses regarding the impact of social media on their writing or reading of messages, one of them admitted to having developed the tendency to use more slang and informal language, while another said that their writing skills are improving due to using social media due to more focus on choosing the right level of formality with regard to the intended audience:

"Especially in the classroom context, I would prefer using ‘aap’ [address term to show politeness in Urdu] because . . . there is no particular reason but I prefer giving respect to people even if they are juniors. I would call them ‘aap’ because I don’t have amicable relationships with them. But with my friends, I will call them ‘tum’ [address term that shows equal status of the interlocutors/informal tone]" (interview # 5).

Some of them also said that they have been able to improve their vocabulary and reading skills through their use of social media. Another aspect highlighted by the participants in crafting and interpreting digital messages was the use of emojis and GIFs:

"We use emojis- another thing, GIFs- that's used more because it takes one second, but it sums up everything- it expresses emotions more than text e.g. you don't want to continue a conversation [you use an emoji]. It ends the conversation" (Interview #1).

"I use most of the time it's for it's to express my emotions better. Because if I am a very sarcastic person and if I say some sarcastic I send a very sarcastic message just like this, it would sound rude. So, I add some laughing emojis at the end" (Interview # 4)

"If someone sends me a text without emojis, I would assume that the tone of this conversation is very serious, so I would in reply as well stop using emojis. It sets the mood for me at least" (interview # 5)

Furthermore, the participants showed their awareness of using other visual elements according to the kind of social media app, which they felt shaped audience expectations:

"On Instagram story I'll just put this [showing a video clip] and that's my story- I like 'friends' [a TV series] I cannot put 1000 clips in my feed-people will think she's gone mad- but on my story, it's gone [before I post the next video clip]" (Interview # 4).

The participants shared plurilingualism as another trend (affordance) in drafting digital messages. This included both code selection and use of code-switching as well as the use of transliteration e.g. Urdu written in 'Roman English'[the English Alphabet], in informal messages, in particular. To probe further, the 'reading' practice, as mentioned earlier, the think-aloud strategy was used with the participants during the interview. Four out of five participants shared their preference for the poster over plain text because of its visual elements.

It was observed that while reading the first poster, their focus was mainly on the visual element, with their eyes moving back and forth from the picture to the text in bold and not resting on the 'small print' in the text. On the other hand, when reading the plain text, their eyes moved on the page, reading the text more linearly and focusing their attention on the 'content' of the text while using headings, words and/or sentences that were in bold, italics or underlined. In the second poster, the baby with blue eyes appealed to them the most, followed by the use of different colours and large-size text wherever used in the poster, leading their eyes to dart from one bit of information to another. Reading/interpreting of multimodal messages was reported as both selective and non-linear

"[If] It's a lot of text why would I want to read it? But if I see a picture, then I would want to read it" (Interview # 1).

"I look at big text first. Poster competition, pictures. Even if I don't read it, I would know it's something related to earth and environmental changes, and then.... This poster is we know where to look for which thing" (Interview# 2).

"Eyes running all over the page- NOT left to right and top to bottom- focusing on picture, font size- anything that looks interesting- NOT reading information that is not of interest [hence sometimes 'important' information is missed!]" (Interview # 4).

Thus, no linear reading was observed and/or reported in 'reading' or interpreting the message in the multimodal posters in contrast to the plain information text, containing the same information as the first poster but without any other visual elements such as colour or pictures.

The results of the quantitative survey shared above indicate a strong tendency of Generation Z users studying in various faculties of a private university in Pakistan to employ multimodal digital communication. The analysis and findings of the semi-structured interviews also highlight the 'the vortex of modes' that users employ when communicating through digital media and its effects on their learning and literacy practices Hosenfield's (1977) work on strategies used by successful language learners). Our findings indicate careful consideration by Generation Z users of language, format, and image in whatever form while designing messages; this helps us in taking forward Jovanovic and Van Leeuwen's (2018) argument of conversations on digital media platforms being controlled within the affordances and constraints of prearranged templates. The results indicate that different modes in each app have different material values and spaces for the organization with which they are laden and it is the visual that is at the centre and precipitates the rest most of the time.

The changes in literacy practices reported by the study participants due to the varied 'contexts' of

different social media apps and platforms provide further evidence of the change in literacy practices highlighted by Street (2017), from defining literacy as reading with a cognitive focus to literacy being embedded in the social and cultural traditions of a community, and its implication for the teaching of literacy in schools. At the same time, an uncompromising acceptance of most of the respondents for changes that they felt in their reading and writing practices during the survey reinforces the claim of Sakr, et al., (2016, p. 81) “from the linearity of the written text to the modularity of the contemporary written elements of multimodal text”, reiterating the concept of multiple literacies beyond print (Gee, 2015). This accounts for indistinct overlapping boundaries of reading and writing, bringing the academic and digital worlds together by tying them in the same knot behind which the underpinning idea is the recognition of more than one mode in the meaning-making process.

## **CONCLUSION & IMPLICATIONS**

The current research study aimed to examine how the recent trend of multimodal digital communication, heightened during the pandemic, has influenced the use and choices of language and other modes as well as the literacy practices of Generation Z in a Pakistani higher education setting. The study findings have implications for teaching English (and other languages), particularly concerning using multimodal material for enhancing students' comprehension of and response to reading texts. Similarly, other disciplines also need to take into account students' changing literacy practices to enhance their learning outcomes. For example, as Generation Z users employ multimodal strategies for crafting and interpreting digital communication, they should be encouraged to use methods such as infographics for reading, summarizing and sharing textual information for in-class discussions and digital posters for oral presentations. Furthermore, the study findings about the heightened awareness of Generation Z's students in higher education settings of the different modes used for crafting messages in regard to the affordances and constraints of other apps indicate that students should be encouraged to use formatting, colours, font size, headings and images in their oral class presentations and written task/research reports for improved communication with their target audience, whether these are peers, their teachers and /or external 'clients' in the broader community.

The study findings have important implications for teaching/learning of English language in higher education settings in non-native English-speaking countries, in particular, as well as the study of literacy practices more generally, necessitating faculty of other disciplines to take into account students' changing literacy practices in their classrooms.

## **Competing Interest**

The author had no competing interests.

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