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An investigation into the reading direction preferences of Generation Z:
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An Investigation Into The Reading Direction Preferences Of Generation Z: A Study On The Design Of Asian Winter Olympics Posters

Zhou Yaru*
College of Creative Arts, Universiti Teknologi MARA
Shah Alam, Malaysia
Email: 2022733105@student.uitm.edu.my

Azahar Harun*
College of Creative Arts, Universiti Teknologi MARA
Melaka, Malaysia
Corresponding author
Email: azahar581@uitm.edu.my

*These authors contributed equally to this study

ABSTRACT

Visual design is a crucial tool for communicating ideas through images rather than words or printed text. It enables readers to visually interpret and understand information, potentially solving problems across various life aspects. Traditional reading patterns usually flow from left to right and from top to bottom, while some Asian scripts are written in horizontal rows from left to right or in vertical columns from top to bottom. Lines guide the eye between sections and visual elements, while white space allows the eye to rest and focus on targeted areas. The purpose of arranging the five elements of layout design—text, images, lines, shapes, and white space—is to capture the reader's attention and effectively convey information. In this study, researchers conducted a visual content analysis of a poster with 40 Generation Z respondents to investigate their reading direction. This generation is known for its frequent use of various gadgets and preference for short, simple text to comprehend content. The researchers intentionally designed a vertical banner-sized poster representing the Asian Winter Olympics as a sample. The events included Sapporo 1972 and Nagano 1998 in Japan, PyeongChang 2018 in South Korea, and Beijing 2022 in China. The poster is segmented into four sections from top to bottom, each depicting one of the Winter Olympics events from 1972 to 2022. Coding categories were developed to analyse text layout, lines, and white space. However, the colours and images of these emblems and symbols of the Winter Olympic Games were predetermined, so colours and images were not examined in this study. This exploratory study of Generation Z offers an analytical approach to understanding the reading orientation of Generation Z and serves as a basis for future research. Additionally, several informants tended to scan the poster for information, even though it was not indicated that the poster could be interacted with via an app on their mobile phones.

Keywords: *Winter Olympics, Generation Z, Layout Design, content analysis*

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INTRODUCTION

Visual design is a vital communication tool that conveys ideas via images rather than words or printed text. Design aids in helping readers visually interpret and understand information, addressing challenges in various facets of life. Traditionally, readers move from left to right and from top to bottom, while some Asian characters are written either left to right in horizontal rows or top to bottom in vertical columns (Siek et al., 2023). Lines direct the eye between sections and elements, and white space provides a resting area to focus on particular sections. The arrangement of the five layout design elements—text, images, lines, shapes, and white space—aims to draw the reader's attention and relay information (Siek & Lee, 2021). In the age of integrated media, the evolution of poster design offers increased creative opportunities. The advancement of new media has introduced fresh perspectives on communication concepts and forms. Posters can be employed across various design fields in both two- and three-dimensional forms. Combining graphics with text gives a significant edge in information delivery, creating visually compelling and comprehensible presentations that cater to the quick absorption of information required by modern audiences. The growing necessity for rapid information comprehension calls for distinctive visual experiences. Olympic poster design is a form of visual communication that goes beyond the constraints of language, ethnicity, and national boundaries (Ceken & Aybay, 2021). It not only captures moments of excitement but also provides an alternative to the tedium of extensive text reports.

As a visual medium, posters incorporate aspects of Olympic advertising that reflect the era and the cultural characteristics of the host country (Lilea, 2023). They also capture the artistic, political, and social contexts of their time (Shapiro, 2009). The first modern Olympic Games were held in Athens in 1896. At that time, there was no significant poster design; only the cover of the report to the International Olympic Organizing Committee was used, which later became the emblem for subsequent games. During the second Olympic Games in France, a memorable poster depicted a woman dressed in authentic French chivalric attire, holding the three traditional French weapons—the foil, the sabre, and the heavy sword—in her right hand. Since the 20th century, posters have been instrumental in announcing the Olympic Games. Their broad appeal and ability to display eye-catching and memorable images make them an excellent medium for disseminating information about the Games. Similar to any influential promotional material for an educational exhibition, a concise description generates several questions, and the main function of a poster is to promote the upcoming Olympic Games. However, the mention of "striking and memorable images" suggests an appeal to visual elements and their aesthetic attraction (Hughson, 2010). The new generation of posters emphasises narrative representation to convey meaning, uses direct eye contact to enhance interactive meaning, and customises information value, salience, and framing to establish constitutive meaning (Zhang, 2023). The primary purpose of visual design is not just to create an appealing look but also to evoke emotions that enhance the overall experience (Shiau Gee et al., 2019). Visual design is a multidimensional and practical form of fine art applicable in various domains (Liu & Ji, 2023; Wang, 2023).

Nevertheless, Generation Z, known for its frequent use of various gadgets (Ling, 2020), prefers short and simple texts for content comprehension. This study aims to analyse the reading direction of Generation Z. The researchers opted to create a vertical banner-sized poster of the Asian Winter Olympics as a sample, featuring Sapporo 1972 and Nagano 1998 in Japan, PyeongChang 2018 in South Korea, and Beijing 2022 in China. The poster is divided into four sections, each representing one of the Winter Olympics events from 1972 to 2022. Coding categories were developed to analyse text layout, lines, and white space, but as the colours and images of the emblems and symbols were predetermined, they were not the focus of this study. In this study, a content analysis was conducted with 40 Generation Z respondents to provide a comprehensive examination of Generation Z's reading direction and to reflect on how aesthetic preferences in reading directions have evolved in response to societal changes.

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The theoretical framework for this analysis follows Feldman's four-step structure of criticism, which includes description, analysis, interpretation, and judgement (Feldman, 1993, p.100). This study aims to engage the public and serve as a conduit for enhancing understanding of visual arts, shedding light on Malay symbolism, and fostering greater appreciation for the meanings behind an artist's work. It also seeks to encourage public appreciation and understanding of the concept of beauty within the context of Malay cultural traditions in visual arts.

LITERATURE REVIEW

Ancient civilizations recorded their experiences through cave paintings, but the advent of writing enabled the storage of records in textual form. Eventually, advancements in printing technology during the late thirteenth century revolutionised the dissemination of information on a larger scale. The use of imaging technology has significantly contributed to the education and culture of various socio-economic groups. Furthermore, it has made advice more widely available in diverse forms, increasing its effectiveness and reach. The Spanish historical missionary González de Mendoza suggested in his 1585 book "History of the Great and Mighty Kingdom of China" that Gutenberg might have been influenced by Chinese printing technology (Shen, 2023).

Chinese printed materials were introduced into Germany via two routes: one through Russia and the other through Arab traders who transported books. Gutenberg is believed to have used these books as templates for his printing innovations. The advent of printing addressed the issue of error-prone and time-consuming manual transcription, thereby accelerating the pace of cultural dissemination and development (Zhou, 2022). The necessity to support the printing process led to the development of Gutenberg's graphic design work. Initially, woodblock prints were utilised only by a select few—kings and monks in Europe—to create posters, which limited their popularity. Posters did not begin to be used on a large scale until the 17th century when the East India Company started printing advertising posters. The popularity of commercial posters increased further during the 18th century. The origins of posters can be traced back to the widespread use of paper-based mass reproduction techniques (Hu, 1996). Cultural posters typically include advertising for social, leisure events, and exhibitions (Sun & He, 2016). The layout of these posters is crucial because the aesthetic appeal and persuasiveness of the design influence daily life and contribute to the development of modern cultural posters (Zhao, 2019).

Visual Communication Design

Visual communication design is an expressive form that employs visual elements to convey information to an audience. It is the aspect of visual design that focuses on establishing a harmonious relationship between form and content. Visual design is a practical art applicable to many facets of communication. It involves a range of modelling techniques, including two-dimensional and three-dimensional shapes, as well as dynamic and static art forms. In their book "Reading Images: The Grammar of Visual Design," Kress and Van Leeuwen discuss the existence of diverse discourses in human communication. They posit that images function as social symbols that convey narratives and concepts (Kress & Van Leeuwen, 2020).

Visual Design Features

Visual semiotics defines interpersonal meaning as the interactional significance of images. This encompasses the relationship between the image creator, the person or object depicted in the image, and

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the viewer (Yu, 2019). The "Winter Olympics" poster is designed to promote the Winter Olympics in Asia. Its focus is on analysing the logos of the last four Winter Olympic Games held in Asia and highlighting the connection between the Winter Olympics mascots and the backgrounds of the posters.

Significance of Visual Design

In cross-cultural engagement and cultural integration, posters are recognized as design artefacts and fundamental advertising tools, with colour regarded as the most significant and captivating element of the composition (Pryshchenko, 2021). Graphic design serves as a potent means of visual communication, grounded in design and aesthetic principles, and employs components such as shapes, colours, and fonts to create visually engaging materials. New technological advances necessitate the use of highly visual information, which demands expertise in visual design skills (Kuba & Jeong, 2022). A well-designed layout underscores the importance of layout design by eliminating the necessity for viewers to read every word meticulously to comprehend the entire content on the screen. Modality is crucial for determining interactive meaning, encompassing high, medium, and low modalities. This includes factors like colour saturation, readability, brightness, and image adjustments (Yu, 2019).

Sequence of Reading

Mastering visual design in poster creation involves understanding and applying the principles and rules of visual perception. The behaviour of visual enhancement in masterful visual design stems from and evolves with nature; it is the deliberate application of these principles to craft images that effectively transmit a specific message within a given visual context (Lin, 2019).

Principles of Visual Design

The initial step in generating a poster layout using visual design principles is to ascertain the placement of visual elements to establish a clear flow. This primarily involves arranging the various primary and secondary elements on a two-dimensional plane, considering their hierarchical relationships. The design process should also take into account the anticipated starting point and reading rhythm of the audience (Xu & Wei, 2009).

a) One-way visual movement: Unidirectional visual processes encompass three main types: linear, horizontal, and diagonal. Diagonal processes evoke strong impacts and unstable emotional responses, whereas horizontal and linear processes offer stable and serene experiences.

b) Visualisation of the centre of gravity: By optimising the placement of the visual focal point according to the needs of each project, information can be conveyed effectively (Zhang, et al., 2013).

c) A repeating visual pattern: Designers utilise repeating patterns to instil a sense of unity, continuity, and rhythm in images. This is accomplished by arranging identical or similar elements in a repetitive visual sequence, enhancing the graphic's distinctiveness and the image's vivacity.

d) Guided visualisation: Designers employ dots and lines to unify components and create a cohesive visual composition.

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e) Disorganised visual perception: Scattered composition considers screen size by positioning images at various points in the layout and adjusting their density and sparsity to manage visual attention.

Elements of Visual Composition in the Layout of a Poster Design

Poster layouts typically comprise text, images, lines, shapes, and blank space. The configuration of these elements and the realisation of the intended design concept occur through the deconstruction of hierarchy (Hong & Hwang, 2006). Layout design strategically positions visual elements within a grid to effectively communicate a specific message and engage the reader's interest. Müller-Brockmann, a prominent figure in Swiss graphic design, seamlessly integrates the grid concept with his design philosophy. He presents the grid as a methodological system that embodies a designer's organised approach to conceptualising work, demonstrating the use of mathematical thinking to create organised, analyzable, and clear designs that feature a rigorous framework that is both practical and visually appealing (Brockmann, 2016). The application of grid systems entails strict adherence to fundamental principles.

Arrangement of Poster Layout

a) Alignment: Alignment refers to how a designer creates connections between different elements within a design. Repeating design elements within an image increases visual consistency and the image's ability to capture the reader's attention (Stieger, 2015). Regarding text, designers often prefer justified (aligning text to the left or right edge) or centred alignment (aligning text to the centerline of the design) (Soegaard, 2020).

b) Visual Hierarchy: In effective layout design, visual elements are arranged to prioritise the most critical focal points within the image. Hierarchy enables the viewer to be systematically guided through the intended sequence of the image. Attributes such as size, colour, contrast, and position are used to emphasise the hierarchy of important elements in the layout.

c) Contrast, combined with placement and balance, can make a design distinctive and appealing. By integrating various design elements such as contrasting colours, different typographic styles, and diverse aesthetics and moods, a unique and one-of-a-kind product can be harmoniously created.

d) Visual Balance: Visual balance pertains to the equilibrium of elements within an image. When designing your layout, seek ways to achieve balance in the visual elements on your page, whether through symmetry or balanced asymmetrical arrangements.

e) Proximity: Proximity concerns the relative closeness of elements within a layout. It enables viewers to easily associate different visual components of a project. The Golden Ratio layout draws from the Golden Ratio (1:1.618), esteemed as a standard of beauty in Greek architecture and influential in social aesthetics (Staff, 2023). In the realm of graphic design, designers often apply the golden ratio to divide pages, and the use of the golden spiral can enhance the visual appeal of images (Gjonbalaj, et al., 2021).

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Components of Design Composition

Layout design is composed of five primary elements: text, images, lines, shapes, and white space. These fall into two categories: textual content and visual content. The essential elements of poster design centre around the composition of text, graphics, and images. Text is vital in layout design and includes various components such as titles, subtitles, body text, and appendices; font and design choices significantly affect the visual impact of your layout. A harmonious and inclusive design integrates multiple languages. Moreover, dynamic information ensures that screen elements are suitably aligned. Text placement is crucial for the reading experience, considering human physiology and readability. Text can be positioned in diverse ways within a design: adhering to left alignment, right alignment, centering, slanting, following a pattern shape, utilising colour gradients, or varying in style. Grids facilitate the systematic arrangement of points, lines, and areas within layout elements. The placement of images and graphics within a layout is contingent on an individual's perception of the subject (Xu & Wei, 2009). Accurate communication of information and effective expression of design themes are achieved through precise proportions and distribution of graphics, affording control over the visual impact.

Asian Winter Olympics

At various Winter Olympics hosted in Asia, different symbols, iconography, and mascot designs carry distinct cultural meanings, aesthetic preferences, and generational traits (Olympics Winter Games, 2022). To provide readers with an in-depth understanding of the visual design at the Winter Olympics, researchers have selected information visualisation diagrams that present complex textual information in a clear, comprehensible graphical format.

RESEARCH METHODOLOGY

This study employed qualitative research methods and utilised design thinking (Brown & Wyatt, 2010; Simon, 1969) to create a poster sample in the form of a portrait-style banner. The theme focused on the Winter Olympics in Asia, highlighting events like Sapporo 1972 and Nagano 1998 in Japan, Pyeongchang 2018 in South Korea, and Beijing 2022 in China. However, the colours and images of the emblems and symbols from these Winter Olympic Games were predetermined, so they were not a subject of discussion in this study. Using a purposive sampling method (Campbell et al., 2020), a total of 40 Generation Z design students were invited to discuss their reading direction when viewing this printed poster. Coding categories were developed to analyse the text layout, lines, and white space.

Design Thinking Process for Designing a Sample Poster

Design thinking consists of five phases: empathise, define, ideate, prototype, and test. This study aims to understand users, challenge assumptions, create a prototype, and test it with participating respondents. The five stages are explained as follows:

1. Empathise: The goal was to design a poster to better understand the audience, Generation Z, and their reading directions. The researcher, a college lecturer in China, observed students and engaged in objective discussions with them, noticing their enthusiasm for the Olympics. Recognizing that today's youth spend a significant amount of time looking at monitors and smartphone screens, the researcher was inspired to investigate Generation Z's reading direction when looking at a Winter Olympics poster from Asia

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2. Define: The researcher aimed to establish a clear perspective based on an understanding of Generation Z, assessing their interest in printed materials and whether they prefer short and simple texts for content comprehension.

3. Ideate: Creative brainstorming produced three potential solutions involving text layout, lines, and white space. The poster was organised into four sections, each representing one of the Winter Olympic events from 1972 to 2022. The design integrated visual infographics and augmented reality to effectively and artistically emphasise the design implications, cultural significance, and humanitarian aspects of the emblems, mascots, and sports images associated with the Winter Olympics in Asian countries (refer to Figure 1).

4. Prototype: Out of the three concepts, one was selected by three design lecturers, including the researcher. This selected design was a vertical banner-sized poster. The prototype served as a model of the final poster, enabling viewers to identify design flaws and confirm accuracy before the commencement of production (refer to Figure 2).

5. Test: The prototype was distributed to a participant in soft copy format for feedback and as a pilot test to gauge its effectiveness (refer to Table 1, item 1).
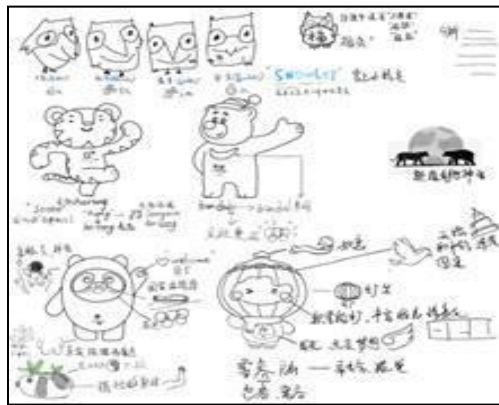

Figure 1. Brainstorming of the graphic elements and rough layout
(Source: Author's personal collection)

Figure 2. Prototype
(Source: Author's personal collection)

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Research Population

Forty Generation Z digital media students from a university in Jiangsu Province were invited to participate in a visual survey concerning the aforementioned poster. The researcher presented a colour poster in front of the class. Each participant received an A4 sheet of paper with the poster printed on it and was asked to record and fill in their reading order preferences based on the layout, lines, and white space of the text on the poster. A total of four hours was allocated for participants to complete the task.

DATA ANALYSIS

Raw Data Collected

After excluding the first participant who responded via soft copy, thirty three (*n*= 33) valid datasets were collected from the initial 40. The remaining eight datasets were either incomplete or blank and therefore not included in the analysis, resulting in an 83% collection rate (Figure 3).
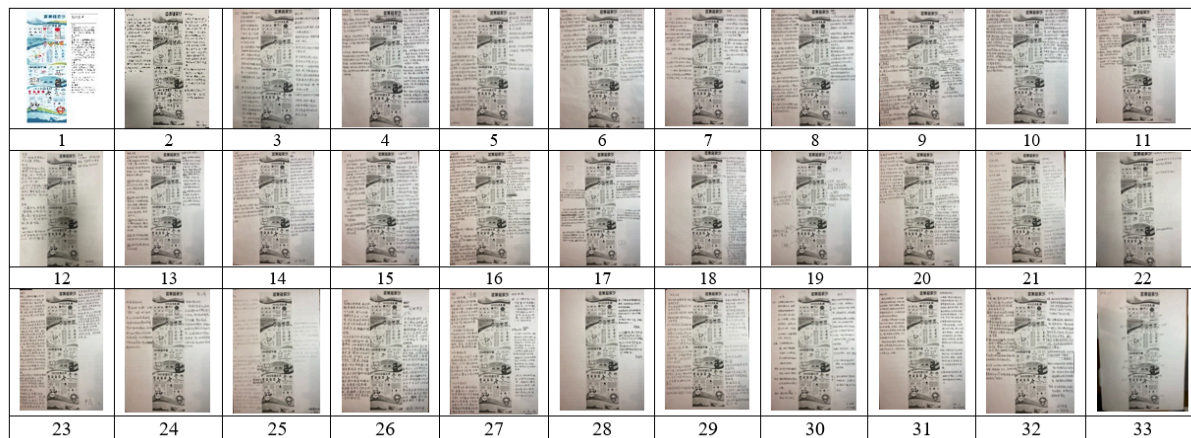

Figure 3. Gen Z responded to the sample poster of the Winter Olympics of Asia
(Source: Author's personal collection)

Content Analysis by Three Industry Experts

The researcher enlisted the expertise of three industry professionals to perform a content analysis on the 33 valid datasets (De Sola Pool et al., 1952). The three experts were (A) a visual communication lecturer at a university, (B) a graphic designer with 11 years of relevant professional experience, and (C) a manager of a design studio with 6 years of professional experience.

Thematic Analysis

This study employed a thematic analysis approach that involved raw data collection, coding, theme development, and report writing (Braun and Clarke, 2006). The researchers manually encoded keywords based on data preprocessing, categorised and combined data according to potential relationships between

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keywords, and transformed data into a structured and organised format. Ultimately, thematic concepts related to text layout, lines, and whitespace were identified, qualitative theories were formulated, the research questions were addressed, and the findings were summarised. The data were organised using first-order codes, second-order dimensions, third-order themes, and aggregate dimensions (Figure 3).
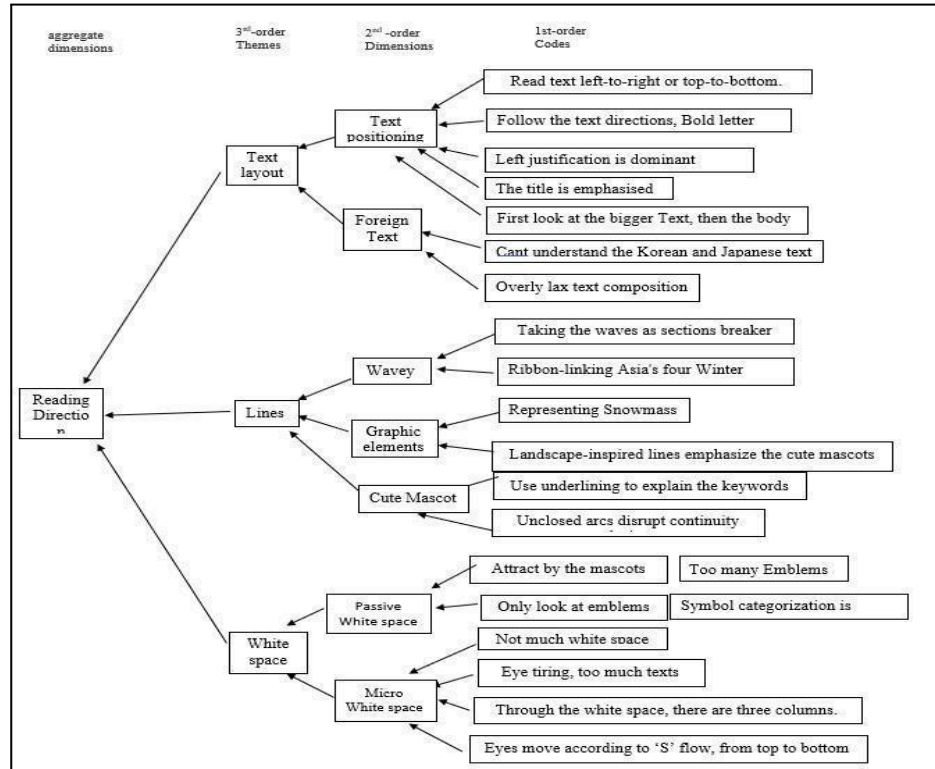

Figure 3. Thematic analysis of reading direction of the Winter Olympics Asia Poster

CONCLUSIONS

Text layout, lines, and whitespace provide a navigational guide for the audience's eyes. Typically, in a Z-layout, readers scan from the top left to the top right, then to the centre, and from the bottom left to the bottom right corner. This study applied thematic analysis to the valid data content reported by 33 participants, from coding to theming to dimension aggregation.

Rayner et al. (2001) suggested that reading is accomplished by processing words letter by letter. However, in this study, the poster was in Chinese. To read Chinese characters, one must understand the basic radicals or decompose them into components to read and comprehend the Chinese words on the poster. This was not an issue since all participants were Chinese. However, the inclusion of Japanese and Korean words caused confusion during reading. Additionally, the layout design featured interconnected ribbon lines, which made segregating different sections challenging, but elements and icons like snowflakes and skiers were well-received. Regarding whitespace, participants appreciated wavy elements that helped divide sections and isolate text blocks, enhancing fluidity and readability. The researchers also observed that Generation Z's preference for short, simple texts has become a standard, causing participants to favour images over text.

Moreover, although some participants were inclined to scan the posters with their mobile phones to

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obtain information, they were not informed that this was possible through an interactive app. The research implication of this study is that incorporating engaging images and graphics, as well as effective use of text layout and whitespace, can capture the attention of Generation Z viewers, potentially increasing the time they spend on a page. For practical implications, designers might consider substituting detailed text with visual formats, such as integrating an interactive application that allows users to scan images or symbols on posters to view short videos, which suits the lifestyle of Generation Z. This exploratory study provides an analytical process of Generation Z's reading orientation and serves as a reference for future research.

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