Inhibiting the Proliferation of Infections During the Covid-19 Pandemic: Appraising the Place of Graphics Design

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Abstract

The coronavirus, or Covid-19, originally appeared in Wuhan, China, and its first confirmed case was reported on November 17, 2019. Science and technology played important roles in testing, analyzing, and determining the virus's deadliness, as well as in disseminating preventative measures to help save lives. These acts were strategic steps towards taming the virus. After lives were lost to the coronavirus, it became lethal, and vaccinations to stop its spread appeared to be ineffective. Therefore, it became imperative to raise awareness of the necessity of preventative actions. After the outbreak, no area of science or technology was able to achieve widespread behavioral change or awareness on its own without utilizing a few aspects of art, particularly graphics. These aspects include auditory, visual, and audiovisual media, which are essential elements of graphics design. The elites and common folks learned about it and the importance of staying safe through the use of graphic elements including posters, social media, flyers, memoranda, press releases, sign language, radio and television advertisements, etc. Based on agenda-setting theories as well as user and gratification theories, this study employed mixed methods to investigate the important roles that art, using different graphic design components, played in enhancing science and technology to counteract the pathogenic virus's (coronavirus's) sporadic spread. A sample of 370 students from three higher institutions in Southwest Nigeria was surveyed, and it was claimed that, of the many components of graphics, the majority of the respondents learned about the virus's emergence through audiovisual media. This study made many recommendations, including that governments, organizations, schools, NGOs, businesses, religious institutions, and others think about using audiovisual media as a successful tool for informational communication as well as for generating publicity and advertising for products and services, all the while smoothly reaching the intended target audience.

Introduction

As long as the human race exists, there is no doubt that it will continually be faced with varying challenges emanating from how unfair and/or mindful it relates to the environment (Estep & Hoekstra, 2016; Hd, 1960; Santos, 2012). As a result of the incessant upsurge of the world's population, some activities, such as environmental degradation, health, and other natural or man-made disasters, are inexorable. In similitude with other life-threatening pandemic outbreaks that have been witnessed globally in the past years, such as the H1N1 influenza pandemic in 1918–1920 (Feehan

& Apostopoulos, 2021), etc., the coronavirus that emerged in Wuhan, China, on November 17th, 2019 came with an intense level of deadliness (Licastro, Rajasekharan, Monego, Segat, D'Agaro, & Marcello, 2020; Lin, Liu, Gao, Nie, & Fan, 2020) and a high rate of transmissibility (Cao, Cai, & Xiong, 2020). The question that is worth asking is that, after all the attempts from the scientists and technological aids in China during the fresh stage of the outbreak couldn't have efficiently curtailed the permeation of the virus, how did the information, behavioral change, precautionary measures, and awareness creation transmitted from China to the entire world?

As a result of the focus of this study, out of all the awareness-creation measures adopted by China, reporting stands out. Reporting can be described as giving a spoken or written account of something that one has observed, heard, done, or investigated (Xing-mei, 2004; Muir, 1984; Jun-song, 2003). Hence, to seamlessly carry out the dissemination of information in the process of reporting, some communication channels must be taken into consideration.

The dissimilar channels and media through which a seamless art of reporting becomes effective are therefore properly taken care of by audio, visual, and audiovisual media, which are all what make up graphics in art as well as mass communication (Li, 2016; Tao-pin, 2007; Gutteling, & Wiegman, 1996). It is necessary to note that the outbreak of the virus seemed to be deadly after lives were lost to it, creating a dent in the world's population since the vaccines to prevent its rapid spread seemed to be unyielding and ineffective. Hence, the need to embrace the art of reporting, otherwise known as awareness creation and behavioral change of the mass, for prophylactic measures became expedient. Consequently, in channeling various forms of awareness, no part of science and technology did it all alone without maximizing almost all the components of publicity and advertising in graphics.

The quick change Large-scale surveillance, early reporting and situation monitoring, the setting up of medical facilities and supplies, and other preventive measures were all crucial in bringing the epidemic under control both nationally and in Wuhan AlTakarli, the epicenter of the outbreak (2020).

Graphics, in art, manifests itself as the art or process of creating print media and audiovisual communication by combining typographic components, audio, visual, and/or audiovisual elements, principles of design, et al. for the purpose of conveying messages to the mass and/or target audience. It was through the engagement of print media and audiovisual media such as posters, fliers, radio, sign language for the deaf, and television advertisements, which are solely rooted in graphics, that the elites and grassroots citizens became aware of the outbreak of the pandemic, the need to stay safe, and varying helpful precautionary measures.

This study hereby traced significant roles played by art, using graphics, in augmenting science and technology to neutralize the sporadic spread of the pathogenic virus (coronavirus). This study also assessed the role graphics played in empowering many youths with or without formal art education, yet explored graphics as a source of income during the lockdown that stirred economic hardship in Nigeria and globally. During the pandemic lockdown, there were economic challenges as a result of the academic activities, physical hawking cum trading, and business transactions that halted for months; hence, the need to maximize other possible means for people to financially empower themselves became expedient. Therefore, many youths resorted to exploring the virtual means to educate themselves and monetize their different acquired skills, most of which are in graphics.

This research aims to evaluate the role that art plays in balancing the destructive consequences of the COVID-19 pathogenic infection by enhancing the roles of science and technology. This will further reposition the place of art in global relevance and stir awareness of why art, science, and technology are

inseparable and should be allowed to coexist. Its objectives are to further inform the following expositions: How has art, through one of its facets (graphics), been able to complement science and technology in neutralizing the pathogenic viral infection COVID-19? How did Graphics further help many Nigerians to make ends meet during the economic meltdown stirred by the pandemic?

Human interactions with society are often informed and influenced by their sense of sight. The vividness of visual messages appeals to the sub-consciousness of the viewing public. Visual information directs the mind and creates a connection between the viewers and the visually promoted reality, which makes the audience accept the actuality of what they see. Visual aids and graphics have proven to be resourceful in the field of education research. Texts and simplified images enhance learning and information recall.

Maria Neurath collaborated with Nigerian health officials in the 1950s to develop the renowned isotype information design system, which is now crucial to halting the leprosy outbreak (Roberts, 2020). Vibrant, visually stimulating content was also used to spread awareness of the Ebola and HIV/AIDS epidemics. However, public health organizations, governmental bodies, and media outlets use graphic and visual information to influence a behavioral change that flattens the transmission curve in order to stop the spread of coronavirus infection in Nigeria. This is especially effective in public places where people are likely to come into contact with the virus. As a result, this study evaluated the important role graphic design plays in preventing the coronavirus from spreading.

This study is grounded in agenda-setting and uses and gratifications theories. Agenda-setting, formulated by McCombs and Shaw in 1972, explores how the media dictates the importance of issues to the mass audience. During the COVID-19 pandemic, the media shifted focus from economic challenges to the severity of the virus, influencing behavioral changes and new perspectives among Nigerians. The uses and gratifications theory (UGT), introduced by Katz and

Blumler in the 1940s, examines why people use certain media, their needs, and the gratifications obtained. In the pandemic, Nigerians utilized media differently – some sought updates on death and casualties, while others, particularly youths, used it for financial empowerment. UGT emphasizes media consumers' free will in deciding usage and its impact. This study reveals that despite seeking gratifications, Nigerian students found certain media facets, especially those conveying casualty alerts, to be alarming, demonstrating a nuanced view of the media's influence (McCombs & Shaw, 1972; Katz & Blumler, 1974).

During Nigeria's COVID-19 pandemic, measures like lockdowns and medical support were enforced by President Buhari and state governors. The WHO and local agencies, including the FMH and NCDC, played key roles in awareness and prevention. Emphasized preventive measures included handwashing, social distancing, respiratory hygiene, and staying informed. Information dissemination employed diverse channels across urban and rural areas, utilizing television, radio, social media, and visuals in multiple languages. The awareness campaign categorized visuals into optimism, regulatory instructions, and alertness, employing graphic designs to effectively sensitize Nigerians to the virus's reality and promote preventive measures, focusing on instilling confidence amid challenges.

The Optimism classification of the graphic visuals caters for various graphic visuals and other means of correspondence that were adopted by the above-mentioned key health agencies and bodies, all in a bid to create the assurance and courage needed by the public to stay safe in lieu of panicking. One of the visuals that was created to promote assurance was a memo released by the Nigerian Honourable Minister of Health, Dr. Osagie Ehanire, on February 27, 2020, for public awareness regarding the reported first case in Nigeria on the same day. In the press release, the minister informed the public of the first case detected in an Italian that entered the country through Lagos. To curtail the public's psychological panicking, the

minister thereby expressed optimism that the situation is under control and the said Italian is under proper care at the Infectious Disease Hospital, Yaba, Lagunas. The release, the minister informed the public of the first case detected in an Italian that entered the country through Lagos. To curtail the public's psychological panicking, the minister thereby expressed optimism that the situation is under control and the said Italian is under proper care at the Infectious Disease Hospital, Yaba, Lagunas. The pictorial format of the memo from the minister is displayed below.

Plate 1a: A means of communication employed by Honourable Minister of Health, Nigeria on February 27, 2020 to confirm the first case of coronavirus in Nigeria. Source: Google search

Plate 1b: A Graphic Visual promoting optimism
Source: Google search

Similarly, in the medical sphere, it is usually believed that prevention is better than cure (Leòn, 2002; Shanmugaratnam, 1985); hence, in a bid to neutralize the sporadic spread of COVID-19, there were some graphic visuals that were maximized to promote regulatory instructions. The said visuals were intended to create an eye-opener effect on viewers in learning how to embrace precautionary measures during the pandemic period. As a result of the need to ensure people stay safe, the graphic visuals under this classification appeared to be massively in circulation. The massive production was a result of the need to create visuals that promote preventive measures, which was not a role played by the government alone. Other stakeholders, such as corporate organizations, religious bodies, schools, health centers, etc., also joined in the production of many a graphic visual that promotes regulatory instructions against the virus; the gesture was born as a way of supporting community services by the above-mentioned stakeholders.

Plate 2a: A visual communication conveying precautionary by The Measures against Covid-19 virus. students and host Source: NCDC official website
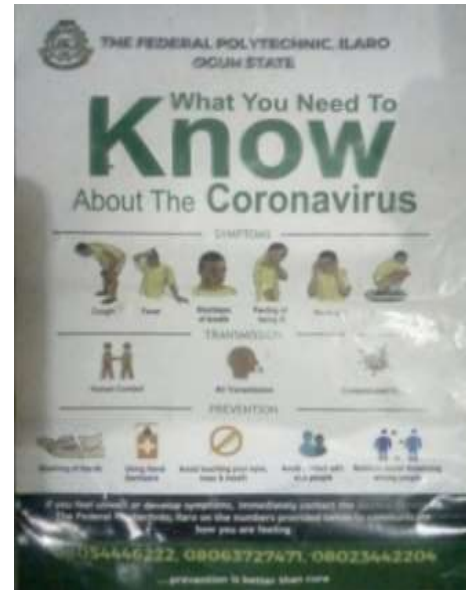

Plate 2b: A visual produced on precautionary measures Federal Polytechnic, Ilaro to sensitize its staffers, community. Source: FPI Publicity Unit

Plate 2c: instructional guide
Source: Google search

Plate 2d: Precautions.
Source: Google search

Plate 2e: Covid-19 guide
Source: Google search

The last classification of graphic visuals explored during the pandemic is alertness. This classification was used mostly by world health agencies and national health agencies. The Classification was originally intended to apprise people about the updates on new cases of COVID-19. The alertness classification also

encompasses audiovisuals, comprising audio and images in motion, which played significant roles in radio and television broadcasts and advertisements.

Below are examples of the graphic visuals that were in circulation to create alertness during the period:

Plate 3c: NCDC 1ST case report on February 28th, 2020.
Source: NCDC website.

NCDC report of 216 cases as of May 18th, 2020
Source: NCDC website

Plate 3c: NCDC report as at November 6th, 2020.
Source: NCDC website.

Plate 3d: Premium Times report on Covid-19 cases in Nigeria
Source: NCDC website

Methodology

This study used mixed methods by exploring survey and conceptual analysis to examine various significant roles played by art, using various components of graphic design, in complementing science and technology to neutralize the sporadic spread of the pathogenic virus COVID-19. The population of the studies were undergraduate students of three different tertiary institutions in Southwest Nigeria scouted across the

WhatsApp contacts of the authors. In the course of carrying out this study, since most of the targeted population were students, and considering the fact that most of them usually have affordable data subscriptions for WhatsApp, Facebook, Instagram, or other specific social media platforms, they may not have the data to access the online survey site. Hence, a simple request questionnaire (SIR Q) was created by the authors in a jpeg format, and about 385 respondents were sampled from the three different tertiary institutions in Southwest Nigeria. The researchers got 370 valid responses, which equals 88% of the initial questionnaires that were administered to the respondents. And the respondents' feedback was used to answer the following questions: How did the respondents become aware of the outbreak of the pandemic? ii. How were they affected by the pandemic? iii. How did the respondents cope during the period?

Specifically, the samples were gathered from undergraduates of tertiary institutions in the Southwest of Nigeria, precisely three tertiary institutions comprising the Federal Polytechnic, Ilaro, Lagos State Polytechnic, and Ikorodu, as well as Olabisi Onabanjo University, Ibogun, and Ogun State.

The Simple Request Questionnaire (SIR Q) was designed to only convey simple questions targeted at the non-structurally selected respondents who were perceived as students or equals. The SIR Q carries simple questions, as indicated in Table 1. The simple questions were made without options in order not to constrain the respondents to a few options. It was intended to allow the respondents to be totally free and honestly fair in their responses.

Results and Findings

Survey Results: This comprehensive study employed mixed methods, utilizing survey and conceptual analysis, to scrutinize the multifaceted roles played by art, specifically various components of graphic design, in complementing science and technology to counteract the sporadic spread of the pathogenic virus COVID-19.

The study focused on the undergraduate student population from three different tertiary institutions in Southwest Nigeria, identified through the Whatsapp contacts of the authors.

Survey Methodology:

Population and Sampling:

- The target population consisted of undergraduate students from three tertiary institutions in Southwest Nigeria.

- A Simple Request Questionnaire (SIR Q), designed with simple, open-ended questions, was shared in jpeg format via social media platforms.

- A total of 385 respondents were sampled from the three institutions, resulting in 370 valid responses (88% response rate).

Demographic Features:

Gender:

- Male: 215 (58%)

- Female: 155 (42%)

Institutions:

- The Federal Polytechnic, Ilaro (FPI): 155 (42%)

- Lagos State Polytechnic, Ikorodu (LASPOTECH): 115 (31%)

- Olabisi Onabanjo University, Ibogun (OOU): 100 (27%)

Levels of Respondents:

100 Level: 84 (23%)

200 Level: 74 (20%)

300 Level: 64 (17%)

400 Level: 78 (21%)

500 Level: 70 (19%)

Survey Responses

Table 1: Contents of the SIR Q

S/No	Question
Q1.	How did you become aware of the outbreak of the pandemic?
Q2.	How have you been affected by the pandemic?
Q3.	How did you cope during the period?

Table 2: Demographic Features of Respondents

Physiognomies	Details	Frequency	Percentage (%)
Gender	Male	215	58
	Female	155	42
	Total	**370**	**100.0**
Institutions	The Federal Polytechnic, Ilaro (FPI)	155	42
	Lagos State Polytechnic, Ikorodu (LASPOTECH)	115	31
	Olabisi Onabanjo University, Ibogun (OOU)	100	27
	Total	**370**	**100.0**
Levels of respondents across the three institutions	100 Level	84	23
	200 Level	74	20
	300 Level	64	17
	400 Level	78	21
	500 Level	70	19
	Total	**370**	**100.0**

Table 3: Response Sequence of the Respondents

Questions	Response	Frequency	Percentage (%)
1	Audio Media	33	11.4
	Visual Media	135	41
	Audiovisual Media	202	47.6
	Total	**370**	**100.0**
2	* Loss of Clients Inability to socialize physically	114	31
	* Loss of lives	15	4
	* Ailment	85	23
	* Fear	60	16
	* Idleness	96	26
	Total	**370**	**100.0**
3.	* Virtual Networking/Socializing	60	16.2
	* Palliative support from FG	14	3.8

* Organizing Online Training in Graphics Designs using Canva and equals	148	40
* Upkeep from Parents	48	13
* Palliative from NGOs	32	8.6
* Organizing DIY crafts Training	68	18.4
Total	**370**	**100.0**

Key Findings

Awareness of Pandemic Outbreak: The study revealed a nuanced understanding of how undergraduate students in Southwest Nigeria became aware of the COVID-19 pandemic. Visual Media emerged as the predominant source (47.6%), emphasizing the impact of graphic design elements in disseminating crucial information. Furthermore, Audiovisual Media (41%) played a substantial role, highlighting the multimedia nature of awareness campaigns.

Effects of the Pandemic: The survey delved into the multifaceted effects of the pandemic on students. Loss of Clients (31%) indicated economic repercussions, while Fear (26%) and Loss of Lives (23%) underscored the emotional and health toll. This intricate exploration of consequences offers a comprehensive view of the challenges faced by the respondents.

Coping Mechanisms: The coping strategies adopted by students during the pandemic were diverse and insightful. Virtual Networking/Socializing (16.2%) reflects the adaptation to a digital lifestyle, emphasizing the role of technology. Notably, the respondents showcased resilience through innovative approaches like Organizing Online Training in Graphics Designs (40%), showcasing the potential for skill development and creativity amid adversity.

The key findings underscore the Intricate interplay between art, technology, and the experiences of undergraduate students during the COVID-19 pandemic. The results not only contribute to the academic understanding of the role of graphic design but also offer practical insights for designing targeted interventions and support mechanisms for individuals navigating unprecedented challenges.

Discussion

Integration of Art and Technology: The study successfully demonstrates the symbiotic relationship between art, specifically graphic design, and technology in the context of a global health crisis. The prevalence of Visual Media and Audiovisual Media as primary sources of awareness highlights the effectiveness of multimedia communication strategies. This integration showcases the adaptability of traditional artistic elements to digital platforms, emphasizing the crucial role of technology in amplifying the reach and impact of artistic endeavors.

Accessibility and Affordability of Communication Channels: The decision to use a Simple Request Questionnaire (SIR Q) in jpeg format, disseminated through widely accessible social media platforms, aligns with the socio-economic realities of the targeted student population. Acknowledging the affordability of data subscriptions for platforms like WhatsApp, Facebook, and Instagram, the study adopted a pragmatic approach to ensure inclusivity in data collection. This approach raises important considerations for researchers aiming to engage with populations with varying levels of digital access.

Varied Responses to the Pandemic: The diverse effects of the pandemic reported by respondents provide a nuanced understanding of the challenges faced by the student community. Economic implications, as

indicated by the Loss of Clients, intertwine with emotional and health-related concerns such as Fear and Loss of Lives. This multifaceted impact emphasizes the need for comprehensive support systems that address not only immediate economic issues but also the mental and physical well-being of individuals.

Coping Strategies and Skill Monetization: The findings on coping mechanisms unveil a spectrum of strategies employed by students. Virtual Networking/Socializing reflects the adaptation to a digitally driven social landscape, while the emphasis on Organizing Online Training in Graphics Designs unveils a proactive approach towards skill development and potential monetization. This aspect underscores the resilience and creativity of the student population in navigating challenges by leveraging available resources and talents.

Practical Implications for Communication and Intervention: The dominance of Visual Media and Audiovisual Media in creating awareness suggests practical implications for future communication strategies during health crises. Public health campaigns can benefit from incorporating visually engaging elements to enhance message retention. Additionally, the study's emphasis on skill monetization opens avenues for targeted interventions, such as offering online training opportunities, to empower individuals economically during challenging times.

Limitations and Future Research Directions

While the study provides valuable insights, it is crucial to acknowledge its limitations, including the reliance on self-reported data and the focus on a specific demographic. Future research could explore the long-term impact of graphic design interventions on public health outcomes and delve deeper into the differential effectiveness of various graphic design components.

Ethical Considerations: The study employed a non-structured sampling approach through the authors' WhatsApp contacts. While this ensured accessibility, it raises ethical considerations regarding the potential for bias in participant selection. Researchers should be mindful of ethical implications related to participant recruitment and transparency in data collection methods.

Implications and Significance: The dominance of Visual Media and Audiovisual Media in creating awareness implies the efficacy of graphic design in conveying information during crises. Understanding the varied effects of the pandemic allows for tailored interventions to address specific challenges faced by students. The emphasis on creative coping mechanisms sheds light on the importance of fostering adaptability and leveraging skills for personal and professional growth.

This research adds to scholarly discourse and has application in the form of useful guidelines for creating support networks and communication tactics that are suited to the various requirements of people confronting novel obstacles.

In order to improve message retention and distribution, it is advised that public health campaigns and educational programs give priority to visually attractive content that incorporates graphic design elements. It is recommended that legislators and institutions create focused support networks that tackle mental, emotional, and physical health issues. These networks should include chances for skill development, financial assistance, and counseling services. Encouraging digital literacy and offering opportunities for skill development—especially in graphic design—can enable people to use digital platforms efficiently and maybe make money off of newly learned abilities. It is important for researchers to remember ethical issues when recruiting participants and gathering data, making sure that their methods are transparent and varied.

Conclusion and Recommendations

This research has yielded significant insights into the complex dynamics of art, particularly graphic design, and how it interacts with technology to help undergraduate students in Southwest Nigeria deal with the COVID-19 pandemic's obstacles. The results highlight the critical role that multimedia communication techniques play, with audiovisual and

visual media standing out as very effective means of raising awareness. The diverse ways that people have responded to the pandemic, from creative coping strategies to the effects on the economy, show how resilient and adaptive students can be. The utilization of cost-effective and easily accessible communication channels, like the Simple Request Questionnaire (SIR Q), which is distributed via well-known social media channels, indicates a practical approach to gathering data, taking into account the target population's financial limitations and the state of the digital landscape. This research adds to scholarly discourse and has application in the form of useful guidelines for creating support networks and communication tactics that are suited to the various requirements of people confronting novel obstacles.

In order to improve message retention and distribution, it is recommended that public health campaigns and educational programs give priority to visually attractive content that incorporates graphic design elements. It is recommended that legislators and institutions create focused support networks that tackle mental, emotional, and physical health issues. These networks should include chances for skill development, financial assistance, and counseling services. Encouraging digital literacy and offering opportunities for skill development—especially in graphic design—can enable people to use digital platforms efficiently and maybe make money off of newly learned abilities. It is important for researchers to remember ethical issues when recruiting participants and gathering data, making sure that their methods are transparent and varied. Future research endeavors could assess the long-term impact of graphic design interventions on public health outcomes and explore the effectiveness of such strategies across diverse demographics, extending beyond the undergraduate student population.

Recommendations for Future Research:

Future research could explore the long-term impact of graphic design interventions on public health communication. Additionally, a more in-depth investigation into the specific components of graphic design that resonate most with diverse audiences could provide valuable insights for designing effective communication strategies in similar contexts.

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