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EMPIRICAL MAPPING ANALYSIS OF WEBSITE WORLD HEALTH ORGANIZATION FROM OCTOBER TO DECEMBER 2023: A WEBOMETRIC ANALYSIS

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Abstract: This webometric analysis uses SimilarWeb, a competitive intelligence tool, in order to evaluate the World Health Organization's website using webometrics. This study investigates global and country rankings, traffic sources, channels, demographics, performance metrics, referring websites, and social media impact between October and December of 2023. Additionally, SimilarWeb provides a standardized way to assess internet usage patterns globally by assessing user engagements, website traffic, and rankings. The application uses SimilarWeb for assessing national geography websites' online presence. The analysis contributes significantly to webometrics and to improving the marketing strategies of the World Health Organization. A global ranking of #3290 is revealed for the traffic rank of <https://www.who.int/>, with a total of 71.93 million worldwide visits. Desktop and mobile devices are represented by 37.49% and 62.51%, respectively, in the device distribution. Mediafire.com is the primary referring website, contributing 22.06%, and file-sharing and hosting are the leading industries, contributing 22.09%. According to the analysis, the website has a higher proportion of female visitors with 62.69% compared to male visitors with 37.31%. The 25-34 age group has the highest representation of users, at 27.26%.

Keywords: Webometric, WHO, SimilarWeb, Website analysis

1. INTRODUCTION

Webometric analysis is a quantitative method used to study the World Wide Web. It has become quite popular in different fields like e-tourism, academic research evaluation, and website design quality. Researchers such as Filieri et al. (2015) and Thelwall & Kousha (2015) have contributed to this area of study. To evaluate the importance and influence of websites, this approach utilises the measurement of web impact factors, links, and visibility indicators. Several studies have been conducted on this topic, including those by Vaughan & Hysen (2002), Ramezanghorbani et al. (2020), and Ramanayaka et al. (2018). The website of the World Health Organization (WHO) at <https://www.who.int/> is a significant topic for webometric analysis because of its worldwide significance and impact in sharing public health information (Das et al., 2019). This study offers valuable insights into the web presence and impact of the World Health Organization (WHO) website, a critical platform for global health information. By doing so, it contributes to our understanding of how visible and influential the organisation is online (Turcanu et al., 2022; Augusta, 2020).

The research conducted on the website <https://www.who.int/> introduces a fresh perspective by incorporating the element of time. This expands the scope of statistical data used to analyse trends and future developments on the World Health Organization (WHO) website in the online domain (Kvitka et al., 2019). This innovative approach addresses a notable void in the current body of research by offering a thorough comprehension of the online presence and influence of a prominent international health organisation. By incorporating the element of time, we can analyse statistical data over a period, which helps us predict trends and anticipate how information will be presented on the WHO website. It is important to grasp the changing dynamics of web presence and its influence, especially when considering a well-known international health organisation. In addition, this study seeks to make a valuable contribution to the field of webometrics. It provides a model that can be used to evaluate the online presence of influential organisations in the public health sector (Kvitka et al., 2019). This contribution plays a crucial role in enhancing our comprehension of webometrics and how it can be applied to organisations working in the public health sector. This study aims to analyse the impact and visibility of the WHO website by considering various factors. The findings will offer practical recommendations to improve the website's online presence and effectiveness in sharing important public health information with a worldwide audience (Assarut & Eiamkanchanalai, 2022).

The study examines the impact factors and visibility indicators of the WHO website. It aims to assess how effective the website is in reaching and engaging with diverse global audiences, especially during public health crises when people rely heavily on the internet for health-related information (Assarut & Eiamkanchanalai, 2022). Understanding the effectiveness of a website in communicating public health information to diverse global audiences and informing strategies to

enhance its reach and impact relies heavily on recognising the importance of its impact and visibility. This study provides great importance due to the growing dependence on the internet for obtaining health-related information, especially in times of public health emergencies (Patil, 2020). Therefore, gaining knowledge about the web impact factors and visibility indicators of the WHO website can provide valuable insights into how effectively it reaches and engages with diverse global audiences. In addition, the results of this study can provide valuable insights for improving the website's effectiveness in reaching a wider audience and making a greater impact. This, in turn, can help in effectively sharing important health information and addressing global health issues (Farhan et al., 2022; Ali et al., 2021). This study has the potential to make significant advancements in the field of webometrics by applying its techniques to the website of a prominent global health organisation. This can greatly enhance our understanding of how webometrics can be utilised in the context of such organisations. This study presents a model for evaluating the online presence of influential organisations in the public health domain by analysing the web impact factors and visibility indicators of the WHO website. In addition, the results of this study can provide valuable insights for improving the online presence of public health organisations. This, in turn, can contribute to the overall field of health communication and information sharing (Lutz & Hoffmann, 2017).

In this study, we aim to perform a thorough webometric analysis of the WHO website. Our goal is to assess various factors that contribute to its web impact, such as links and visibility indicators. The study aims to provide a comprehensive evaluation of the website's impact and reach, offering insights into its effectiveness in effectively communicating public health information to a wide range of global audiences. In this study, we aim to find ways to make the website more effective and visible. By analysing its web presence, we can identify areas for improvement and offer practical suggestions to enhance its impact (Bačík et al., 2021). In conclusion, this study has the potential to provide valuable insights into the web presence and impact of the WHO website. This will contribute to a better understanding of webometrics in the field of global health communication. The study aims to provide practical recommendations for improving the WHO website's online reach and influence. By analysing web impact factors and visibility indicators, the study seeks to enhance the website's ability to share important public health information with a global audience (Assarut & Eiamkanchanalai, 2022).

2. LITERATURE REVIEW

The research conducted by Turner et al. (2018) highlights the growing significance of webometric analysis in assessing the influence and efficacy of websites. It is important to highlight the importance of theoretical literature reviews in understanding the evolution of a theory and the validation or rejection of its statements. We can use this method to analyse the World Health

Organization (WHO) website and assess the basis of its content and the accuracy of its statements.

In addition, Gostin et al. (2015) emphasise the important role and impact of the WHO normative authority. This perspective is crucial for contextualizing the impact and scope of the WHO website in the online domain. Gaining knowledge about the normative authority of the WHO can offer valuable insights into how its website impacts public health policies and practices. Furthermore, Jansen et al., (2022) offer valuable insights on how to measure user interactions with websites, highlighting the significance of analytics methods. This literature provides valuable guidance for the review process, helping to identify suitable metrics and methodologies for assessing user engagement with the WHO website within the specified timeframe.

In a recent study, Schmitt et al., (2020) delve into the influence of privacy laws on the behaviour of online users. This research holds relevance for the analysis of the WHO website using webometric methods. Having a clear grasp of how privacy laws affect user behaviour is crucial for assessing a website's adherence to privacy regulations and its influence on user engagement. In their publication, Prantl & Prantl (2018) provide a thorough analysis of various tools used for measuring website traffic and rankings in the field of competitive intelligence. This literature can provide valuable guidance for the review process, helping to choose the right tools and methodologies to assess the web traffic and visibility of the WHO website within the specified period.

In conclusion, when conducting a literature review on the webometric analysis of the WHO website, it is important to consider various aspects. These include theoretical perspectives, normative authority, user interactions, privacy implications, and competitive intelligence tools. By taking all of these factors into account, we can gain a thorough understanding of the website's impact and effectiveness.

3. METHODOLOGY

To perform a webometric analysis of the World Health Organisation (WHO) website between October and December 2023 using SimilarWeb, it is important to employ a thorough methodology. Webometric analysis involves various methods to study websites, including analysing website content, examining web link structures, studying web usage patterns, and analysing web technologies (Gee et al., 2022). When assessing a website, we need to consider its content, structure, usage patterns, and technological aspects. To evaluate the usability and effectiveness of the WHO website, we can utilise usability testing. This method allows us to compare its performance with other popular search engines, as demonstrated by Wang et al., (2012). When it comes to measuring website traffic and rankings, there are a couple of useful

tools that can be used. Alexa and SimilarWeb are competitive intelligence tools that can provide estimates of the WHO website's traffic data (Prantl & Prantl, 2018). In addition, a study conducted by Jansen et al., (2022) compared the standard analytics metrics from Google Analytics with SimilarWeb to gain insights into user interactions with the WHO website.

In addition, it can be valuable to evaluate the adherence of the WHO website to accreditation and quality standards by applying the principles of the World Health Organization (Chen et al., 2014). In order to determine the availability of WHO recommendations on pandemic prevention, one can analyse the content of the WHO website (Gesualdo et al., 2010). In addition, for the analysis, it is recommended to gather data from reliable sources such as the WHO website (Majumder, 2022). Furthermore, it is important to consider the influence of privacy laws on the behaviour of online users when examining the WHO website's adherence to privacy regulations (Schmitt et al., 2020). The analysis of the WHO website from October to December 2023 using SimilarWeb involved filtering data by device type, user demographics, and referral channels to provide a detailed assessment of web traffic and engagement. This includes conducting usability testing, evaluating the quality of content, measuring website traffic, ensuring adherence to accreditation standards, and complying with privacy regulations. By combining these approaches, we can thoroughly evaluate the WHO website.

4. RESULT AND DISCUSSION

a. Traffic & Engagement Overview Analysis

According to Figure 1, the website <https://www.who.int/> experienced 71.93 million visits worldwide during the period of October to December 2023, reflecting a 9.73% decrease compared to the previous month. According to the distribution of devices, most visits were from mobile devices, indicating that most users access the site via mobile devices. Globally, the website holds a ranking of #3290, with a ranking of #4,023 in the United States and a ranking of 24 in the health sector. The 9.73% decline in total visits could be attributed to external factors such as changes in public health crises or competition from other health-related websites. Further research is needed to identify specific causes. In the global health landscape, the website has a significant presence with strong rankings at the global, country, and industry levels. It is recommended that the website be optimized for mobile users, that the reasons behind the slight decline in visits be investigated, and that a focus on health-related content be maintained to enhance the website's influence in the health industry.

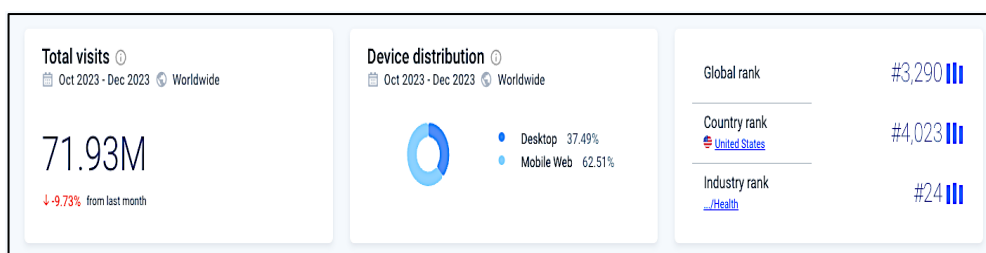


Figure 1. Traffic analysis

Figure 2 illustrates the level of engagement on the WHO website <https://www.who.int/> from October to December 2023. The website garnered 23.97 million monthly visits and reached 15.46 million unique visitors worldwide. Users explore an average of 2.36 pages per visit and spend an average of 2 minutes and 22 seconds on the site, demonstrating that it delivers compelling content that engages its audience. It is important to contextualize this metric within the context of the website's purpose and content nature, even though the bounce rate is relatively high at 67.69%. It is recommended that engagement metrics are continuously monitored, potential strategies to reduce bounce rates are explored, and ways to extend average visit durations are explored, ensuring sustained user interest and interaction with the website.

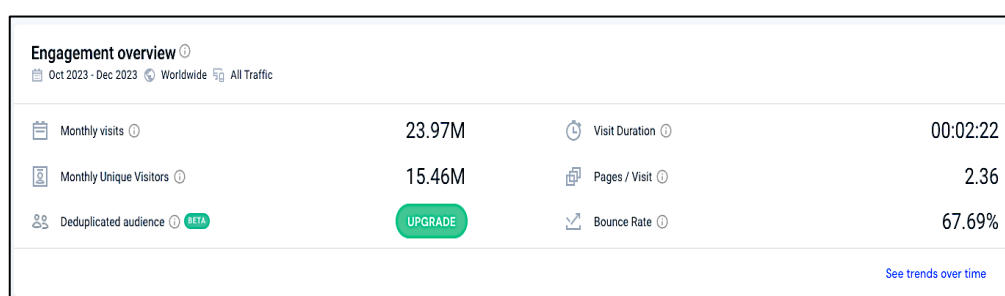


Figure 2. Engagement overview analysis

b. Visits Over Time Analysis

According to Figure 3, the website <https://www.who.int/> attracted 71.93 million visits during the period October-December 2023, demonstrating its global significance in disseminating health information. Based on a comparative analysis with other health-related websites, who.int maintained consistently high visit numbers, peaking at 24.67 million, demonstrating its dominance in the field of health. There was a considerable difference between the World Health Organization's website and its counterparts, including cdc.gov, paho.org, and thelancet.com, which also demonstrated steady user engagement. The visit numbers for Intelihealth.com were generally below 5,000, which indicates the potential for improving the website's online visibility and reaching a wider audience. As recommendations, Intelihealth.com should leverage the strengths found in WHO's performance, evaluate best practices from other websites, and implement strategic measures to increase its visibility



Figure 3. Visits over time analysis

c. Geography Analysis

According to figure 4, between October and December 2023, the top countries contributing to traffic to <https://www.who.int/> have undergone significant changes. At 16.34%, the United States held the highest traffic share, with a substantial decline of 10.16%. There was a remarkable 20.30% increase in traffic from India, which solidified its substantial user base at 10.04%. There was also a drop of 11.67% in traffic from the United Kingdom, contributing 4.20% to the website's traffic. In Mexico, user engagement decreased by 41.08%, resulting in a 3.48% traffic share. The Philippines remained a significant source of traffic for the website despite a decrease of 18.56%. According to the recommendations, content and strategies should be tailored for heightened engagement in the United States, India, and the United Kingdom, Mexico growth should be sustained and enhanced, and factors contributing to the decline in traffic from the Philippines should be investigated for strategic re-engagement.

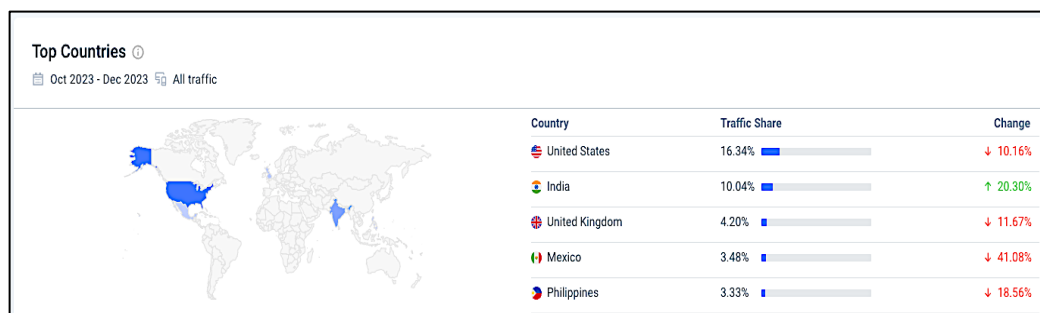


Figure 4. Geography analysis

d. Organic Search Analysis

In Figure 5, the webometric analysis of <https://www.who.int/> shows a nuanced pattern in organic search traffic from October to December 2023. The World Health Organization (WHO) accounted for 21% of desktop traffic, indicating that a substantial number of users are actively seeking information about it directly. As a result, 79% of the website's traffic is non-branded traffic, reflecting the website's visibility and relevance in broader health-related searches. Branded search terms include "who" and "oms", with the latter seeing a remarkable

1.12% and 0.64% respectively, suggesting increased interest in WHO using its acronym. The search terms “ICD 11” and “World Mental Health Day” demonstrated declines of 37.20 percent and 92.96%, respectively, underscoring the website's relevance in health-related topics. To increase overall visibility and engagement, we recommend capitalizing on the increased interest in branded searches, optimizing content for popular non-branded terms, and monitoring emerging trends.

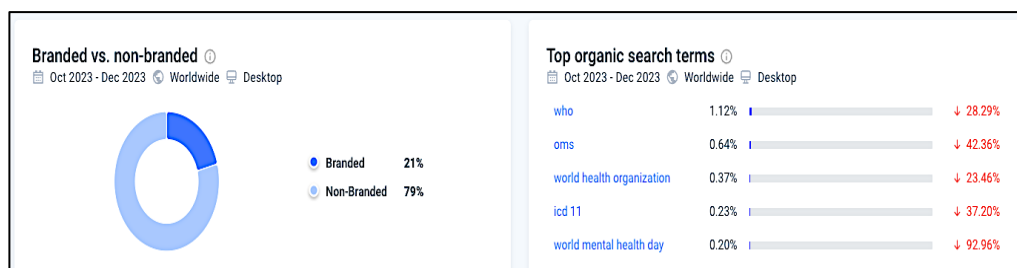


Figure 5. Organic search analysis

e. Referrals Analysis

The figure 6 illustrates the referrals analysis for October through December 2023, highlighting significant trends in referring websites and industries. Mediafire.com emerged as the top referrer, contributing 22.06% of desktop traffic, suggesting a significant portion of users access WHO resources through file-sharing sites. Paho.org is ranked second with 6.97%, demonstrating the importance of collaboration within the health sector, while nih.gov and Wikipedia.org are both ranked third with 4.37 and 4.10 percent, respectively. File-sharing and hosting websites contribute 22.09% of traffic, which highlights the unique way in which WHO resources are accessed through file-sharing platforms. The share of traffic from government entities has declined by 5.22%, indicating low engagement and interest. In order to enhance overall visibility and impact, recommendations include optimizing collaborations with Mediafire.com, Paho.org, and Wikipedia.org, tailoring content for governmental needs, and further exploration of user behavior within the File Sharing and Hosting industry. The percentage of website traffic derived from referrals is 4.8%



Figure 6. Referrals analysis

f. Outgoing Traffic and Ads Analysis

The webometric analysis of <https://www.who.int/> reveals significant trends in link and ad destinations from October to December 2023 (Figure 7). The top link destination is login.microsoftonline.com, representing 23.27% of traffic share, indicating that a substantial amount of WHO-related resources are accessed through Microsoft Online services. It should be noted that nih.gov contributes 11.83%, emphasizing the cross-referencing and collaboration between the WHO and the National Institutes of Health. While [Paho.org](https://paho.org) (3.81%) emphasizes the association with regional health organizations, [Zoom.us](https://zoom.us) (2.74%) suggests the use of virtual meeting platforms. Among the ad destinations, app.unv.org displays a significant 13.07%, demonstrating how effective its advertisements are at engaging users. However, destinations such as fw.cmcvellore.ac.in, zazporn.com, and Eid.elsevier.com require further investigation to determine their nature and alignment with the WHO's guidelines. The recommendations include improving collaboration with Microsoft Online services, strengthening partnerships with health-related organizations, exploring regional health collaboration opportunities, and conducting detailed analyses of ad destinations for strategic improvements.

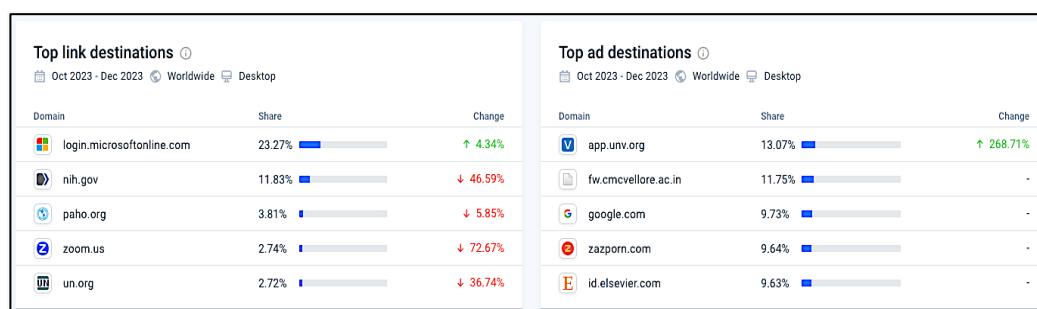


Figure 7. Outgoing traffic and ads analysis

g. Display Advertising Analysis

In Figure 8, display advertising is analyzed in the period between October and December 2023 based on the webometrics of <https://www.who.int/>, indicating a diversified and strategic approach to display advertising. As the primary display ad network for the WHO website, AdSupply occupies a significant 81.96% share, indicating its essential role in facilitating ad display. A concerted effort has been made to maximize reach and impact through multiple ad networks, with PopMyAds contributing 7.53% and Google Display Network contributing 7.1%, respectively. Besides skimlinks, other unidentified networks play an important role in the WHO's ad strategy. It is noteworthy that Americanthinker.com emerged as the top publisher, contributing a significant 60.83% of top publishers with a notable 222.16% increase, demonstrating the effectiveness of this collaboration. It is recommended that AdSupply continues to optimize its effectiveness, monitor diverse ad networks strategically, and

strengthen collaborations with top-performing publishers while investigating opportunities for improvement in others. Display ads makes up <1% of website traffic.

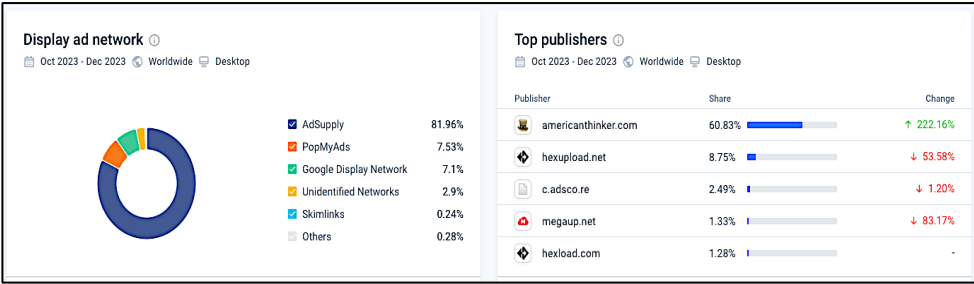


Figure 8. Display advertising analysis

h. Gender and Age Distribution Analysis

As shown in figure 8, the webometric analysis of <https://www.who.int/> website indicates a diverse audience both in terms of gender and age. Based on the gender distribution, female visitors make up 62.69% of visitors, compared to male visitors who make up 37.31%. There is a significant concentration of users in the 25-34 age group, with the highest representation at 27.26%, followed by the 18-24 age group with 22.28%. There is an active audience for the website, including users in their prime working years (35-44) and those approaching or in mid-life (45-54). According to the engagement from 55-64 and 65+ age groups, the website is relevant to the senior demographic, indicating a broad appeal across a variety of life stages. There are several recommendations included in this report, including tailoring content to meet the specific needs of different age groups, exploring strategies to increase engagement with the 65+ age group, and monitoring demographics for ongoing content adaptation.

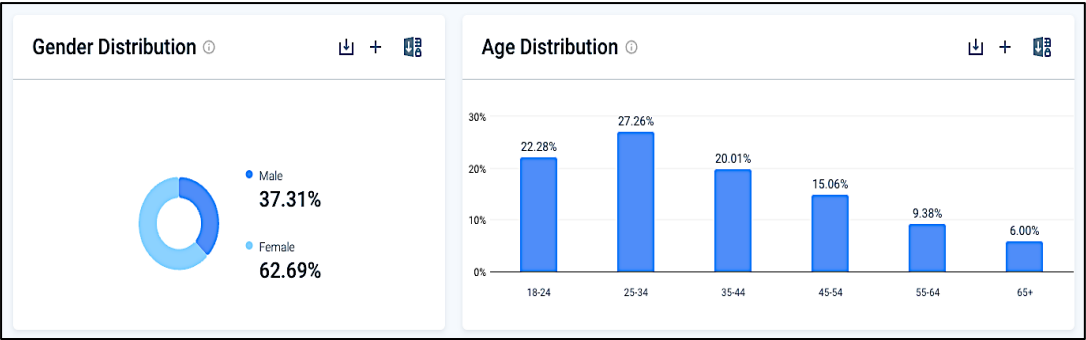


Figure 8. Gender and age distribution analysis

In conclusion, this study of the webometrics of the World Health Organization (WHO) website provides valuable insights into its digital impact and effectiveness. The analysis utilizes key webometric methods such as link search commands and web validity hypotheses to evaluate hyperlink counts, information retrieval, and connectivity. The webometric techniques,

including link counts, citation indexes, bounce rates, and page load times, offer empirical evidence of the website's digital authority and influence. These quantitative metrics help assess the reach, engagement, and visibility of the WHO website, providing a clear picture of its impact on a global scale. Furthermore, an assessment of web accessibility and quality contributes to determining the website's influence in the public health sector. The following table summarizes the key metrics of WHO's website performance from October to December 2023:

Table 1. Key Webometric Metrics (October - December 2023)

Metric	Value/Description
Total Visits	71.93 million (9.73% decrease from previous month)
Device Distribution	Majority of visits from mobile devices
Global Ranking	#3290 (Global), #4023 (U.S.), #24 (Health Sector)
Engagement (Pages per Visit)	2.36 pages per visit
Average Visit Duration	2 minutes 22 seconds
Bounce Rate	67.69%
Organic Traffic	79% non-branded traffic
Top Referral Source	Mediafire.com (22.06% of desktop traffic)
Top Link Destination	login.microsoftonline.com (23.27% of traffic)

The analysis also covers aspects like traffic over time, geography, organic search, referrals, and outgoing traffic, which provide additional layers of understanding of how users interact with the website. For instance, the traffic from the United States dropped by 10.16%, while traffic from India increased by 20.30%, reflecting regional shifts in engagement. The website's visibility in organic search is particularly notable, with 79% of traffic coming from non-branded sources, indicating strong relevance in health-related search queries. The WHO website also benefits from substantial collaboration with organizations like Paho.org and nih.gov, which contribute significant referral traffic.

Overall, the webometric analysis highlights the WHO website's strong digital presence and global influence in public health communication. It provides actionable insights for optimizing mobile user engagement, improving content strategies to reduce bounce rates, and expanding visibility in emerging regions.

5. DISCUSSION AND CONCLUSION

The analysis of the World Health Organisation (WHO) website provides a comprehensive perspective on its influence and effectiveness. Informetric methods applied to the World Wide Web, also known as Webometrics, were introduced by Almind and Ingwersen in 1997. These methods help us understand how to analyse the web using specific methodologies. This approach is very useful for thoroughly assessing the reach and impact of the WHO website in the digital realm. Furthermore, a study conducted on medical travel facilitator websites provides valuable insights into the examination of web page contents and the range of services available to potential users (Cormany & Baloglu, 2011). Examining this viewpoint can be quite useful in comprehending the user-oriented elements of the WHO website and its capacity to deliver pertinent and easily understandable information to its audience. In Thelwall's work on quantitative web research for the social sciences, a thorough introduction to webometrics is presented. This provides a framework for conducting quantitative analyses of web-based data (Thelwall, 2009). Applying this framework allows for a structured and systematic evaluation of the impact of the WHO website's webometric analysis.

By analysing the webometric data of the WHO website from October to December 2023, we can gain a better understanding of the demographic characteristics of its visitors. This information is crucial for improving content strategies and making sure that the website remains relevant to a wide range of audience segments. Based on the data, it is interesting to note that there is a significant majority of female visitors, accounting for 62.69% of the total, while male visitors make up 37.31%. It is crucial to create content that addresses the health concerns and interests of women, as they play a significant role in making healthcare decisions within households. Moreover, having a grasp of the gender dynamics allows for the development of tailored messaging and campaigns that are inclusive and responsive to the distinct health requirements of all genders.

The demographic analysis of the WHO website reveals that it is especially popular among younger users, with 22.28% of the audience aged between 18 and 24 and 27.26% between 25 and 34 years old. These groups, typically students and young professionals, benefit from content on preventive healthcare, mental health, and emerging health issues, which are pertinent to their lifestyles. However, the website could improve its engagement with the 65+ age group, which may struggle with accessibility features. To better serve this demographic, the WHO could implement strategies similar to those used by the National Institute on Aging (NIA), which has adapted its website to be more senior-friendly by including larger text, high-contrast color schemes, and simple navigation. Additionally, the CDC has created content tailored to older adults, such as audio guides and step-by-step instructions for managing chronic conditions. The WHO could adopt similar features, such as voice-assisted navigation, interactive health quizzes, and personalized health tips focused on chronic disease

management and mental health to improve accessibility and engagement. Moreover, simplifying the website's design and offering content with more visual aids (e.g., videos, infographics) would enhance usability for seniors, helping them find critical health information more easily. By prioritizing these accessibility improvements, the WHO website could better engage the 65+ demographic, ensuring that older adults not only access health information but also interact meaningfully with it.

In terms of strategy, the WHO can use the findings from this analysis to improve educational programmes, make content delivery more effective, and create focused campaigns for different demographic groups. As an example, by developing engaging and easily understandable content for young people, focusing on the importance of preventive care for middle-aged individuals, and adapting information for older adults, the website can strengthen its position as a valuable global health resource. The WHO should monitor demographic trends and focus on enhancing the mobile user experience, given the high proportion of mobile visitors. Additionally, strategies for re-engaging users in countries like the United States and Mexico, where traffic has declined, should be prioritized. To ensure effective operations, the WHO can employ various strategies. These include setting up feedback mechanisms, conducting user surveys, and utilising analytics tools. By doing so, the organisation can obtain real-time insights and make agile adjustments to its content and features. This approach allows the website to constantly adapt and respond to the needs of its diverse global audience. It is designed to effectively serve users by providing authoritative health information worldwide, which is in line with the WHO's main objective.

The findings from this webometric analysis of the WHO website have significant interdisciplinary relevance, offering insights that extend beyond digital metrics to broader fields like public health communication, digital literacy, and international health policy. In the realm of public health communication, the study demonstrates how the digital presence of global health organizations like WHO can shape public understanding and behavior, particularly in relation to health crises and preventive measures. Understanding user engagement with health content can inform strategies to improve communication effectiveness, ensuring that crucial health information reaches diverse audiences in an accessible format. In the field of digital literacy, this analysis highlights the need for enhancing accessibility features, especially for older adults, thereby contributing to the ongoing discourse on making digital content more inclusive and user-friendly. Lastly, the study's findings can inform international health policy, particularly in terms of how digital platforms can be utilized to disseminate health information across borders. Policymakers can use insights from the study to strengthen global health communication strategies and ensure equitable access to accurate health information, particularly in low-resource settings.

The webometric analysis of the WHO website is subject to several limitations that may affect the reliability of the findings. Firstly, incomplete datasets can arise due to the limitations of web analytics tools such as SimilarWeb and Alexa, which may not fully capture all traffic sources, particularly from regions with limited internet access. Language barriers also pose a challenge, as the WHO website offers content in multiple languages, potentially hindering engagement for non-proficient users. Additionally, technical limitations in webometric tools may prevent a nuanced understanding of user behavior, such as the causes behind high bounce rates. Finally, privacy regulations (e.g., GDPR) may restrict data collection, leading to potential gaps in user demographic and interaction data. These factors must be considered when interpreting the study's results.

In conclusion, this study of the webometrics of the World Health Organization (WHO) website offers valuable insights into its digital impact and effectiveness. Using webometric and informetric methodologies, the analysis provides a comprehensive view of the WHO website's network-based communication and quantitative metrics. Key webometric techniques, such as link search commands, were applied to evaluate hyperlink counts and information retrieval, assessing the website's digital authority and visibility. Additionally, evaluating web accessibility and content quality helped us understand how widely the website is used and how effective it is at reaching its audience. By looking at the website's link structure and applying web validity hypotheses, we gained a better understanding of how well the website connects with other sites and its overall trustworthiness. These findings offer a robust framework for assessing the WHO website's global impact and its effectiveness in disseminating health information.

6. ETHICAL CONSIDERATIONS AND RECOMMENDATIONS

While conducting the webometric analysis of the WHO website, ethical standards were strictly adhered to, particularly concerning the collection and use of visitor demographic data. All data was obtained from publicly accessible tools, ensuring compliance with privacy regulations. No personally identifiable information (PII) was collected, and any demographic data used was anonymized to protect user privacy. These precautions ensure transparency and confidentiality, reinforcing the integrity of the study.

Looking ahead, future research could benefit from comparative studies between the WHO website and those of other major health organizations such as the CDC, UNICEF, and the Pan American Health Organization (PAHO). These comparisons could uncover best practices and areas for improvement in global health communication strategies. Additionally, further investigation into the user engagement of older adults with health-related content could help optimize accessibility for this demographic. Finally, future studies could incorporate visual

tools, such as graphs, visitor trend timelines, and hyperlink network maps, to present data more intuitively and engage a broader audience.

REFERENCES

- Agusta, A. (2020). Analisis konten webometrics pada repository universitas syiah kuala dan universitas sumatera utara. *Baitul Ulum Jurnal Ilmu Perpustakaan Dan Informasi*, 1-17. <https://doi.org/10.30631/baitululum.v3i1.36>
- Ali, Q., Aslam, M., & Hafeez, S. (2021). Impact of online recruitment on organizational attractiveness: an experimental study in the context of pakistan. *Irasd Journal of Management*, 3(3), 318-328. <https://doi.org/10.52131/jom.2021.0303.0048>
- Almind, T. C. & Ingwersen, P. (1997). Informetric analyses on the world wide web: methodological approaches to 'webometrics'. *Journal of Documentation*, 53(4), 404-426. <https://doi.org/10.1108/eum0000000007205>
- Assarut, N. & Eiamkanchanalai, S. (2022). How hotel brand website contributes to online hotel reservation on consumer review website?. *Advances in Hospitality and Tourism Research (Ahtr)*, 10(3), 404-426. <https://doi.org/10.30519/ahtr.933696>
- Bačík, R., Gavurova, B., Fedorko, I., & Fedorko, R. (2021). Website quality factor as a multidimensional construct and its impact on the use of e-banking. *Journal of Entrepreneurship and Sustainability Issues*, 9(1), 542-557. [https://doi.org/10.9770/jesi.2021.9.1\(34\)](https://doi.org/10.9770/jesi.2021.9.1(34))
- Chen, E., Manecksha, R., Abouassaly, R., Bolton, D., Reich, O., & Lawrentschuk, N. (2014). A multilingual evaluation of current health information on the internet for the treatments of benign prostatic hyperplasia. *Prostate International*, 2(4), 161-168. <https://doi.org/10.12954/pi.14058>
- Cormany, D. & Baloglu, S. (2011). Medical travel facilitator websites: an exploratory study of web page contents and services offered to the prospective medical tourist. *Tourism Management*, 32(4), 709-716. <https://doi.org/10.1016/j.tourman.2010.02.008>
- Das, S., Balasubramanian, P., & Chowdhury, A. (2019). Webometrics ranking (wr) of world universities and national institutional ranking framework (nirf): a comparative study. *Srels Journal of Information Management*, 154-158. <https://doi.org/10.17821/srels/2019/v56i3/144386>

- Farhan, N., Chassab, B., & Al-khafaji, N. (2022). Evaluating the effect of intent factors on the student's intention to register for external exams via the internet: directorate of education in dhi-qar as a case study.. <https://doi.org/10.4108/eai.7-9-2021.2314923>
- Filieri, R., Alguezaui, S., & McLeay, F. (2015). Why do travelers trust tripadvisor? antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth. *Tourism Management*, 51, 174-185. <https://doi.org/10.1016/j.tourman.2015.05.007>
- Gee, L., Dasan, J., & Hassan, C. (2022). Investigating the usability of universities' websites: upgrading visualization preference and system performance. *International Journal of Interactive Mobile Technologies (Ijim)*, 16(02), 129-143. <https://doi.org/10.3991/ijim.v16i02.23707>
- Gesualdo, F., Romano, M., Pandolfi, E., Rizzo, C., Ravà, L., Lucente, D. & Tozzi, A. (2010). Surfing the web during pandemic flu: availability of world health organization recommendations on prevention. *BMC Public Health*, 10(1). <https://doi.org/10.1186/1471-2458-10-561>
- Gostin, L., Sridhar, D., & Hougendobler, D. (2015). The normative authority of the world health organization. *Public Health*, 129(7), 854-863. <https://doi.org/10.1016/j.puhe.2015.05.002>
- Jansen, B., Jung, S., & Salminen, J. (2022). Measuring user interactions with websites: a comparison of two industry standard analytics approaches using data of 86 websites. *Plos One*, 17(5), e0268212. <https://doi.org/10.1371/journal.pone.0268212>
- Khazaal, Y., Fernandez, S., Cochand, B., Reboh, B., & Zullino, D. (2008). Quality of web-based information on social phobia: a cross-sectional study. *Depression and Anxiety*, 25(5), 461-465. <https://doi.org/10.1002/da.20381>
- Lutz, C. & Hoffmann, C. (2017). Making academic social capital visible. *Social Science Computer Review*, 36(5), 632-643. <https://doi.org/10.1177/0894439317721181>
- Majumder, P. (2022). Analyses of polynomial neural networks for prediction of the prevalence of monkeypox infections in asia and around the world. *Electronic Journal of General Medicine*, 19(6), em410. <https://doi.org/10.29333/ejgm/12400>
- Patil, U. (2020). Public health at the public library: preventive health programs implemented in large public libraries. *Slis Connecting*, 9(1). <https://doi.org/10.18785/slis.0901.07>

- Prantl, D. & Prantl, M. (2018). Website traffic measurement and rankings: competitive intelligence tools examination. *International Journal of Web Information Systems*, 14(4), 423-437. <https://doi.org/10.1108/ijwis-01-2018-0001>
- Ramanayaka, K., Chen, X., & Shi, B. (2018). Application of webometrics techniques for measuring and evaluating visibility of university library websites in sri lanka. *Journal of the University Librarians Association of Sri Lanka*, 21(1), 1-17. <https://doi.org/10.4038/jula.v21i1.7908>
- Ramezanghorbani, N., Rangraz, M., & Heidari, R. (2020). Some effective factors on the webometric status of selected universities of medical sciences: lessons learned from iran. *Iranian Journal of Public Health*. <https://doi.org/10.18502/ijph.v48i6.2923>
- Schmitt, J., Miller, K., & Skiera, B. (2020). The impact of privacy laws on online user behavior. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3774110>
- Thelwall, M. & Kousha, K. (2015). Web indicators for research evaluation. part 1: citations and links to academic articles from the web. *El Profesional De La Información*, 24(5), 587. <https://doi.org/10.3145/epi.2015.sep.08>
- Turcanu, D., Siminiuc, R., & Turcanu, T. (2022). Website performance analysis in relation to the visibility indicator of the webometrics ranking: case study top 5 universities from the republic of moldova & romania.. <https://doi.org/10.52326/ic-ecco.2022/mm.01>
- Turner, J., Baker, R., & Kellner, F. (2018). Theoretical literature review: tracing the life cycle of a theory and its verified and falsified statements. *Human Resource Development Review*, 17(1), 34-61. <https://doi.org/10.1177/1534484317749680>
- Vaughan, L. & Hysen, K. (2002). Relationship between links to journal web sites and impact factors. *Aslib Proceedings*, 54(6), 356-361. <https://doi.org/10.1108/00012530210452555>
- Wang, L., Wang, J., Wang, M., Li, Y., Liang, Y., & Xu, D. (2012). Using internet search engines to obtain medical information: a comparative study. *Journal of Medical Internet Research*, 14(3), e74. <https://doi.org/10.2196/jmir.1943>

PUBLIC SERVICE ANNOUNCEMENT TO RAISE AWARENESS OF COASTAL RECLAMATION'S HARMFUL EFFECTS IN KLEBANG, MALACCA

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Abstract : The coastal reclamation issues in Klebang, Malacca, pose a significant problem within the state, exacerbated by a lack of public awareness through print ads Public Service Announcement (PSA). Coastal development projects have stripped marine resources for fishers in the area. This leads to adverse effects such as flash floods, loss of income for local sea product vendors, sedimentation of mud, and destruction of corals and mangroves crucial for sea animal breeding. There is a noticeable absence of visual awareness regarding coastal reclamation. This research aims to understand the acceptance of print ads PSA on the coastal reclamation's harmful effects among local communities in Klebang, Malacca. This research utilized survey questionnaires as its primary data collection method. Results indicate that respondents acknowledged the harmful effects of coastal reclamation in Klebang, Malacca. They expressed agreement on the necessity of utilizing print ads PSA to address the issue, recognising its potential to bring positive changes to the coastal reclamation situation. In conclusion, the coastal reclamation issue in Klebang, Malacca, remains inadequately acknowledged, particularly in Malaysia, and

print ads PSA are needed to make this issue known.

Keywords: Public Service Announcement, Coastal Reclamation, Klebang, Malacca, Environmental Awareness

1. INTRODUCTION

Coastal reclamation is a common practice in countries with a shortage of available land, and it has become Malaysia's best method for extending shoreline areas for economic growth. Recently, coastal reclamation has been widely used to form entirely new islands, a common occurrence in Asia and the Middle East (Chee, S. Y., 2017). However, due to its poor management, it has negatively impacted the nearby marine environment and the local community (J, Mohamed. & M, Razman. 2018). According to Ashley Yeong (2022) from the Macaranga journalism portal, the project covers 33 km of Melaka's coastline, or nearly 25% of the total. It is among the largest reclamation projects in Malaysian history.

The Melaka Waterfront Economic Zone (M-WEZ) was proposed in the hope of the state government of Melaka to be a part of a national project because Melaka was left out of all of the country's economic corridors. In order to stimulate the state's economic growth, the state government needed to develop its own corridor project (Bernama, 2023). Launched in April 2021, the MWEZ project features its own signature welcome gate, 22 bridges totalling to RM216 million, a Sky Wheel, chalets on the water, hundreds of upscale offices and residences, a Venice-style water canal, and the signature MWEZ tower. The huge project, which covers 25,000 acres over 33 kilometers of Melaka's coastline, is the biggest land reclamation project in Malaysia. The MWEZ will be built from Umbai to Tanjung Bruas on reclaimed ground (Murali, R. 2024).

This has had many negative impacts on the coastal area. Despite the urgency and seriousness of the issue, the people and those living in the area often overlook it. As a fellow nature enthusiast, the researcher has a profound connection to the research conducted. The love and appreciation for the Klebang beach, the sea, and the flora and fauna that live in their harmonious coexistence accentuates the area's beauty and uniqueness. The researcher witnessed the Malacca coastline's ecosystem and landscape deteriorate due to coastal reclamation activities, so it is quite compelling to take this small first step to increase public awareness of the problem. The historical state is well known for its unique history, historical buildings, rich mix of culture, great foods, and its infamously developed artificial lands. The famous 'desert' on Klebang Beach is one of the indicators of the coastal reclamation activities that have been ongoing in Malacca for so long.

2. PROBLEM STATEMENT

Numerous written publications can be found online, published by experts in the field, detailing the negative impacts that coastal reclamation activities have caused on

the coast's environment since they began in the state. Regrettably, despite the dire consequences outlined in these writings, there remains a dearth of public or online awareness, particularly when it comes to print ads PSA.

Coastal reclamation negatively impacts the environment and damages marine life and the natural ecosystem, thereby influencing fishermen's income and livelihood. This multi-million-ringgit fisheries sector, on which thousands depend, is being traded off for development. Fishermen will soon lose their fishing grounds due to the loss of fish during the development process. Progressively, fishing has changed from being the major economic business to a minor in the settlement.

Among the numerous projects under Beijing's 'One Belt, One Road' initiative, one notable example is the completion of coastal reclamation, which will distance the Portuguese seagoing community, the Kristang people, from the coast and turning their settlement's pier into dirt. This threatened the Portuguese's entire heritage, as the Portuguese settlement village used to be one of Malacca's best attractions. The community of just over 2,000 people primarily resides in an area popular with tourists who come to eat seafood in the evening, but parts of the seafront have already undergone reclamation (Abdullah, M.K.B, 2020).

Coastal reclamation work resulted in creek silt-ups while extracting sand from the seabed, leading to pollution and the destruction of corals, which are crucial for marine animal survival, as well as mangrove trees that serve as breeding grounds for fish and prawns (Pandiyan, V. M, 2021). The state government has approved reclamation projects in the coastal area due to Malacca's rapid development of accommodations and infrastructure. Nevertheless, the project has had adverse effects on the coastal and sociocultural environment, including threats to the nesting of hawksbill sea turtles.

Over the last 15 years, Melaka has turned from rural to urban, and the gains in productivity from urbanization have fuelled economic growth. Melaka has now reached an 86.5% rate of urbanization and will face new productivity challenges to sustain its growth. Melaka is expected to increase its population by 70% in the next 20 years (Global Platform for Sustainable Cities, & Salat, S, 2018). Some studies have investigated the loss of coastal Ecosystem Services Value (ESV) caused by reclamation. Murray, N. J. (2018), reported the significant and lifelong impact of fast coastal development globally on coastal ecosystems, threatening the distribution of key ecosystem service.

Sahabat Alam Malaysia (SAM) calls upon the Malaysian government to cancel all proposed coastal reclamation projects in the country. The call stems from SAM's findings and field surveys, demonstrating the detrimental impact of coastal reclamation projects on coastal communities and the marine ecosystem. The coastal reclamation projects also infringe on fishermen's rights to livelihood. SAM's new

publication titled "Impacts of Coastal Reclamation in Malaysia" details the biological, physical, socio-economic, socio-cultural, and other impacts of coastal reclamation, highlighting several cases in Malaysia. Furthermore, Malaysia lacks PSA about environmental issues such as coastal reclamation or other types of environmental awareness.

3. RESEARCH OBJECTIVES

The objective of this research is to assess the level of awareness and understanding of the harmful effects of coastal reclamation, as communicated through print ads PSA, among the local communities in Klebang, Malacca.

This research will analyze the understanding and perception of the harmful impacts of coastal reclamation among local communities in Klebang, Malacca.

This research will also propose guidelines for creating effective print ads PSA that enhance community understanding of coastal reclamation issues among local visitors and residents of Klebang, Malacca.

4. SCOPE OF RESEARCH

This research focuses on the use of print ads PSA as a form of awareness campaign to raise environmental awareness of coastal reclamation harmful effects in Klebang, Malacca. This research studied the acceptance of using print ads PSA to raise awareness of coastal reclamation issues among local communities in Klebang, Malacca. At the same time, this research can help educate people in the public community that print ads PSA such as posters, can have a huge impact on bringing changes to the problematic coastal reclamation issue at the moment.

5. LITERATURE REVIEW

Print ads PSA are visual communication at their finest. For instance, it was used as a powerful visual and message to effectively capitalize on viral content to bring much-needed attention to domestic violence. Visual communication is the use of symbols and imagery to convey information and ideas. Visual communication is one of the three main types of communication, along with verbal communication, which involves speaking, and non-verbal communication, which includes tone and body language. Visual communication is believed to be the type that people trust most, and it involves signs, graphic designs, films, typography, and other countless examples (White, D, 2021).

Information retention is the primary goal of all content, and the use of visual aids, particularly powerful images, can help people remember information for a longer period of time. In a research study, only 10–20% of participants were able to recall spoken and written information, but more than 50 percent could recall visuals and images. When choosing visuals to promote products and services, it is crucial to focus on information retention (San Luis, G, 2019). The general components that can be included in a PSA are images or photographs, video footage, text, voiceovers or narrations, or music. There are also different types of PSA, such as announcements, documentaries, interviews, and narratives.

Reclamation land is the artificial shaping of new land by landfilling, leveling, and draining the coastal area (Sufian, D. A, 2010). Coastal reclamation is the process of land reclamation to form new land or bind the sea and the tidal flat to make space for human activities, is an effective approach to meet the growing demand for new land in coastal regions for urban development, population growth, agricultural and industrial purposes (Chen et al., 2017). There are two types of coastal reclamation. The first one is the island type, and the second one is the peninsular type. The first one is in the form of a reclaimed artificial island separated from the existing shoreline, while the second one is a shore-connected reclamation. Coastal reclamation for housing and industrial uses came into significance after the 1970s as a result of accelerated rapid urban development and the increasing cost of land in some major coastal cities. Many coastal areas of the country, including Penang, Malacca, Labuan, Langkawi, and Kota Kinabalu, have successfully implemented numerous small-scale reclamation projects, either as public-sector or private-sector initiatives.

PSA may include interviews, dramatizations, animation, and many other types of video and audio content. PSA are made without taking any profit or advantage in general. The production maker aims to motivate, influence attitudes, and change actions. This can be supported by Krishna & Anuragh (2017), who also found that PSA are the most effective component in informing the public about the safety, health, society, environment, and behavior of people.

PSA can be defined as advertisements on issues of public interest presented at no cost as a service to the community. PSA refers to the government's efforts in advertisements used to communicate not only certain specific messages for people's awareness but also to build the culture and identity of Malaysians (John, 2015). Between the 1990s and 2000s, Radio Televisyen Malaysia (RTM) and TV Pendidikan aired the majority of these PSA advertisements. Many PSA, advertisements, and

campaigns, either from governments or corporate companies, have begun to grow using various types of media, including billboards, magazines, radio, television, and the Internet, to communicate 'national unity' to the people.

6. FRAMEWORK

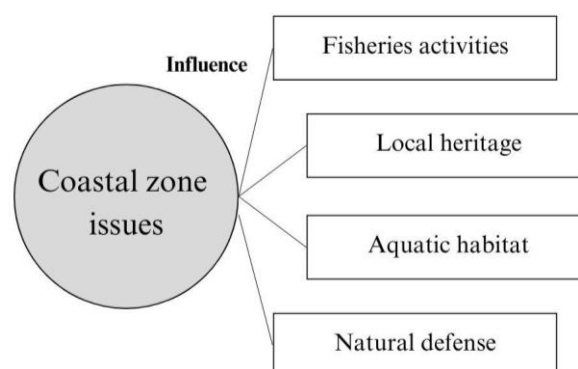


Figure 1. Conceptual Framework Adapted from Natália M. P de Alencar (2020)

Figure 1. was constructed to appraise the environmental awareness of the coastal reclamation issues in Klebang, Malacca, inspired by the framework by Natália M. P. de Alencar (2020). While Natália's focus is on a broader aspect of coastal issues, specifically the management of coastal sustainability, this research focuses on the coastal reclamation issue and the perception of the community in the coastal area of Klebang, Malacca, about print ads PSA on the harmful impact of the issue. Each of the four issues replaced in the framework was affected by coastal zone issues, making them relevant to this research. Each of the affected areas listed in the framework serves as a guide for the research objectives and questions in this research. Figure 2. was used to get the needed data information to form the new guideline for print ads PSA. Figure 3. will aid in addressing the research objectives, questions, and hypothesis.

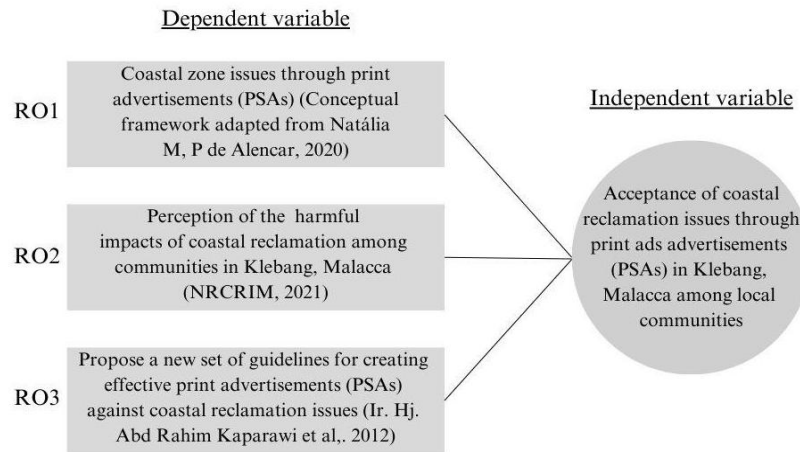


Figure 2. Conceptual Framework for Guidelines Proposal

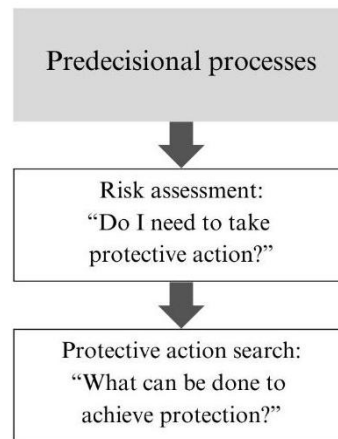


Figure 3. The Protective Action Decision Model (PADM) by Kuligowski (2012)

7. METHODOLOGY

The primary data source for the research used to observe the acceptance of print ads PSA about the harm of coastal reclamation issues among the local community in Klebang, Malacca, are survey questionnaires. A literature review is the secondary data source. The quantitative research method from the questionnaire was chosen because it has the measurable information that can be used for mathematical calculations and statistical analysis. The data collected by mean and percentage from using Statistical Package for the Social Science (SPSS). Mean score interpretation by Moidunny (2009) in Table 1 was used to analyze the data for each question in the survey. This method will be used for Phase 1.

Table 1: Mean Score Interpretation (Moidunny, K., 2009)

Mean Score	Interpretation
1.00 - 1.80	79
1.81 - 2.60	35
2.61 - 3.20	17
3.21 - 4.20	21
4.21 - 5.00	152

Phase 1 acted as Survey 1 that will answer the research objectives in proposing a new guideline for print ads PSA, while Phase 2 acted as Survey 2 that will validate the new proposed guideline for print ads PSA, created using data gained from Phase 1.

For Phase 1, the research attempted to quantify factors contributing to the acceptance among communities in Klebang, Malacca, of print ads PSA on the coastal reclamation issues. Questionnaires were distributed to respondents of various races, ages, genders, marital statuses, educational backgrounds, and employment statuses. This method was employed to serve as a safe alternative for gathering survey data in the current global pandemic situation. Another method used was literature review by using secondary data research. It is accomplished by examining and collecting data from previous research conducted by other individuals or researchers on related topics. Table 2 explains the significance for every question and analysis techniques used.

Table 2: Mapping of Research Objectives and Research Questions with the Research Instruments

Research objective	Research question	Instrument	Analysis technique
To assess the level of awareness and understanding of the harmful effects of coastal reclamation, as communicated through print ads PSA, among the communities in Klebang, Malacca.	How do print ads PSA help to create awareness of the harm of coastal reclamation among the communities in Klebang, Malacca?	-Survey questionnaire (question numbers 7,8,9,10) -Literature review	- Frequency
To analyze the understanding and perception of the harmful impacts of coastal reclamation among communities in	What are the harmful side effects of coastal reclamation that have caused damage to the coastal area and the communities of	-Survey questionnaire (question number 11,12,13,14,15,16)	- Frequency

Klebang, Malacca.	Klebang, Malacca that can be shown in the print ads PSA?	Literature review	
To develop and propose a set of guidelines for creating effective print ads PSA that enhance community understanding of coastal reclamation issues among residents of Klebang, Malacca.	What way can print ads PSA be implemented to address the harm of coastal reclamation issues among the communities in Klebang, Malacca?	Survey questionnaire (numbers 17,18,19,20,21,22) Literature review	- Frequency Data result from RO1 and RO2

The research setting is the coastal area of Klebang, Malacca as the research study area because of its popularity as the most famous attraction spot that was built out of artificial lands with the help of coastal reclamation. The research requires samples from the targeted area of study, which is the local community living nearby in the coastal area of Klebang, Malacca, or the local community living nearby in the city of Malacca. Malaysians aged 18 and above are eligible to participate. The number of respondents that took part was set and limited to a total of 250 participants, as Phase 1 needed 152 qualified online forms altogether to fit the requirements for a reliable number of sample sizes for the research proposed by Krejcie, R. V., and Morgan, D. W. (1970) as in Table 3. The Google Forms survey platform was used as the gathering mechanism in this survey questionnaire while using the Quick Response (QR) code as its distribution system. Following the same guideline, Phase 2 used the minimum requirement of 10 for sample size in Table 4.

TABLE 3: Determining Sample Size for Research Activities by Krejcie, R. V., & Morgan, D. W. (1970) for Phase 1

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

TABLE 4: Determining Sample Size for Research Activities by Krejcie, R. V., & Morgan, D. W. (1970) for Phase 2

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

7.1 RESEARCH INSTRUMENTS

The questions in the survey were based on the conceptual framework of The Coastal Zone Issues and Their Influence by Natalia M. P. de Alencar (2020), with an inspired adaptation from the Protective Action Decision Model by Kuligowski (2012). Both the conceptual frameworks serve as the foundation for the survey questions, providing the necessary questionnaire guidelines for print ads PSA on the coastal reclamation issues in Klebang, Malacca, which were found to be appropriate for this study. Table 5 showed the two instruments used in the research.

TABLE 5: Instruments used for this research

Research instruments
Survey questionnaire (Primary data) -Adapted from Nathan James Bennette et al. (2015) for questions numbers 7 to 16 -Adapted from PADM (2012) for questions numbers 17 to 22
Literature review (Secondary data) -Provide detailed information from readings as context for the discussed questions and subject matter.

7.2 PROCEDURES FOR DATA COLLECTION

The set of questionnaires has a total of 22 questions. The set contained four different sections, which were Part A, Part B, Part C, and Part D, and was given to 250 respondents in order to get 152 responses. The questionnaire gathers the respondents' demographic information, gathers the respondents' understanding of print ads PSA on the harmful effects of the coastal reclamation issue in Kebang, and then gathers the respondents' understanding of the harmful side effects of the coastal reclamation issue in Klebang. Finally, the survey collects data to develop guidelines for new print ads PSA addressing the coastal reclamation's harmful effects in Klebang, Malacca. Secondary data research was then conducted by examining other online studies, e-books, articles, news, web pages, and reports within the relevant research domains.

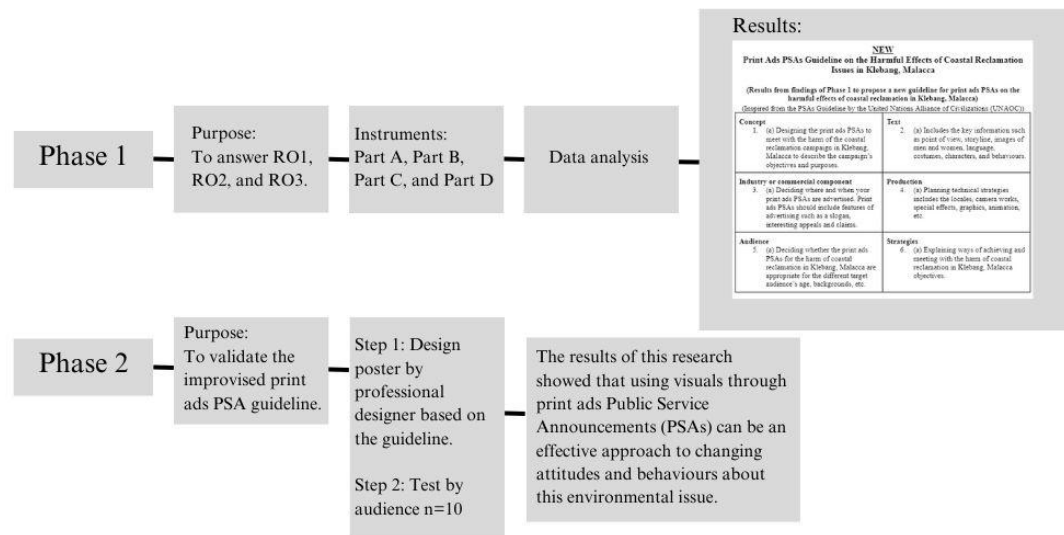


Figure 4. Procedures and Purposes for Data Collection for 2 Phases

The purpose of Phase 2 was to validate the result from Phase 1. A poster was created using the improvised guideline for print ads PSA gained from the results of Phase 1. A short survey questionnaire was conducted to test the new guidelines for print ads, specifically PSA, using a poster about the harmful effects of coastal reclamation in Klebang, Malacca. 10 respondents were used for the survey questionnaire in accordance with the minimum sample size needed using the sample size model for research activities by Krejcie, R. V., & Morgan, D. W. (1970). The Google Forms survey platform was used as the gathering mechanism in this survey questionnaire while using the Quick Response (QR) code as its distribution system.

8. EMPIRICAL RESULTS AND ANALYSIS

After completing the questionnaires, data from Google Forms was collected and processed in the Statistical Package for the Social Sciences (SPSS) for descriptive statistical analysis to get their reliability analysis and mean for each questions in the questionnaire.

8.1 RELIABILITY ANALYSIS

8.1.1 PHASE 1

Table 6. shows the research reliability statistics for the overall questions in the survey excluding the demographics.

TABLE 6: Reliability Statistics for Phase 1

Reliability Statistics						
Cronbach's Alpha		N of Items				
		.905				
		16				

Case Processing Summary			
		N	%
Cases	Valid	152	99.3
	Excluded ^a	1	.7
	Total	153	100.0

a. Listwise deletion based on all variables in the procedure.

Overall Agreement ^a						
		Kappa	Standard Error	Asymptotic z	Sig.	Asymptotic 95% Confidence Interval
						Lower Bound Upper Bound
Overall Agreement		.379	.005	83.313	<.001	.370 .388

a. Sample data contains 152 effective subjects and 16 raters.

This section successfully assessed the respondents' demographic data, including their gender, age, ethnicity, education level, marital status, and employment status. The results for each variable and their frequency percentage results are listed and shown. The results for each variable and their frequency percentage results are listed and shown in Table 7, Table 8, Table 9, Table 10, Table 11, and Table 12 as below:

TABLE 7: Frequency And Percentage Of Respondents By Gender

Gender	Frequency	Percentage (%)
Male	50	32.9
Female	102	67.1
Total	152	100

TABLE 8: Frequency And Percentage Of Respondents By Age

Age	Frequency	Percentage (%)
18 - 24	79	52
25 - 34	35	23
35 - 44	17	11.2
44 - above	21	13.8
Total	152	100

TABLE 9: Frequency And Percentage Of Respondents By Ethnicity

Ethnicity	Frequency	Percentage (%)
Malay	80	52.6
Chinese	54	35.5
Indian	13	8.6

Other	5	3.3
Total	152	100

TABLE 10: Frequency And Percentage Of Respondents By Education Level

Education Level	Frequency	Percentage (%)
SPM	28	52.6
Diploma	24	35.5
Degree	86	8.6
Master - higher	14	3.3
Total	152	100

TABLE 11: Frequency And Percentage Of Respondents By Marital Status

Marital Status	Frequency	Percentage (%)
Single	114	75
Married	35	23
Divorce	3	2
Total	152	100

TABLE 12: Frequency And Percentage Of Respondents By Employment Status

Employment Status	Frequency	Percentage (%)
Unemployed	4	2.6
Student	83	54.6
Employed	55	36.2
Self-employed	10	6.6
Total	152	100

Table 13. below showed the mean scores results and its interpretation for Part B section in the questionnaire conducted.

TABLE 13: Part B Survey Questionnaires Mean Scores Results

Question number	Question	Mean	Interpretation
7	Will print ads Public Service Announcement (PSA) on the harm of coastal reclamation be a good idea in bringing awareness to society?	4.20	High
8	In your opinion, will print ads Public Service Announcement (PSA) on the harm of coastal reclamation issue be successful if it were made?	3.92	High
9	Will print ads Public Service Announcement (PSA) help make an impact on the awareness issue in Klebang, Malacca?	4.07	High
10	Are you aware of the harm of coastal	4.03	High

	reclamation activities to the environment if actions are not taken seriously?		
Overall Average			High

The respondents are aware of the negative effects that coastal reclamation in the Malacca coastal area has on the environment, including harmful impacts such as the extinction of animals and plant habitats, a decrease in natural wetlands, blocked rivers and seafront, fishermen losing catches, and many more. The respondents concurred that the promotion of print ads PSA is necessary to heighten public awareness of the coastal reclamation issue in Klebang, Malacca. This approach has demonstrated efficacy in disseminating information against drunk driving, advocating for the use of seat belts in automobiles, and highlighting various other social and environmental issues within the community.

Table 14. below showed the mean scores results and its interpretation for Part C section in the questionnaire conducted.

TABLE 14: Part C Survey Questionnaires Mean Scores Results

Question number	Question	Mean	Interpretation
11	Do you know that Malaysia is one of the active countries in reclaiming the coastal area for development purposes?	3.64	High
12	Are you aware of the coastal reclamation issue in Klebang, Malacca?	3.49	High
13	Do you think the coastal reclamation issue in Klebang, Malacca (or Malaysia as a whole) is serious?	4.19	High
14	In your opinion, do coastal activities bring more harm than good to the environment?	4.15	High
15	Is the harm of coastal reclamation in Klebang, Malacca an issue that needed attention?	4.20	High
16	Can print ads Public Service Announcement (PSA) help in spreading awareness of the harm of coastal reclamation issues in Klebang, Malacca?	4.15	High
Overall Average			High

Most of the respondents recognize that Malaysia is among the most active countries in reclaiming its coastal area for development purposes, as this practice is prevalent in many Asian countries. The majority of respondents recognize the issue of coastal reclamation in Klebang, Malacca, and concur that it's a grave concern that requires their attention and care. The majority of the respondents addressed the research question by agreeing that print ads PSA can aid in raising awareness about the detrimental effects of coastal reclamation issues in Klebang, Malacca. They also endorsed the use of print ads PSA as a strategy to disseminate information about these issues in Klebang, Malacca. Despite the public's awareness of the coastal reclamation issue in Malaysia, the situation has not improved. The results indicated that most of the respondents agreed to print PSA as a type of awareness, as they have great potential to bring positive changes to the coastal reclamation situation in Klebang, Malacca.

Table 15. below showed the mean scores results and its interpretation for Part D section in the questionnaire conducted.

TABLE 15: Part D Survey Questionnaires Mean Scores Results

Question number	Question	Mean	Interpretation
17	Do you know what a print ads Public Service Announcement (PSA) is?	3.27	High
18	Are there any other types of awareness promoting the harm of coastal reclamation issues in Klebang, Malacca that you know of?	3.36	High
19	Does action needed to minimise the harmful side effects of the issue?	4.29	Very High
20	Does the harm of coastal reclamation issue an important message that needs to be heard now and is it as important as other types of awareness out there in the public (for example the cyberbullying issue)?	4.07	High
21	Do you agree with using print ads Public Service Announcement (PSA) as a method of spreading awareness of the harm of coastal reclamation?	4.19	High
22	Will print ads Public Service Announcement (PSA) about the coastal reclamation issue bring changes to the situation if it were made?	3.93	High
Overall Average			High

The feedback from the survey questionnaire supports the hypothesis, as only 5 respondents strongly disagreed with print ads PSA and their role in promoting environmental awareness. Based on the provided information, it is valid to use the data as a solid foundation for enhancing the visualisation of the harmful effects of coastal reclamation in Klebang, Malacca, through print ads PSA. Nearly all the respondents concur that taking action is necessary to lessen the negative impact of the issue on their environment and socio-economic conditions. More than half of the total respondents agreed that the community needs to hear the important message about the harm caused by coastal reclamation issues, which is just as important as other forms of public awareness in Malaysia today.

Table 16. showed the findings for Phase 1 according to their research objectives.

TABLE 16: Findings from Phase 1

RO	Findings
RO1: To acknowledge the level of understanding of the harmful effects of coastal reclamation issues through print ads Public Service Announcement (PSA) among local communities in Klebang, Malacca	The respondents are aware of the harmful impacts caused by coastal reclamation in the coastal area of Klebang, Malacca. They also concurred that print ads PSA ought to be employed to raise awareness of the coastal reclamation issues in Klebang, Malacca since print ads PSA have proven to be an effective means of awareness against drunk driving.
RO2: To analyse the harmful effects of coastal reclamation among local communities in Klebang, Malacca	Most of the respondents are aware of the harmful impacts of coastal reclamation issues in Klebang, Malacca and most of the respondents also think that the coastal reclamation issues in Klebang, Malacca is a serious matter that needs to be given attention and taken care of by the respective people. Majority of the respondents also agreed that print ads PSA can help in spreading awareness on the harm of coastal reclamation in Klebang, Malacca.
RO3: To propose a guideline for print ads Public Service Announcement (PSA) about the coastal reclamation issues among local communities in Klebang, Malacca	Most of the respondents agree that actions are needed to minimise the harmful effects of the coastal reclamation issues in Klebang, Malacca to its environment and socio-economics. They also agreed that the harm of coastal reclamation is an important message like any other environmental awareness in Malaysia, and this acts as a strong base that print ads PSA is the next potential medium for the awareness campaign of coastal reclamation issues in Klebang, Malacca. Therefore, a guideline for print ads PSA is needed.

8.1.2 PHASE 2

Data was gathered from the questionnaire conducted in Phase 2 which aimed to understand the public's perception of the print ads PSA poster on coastal reclamation's harmful effects in Klebang, Malacca. The PSA poster as in Figure 5. was created using the new guidelines for print ads, derived from the findings of Phase 1 (Survey 1).



FIGURE 5. Poster used as Instrument for Phase 2

This study revealed that more than half of the respondents were aware of the ongoing coastal reclamation issue in Klebang, Malacca. At the same time, the respondents were unaware that coastal reclamation has been negatively impacting the surrounding environment since its inception. Simultaneously, over half of the respondent advocate for the use of print ads PSA to raise environmental awareness about the coastal reclamation issue in Klebang, Malacca. This is due to their observation of the detrimental impacts occurring in the coastal area of Malacca, and their desire to shed light on the situation. Only a small percentage of the total respondents are unaware of the existence of print ads PSA and the potential risks that coastal reclamation issues could pose to local communities and their daily livelihoods in the future. Based on the findings obtained from the implementation of this research, some conclusions can be finalised and concluded.

9. DISCUSSION AND CONCLUSION

The previous guidelines for PSA by UNAOC serve as the base of guideline for print ads PSA on the impacts of coastal reclamation in Klebang, Malacca. Improvisions were made according to the findings from this research following the data gained from Phase 1 (Survey 1). This new guideline aims to offer guidance for print ads PSA that highlight about the detrimental impacts of coastal reclamation issues in Klebang, Malacca. The new guideline was then used to create the PSA poster used in Phase 2 (Survey 2). Table 17. below showed the old PSA guideline while Table 18. showed the new print ads PSA for coastal reclamation's harmful effects in Klebang, Malacca.

TABLE 17: Comparison between Old and the New revised PSA Guideline: Old PSA Guideline

Concept <ul style="list-style-type: none"> - Designing the art to meet with an organisation's objectives to describe their campaign's purpose. 	Text <ul style="list-style-type: none"> - The campaign's overall message that must be linked to the objectives and the strategy.
Industry or commercial component <ul style="list-style-type: none"> - Explain and defend your decisions for where and when your PSA should be played or shown. 	Production <ul style="list-style-type: none"> - Planning the technical strategy. For example: the locales, camera works, etc.
Audience <ul style="list-style-type: none"> - Clear description of your target audiences. 	Strategies <ul style="list-style-type: none"> - Summary of how to reach the objectives and which media are appropriate to use.

TABLE 18: Comparison between Old and the New revised PSA Guideline: New PSA Guideline

Concept <ul style="list-style-type: none"> - Designing the print ads PSA to meet with the harm of the coastal reclamation campaign in Klebang, Malacca to describe the campaign's objectives and purposes. 	Text <ul style="list-style-type: none"> - Includes key information such as point of view, storyline, images of men and women, language, costumes, characters, and behaviors.
Industry or commercial component <ul style="list-style-type: none"> - Deciding where and when the print ads PSA will be advertised. Print ads PSA should include features of advertising such as a 	Production <ul style="list-style-type: none"> - Planning the technical strategies which include the locales, camera

slogan, interesting appeals, and claims.	works, special effects, graphics, animations, etc.
Audience <ul style="list-style-type: none"> - Deciding whether the print ads PSA for the harm of coastal reclamation in Klebang, Malacca are appropriate for the different target audience's ages, backgrounds, etc. 	Strategies <ul style="list-style-type: none"> - Explaining ways of achieving and meeting the harm of coastal reclamation in Klebang, Malacca objectives.

The purpose of this research was to determine the effectiveness of print ads PSA in raising awareness about environmental issues related to coastal reclamation among the local people in Klebang, Malacca. We can also draw the conclusion that the majority of the local communities in Klebang, Malacca, are open to utilizing print ads PSA as a means to raise awareness about coastal reclamation issues, their detrimental effects on the surrounding coastal environment, and the future consequences for those who rely on sea catches. The recorded data revealed several gaps in public participation in this research, primarily due to the ongoing pandemic situation in Malaysia. As a result, the mechanism of using Google Forms and Quick Response (QR) codes was effective and very cost-effective. However, we had to take this action to prevent further serious consequences. Still, there are limitations to it. The research has identified the need for additional research or a more comprehensive review of development in various areas. This would allow for a deeper understanding of how the actual people living in the area perceive the alarming situation and how they view print ads PSA as a helpful medium for slowing down the harmful effects of coastal reclamation in Klebang, Malacca.

In addition, conducting more comprehensive research was necessary to refine the data. Comprehensive survey questions can be structured to address the research questions and objectives with greater detail and precision. The data on the research questions and research objectives for this research was answered, but undeniably, it was only the surface of the answer; it is not answered in a more in-depth way yet, in a personal opinion. There could be more aspects of this research that could be unraveled and discovered if more time were given. The research's findings revealed several gaps in our understanding of public involvement in research, which warrant further investigation. Due to a lack of knowledge and time, more questions remain unexplored and unanswered in this research. Hopefully, future researchers will anticipate finding and filling these gaps in this research more precisely.

REFERENCES

- Abdullah, M. K. B. (2022, August 22). Melaka Gateway raises heritage concerns for Portuguese Settlement. Malaysiansmustknowthetruth.Blogspot.Com.
<http://malaysiansmustknowthetruth.blogspot.com/2017/09/melaka-gateway-raises-heritage-concerns.html>
- Chee, S. Y. (2017). Land reclamation and artificial islands: Walking the tightrope between development and conservation. *Global Ecology and Conservation*, 12, 80–95.
<https://doi.org/10.1016/j.gecco.2017.08.005>
- Chen, W., Huang, Y., Liu, S., Zhang, L., Wei, X., Sang, M., Wang, F., Liu, J., & Hu, B. (2017). Monitoring and analysis of coastal reclamation from 1995–2015 in Tianjin Binhai New Area, China. *Scientific Reports*, 7(1). <https://doi.org/10.1038/s41598-017-04155-0>
- Global Platform for Sustainable Cities, & Salat, S. (2018). Melaka Sustainability Outlook: Rapid Assessment Diagnostic. Thegpsc.Org.
https://www.thegpsc.org/sites/gpsc/files/partnerdocs/20180514.african_regional_workshop-melaka.final_serge_and_lincoln_0.pdf
- J, Mohamed. & M, Razman. (2018). MANAGEMENT AND INITIATIVES TOWARDS SUSTAINABLE COASTAL DEVELOPMENT IN MALAYSIA: EXPERIENCE FROM RECLAMATION ACTIVITIES IN MALACCA. 2. 23-32.
- John, D. a. F. (2015). Language choice and ideology: Examining the use of the Malay language in English newspaper advertisements in Malaysia. *Language & Communication*, 43, 87–101. <https://doi.org/10.1016/j.langcom.2015.05.004>
- Krishna Pal Singh & Anurag Singh (2017). PUBLIC SERVICE ADVERTISING IN INDIA: AN EVALUATION THROUGH LITERATURE II, *International Journal of Marketing & Financial Management*, ISSN: 2348 – 3954 (online) ISSN: 2349 – 2546 (print), Volume 5,(Issue 3, Mar - 2017), pp 53 - 64.
- Moidunny, K. (2009). The Effectiveness of the National Professional Qualification for Educational Leaders (NPQEL). Unpublished Doctoral Dissertation, Bangi: The National University of Malaysia.
- Murali, R. (2024, March 9). Melaka may move capital to MWEZ once completed, says rep. *The Star*. <https://www.thestar.com.my/news/nation/2024/03/09/melaka-may-move-capital-to-mwez-once-completed-says-rep>
- Murray, N. J. (2018, December 19). The global distribution and trajectory of tidal flats. *Nature*. https://www.nature.com/articles/s41586-018-0805-8?error=cookies_not_supported&code=ca1b78e8-bfcc-4a0b-bbaa-750ee226a6a9
- Pandiyan, V. M. (2021, May 12). Questions over coastal corridor. *The Star*.
<https://www.thestar.com.my/opinion/columnists/along-the-watchtower/2021/05/12/questions-over-coastal-corridor>
- San Luis, G. (2019, April 22). Why visual communication is more important than ever. *PressReader*. <https://www.pressreader.com/philippines/philippine-daily-inquirer-1109/20190422/282114932976654>
- Sufian, D. A. (2012, July 16). Emerging issues on reclaimed land in Malaysia: alienation for freehold or leasehold? - IIUM Repository (IRep). *Irep.iium.Edu.My*.
<http://irep.iium.edu.my/9365/>

White, D. (2021, October 10). Study.com | Take Online Courses. Earn College Credit. Research Schools, Degrees & Careers. Study.

Yeong, A. (2022, November 1). *Reclamations gateway to ecological disaster - Macaranga*. Macaranga. <https://www.macaranga.org/reclamations-gateway-to-ecological-disaster/>

ANALYSIS OF FACTORS INFLUENCING SUCCESS IN COLLEGE-LEVEL ADVERTISING DESIGN COMPETITIONS: A QUANTITATIVE STUDY OF COLLEGE AWARDS

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Abstract: This study examines patterns in award-winning graphic advertising designs to identify factors that increase students' chances of success in university competitions. The research specifically analyzes creative advertising approaches, visual representations, and submission strategies of gold-winning entries in the AD CAMPUS competition (2019–2023). Findings show that using metaphors, flat illustrations, and submitting three pieces as a cohesive series are the most effective strategies for winning. This study provides valuable insights for instructors guiding students in creative advertising competitions, offering a foundation for future design instruction and competition strategies.

Keywords: Advertising Creativity; Creative Approaches; Empirical Research; Quantity of Works; Visual Representation of Design

1. INTRODUCTION

There is a growing need for advertising education as a result of the advertising industry's recent rapid growth. For students pursuing careers in field of advertising, exceptional creative thinking, creativity and practical skills are necessary, in addition to a solid theoretical foundation; design theories and development are an essential component of this advertising education. Against this backdrop, a number of advertising design contests have steadily grown in importance as training grounds for students' all-around skills. Students can display their creativity on a stage and get a chance to match their products with real market needs by participating in these competitions.

The study examines the gold-winning graphic advertising design works from the previous five years (2019-2023) in the context of the China College Students Advertising Art Festival Academy Awards. Through a quantitative analysis of three main factors such as: a) creativity methods; b) visual presentation forms; and c) quantity of submissions per group. The aim of this study is to identify the innovative themes in these exceptional pieces and to offer insightful advice to upcoming students taking part in advertising contests. The study's conclusions should assist future students grasp the essential components of effective creative advertising, improving their chances of entering and succeeding in competitions and developing both their practical and creative skills.

2. LITERATURE REVIEW

From a technological perspective, our everyday lives and education have been significantly impacted by the widespread advancement of mobile internet technology. Concurrently, there has been a radical shift in the advertising sector. Advertising education, being a highly practical discipline, needs to adapt its methods and content in order to develop flexible talent that will meet the changing needs of the advertising industry and keep up with industry advancements. A number of national policy documents have been formulated in recent years with the goal of evolving the advancement of higher education. The dynamic modification of teaching content and curriculum based on industry development needs was stressed in the "13th Five-Year National Strategic Emerging Industries Development Plan" released in 2016. At present, according to the requirements of national policies, many advertising design competitions have built a practical teaching reform platform of promoting training, learning and teaching through competition, so as to cultivate students' innovative consciousness and problem-solving ability, hoping to achieve the consistency of course content and market demand. The Ministry of Education's 2019

"Implementation Opinions on Double First-Class Undergraduate Courses" strongly supporting the deep integration of contemporary information technology (IT) with the teaching instruction or methodology. It optimises and restructures curriculum systems and instructional materials in accordance with the demands of talent development, and economic, and social development, guiding students towards inquiry-based and personalised learning. In order to promote the growth of applied undergraduate and industry-specific colleges, the State Council's 2017 "Opinions on Deepening the Integration of Production and Education" highlight the concepts of school-enterprise collaboration and cooperative education. It places a strong emphasis on strengthening practical instruction, adjusting to industry demands, and enhancing the training system, with a primary focus on applied talents.

Taken a closer look at these educational (teaching) policies reveals that they prioritise the development of applied skills, the incorporation of "Internet + education" into instructional strategies, and curriculum that is specially customised to meet the needs of each student. These significant national policies emphasise how crucial it is to align teaching strategies with the practical needs of emerging industries. This Focus on applied talent development, bolstered by modern Information Technology (IT), emphasises the importance of industry relevance and real-world knowledge in post-secondary education. The synergy between policy directives and technological advancement underscores a strategic commitment to preparing students for a dynamically changing professional landscape, ensuring their readiness to make meaningful contributions to the advertising industry and beyond.

Despite the increasing relevance of advertising design competitions in education, little research has been done on identifying specific patterns in award-winning works that can guide students in future competitions. The Times Young Creative Awards, the National Advertising Art Design Competition for College Students (also known as "SUN-ADA"), and the China College Students Advertising Art Festival Academy Award (also known as "AD CAMPUS") are just a few of the well-known competitions in China, that provide students with a useful platform. With 32 editions under its belt since its launch in 1992, the Times Young Creative Awards seeks to foster young people's creativity and develop the next generation of creative elites. It is recognised as the pinnacle of young creative achievement because of its strict professionalism and elevated creative standards; it is also frequently compared to the "Oscars" of the Chinese creative award industry. Now in its 15th edition, "SUN-ADA" was founded in 2005 with the goals of advancing educational reform, fostering moral character development, strengthening abilities, inspiring wisdom, and improving quality. The China College Students Advertising Art Festival Academy Award, or "AD CAMPUS" for short, has been given out nationwide for exceptional accomplishments in

advertising among college students. It has been held since 1999 and has been organised in 21 editions. It invites students from different universities to participate in propositional creativity for well-known national and international businesses, making a substantial contribution to industries like marketing, advertising, communication, art, design, new media, and animation.

It is clear from the examination of these exceptional platforms for typical competitions that design discipline competitions are an effective means of developing students' creative and practical skills while they are in school. These kinds of contests can be easily incorporated into classroom instruction, along with the use of efficient online learning tools. These contests are an important part of the practical teaching methodology in Chinese higher education, because of their widespread impact, which is highlighted by their prominence in the professional development of students across the design discipline. The thoughtful incorporation of design competitions into the academic program is in line with the all-embracing objectives of Internet-plus education, providing students with a special opportunity to develop their creative thinking and practical skills. It does, however, serve as evidence of how flexible and positive educational approaches can be to meet the needs of the modern world, encouraging students to have a proactive attitude towards the learning process and creating a supportive environment.

A review of the literature at this time indicates that the majority of universities offering programs in advertising design view advertising design competitions as an essential component of hands-on learning. Students believe that entering advertising design competitions improves their creative abilities, critical thinking, and practical skills, which will help them greatly in their future careers (Liu and Qiu, 2019). Students can improve their problem-solving and practical skills by applying their theoretical knowledge and visual skills to real-world design challenges through the integration of advertising design competitions into their daily coursework and assessment methods (Xiao, 2016). Students create advertising works based on real-world scenarios; by entering national advertising competitions like the Times Young Creative Awards, Golden Calf Awards, and College Awards. These competitions require students to apply their creative advertising skills. This competitive learning environment encourages students to actively participate in the development of their practical and creative thinking abilities, which eventually raises their level of professional proficiency (Pang, 2017). According to Liu (2019), advertising design competitions give students a stimulating intellectual environment, acting as a singular forum and supporting thought-provoking analysis that goes beyond the confines of textbooks. These contests, which are based on business ideas, give students a glimpse into what employers need, which aids in their decision-making about how to further their

education and improves their employability. Through the seamless integration of theoretical and practical activities, case studies on advertising design competition and experiential marketing are combined to create a collaborative learning outcome (Parker, 2000). Numerous academics' research findings highlight the beneficial and positive effects of advertising competitions on students' professional creativity and practical skills. Nevertheless, there hasn't been much focus on explaining how to write exceptional competition entries.

This study analyses the number of entries that received the grading recognition award from 2015 to 2018, with a focus on the "SUN-ADA" and "AD CAMPUS" events, in an effort to understand this gap. Finding patterns in the winning entries' conceptual content and expressive forms is the aim. Using quantitative statistical analysis, Zhang (2020) tackles this from the perspective of storytelling marketing theory, examining the patterns in the conceptual content and expressive forms of the winning pieces. The study uses meticulous case descriptions, but it only analyses a representative sample of cases as opposed to offering comprehensive final information. It is acknowledged that more research is necessary in this field even though this research offers and conveys a useful perspective. Student creativity, practical skills, inventiveness, and market readiness are all greatly enhanced by participation in advertising design competitions. The incorporation of these competitions into academic curricula is consistent with the overarching objectives of contemporary education, which prioritise the practical application of theoretical knowledge. Students can learn the nuances of creating effective competition submissions by using the analysis of award-winning entries as a guide. Academic institutions can adequately prepare students for the competitive and dynamic advertising industry through such initiatives.

The research perspective for this study is based on the "ROI" advertising creative theory put forth by American copywriter and creative director William Bernbach (1911–1982). ROI, an acronym for "Relevance Originality Impact," is a useful manual for creative advertising. Bernbach understood and held the view that for advertising to be effective, it needed to establish an emotional connection with the public; therefore, the presentation of the advertisement is even more important than the content. He asserts that if an advertisement isn't unique, doesn't relate to the product, or doesn't have a big enough impact on the viewer, it loses its meaning.

Previous research on creativity in advertising design competitions has highlighted the importance of innovative thinking and the use of visual elements in design. For instance, studies by Wang (2020) and Xu (2024) emphasize the role of Creative and visual in engaging audiences. However, few studies have specifically examined how

these factors correlate with success in graphic advertising competitions. This study fills that gap by quantitatively analyzing the use of creative approaches, visual representations, and submission strategies in award-winning designs.

This study emphasise how vital and critical it is to present and carry out advertising ideas. The study focusses on the "AD CAMPUS's" gold-winning graphic advertising design from the previous five years (2019–2023). It uses three primary variables as analytical indicators: a) the number of submissions for each group; b) the creative advertising techniques; and c) the visual representation of design. The study attempts to provide a systematic explanation of the innovative patterns of exceptional design advertisements through quantitative analysis. The research acts also as a useful manual for students competing, because it offers an impartial and exhaustive understanding of the creative trends. The ultimate goal is to improve students' analytical and creative thinking, practical and hand-on skills, which is in line with the main goals of the teaching and learning through the participation in design competition.

The study aims to improve students' practical skills within the context of the classroom and their ability to think creatively and analytically. The study contributes to our understanding of effective creative direction by identifying the underlying patterns of successful design (print) advertisements through a quantitative analysis. At the same time, this allows students who are submitting work for competitions to get more precise, clear, and targeted instruction. The primary objective aligns with the concepts of competition-driven learning and teaching by focusing on raising students' practical skill levels and stimulating their creative thinking.

3. METHODOLOGY

3.1 Data Collection

At present, the advertising design courses taught in the class mainly focus on the design of print advertisements. In order to understand the design patterns of previous winning entries in the process of competition, design patterns are provided for the creation of advertising design entries. Increase the likelihood of winning. Over the course of the previous five years (2019–2023), data for this study was gathered from the AD CAMPUS's official website. The graphic advertising design category's gold-winning entries were the main focus. For examination, 208 entries in total were gathered; Utilising the College Award as the primary data source guarantees the accuracy and dependability of the data, considering its standing as a distinguished nationwide contest. Specifically identifying and extracting data related to 2-

dimensional (print) advertising design gold-winning entries, the researcher used the website's features as filters.

3.2 Research Methods

With Microsoft Excel serving as the main instrument for data analysis, the study used a quantitative research design. For a thorough statistical examination, three primary variables were selected: a) the creative advertising approaches; b) the visual representation of design; and c) the number of submissions for each group.

The Creative Advertising Approaches: The researcher classified the creative methods used in the gold-winning entries by drawing on well-known theories such as James (2021) believed that creativity is old elements in new combinations; The book of Ding (2021), *72 Creative Changes— 72 Strategies to Turn Advertising Rookie into Creative Masters*, and Ding (2024) summarized 27 Creative Methods in Eight Aspects. Firstly, the researcher downloaded (2019-2023) gold awards graphic advertising entries from the AD CAMPUS website. Then placed them in a folder on the computer, and analyzed each entry. After that the entries were divided into thirteen categories, and the corresponding table was made in Microsoft Excel (See Table 1). Patterns in the application of creative techniques were found by analysing the amounts and percentages of each method.

The Visual Representation of Design: By checking gold awards graphic advertising entries on the AD CAMPUS website (2019-2023), the researchers were able to find out the visual representation method adopted by the creator's interpretation of the works. the results were collected in Microsoft Excel (See Table 2). There were 12 categories of visual representation Design forms utilised in the gold-winning entries, acknowledging the importance of visual representation in advertising, particularly from the viewpoints of industry, academia, and advertising companies. The researcher looked at the distribution and prevalence of these visual representation of design forms to find patterns and preferences among judges.

The Number of Submissions for Each Group: Researcher examined the number of submissions for each group about the gold awards graphic advertising entries in the AD CAMPUS website (2019-2023). And the specific number of results conducted statistics in the Microsoft Excel (See Table 3). The study looked into how the quantity of entries submitted affected the chances of winning. The number of entries submitted per series—which could be positioning as first, second and third, was used as a method to group the entries. The goal of the analysis was to see if there was any relationship between the likelihood of winning and the quantity of entries received.

The research sought also to provide an in-depth and impartial understanding of the factors influencing success in 2-dimensional advertising design competitions by using descriptive analysis techniques and Excel for statistical computations. The utilisation of a quantitative approach facilitated a more profound examination of patterns and trends within the dataset, thereby augmenting the dependability and relevance of the research outcomes.

4. ANALYSIS

4.1 The Creative Advertising Approaches

James Webb Young, since its book publication in 1965, "A Technique for Producing Ideas;" Young's proposed the concept of creativity as "new combinations of old elements." He summarized that ideas follow a five-step process of: 1) gathering or collecting raw material for the mind; 2) digesting and assimilating the raw materials in the mind; 3) stepping away from the problem; 4) allowing the ideas to come back or emerge naturally; and 5) testing the ideas in the real world and adjusting it base on feedback.

One of the most challenging steps in the creative process is generating new ideas. Ding (2021), in his book 72 Creativity Changes, addresses this challenge by identifying three core stages in the creative process, offering 72 strategies to stimulate the emergence of innovative ideas. Ding (2024), a famous Chinese brand, advertising and marketing expert, in his book "Advertising Planning and Creativity," summarized 27 creative methods with eight aspects, illustrating how advertising creativity can be effectively expressed through a case study.

As a result, educational institutions stress how important creative advertising is to propel student understanding of their own creative process. The -Table 1- below was created by the researcher; by tallying the number of works-entries, their proportions, and the use of creative methods for each winning group. The researchers also concentrated their effort on the gold-winning entries in the College Awards graphic advertising category over the previous five years (2019–2023).

Table 1: The Creative Approaches in Graphic Advertising

The Creative Advertising Approaches	Quantity of Works-Gold winning	Percentage (%)
Metaphor	39	18.8%
Substitution	26	12.5%
Exaggeration	24	11.5%
Contrast	22	10.6%
Halo Effect	22	10.6%
Personification	18	8.7%
Positive Induction	18	8.7%
Emotion	15	7.2%
Homology	10	4.8%
Negative Induction	5	2.4%
Symbolism	5	2.4%
Peculiarity	2	1.0%
Humour	2	1.0%
Total of Categories: 13	Total of entries: 208	Total: 100%

This -Table 1- above, also summarizes 13 categories of creative methods employed in the gold-winning graphic advertising design entries of the college award, providing insights into the distribution and prevalence of various creative approaches taken by the participants.

The total number of creative method works were 208 entries. Firstly, as the -Table 1- above show the metaphorical creative method was the most frequently used, securing 39 gold awards, which represent the 18.8% of the total entries; Secondly, four creative methods such as: Substitution, Exaggeration, and Halo Effect, were relatively more prevalent, with 26, 24, and 22 entries respectively, which represent 45.2%, almost half of all others creative methods together; Thirdly, follow by a set of four creative methods, such as Personification, Positive Induction, Emotion, and Homology, were used moderately, with 18, 18, 15, and 10 entries respectively, which represent 29.4% of the total entries award. Finally, the remaining four creative methods such as: Negative Induction, Symbolism, Peculiarity and Humour, were less frequently used, with 14 works combined together, which represent only 6.8% of the total entries. Through this data analysis, the following conclusion can be drawn:

The high prevalence of metaphor suggests that this creative method resonates more with competition judges, possibly due to its ability to convey interesting ideas graphically and truthfully. Therefore, teachers can focus on the creative method of metaphor when guiding students to participate in the competition, which consequently increased the student's chances to win more awards.

4.2 The Visual Representation of Design in Graphic Advertising

Three distinct groups from various backgrounds frequently judge student entries for the competition College Awards: representatives and expert from the industry, experts from the academia, and brand ambassadors. Brands frequently highlight an artwork's maturity and even its potential for direct commercial application. As a result, the works' visual representation of design bear special significance. Presently, one of the most frequent problems that students face during instruction is having the ability to come up with original ideas for competitions or special ideas that meet up industry standards and expectations, most of the time students finds difficult to communicate their ideas visually. Beside selecting the best visual presentation for competitions can also be difficult for some students.

Given these obstacles, studying exceptional, award-winning works is the most direct and efficient way to foster creative development in the student mind. This study introduced a statistical analysis based on another factor of advertising creativity in order to obtain a more accurate understanding of the visual representation of design that judges particularly appreciate in graphic advertising.

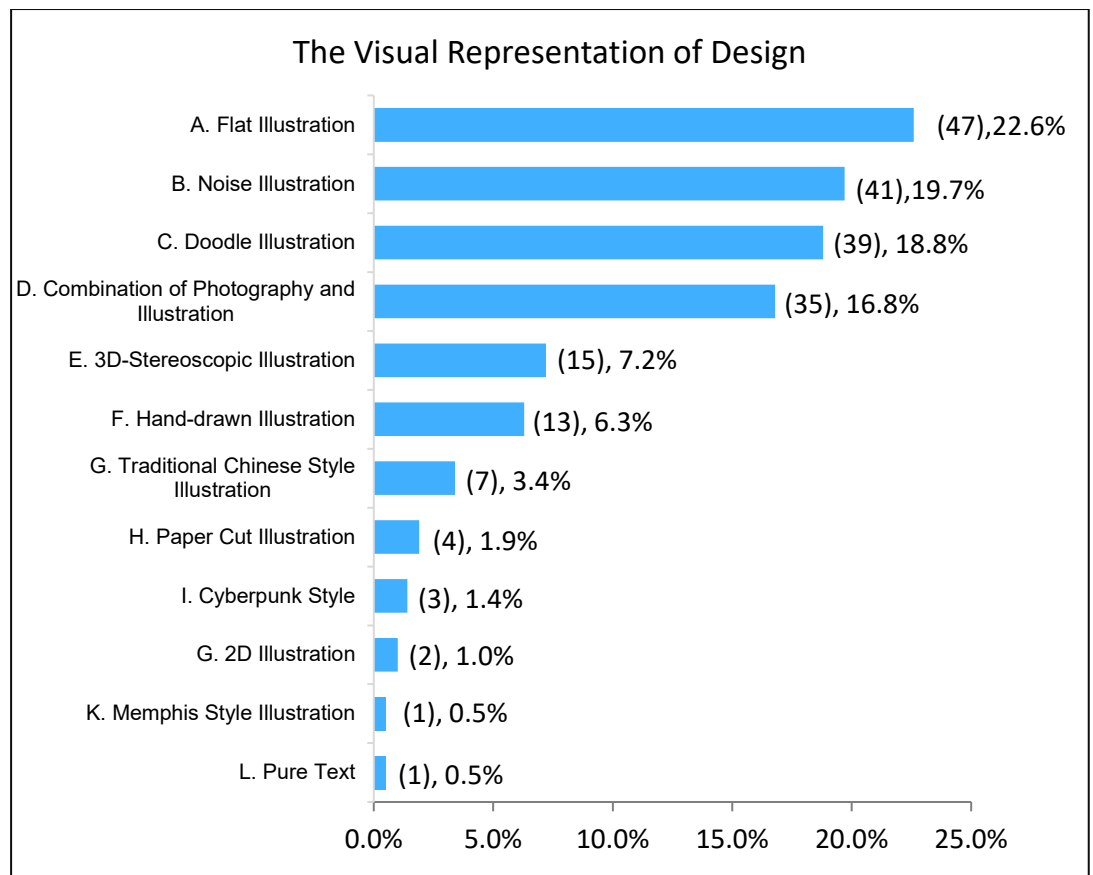


Figure 1: The Visual Representation of Design in Graphic Advertising

This - Figure 1- above also summarizes 12 categories of visual representation of design employed in the gold-winning graphic advertising design entries of the college award, providing insights into the distribution and prevalence of the various visual approaches taken by the participants.

The total number of visual representation of design in graphic advertising design were 208 entries. It shows evidence from the gold-winning entries in the College Awards category, that over the past five years students have preferred 12 different visual presentation forms. Firstly, the most frequently employed visual presentation forms was the -flat illustration- with 47 works, which represent 22.6% of the total of entries. Secondly, three relatively prevalent visual presentation forms such as: Noise Illustration, Doodle Illustration, and the Combination of Photography and Illustration, were used moderately, which represent the 19.7%, 18.8% and the 16.8% of the total respectively. Thirdly, follow by a set of two visual presentation forms, such as 3D-Stereoscopic Illustration, and Hand-drawn Illustration, with 15 & 13 entries, which represent the 7.2 % and the 6.3% respectively. Lastly the least frequently employed visual presentation forms, comprises the last six categories, such as Traditional Chinese Style, Illustration, Paper Cut Illustration, Cyberpunk Style, 2D Illustration,

Memphis Style Illustration, and Pure Text; which collectively represent 8.7%. form this data analysis, the following conclusion can be drawn: The high prevalence of flat illustration suggests that this visual representation method resonates more with competition judges, possibly due to its ability to convey complex ideas succinctly and visually. It is evident that guiding students through this process in term of visual representation of design in graphic advertising design competition; it is necessary to prioritize the used of graphic visual forms which may show higher winning possibilities and is more likely to garner recognition from judges, which consequently increased the student chances to win more awards.

4.3 The Number of Submissions for Each Group in Graphic Advertising

The study gathered information from the 208 groups that won gold in graphic advertising over the previous five years at the College Awards in order to further corroborate this finding In this study, the number of submissions per group influences the likelihood of the winning. Award-winning entries from national competitions like "Times Young Creative Awards"- "SUN-ADA" and "AD CAMPUS" were examined. It was revealed that the group that received the most awards was the one that submitted three pieces in a series.

Table 2: The Number of Submissions for Each Group in Graphic Advertising Design

The Number of Submissions for Each Group	Quantity of Works-Gold winning	Percentage (%)
3	166	79.8%
2	31	14.9%
1	8	3.8%
24	2	1.0%
6	1	0.5%
Total of Categories: 5	Total: 208	Total: 100%

This -Table 2- above also summarizes 5 categories of submission per group in graphic advertising design entries of the college award; providing into the distribution and prevalence of the various results taken by the participant. The 5 categories were submitted in series or groups of three (triple), two (double) and one (single) entry; beside the series of 24 works and another of 6 works, which represent a total of 208 entries.

The total number of the quantity of submission per group in graphic advertising design were 208 entries. It shows that among the gold-winning entries in the College Award category, that over the past five years students have -presenting- three pieces in sequence, which is the most popular approach, with 166 submissions, which represent 79.8% of the total. However, under the category of 24 works combined with other 6 works group, it shows that very few were submitted. Under the submission of two (2) per group, it shows 31 works which represent the 14.9% of the total. This data indicates that the more submission per group may not always represent a higher chance of winning any competition. Perhaps, the best course of action is to submit small number of works (two works or three works together as one entry) combined into a series of submission, using this planning may increase the student advantage to gold-winning the competition; under the College Award, rules and regulations is stated that up to maximum of three entries (three works, three design, three visuals) together may be submitted per group. It is also advisable to submit two works as per one entry.

Consequently, given that it accounts for a sizeable percentage of the data (79.8%), it appears that submitting three works in succession is the most popular and effective approach. When entering competitions for graphic advertising design, submitting three pieces as a cohesive series increases the likelihood of winning awards. It is advised that when producing work for advertising competitions, submissions should follow the insights that have been analysed and outlined. This will increase the likelihood of winning prizes.

As a result of a thorough examination of the College Awards' gold-winning pieces, the research has revealed some intriguing trends taken by the participants. When it comes to creative methods for advertising, 'metaphor' is the most often utilised, making up 18.8% at (Table 1). 'Substitution, exaggeration, contrast, and halo effect' are also used fairly frequently, totalling over 45% at (Table 1). The most common type of visual presentation form, accounting for 22.6% of the works, is the 'flat illustration' at (Figure 1). There has also been extensive use of 'Noise Illustration', combined with 'Doodle Illustration,' as well as 'Combination of Photography and Illustration' altogether (Figure 1). Furthermore, we noted that the vast majority of submissions which represent 79.8% have three pieces per group (Table 2), whereas submissions representing 1.0% and 0.5% of 24 and 6 pieces per group are rather uncommon (Table2).

5. DISCUSSION AND CONCLUSION

The study's goal was to identify patterns within three influencing factors, analysing the 2-Dimensional advertising design entries that have won gold awards, in order to increase the likelihood of winning university student advertising design competitions. The findings from this study suggest that certain creative approaches, such as the use of metaphor, flat illustrations, and submitting three works per group, significantly increase the chances of winning in graphic advertising competitions. This outcome is consistent with industry trends favoring clear, visually engaging designs that convey complex ideas succinctly. The prevalence of metaphors in winning designs aligns with James (2021) proposed concept of creativity as "new combinations of old elements," which resonates with both academic theories and practical industry applications. Furthermore, flat illustrations have become increasingly popular due to their ability to simplify complex messages while maintaining aesthetic appeal, as observed in contemporary advertising campaigns (Ni, 2016).

University students who take part in advertising design competitions can effectively direct their creative process and effort by understanding the design patterns of previous winning entries. This pattern enhances our understanding of how university students can produce more competitive entries, thereby boosting their confidence in the process; as a result, these new learning patterns (this visual design solutions) can be used as a guide for future university design competitions. This study relies on the quantitative methods to produce reliable and accurate results, applying statistical analysis to the small number of practical teaching classes, the results of the data presented has convey substantial and positive information. Lastly, increasing the confidence and excitement of university students and faculty members to participate in design competitions and to share knowledge about the patterns involved in producing outstanding award entries among the students. It also helps with practical instruction by giving the teacher a different way to succeed.

However, the study also has limitations. The sample size of 208 entries, all from a single competition (AD CAMPUS), may not fully represent the broader landscape of global advertising competitions. Future research should expand the scope to include other prestigious contests, such as the "Times Young Creative Awards" or "SUN-ADA," to determine whether these patterns hold across different contexts. Additionally, the role of judges' personal preferences, industry standards, and the impact of emerging technologies such as AI in the creative process should be considered in further studies.

As the advertising industry continues to evolve, understanding the creative strategies that resonate with judges and consumers alike can help shape future advertising campaigns. Moreover, teaching students how to apply these strategies effectively can better prepare them for the competitive nature of the industry.

REFERENCES

- Ding, H. Z. (2021) 72 Creative Changes. Henan University Press.
- Ding, B. Q. (2024) Advertising Planning and Creativity. Higher Education Press.
- James, W. Y. (2021) A Technique for Producing Ideas. Zhejiang Education Press.
- Liu, S. & Qiu, B. (2019) Research on practical teaching of advertising competition. Drama House (21), 162+164.
- Liu, X. W. (2019) The Truth of "Award" in advertising. Liaoning Fine Arts Publishing House.
- Ni, H. X. (2016). Study on the modeling of Flat 2.0 style Illustration in Flat Advertisement. Modern Decoration (Theory), (10):124.
- Pang, Y. (2017). Path Choice of Students' Creative Ability Cultivation in Academic Competition. Advertising Dazhan (Theory Edition), (06), 86-89.
- Parker, B. (2000). Putting it all together: Effective participation in advertising competitions. Journal of Advertising Education, 4(1), 19-29.
- Wang, J. (2020). Cultivation of innovative thinking in print advertising under the "Grand Canton Competition" -- A case study of School of Fine Arts and Design of Huizhou University. China National Exhibition (22), 185-187.
- Xu, M. Q. (2024). Research on visual Rhetoric in Advertising design. Shanghai Packaging (03), 168-170.
- Xiao, K. (2016) Discussion on the Integration of Advertising Competition and Practical Teaching of Advertising Specialty. Journal of Guangxi Economic Management Cadre College (02), 104-108.
- Zhang, Q. (2020) Creative rules of works of grade award of "Academy Award" in "Daguang Competition". Young Reporter (14), 101-102.

EMOTIONAL FURNITURE DESIGN FOR THE ELDERLY : HOW TO MAKE DESIGN CONNECT TO END-USERS

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Abstract : As the problem of an aging society becomes increasingly serious, the emotional needs and quality of life of the elderly are receiving more and more attention. Furniture is not only closely related to people's daily lives, but also shows the emotional pursuits and personality characteristics of users during use. Therefore, in order to narrow the distance between elderly furniture and users, it is necessary to use the concept of emotional design, and then design furniture products with spiritual care and emotional satisfaction characteristics according to the physiological and psychological characteristics of the elderly and their emotional needs. This paper aims to explore how to improve the comfort and emotional resonance of furniture used by the elderly through emotional design methods. Through empathetic design and metaphorical techniques, we designed furniture that can arouse emotional resonance and psychological memory to meet the social and emotional needs of the elderly in environments such as reading rooms. The ultimate goal is to design furniture that is both practical and that can give emotional support and spiritual satisfaction to the elderly, so that they can feel the care and respect of society in their later years.

Keywords: elderly furniture, emotional design, empathy, end-users

1. INTRODUCTION

In the context of globalization, the growth of the elderly population has become a common phenomenon. China, as the most populous country in the world, has a particularly significant growth rate in its elderly population (RIVM 2013)(World Health Organization 2002). Elderly people are the consumers of the future as they are growing in number and make up different components of the world's population (Zhengjun et al. 2019). However, the design industry has shown a certain degree of neglect when targeting this growing consumer group, and has invested more resources and innovation in the middle-aged, young and children's markets. With the improvement in the economic conditions of the elderly and the increase in their spending power, the elderly furniture market has shown great development potential (Zhang et al. 2023). As the main force of future consumption, the elderly have a profound impact on the market not only because of their growing numbers, but also because of their proportion in the global population structure. The growth of China's elderly population is a social phenomenon that cannot be ignored. This growth trend has put forward new requirements for the furniture design industry, requiring the industry to have a deeper understanding of and attention to the living habits, physical conditions and aesthetic preferences of the elderly. At present, the design industry has deviations in market positioning and has failed to fully recognize the market opportunities brought about by the growth of the elderly population. This phenomenon has restricted the development and innovation of the elderly furniture market to a certain extent. With the improvement of the economic level of the elderly and the change in consumption concepts, the demand for the elderly furniture market is growing. This market not only has a broad space for development, but also has important significance for improving the quality of life for the elderly(Wu 2023). The design industry should adjust its market strategy and pay more attention to the needs and preferences of the elderly. Through innovative design and personalized services, the elderly's requirements for functionality, comfort and aesthetics in furniture can be met.

In the context of rapid social and economic growth, people's pursuit of quality of life has gone beyond basic material needs and is moving towards deeper spiritual and emotional satisfaction. Furniture, as a core element of daily life, should not only be designed for beauty and practicality, but also be committed to meeting the comprehensive functional needs of users.

For emotional furniture design for the elderly, designers need to adopt a comprehensive design strategy that takes into account safety, convenience, comfort, and aging-friendly design that adapts to the physiological and psychological

characteristics of the elderly (Zhengjun et al. 2019). Safety ensures the stability of the furniture structure and prevents potential safety risks. Convenience focuses on simplifying the operating process and reducing the barriers to use for the elderly. Comfort improves the daily life experience of the elderly by providing excellent ergonomic support. Aging-friendly design pays special attention to the specific needs of the elderly, including fine-tuning the size, shape, and operation of furniture.

The core of emotional design is to have a deep insight into the emotional needs of the elderly, which requires designers to show a high degree of empathy and truly understand their living conditions and emotional pursuits from the perspective of the elderly. Through careful design, designers can create furniture that is both functional and beautiful, while also being able to resonate with the elderly on a spiritual level, providing them with a sense of home and emotional support.

2. THE EMOTIONAL DESIGN PERFORMANCE OF ELDERLY FURNITURE

Emotional design is an important guiding concept for the design of furniture for the elderly. It can use visible or invisible design language to place users' emotions in it, so as to achieve the purpose and effect of conveying emotions, and thus meet the spiritual and psychological needs of users. Specifically, the emotional design of furniture for the elderly should be manifested in the following aspects:

First, soft curves and large surfaces should be chosen in the modeling design, avoiding straight lines and sharp corners. At the same time, elements or symbols with traditional cultural characteristics should be matched, so as to show the characteristics of the primitive and nostalgic atmosphere, to meet the physical and mental characteristics of the elderly as well as their emotional needs. Second, the color design should highlight the applicability of the effect, paying attention to the harmonious relationship of color collocation. Thirdly, the functional design should be based on the living habits and concepts of the elderly, highlighting the simplicity and convenience of the use of furniture and ensuring that furniture for the elderly can be widely used. Fourthly, the material design should take into account the elderly people's feel when they touch the furniture. On the one hand, the use of high-tech materials should be reduced; on the other hand, mainstream materials should be used in line with the elderly's needs when they were young, so as to give them good visual and tactile feelings through the surface characteristics of the furniture, and also healthy and positive psychological association. Thus, the recessive interaction between furniture product design and the elderly can be realized.

3. THE EMOTIONAL DESIGN APPEAL OF ELDERLY FURNITURE

As a growing special group in modern society, the elderly deserve to have their quality of life and emotional needs studied in-depth and given attention. Although the living conditions of many elderly people may not be ideal, they usually show high satisfaction. This satisfaction stems from the difficult life they have experienced in the past and their gratitude for the improvements in their current life. However, the satisfaction of the elderly with their quality of life does not mean that they do not have higher pursuits in life. In fact, with the relative decline of material conditions, the spiritual needs of the elderly are growing. This transformation requires us to deeply explore and understand their living conditions and real needs when designing emotional furniture for the elderly. The living conditions of the elderly are affected by many factors, including economic conditions, health conditions and social support. Designers need to consider these factors comprehensively to ensure that furniture design can truly solve the actual problems of the elderly. The emotional characteristics of the elderly are mainly manifested in the fear of loneliness and isolation, the pursuit of a sense of belonging, and the desire for the love of their children. These emotional characteristics provide us with several aspects that need special attention when designing furniture for the elderly. Emotional design should not only meet the practical needs of the elderly, but also pay attention to their emotional experiences. Designers can create furniture that can resonate emotionally through the color, shape, material and function of furniture (Lu 2021). Considering the elderly's need for their children's care, furniture design can promote communication and interaction between family members. For example, designing furniture with common activities can enhance the connection between family members. The elderly often have a deep emotional connection to their past lives. Incorporating cultural and nostalgic elements into the design can help the elderly maintain a connection with the past and enhance their sense of belonging and happiness.

3.1 Focus on Safety

The physiological and psychological state of the elderly changes with age. Psychologically, they may be afraid of loneliness, especially those who live alone who are more likely to have and be in negative emotions for a long time, which may have an adverse effect on their physical health. Their physical strength, endurance, balance and coordination abilities generally decline, and some elderly people may also suffer from chronic diseases. These factors have put forward higher requirements for the safety of furniture design. Safety design should not only meet the actual needs of the elderly, be easy to use, and adapt to different life scenarios, but also give psychological comfort to the elderly so that they can live more assuredly.

3.2 Consideration of Comfort

The emotional design concept emphasizes that "good-looking things are more useful". As a high-frequency item in daily life, the attractiveness of furniture becomes the key to design. For the design of furniture for the elderly, comfort is the primary factor to win the favor of the elderly. Considering the changes in the body shape of the elderly, the furniture design should meet their special size requirements and ensure comfort during use (Shanat, M. & Saili, J. 2018). This design concept can not only enhance the user experience of the elderly, but also win their trust.

3.3 Design of Convenience

As they age, the mobility of the elderly may gradually decline, so convenience becomes an important aspect of the emotional design of furniture for the elderly. In addition to traditional convenience design, the advantages of intelligent design should also be fully utilized in the modern social environment. Intelligent furniture should be easy to operate, and can be adjusted and used through simple remote control buttons, reducing the frequency of elderly people getting up and walking. At the same time, the design of intelligent furniture should simplify the process to ensure that the elderly can easily accept and use it accurately to achieve real convenience.

3.4 Highlighting of Personalization

In the emotional design of elderly furniture, personalization is an element that cannot be ignored. The "personalization" here refers to the design that conforms to the personality of the elderly, that is, the design style that reflects the unique taste and life experience of the elderly. In terms of color, structure, form, etc., retro elements can be incorporated to fit the furniture style of the elderly when they were young (Fu & Zhang 2019). Such a design can meet not only the emotional and psychological needs of the elderly, but also stimulate their desire to buy and use.

4. THE EMOTIONAL DESIGN PATH OF ELDERLY FURNITURE

By analyzing the needs of elderly furniture design, we can find that in order to make the design closer to users, it is necessary to conform to their actual needs. In the design of elderly furniture, we should expand from the following aspects: safety, convenience, comfort and aging-friendly.

4.1 Meeting the Needs of the Elderly and Paying Attention to the Safety Design

Through the behavior analysis of the elderly, it is not difficult to find that after entering old age, most of the urban elderly live at home in the state of retirement, generally spend a long time in the family, and are not used to sitting or lying down for a long

time. Therefore, most older people still want to get fit by walking, despite the decline in physical functioning that can occur, such as a decline in balance and coordination. It is therefore necessary not only to cancel the older furniture design elements such as tough, sharp corners, but also to use more rounded without edges and corners design ideas, in order to prevent serious injury for the elderly resulting from physical contact and falls. At the same time, the psychological benefits can also give the elderly a higher sense of security, so as to achieve the purpose of caring and respecting the elderly from the design level.

In the dynamic design of furniture, it is necessary to move the handrail as far as possible for the furniture design, in order to not only make it easier for the elderly to find the fulcrum when sitting up and help them maintain balance in their body and prevent falls, but also to give the elderly a certain sense of security.

In the process of independent living, the elderly are also faced with certain safety and disease risks. Therefore, in furniture design, we can also add intelligent interactive equipment to carry out real-time supervision and early warning for the elderly. For example, the design for toilets can incorporate "monitoring cushion", automatic monitoring of the elderly's heart rate, breathing, blood pressure and other data indicators. When there is a problem, information can be sent to the family phone, so that they can receive timely assistance.

4.2 In Line with the Preferences of the Elderly, Pay Attention to Comfort Design

The body shape of the elderly is quite different from that of the youth, so in the emotional design for elderly furniture, it is also necessary to adhere to the basis of ergonomic design. The furniture size and design will have to take into consideration the elderly's height, activity ability, weight, body width, chest waist circumference and other data to optimize the design, in order to ensure that the furniture conforms to the elderly's bodily requirements, and achieves the effect of improving its comfort level. For example, the normal sitting height of the general furniture is 45-52cm, but the elderly will be short due to the curvature of the back, stiff feet and other problems. So the sitting height design can be reduced to a moderate amount, 37-38cm, which is more appropriate(Shanat, M., 2014).

The home life needs of the elderly are also significantly different from those of young people(Yang 2014), especially in terms of psychological comfort. Given that the elderly spend much more time at home than young people, the design of the home environment should focus on meeting their deep emotional needs. In emotional design, choosing a relatively traditional Chinese style can evoke nostalgia in the elderly and satisfy their emotional attachment to traditional culture. Chinese-style furniture design, with its classic aesthetic characteristics and profound cultural

heritage, provides a familiar and warm living atmosphere for the elderly. Traditional Chinese furniture is known for its practicality and comfort. For example, the frosted texture of a wooden sofa not only gives people a warm and natural feeling, but its materials and craftsmanship are also more in line with the physical needs and usage habits of the elderly. In furniture design, the attention to detail is particularly critical. Pairing with soft and comfortable cushions and traditional wooden coffee tables can not only enhance the practicality of furniture, but also give the elderly a sense of comfort and peace of mind in terms of vision and touch, thereby enhancing their physical and mental comfort.



Figure 1. Wooden sofas with a matte texture

4.3 Close to the Old Life, the Use of Convenience Design

The elderly face decline both psychologically and physiologically. Psychologically, they have an increased fear of loneliness and hope to be cared for, but at the same time they hope to independently handle things they think they can solve, which forms a real contradiction. To solve this problem, the design of elderly furniture can add height adjustment functions, which not only improves the convenience of use, but also meets the psychological needs of the elderly to solve problems independently, allowing them to adjust the height of the furniture at any time according to their needs.

Physiologically, the layout of the elderly's living room should be as simple as possible, and the partition design should be reduced to improve the convenience of movement. In order to further meet the convenience needs of some elderly people, furniture can add simple intelligent auxiliary functions. For example, button for height adjustment can be set on chairs that can be easily controlled by the elderly.



Figure 2. Button for height adjustment can be set on chairs

4.4 Highlight the Nostalgic Style and Implement the Design of Aging

The elderly group is different from other social groups, as most of the elderly began to enter the period of facing death after retirement, so the fear of loneliness is naturally generated. They tend to find meaning in life by recalling the people and things in the past. This process leads to the formation of nostalgic sentiments, evoked by old objects and cultural forms, which serve as anchors to their former lives.

Therefore, in the emotional design of elderly furniture, it is also necessary to meet the nostalgic needs of the elderly and provide necessary spiritual support for them. To meet the general nostalgia of the elderly, designers can incorporate traditional cultural elements and symbols into furniture design to weaken the stiffness of mechanical parts, and try to use curved surfaces as much as possible to avoid excessive contrast, making the use of furniture more comfortable for the elderly and creating a good emotional experience (Mu 2021). Therefore, in addressing the design needs of the elderly, we should try our best to reduce the psychological impact of the changes brought by time on the elderly, so we can choose to imitate and learn the furniture design characteristics of the 80's and 90's, which should not only highlight the gentle and concise, but also highlight the "golden mean", showing the unique characteristics of simple, smooth, stretch and vigorous furniture.

5. DISCUSSION

5.1 Principal Findings

In this study on the application of empathy and availability theory to the user experience of geriatric furniture design, the importance of user-centered design that prioritizes the emotional and physical well-being of older users is emphasized. By

applying availability theory to geriatric furniture design, we found that clear, intuitive design elements can significantly improve usability and safety for older adults. Features such as adjustable heights, non-slip surfaces, and easily accessible storage spaces are directly related to the physical needs of older users and promote both independence and safety in their daily interactions with furniture.

5.2 Empathy-Driven Design Meets Emotional and Psychological Needs

Furniture designs that incorporate traditional aesthetics, such as nostalgic Chinese styles, not only cater to the cultural preferences of the older generation, but also evoke a positive emotional response that helps to reduce loneliness and enhance a sense of belonging. The balance between modern functionality and cultural familiarity is key to meeting the complex emotional needs of this demographic.

5.3 Integration of Smart Technology Enhances the Functionality of Furniture

The combination of smart technologies, such as height-adjustable seats or assistive features such as “lift” buttons on armrests, meets both physical and mental needs. These innovations increase convenience and allow older users to feel in control of their surroundings while maintaining their independence. Smart furniture that meets the needs of the user without over complicating them is a promising way to enhance the experience of older users.

6. CONCLUSION

In summary, with the development of modern society, the elderly furniture industry has found new development opportunities in an aging society and has become an important pillar to help countless elderly people enjoy their old age. The development of modern furniture continues to diversify, showing different morphological characteristics and aesthetic styles, but it obviously does not meet the actual needs of contemporary elderly people. Under the guidance of emotional design concepts, the design of elderly furniture should go beyond traditional aesthetic and functional considerations, follow the design principles of safety, convenience, comfort and aging-friendly, and pay more attention to the physiological and psychological needs of the elderly. Help the elderly create a safe, healthy, happy and happy living environment and atmosphere.

REFERENCES

Fu R.& Zhang Z. (2019). Research on the functional emotional design of furniture for the elderly. China Forest Products Industry,46-49.

Lu Xiaomeng. (2021). Analysis on the Emotional Design of the Furniture for the Aged.

Packaging Engineering,42(02): 282-285.

Mu Ren.(2021). Research on Humanized Design of Furniture for the Elderly. Packaging Engineering, 282-285.

RIVM.(2013). the Dutch National Institute for Public Health and the Environment 2013, Available online: <https://www.rivm.nl/en/news/annual-report-rivm-2013-online>.

Shanat, M.& Saili, J. (2018). Forecasting Consumers' Satisfaction of Furniture Design Through Semantic Differential Method. Global Business and Management Research: An International Journal. 22-25.

Shanat, M.(2014). Furniture Design: Application of semantic differential techniques to measure and evaluate design and user groups' perceptions of aesthetic, form and utility through the medium of chair design. The University of Western Australia, 109-111.

World Health Organization (WHO). (2022). Active Ageing: A Policy Framework. World Health Organization. Online: <https://apps.who.int/iris/handle/10665/67215>.

Wu Chuyan. (2020). Emotional Design of Intelligent Furniture Interface Based on the Elderly. Mass Literature and Art, 75-76.

Yang xia.(2018). Research on Humanized Design of Old People's Furniture, Design and Theory.65-66.

Zhengjun W. et al. (2019). Study on the Emotional Design of Reading Room Furniture for the Aged Community.2019 International Conference on Literature, Art and Human Development (ICLAHD 2019).27.

Zhang J.& Shanat M.(2023). Research on Design and Development of Elder-Friendly Furniture in Chinese Residential Situation. Art and Society. 32-37.

HERITAGE REPRESENTATION IN THE MALAYSIAN NATIONAL FILM, JOGHO (1997)

PEMAPARAN WARISAN DALAM FILEM NASIONAL MALAYSIA, JOGHO (1997)

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Abstract: The film Jogho (1997), directed by U-Wei Haji Saari, is an adaptation of the novel Juara (1976) by S. Othman Kelantan. The film was awarded Best Film at the 14th Malaysia Film Festival (FFM) in 1999. Prior to that, it represented Malaysia at the Asia-Pacific Film Festival in Taipei in 1998, where it won the Best Actor Award. What makes Jogho particularly interesting is its portrayal of the culture and heritage of the Kelantanese Malay community residing along the southern Thai border. Additionally, the characters in the film converse using the Kelantanese dialect. However, according to the 28th FFM's criteria for recognizing a film as Best Film, at least 70 percent of the dialogue must be in Bahasa Melayu. This raises questions about the status of Jogho, which highlights cultural heritage and regional dialect as a form of identity reflecting a specific community in Malaysia. To address the issue of cultural heritage and language in Jogho, this study aims to examine its linguistic and cultural elements within the context of national cinema. In this regard, the study applies Cooke's (1999) concept of cultural heritage to analyze Jogho's position as a Malaysian national film. The data in this article is derived from fundamental research using a qualitative methodology. Content analysis serves as the primary research instrument for obtaining findings. The study's results indicate that the portrayal of Kelantanese Malay cultural heritage in the film aligns with the criteria of cultural representation in national cinema, as discussed by Cooke. This suggests that Jogho successfully

presents an imagined community that accurately reflects the Kelantanese/Patani society.

Abstrak: *Jogho* (1997) filem arahan U-Wei Haji Saari merupakan sebuah filem adaptasi daripada novel *Juara* (1976) oleh S. Othman Kelantan. Filem ini dinobatkan sebagai Filem Terbaik dalam Festival Filem Malaysia (FFM) ke-14 pada tahun 1999. Sebelum itu, filem ini telah mewakili Malaysia dalam Festival Filem Asia Pasifik di Taipei pada tahun 1998, dan memenangi Anugerah Pelakon Lelaki Terbaik. Apa yang menarik tentang filem *Jogho* adalah, filem ini berlatarkan kebudayaan dan warisan masyarakat Melayu Kelantan yang menetap di sempadan Selatan Thailand. Selain daripada itu, bahasa perbualan watak-wataknya juga menggunakan dialek negeri Kelantan. Namun begitu, antara syarat yang dikeluarkan oleh FFM ke-28 bagi mengiktiraf filem sebagai sebuah Filem Terbaik adalah penggunaan 70 peratus Bahasa Melayu. Bagaimana pula kedudukan filem *Jogho* yang memaparkan warisan budaya dan loghat negeri sebagai suatu bentuk identiti bagi mencerminkan masyarakat sesebuah negeri di Malaysia?. Untuk

menghuraikan permasalahan warisan budaya dan bahasa filem *Jogho*, kajian ini bertujuan meneliti bahasa dan warisan budaya dalam konteks sinema nasional. Sehubungan dengan itu, kajian ini menerapkan konsep warisan budaya oleh Cooke (1999) untuk meneliti kedudukan *Jogho* sebagai sebuah filem nasional Malaysia. Data artikel ini diperolehi daripada kajian berbentuk *fundamental* dengan kaedah kualitatif sebagai rekabentuk kajian. Instrumen kajian utama bagi memperoleh jawapan adalah kaedah analisis kandungan. Dapatan kajian merakamkan bahawa, warisan budaya masyarakat Melayu Kelantan yang dipaparkan dalam filem ini menepati kriteria kebudayaan filem nasional seperti yang dibahaskan oleh Cooke. Ini menunjukkan filem *Jogho* berjaya dalam memaparkan komuniti imaginasi yang sebenarnya dapat dilihat dalam komuniti masyarakat Kelantan/Patani.

Keywords: Heritage, National Film, *Jogho*, Dialect

Kata Kunci: Warisan, Filem Nasional, *Jogho*, Dialek

1. PENGENALAN

Jogho (1997) adalah filem karya U-Wei Haji Saari atau nama sebenar beliau, Zubir Saari (Saharudin Musthafa 2001). Selain itu, *Jogho* juga merupakan filem yang diadaptasi daripada novel. Novel tersebut berjudul *Juara* (1976) yang ditulis oleh S. Othman Kelantan yang mengangkat isu politik Melayu-Kelantan pada tahun 1960-an ((Safie & Hassan, 2016)). Selain *Jogho*, U- Wei telah mengarah 10 buah filem lain. Namun begitu, diantara 10 buah filem tersebut, *Jogho* merupakan filem ketiga terbesar selepas *Perempuan, Isteri dan ...* (1993) dan *Kaki Bakar* (1994) (Saharudin Musthafa 2001).

Filem *Jogho* juga telah membolot lima anugerah dalam Festival Filem Malaysia (FFM) yang ke-14. Anugerah-anugerah yang dibolot oleh *Jogho* adalah Filem Terbaik, Pengarah Terbaik, Lakon Layar Terbaik, Pelakon Lelaki Terbaik (Khalid Salleh) dan Poster Terbaik (Kementerian Komunikasi dan Multimedia Malaysia & FINAS, 2018). Selain itu, filem *Jogho* turut dipertandingkan di festival-festival peringkat antarabangsa. Di Festival Filem Antarabangsa Singapura ke-11 pada tahun 1998 dan Festival Filem Antarabangsa Jakarta pada tahun 1999, filem *Jogho* memasuki pertandingan tetapi tidak memenangi anugerah. Namun begitu, di Festival Filem Asia Pasifik ke-43 pada tahun 1998 di Taipei, *Jogho* telah memenangi anugerah Pelakon Lelaki Terbaik yang dilakukan oleh Khalid Salleh (Fai, n.d.; C.P.Jong, n.d.). Selain itu, *Jogho* turut ditayangkan di tayangan perdana di Tokyo pada 13 Disember 1997 dan tayangan di Malaysia pada 28 Mac 1999 dan ditayangkan semula di Kuala Lumpur pada 30 September 1999 (Fai, n.d.; C.P.Jong, n.d.).

Apa yang menarik tentang filem ini adalah, ia mengekalkan keunikan warisan budaya, bahasa dan identiti masyarakat muslim Melayu-Kelantan. *Jogho* berlatarbelakangkan dua lokasi penggambaran iaitu di Selatan Thailand dan Kelantan. Dengan itu, bahasa perbualan utama yang digunakan adalah dialek negeri Kelantan dan bahasa Thailand. Namun begitu, antara syarat pencalonan FFM adalah, filem yang dipilih untuk memasuki kategori Bahasa Melayu perlu menggunakan 70% bahasa pertuturan dalam bahasa rasmi negara (Muhammad Azrul 2016). Oleh itu, dimanakah letaknya pemaparan warisan menerusi filem *Jogho* sebagai sebuah filem Melayu seterusnya filem Malaysia? Mengangkat permasalahan dan persoalan ini, artikel ini akan meneliti warisan budaya, bahasa dan identiti filem *Jogho* sebagai sebuah filem nasional Malaysia.

2. SOROTAN KESUSASTERAAN

Kajian ini membincangkan beberapa penulisan lepas yang mengupas tentang sinema nasional negara masing-masing. Rata-ratanya mengangkat identiti sinema negara mereka dengan membincangkan keunikan sinema mereka yang mampu membezakan sinema mereka dengan sinema negara-negara lain. Perbincangan terperinci adalah seperti di bawah.

2.1 Kajian Sinema Nasional Antarabangsa

Artikel Andrew Higson (1989) bertajuk *The Concept of National Cinema* berbentuk penyelidikan tinjauan dengan mengangkat permasalahan bentuk sinema nasional British dari aspek ekonomi dan juga industri perfileman termasuklah kandungan filem. Artikel ini membahaskan empat konsep yang boleh diperhatikan dalam sinema nasional British iaitu syarat-syarat ekonomi, pendekatan asas kandungan, pameran dan kritikan. Dapatan artikel ini mencadangkan untuk meneroka konsep sinema nasional British dengan lebih mendalam (*in-ward looking*). Walau bagaimanapun, kajian ini lebih menjurus kepada kandungan filem dan hanya konsep pendekatan asas kandungan oleh Higson yang membincangkan tentang kandungan filem. Beliau mempersoalkan tentang apakah filem itu?, adakah ianya berkongsi suatu perkara yang sama atau pandangan dunia?, bagaimana ia mencerminkan karakter nasional?, sejauh mana ia mempersoalkan tentang kenegaraan dan pembentukan negara dalam filem dan kesedaran penonton?. Persoalan ini merumuskan kandungan dalam filem, namun kajian ini menjurus kepada kandungan kebudayaan dalam bentuk identiti nasional seperti kepelbagaian bangsa, bahasa dan budaya.

Buku penulisan oleh Higson (1995a) berjudul *Waving the Flag: Constructing a National Cinema in Britain* merupakan penteorian sinema nasional British menerusi perkembangan industri filem British. Teori dibangunkan berlandaskan perbincangan terhadap dua aspek iaitu industri filem British dan pemaparan budaya dalam filem British. Higson membincangkan dua aspek ini dalam tiga kajian kes daripada *independent* filem British. Kes kajian pertama adalah filem pada tahun 1920-an hingga 1940-an, kedua; mengidentifikasi filem British daripada filem *Hollywood* dan ketiga; kajian terhadap kemasukan idea dokumentari pada sinema nasional British. Berdasarkan tiga kajian kes ini, Higson menjelaskan bahawa sinema nasional British dikenali dari aspek industri iaitu faktor penerbit, pengagih dan pempamer. Manakala, dari aspek kandungan filem, identiti negara British dikenali berdasarkan ciri-ciri kepunyaan masyarakat Britain sebagai contoh pakaian dan budaya menerusi genre *heritage* (warisan).

Buku penulisan O'Regan (1996) bertajuk *Australian National Cinema* membincangkan isu filem pada masa kini dan menganalisis filem-filem ini bagi mendefinisikan kembali

'perhubungan' antara masyarakat dengan sinema. Penyelidikan ini mengangkat permasalahan bahawa filem Australia merupakan sinema pelbagai dan berlainan dengan tiada jalinan yang menghubungkan pembikin filem, pasaran, kritikan, polisi, kerajaan dan penghargaan. Persoalannya adalah, bagaimana filem sering kali dieksploitasi dan bersungguh-sungguh menitikberatkan masalah masyarakat dengan pembezaan kebudayaan dari aspek kelas, agama, bangsa, gender dan orientasi seksual?. Penyelidikan ini mengerjakan kembali konsep yang diketengahkan oleh Michel Foucault dan Bruno Latour. Dapatan kajian adalah, analisis karektor hibrid sinema Australia. Penyelidikan O'Regan hampir dengan kajian ini dari aspek penelitian kepelbagaian dalam sinema khususnya dari aspek bahasa, budaya dan bangsa. Walau bagaimanapun, O'Regan menekankan kepada karektor hibrid yang muncul daripada kepelbagaian ini.

Tesis Doktor Falsafah Kratzer-Juilfs Silvia Cornelia (1996) bertajuk *Exile Cinema as National Cinema: Re-Defining German National Cinema (1962 – 1995)* memperdebatkan tentang sinema kebangsaan Jerman oleh pembikin filem Jerman Timur dan *Gastarbeiter* (pekerja asing atau *guest workers*). Sehubungan dengan itu, tesis ini mengkaji kesatuan idea seni dan sinema nasional Jerman dengan menyelidik bagaimana perdebatan sinema nasional harus difikir kembali dan penteorian kembali dalam konteks perubahan politik, sosial dan kebudayaan Jerman. Perdebatan ini mengangkat satu permasalahan iaitu kemunculan sinema baharu Jerman. Sinema baharu Jerman ini merupakan suatu aliran sinematik khusus yang menguasai tempat dalam sinema nasional Jerman tetapi dianggap tidak lagi berfungsi walaupun ianya telah menyediakan platform asas bagi sinema nasional Jerman. Kajian ini merupakan penyelidikan asas dengan menggunakan teori sinema nasional. Dapatan kajian ini menemukan dua aspek iaitu dari segi tematik dan teoritikal. Dari aspek tematik, tesis ini menghuraikan perbezaan antara sinema *exile* (buangan) di Jerman yang berbentuk sementara atau tetap, sukarela atau paksaan, motivasi, ekonomi atau politik dan 'buangan' dalaman atau luaran. Dari sudut teori, analisis ke atas filem mendapati filem-filem 'buangan' di Jerman telah mengangkat kembali konsep utama dan seni tematik bagi sinema baharu Jerman.

Dalam buku *An Introduction to Media Studies* (1999) pada bab bertajuk *British Cinema: Representing the Nation*, Lez Cooke telah meneroka tentang sinema nasional British dari tiga era yang berbeza sebelum 1910, tahun 1930-an dan *independent* sinema pada tahun 1980-an. Beliau mempersoalkan tentang bagaimana kelas, jantina, bangsa, seksualiti, identiti serantau dan kebangsaan ditonjol pada filem-filem British di zaman yang berbeza dan bagaimana imej berfungsi sebagai perlambangan kepada negara sendiri dan kepada dunia. Persoalan ini dijadikan landasan bagi Lez Cooke (1999) untuk membangunkan sebuah kerangka bagi mengenali sinema nasional British.

Model sinema nasional British oleh Lez Cooke menerangkan dua faktor yang melambangkan sebuah sinema nasional British iaitu industri filem dan yang utama adalah kebudayaan dalam filem. Lez Cooke (1999) menemukan bahawa, faktor industri tidak cukup bagi meneliti sinema nasional British. Faktor kebudayaan telah melengkapkan ciri bagi mengidentifikasi sinema nasional British. Faktor kebudayaan berdasarkan kelas, jantina, bangsa, seksualiti, identiti serantau dan kebangsaan ini pula berubah-ubah mengikut perkembangan zaman dan konteks masyarakatnya.

Buku penulisan Hayward (2005) bertajuk *French National Cinema* bertajuk bersandarkan kajian jenis penyelidikan asas dengan kajian pemeriksaan ke atas sinema nasional Perancis. Hayward mengetengahkan isu politik dan kandungan kebudayaan dalam kandungan bersejarah yang dikesan dalam sosial dan politik yang diperhatikan mencerminkan peralihan yang berbeza. Dua persoalan asas yang diketengahkan oleh Hayward adalah bagaimana nasional dinyatakan? dan bagaimana untuk menyatakan kenasionalan itu?. Dapatan penulisan ini adalah, sinema nasional Perancis telah merentasi suatu fahaman baru mengenai penulisan sinema Perancis dalam pengkonsepsian negara bangsa Perancis. Kandungan kebudayaan Hayward menyenaraikan tujuh tipologi bagi mengelaskan sinema nasional Perancis iaitu naratif, genre, kod dan aturan, gerak isyarat dan tata kata, pelakon sebagai lambang, sinema sebagai pusat dan sinema sebagai ukuran, akhir sekali sinema sebagai penggerak kepada hikayat bangsa dan negara.

3. METODOLOGI

Artikel ini merupakan sebuah kajian *fundamental* dengan mengaplikasikan kaedah kualitatif sebagai reka bentuk kajian. Selain itu, artikel ini turut mengaplikasikan instrumen analisis kandungan untuk menganalisis filem *Jogho*. Filem *Jogho* akan dianalisis berdasarkan model sinema nasional oleh Cooke Lez (1999). Perbincangan selanjutnya diperincikan di bawah.

3.1 Model Sinema Nasional oleh Cooke Lez (1999)

Model sinema nasional British oleh Lez Cooke (1999) merupakan model yang digarap daripada kajian Higson (1989) dan Street (1997). Model ini turut membincangkan industri dan kandungan kebudayaan menerusi filem nasional British. Namun begitu, dalam artikel ini, perbincangan memfokuskan kandungan filem sahaja, manakala, kandungan industri tidak dibincangkan. Justeru itu, kandungan kebudayaan meneliti dua aspek budaya iaitu, ikonografi dan bahasa sebagai cerminan kebudayaan filem nasional British.

Aspek ikonografi yang dibincangkan oleh Cooke merupakan pemaparan kebudayaan menerusi kod-kod visual (Cooke 1999). Kod-kod visual ini diperhatikan pada lokasi, pakaian dan budaya dalam filem-filem nasional. Menerusi tiga kod visual tersebut, penonton boleh membuat pengecaman ke atas filem negara bangsa. Misalnya, lokasi yang berlatarbelakangkan bandar raya Kuala Lumpur membolehkan penonton membuat pengecaman ke atas filem nasional Malaysia. Bagi Cooke (1999), ikonografi merupakan asas utama yang memberi pengecaman kepada penonton bahawa, filem tersebut adalah filem British atau sebaliknya dengan mengangkat intipati British sepenuhnya.

Bagi meneliti aspek ikonografi menerusi filem *Jogho* (1997), aspek ini diteliti dan dikaji ke atas visual dan dialog watak yang menyentuh aspek-aspek kebudayaan. Sebagai contoh berdasarkan penelitian awal, menerusi visual filem *Jogho* terdapat ikonografi yang memberi pengecaman identiti masyarakat Melayu Kelantan. Maka, aspek ikonografi seperti ciri-ciri identiti, latar tempat dan pakaian diperhatikan menerusi filem *Jogho* (1997).

Menerusi aspek bahasa pula, Cooke (1999) membincangkan penggunaan bahasa dalam filem British. Bahasa kebangsaan, dialek sama ada pelat daerah atau perbezaan antara bahasa harian oleh golongan bangsawan dengan golongan bawahan adalah faktor pengecaman penting kepada filem nasional British. Hal ini kerana, bahasa kebangsaan, pelat daerah dan bahasa harian adalah keistimewaan yang terdapat pada sesebuah negara yang dipaparkan melalui filem nasionalnya. Aspek ini juga menjadi identiti kepada sebuah filem nasional kerana keunikan bahasa yang hanya dipertuturkan oleh masyarakat negara bangsa tersebut. Misalnya bahasa Malaysia sebagai bahasa rasmi dan dipertuturkan oleh masyarakat Malaysia amnya. Dialek daerah juga dipertuturkan oleh masyarakat Malaysia yang mendiami atau mempunyai kebolehan untuk bertutur dialek negeri-negeri dalam Malaysia.

Aspek bahasa ini turut diteliti berdasarkan dialog yang diungkapkan oleh watak-watak dalam filem *Jogho* (1997). Penelitian awal mengenalpasti terdapat bahasa atau dialek Kelantan digunakan dalam filem ini. Terdapat juga Bahasa Thailand yang digunakan. Aspek bahasa ini akan diperincikan dan dibahaskan dalam analisa kajian. Dua aspek ini diteliti oleh Cooke (1999) dalam elemen-elemen karektor, babak, situasi dan penceritaan filem nasional British. Justeru itu, berdasarkan model Cooke (1999) ini elemen ikonografi dan bahasa diteliti menerusi filem *Jogho* (1997).

4. ANALISA DAN DAPATAN KAJIAN

Berdasarkan model Cooke di atas, ikonografi dan bahasa diteliti ke atas filem *Jogho* bagi menjawab persoalan artikel ini. Justeru itu, kajian terperinci tentang pemaparan elemen warisan, budaya, bahasa dan ikonografi dibahaskan di bawah.

4.1 Analisis Filem *Jogho* (1997)

Jogho mengisahkan kehidupan Pak Mat atau Mamat iaitu suami kepada Minah dan juga seorang pelaga lembu di Patani, Selatan-Thailand. Sebelum itu, Pak Mat menetap di Kelantan dan setelah gagal dalam bidang politik di Kelantan dia membawa diri dan keluarganya ke Patani. Kehidupan Pak Mat di Patani berlegar-legar antara kemiskinan dan hobinya atau kepakarannya dalam pertandingan berlaga lembu. Dalam satu pertandingan, lembu yang dipertandingkan oleh Pak Mat, Calet telah ditembak mati bersama abangnya iaitu Lazim.

Bermula dari peristiwa itu, Pak Mat mula menggumpul kaki-kakinya di Patani dan Kelantan untuk menuntut bela di atas kematian Lazim. Antara orang-orang yang terlibat adalah Sani dan Salim anak kepada Lazim, Jali orang kepercayaan Pak Mat dan saudaranya di Kelantan, Jaafar Beruang. Namun begitu, perkara yang tidak diduga telah berlaku iaitu, Sani, Salim dan Jali telah terlibat dalam aktiviti tembak-menembak dengan Dolah Munduk (orang yang bertanggungjawab membunuh Lazim) dan anak Pak Isa. Akibatnya, Dolah Munduk dan anak Pak Isa telah mati ditembak. Kematian anak Pak Isa menyebabkan dendam antara Pak Mat dengan Pak Isa menjadi semakin tegang. Cerita berakhir dengan Sani menembak mati Pak Isa di satu pertandingan lembu. Akhirnya polis datang dan Pak Mat telah menutup kesalahan Sani dengan mengaku bahawa dia yang menembak mati Pak Isa (*Jogho* 1997).

Berpandukan model sinema nasional kandungan budaya (Cooke 1999) naratif filem *Jogho* akan dianalisis mengikut, (1) kebenaran sosial, (2) ikonografi dan (3) bahasa.

4.2 Realisme Menerusi Filem *Jogho*

Realiti sosial utama yang jelas dipaparkan dalam *Jogho* adalah kemiskinan. Kemiskinan ini dapat dilihat menerusi kehidupan Pak Mat dan keluarganya. Namun begitu, kemiskinan ini berpunca daripada gaya hidup Pak Mat yang suka berjudi (berlaga lembu). Kemiskinan ini dipaparkan menerusi pengucapan Aminah atau Minah isteri Pak Mat. Antara dialog yang diucapkan oleh Minah adalah “*Yo lah tuh. Anok bini make nasi ngan budu. Hok molek semo ko lembu*” (“*Iyalah. Anak isteri makan nasi dengan budu. Yang elok semua untuk lembu*”) pada minit ke 00:30:01 hingga 00:30:07.

Dialog ini jelas memaparkan kesengsaraan hidup Minah yang terhimpit dalam kemiskinan akibat daripada perbuatan atau hobi suaminya, Pak Mat. Dialog ini diucapkan kepada Pak Mat pada minit ke 00:39:13 dan berakhir pada 00:39:32.

Selain itu, Minah juga menuturkan dialog seperti *“Kito tok se Jusoh masuk politik, kito tok relo Jusoh ikot caro abe...wat nyanyo ko binate. Golok begada hanyo tinggal tula kering...ni bertaruh lagi, ado pitih sikit sebanyak habih keno kiki. Kalu kalah kito nok gi mano lagi?”* (*“Saya tak mahu Jusoh masuk politik, saya tak rela Jusoh ikut cara abang...menganiaya binatang. Bergadai sampai ke tulang kering...ni bertaruh lagi, ada duit sikit sebanyak habis kena kiki. Kalau kalah kita nak pergi ke mana lagi?”*). Dialog-dialog yang dituturkan oleh Minah menggambarkan kehidupan mereka yang terkandas dalam jurang kemiskinan. Namun begitu, sebagai seorang isteri yang setia (menurut pengucapan Pak Mat pada minit ke 00:37:37), Minah tidak mampu melawan kehendak suaminya Pak Mat. Minah hanya mampu menurut sahaja walaupun dia sebenarnya tidak menyukai perbuatan Pak Mat.

Berdasarkan analisis filem *Jogho*, dapatan kajian menunjukkan, filem ini mengangkat salah satu kandungan realiti yang dinyatakan oleh Hatta Azad Khan, iaitu kemiskinan (Khan, 1994). Keseluruhan filem *Jogho* memaparkan kehidupan keluarga Pak Mat iaitu Melayu-Kelantan yang hidup di Patani dalam keadaan miskin dan susah. Walaupun secara puratanya tidak semua masyarakat Kelantan terjerumus dalam kancan kemiskinan, namun, tidak dinafikan sebilangannya hidup dalam keadaan susah dan miskin. U-Wei cuba untuk mencungkil hobi atau minat masyarakat Melayu kampung di Kelantan melalui watak Pak Mat, Sani, Salleh, Jali, Lazim dan yang lain-lain. Melalui dialog yang diutarakan oleh Minah kepada Pak Mat, dapat dirumuskan bahawa Pak Mat tidak berpendidikan tinggi. Selain itu, minatnya terhadap politik dan berlaga lembu (berjudi) adalah satu-satunya cara dia mencari rezeki untuk seisi keluarganya.

4.3 Pemaparan Warisan Dalam Aspek Ikonografi

Ikonografi yang ditonjolkan dalam filem *Jogho* boleh diperhatikan menerusi budaya masyarakat iaitu pakaiannya, amalnya, suasana persekitarannya dan lokasinya. Pertama sekali dari segi pakaian watak-watak dalam filem *Jogho*. Watak-watak mengenakan pakaian yang melambangkan masyarakat Melayu kampung. Pakaian yang dikenakan misalnya; baju kurung, kain sarung, kopiah putih, baju *T-Shirt* lusuh, seluar dan selendang. Pakaian-pakaian ini melambangkan masyarakat kampung Melayu-Kelantan-Patani. Selain itu, budaya amalan masyarakat dapat diperhatikan dalam aktiviti berlaga lembu dan main puteri (main teri merupakan perubatan tradisional masyarakat Melayu-Kelantan).

Kedua menerusi budaya masyarakat Melayu-Kelantan dalam aktiviti melaga lembu (berjudi). Budaya ini tidak diamalkan oleh semua pihak tetapi, ia diamalkan oleh sesetengah pihak di Kelantan mahupun Patani. Dalam *Jogho*, amalan berlaga lembu ini diangkat sebagai salah satu amalan yang diamalkan oleh orang Melayu Kelantan-Patani. Selain itu, budaya lain yang ditonjolkan adalah main puteri atau main teri iaitu perubatan tradisional Melayu-Kelantan suatu ketika dahulu. Main teri diperhatikan berlangsung pada minit ke 00:26:24 hingga 00:27:55 dan bersambung pada minit ke 00:28:57 hingga 00:29:09. Budaya lain seperti bersalam dan mencium tangan orang tua dapat diperhatikan ketika Jusoh bersalam dengan ayahnya (Pak Mat).

Ketiga, ikonografi dapat diperhatikan menerusi suasana sekelilingnya. Rumah-rumah Melayu yang didiami oleh keluarga-keluarga masyarakat Melayu-Patani digambarkan dengan jelas. Rumah Melayu ini merupakan rumah papan yang lengkap dengan tempayan di tepi tangga rumah, atap zink, tingkap papan yang labuh, tikar mengkuang dan birai yang memisahkan kawasan-kawasan dalam rumah. Suasana lain seperti pokok kelapa, kawasan padi dan kawasan perkampungan.

Ikonografi keempat adalah lokasi penggambaran. Lokasi penggambaran dalam filem ini dijalankan di dua tempat iaitu di Patani-Thailand dan Kelantan-Malaysia. Namun begitu, keseluruhan penggambaran dijalankan di Patani. Hanya tiga babak sahaja yang dijalankan di Kelantan iaitu, ketika Pak Mat dan Faizah (anak Pak Mat) berkunjung ke rumah saudaranya, ketika Pak Mat pergi menemui Jusoh (anak lelakinya) dan waktu malam ketika Pak Mat berunding dengan sepupunya Jaafar Beruang.

Filem *Jogho* memaparkan budaya dan ciri-ciri masyarakat Melayu Kelantan. Menurut Cooke, ikonografi ditunjukkan menerusi pakaian, lokasi dan budaya yang mempamerkan keaslian filem tersebut (Cooke 1999). Watak-watak mempamerkan ciri-ciri kemelayuan. Dalam filem ini juga, U-Wei menunjukkan sifat-sifat Melayu seperti bersalam dan mencium tangan orang yang lebih tua ketika berjumpa, mengunjungi rumah saudara-mara, bersantai di kedai kopi dan belajar di sekolah pondok. Ciri-ciri ini memaparkan budaya dan sifat kemelayuan dalam aspek ikonografi yang dinyatakan oleh Cooke.

4.4 Warisan Budaya Melalui Dialek Kelantan

Bahasa yang dipertuturkan dalam filem *Jogho* tergolong dalam dua jenis iaitu loghat Melayu-Kelantan dan Bahasa Siam (Thailand). Bahasa utama yang dipertuturkan dalam filem *Jogho* adalah dalam loghat negeri Kelantan. Oleh kerana Kelantan dan Patani tergolong dalam rumpun Melayu yang sama, loghat Kelantan tidak menjadi janggal jika dituturkan oleh orang Melayu-Patani. Bahasa Siam pula dituturkan dalam

tiga babak iaitu pada minit ke 00:09:03 hingga 00:09:48, 01:03:45 hingga 1:06:18 dan 01:25:53 hingga 01:29:10. Bahasa Siam ini dituturkan oleh polis Thailand dan penduduk Melayu-Patani.

Bahasa yang dituturkan dalam filem *Jogho* menggunakan dua bahasa iaitu loghat negeri Kelantan dan Bahasa Siam. Menurut Cooke (1999), sebuah sinema nasional juga dinilai berdasarkan bahasanya. Bahasa yang dimaksudkan oleh Cooke adalah bahasa negara tersebut, termasuklah bahasa etnik dan juga bahasa golongan atasan dan golongan buruh (Cooke 1999). Cooke mengelaskan bahasa pertuturan berdasarkan etniknya dan kelasnya.

Hal ini kerana, keaslian sinema nasional bergantung kepada penggunaan bahasanya yang melambangkan sebuah negara bangsa. Namun begitu, salah satu peraturan Festival Filem Malaysia (FFM) adalah, menggunakan 70% Bahasa Melayu dan 30% lain-lain bahasa (Kementerian Komunikasi dan Multimedia Malaysia & FINAS, 2018). Filem *Jogho* tidak menggunakan bahasa kebangsaan tetapi loghat negeri. Loghat negeri ini hanya difahami oleh orang-orang negeri tersebut atau mereka yang terdedah kepada loghat tersebut. Namun begitu, *Jogho* memenangi anugerah Filem Terbaik dalam FFM ke-14 walaupun tidak menggunakan Bahasa Melayu tetapi loghat negeri Kelantan. Selain itu, Bahasa Siam digunakan sekadar memenuhi 30% penggunaan lain-lain bahasa.

5. KESIMPULAN

Rumusannya, filem *Jogho* (1997) telah mempersembahkan kandungan realisme (kemiskinan) yang dinytakan oleh Hatta Azad Khan sebagai isu masyarakat Melayu-Kelantan di Patani. Selain itu, penunjukkan dari aspek ikonografi yang dinyatakan oleh Cooke juga ada dipalikasikan. Namun, lokasi penggambaran kebanyakannya dijalankan di Selatan-Thailand dan ini mengurangkan nilai *Jogho* sebagai sebuah sinema nasional.

Tambahan pula, jika diperhatikan dari sudut bahasa, filem *Jogho* menuturkan hampir keseluruhannya dalam loghat negeri Kelantan. Loghat negeri ini termasuk dalam bahasa sebuah bangsa yang hanya difahami oleh penutur, masyarakatnya dan mereka yang terdedah dengan bahasa tersebut. Malaysia sebagai sebuah negara yang unik yang didiami oleh pelbagai bangsa, etnik dan ras memberi kebebasan terhadap masyarakatnya untuk berbahasa. Bahasa loghat negeri ini bukan hanya berlaku di Kelantan, tetapi juga di Terengganu, Pulau Pinang, Kedah, Melaka, Perak, Perlis, Sabah dan Sarawak. Oleh itu, *Jogho* merupakan contoh terbaik untuk meneliti sinema nasional dari aspek bahasa yang disampaikan. Walaupun *Jogho* tidak memenuhi

kreadibiliti dari aspek lokasi (ikonografi) tetapi ia merupakan sebuah sinema nasional Malaysia jika diteliti dari aspek bahasanya.

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RUJUKAN

Cooke, L. (1999). British cinema. In J. Nelmes (Ed.), *An introduction to film studies*. London: Routledge.

C. P. Jong. (n.d.). Film journal: Kaki Bakar (1995) & Jogho (1997) by U-wei Haji Saari. Retrieved from <https://jongcpfilmjournal.blogspot.com/2011/12/film-journal-kaki-bakar-1995-jogho-1997.html>

Fai, L. Y. (n.d.). #3: Kaki Bakar (1995) and Jogho (1997) by U-Wei bin Haji Saari. Retrieved from <https://u5filmjournal.blogspot.com/2011/12/3-kaki-bakar-1995-and-jogho-1997-by-u.html>

Hayward, S. (2005). *French national cinema*. Psychology Press.

Higson, A. (1989). The concept of national cinema. *Screen*, 30(4), 36–47. <https://doi.org/10.1093/screen/30.4.36>

Higson, A. (1995a). *Waving the flag: Constructing a national cinema in Britain*. Oxford University Press.

Khan, M. H. A. (1994). *The Malay cinema, 1948-1989: Early history and development in the making of a national cinema*.

Kementerian Komunikasi dan Multimedia Malaysia & FINAS. (2018, December 29). #SPOTLIGHT: Data pencapaian filem cereka tempatan di peringkat antarabangsa (1950-terkini). Retrieved from <https://www.finas.gov.my/wp-content/uploads/2017/11/DATA-SPOTLIGHT-PENCAPAIAN-FILEM-CEREKA-TEMPATAN-DI-PERINGKAT-ANTARABANGSA-1950-SEHINGGA-TERKINI.pdf>

Kratzer-Juilfs, S. C. (1996). *Exile cinema as national cinema: Re-defining German national cinema (1962–1995)*. (Doctoral dissertation). University of California.

Lez, C. (1996). An introduction to film studies. In J. Nelmes (Ed.), *British cinema: Representing the nation* (pp. 293-328). London: Routledge.

Muhammad Azrul Mohd. Radi. (2016, August 10). Hormati bahasa kebangsaan: FFM bersikap terbuka, tiada kaitan perkauman. Retrieved from <http://www.utusan.com.my/hiburan/hormati-bahasa-kebangsaan-1.368390>

O'Regan, T. (1996). *Australian national cinema*. Psychology Press.

Pansha. (2016, August 5). Pendekatan dilakukan untuk kekalkan identiti berimej filem nasional-PFM. Retrieved from <http://www.astroawani.com/berita-hiburan/pendekatan-dilaksana-untuk-kekalkan-identiti-berimej-filem-nasional-pfm-113105>

Safei, M., & Hassan, T. R. R. (2016). Politik dan intertekstualiti dalam juara. *Malay Literature*, 29(2), 207–232. [https://doi.org/10.37052/ml.29\(2\)no5](https://doi.org/10.37052/ml.29(2)no5)

Saharudin Musthafa. (2010, October 14). Saya buat filem bukan kerana bisnes - jiwa U-Wei dalam filem. Retrieved from http://ww1.utusan.com.my/utusan/info.asp?y=2001&dt=1014&pub=utusan_malaysia&sec=hiburan&pg=hi_10.htm

U-Wei bin Haji Shaari & Makoto Ueda (Producers), U-Wei bin Haji Shaari (Director/Screenwriter). (1997). *Jogho* [Video CD]. Gambar Tanah Licin and NHK Japan Broadcasting Corporation

AN OVERVIEW OF VIRTUAL REALITY- BASED EDUCATIONAL ANIMATION DESIGN OPTIMISATION

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Abstract: Designing virtual reality (VR) experiences for tertiary education appropriately remains an active research topic. VR-based educational animation is seen as a low-cost VR option. It has been mentioned that more effort should be put into designing educational content and the role of design elements for VR. This thematic paper aims to explain the current research in VR-based educational animation. There have been efforts to propose strategies for collaboration with animators, improving the video quality, testing the effects of informational elements, and deriving design guidelines to enhance the video design. The overview identified loopholes and gaps, i.e., a lack of information about learners' preferences for design elements and how to utilise the design elements better. The paper that investigates animators' VR-based educational animation design experience is scarce. Hence, future research could investigate and fill in the gaps mentioned, which includes providing a clear description of the VR-based video design. It is hoped that this thematic paper can support and provide insights into future instructional design and development of VR-based educational animation, thus aiding its wider educational adoption.

Keywords: 360° Video, Educational Animation, Educational Technology, Instructional Design, Virtual Reality

1. INTRODUCTION

Video in the form of animation offers greater imagination in educational material presentation, which has been enriched by virtual reality (VR) and augmented reality (AR) since 2010. Animation, VR, AR, and mixed media are emerging technologies gaining prominence in education (Stadlinger et al., 2021). 360-degree (360°) animation media, also referred to as VR animation, can facilitate a better message and story delivery and can aid in enhancing the effectiveness of the learning process of educational content (Sutrisno et al., 2023). Since we are transitioning from Industrial Revolution (IR) 3.0 to IR 4.0, it is best to keep up with current technology trends and utilise them to benefit learners. One such technology is VR, which uses 360° video. 360° video, or mobile or desktop-based VR, offers the most popular, easiest, and cheapest way to access VR applications (Le et al., 2022). With 360° videos, learners can observe scene(s) from any preferred perspective (Rosendahl et al., 2024). Content creators acknowledge the learning potential of 360° video, where there are attempts to tailor 360° materials to serve instructional purposes (Beege et al., 2024). VR-based learning that provides immersive experiences could be the future of education in Malaysian universities and tertiary colleges (Adnan, 2020). According to Kalkofen et al. (2020), designing VR experiences for tertiary education appropriately remains an active research topic.

The barriers that cause 360° video not to be widely adopted and implemented in education are the insufficiency of suitable video materials on online platforms, e.g. YouTube, as well as the shortage of specialised video materials on specific procedures or for specific areas (for instance, in the medical surgical field) (Ranieri et al., 2022). The creators of multimedia instructional resources are facing a shortage of principled guidance regarding how to design certain elements of animations to promote a better understanding of the content presented (Mustafa, 2023). Huang et al. (2024a) pointed out that 360° videos do not always lead to positive learning effects because the 360° environment may cause learners to focus more on the immersive experience rather than the learning content itself, thus obstructing the learning process. There are times when novel instructional resources, e.g. 360° videos, enhance learners' perceived understanding because of their engaging nature. However, in actual learning, there is no corresponding improvement (Sun & Ch'ng, 2024). When designing instructional immersive technologies, the challenge is to develop a product that can facilitate deep cognitive processing, not just for grabbing the learner's initial attention.

According to Evens et al. (2023), developing a research foundation on 360° video in education has just begun. Researchers are encouraged to consider every aspect of 360° video and the implementation of design to ensure their system can be utilised efficiently, and it has been mentioned that learner experience design is an emerging field (Schroeder et al., 2023). The upcoming research should concentrate more on the instructional design of 360° video and the role of design elements for VR (Radianti et al., 2020; Evens et al., 2023). Sun and Ch'ng (2024) mentioned the need for instructional designs that transcend novelty to promote engagement while also helping to align actual academic performance with perceived understanding closely.

360° videos can lead to learning success, as demonstrated by some studies. Nevertheless, the results cannot be applied or generalised to other contexts (Rosendahl et al., 2024). Future studies should attempt to fully exploit animation technology in VR to create unique, instructive and immersive user experiences (Hashim et al., 2024). This thematic paper seeks to provide an overview with regards to the efforts done on optimising the design of educational 360° animation media or VR-based educational animation so that we can have a better understanding of the issues, views, or even gaps present to support and provide insights to future instructional design and development of VR-based educational animation, thus aiding with broader adoption of VR-based educational animation in higher education and other education levels.

2. EDUCATIONAL ANIMATION

Animation has been explained as a pictorial display that alters its structure or other features over time, which gives rise to a continuous change in perception (Weitz, 2015). Educational animations are developed to facilitate learning (Atabhor & Kofoworola, 2020). It is shown that animation has five characteristics that contribute to learning: (1) providing explanation, (2) presenting information, (3) motivating students, (4) attracting attention, and (5) making teaching appealing (Cevahir et al., 2022).

3. 360° VR

As stated by Elmqaddem (2019), VR refers to a technology that enables us to immerse ourselves in a synthetic world, while this world can be an entirely fictional universe or a replication of the real environment. Omnidirectional video or 360° video is a panoramic spherical (or immersive) video that enables the user to look around during playback, and the viewing of video can be performed through different devices ranging from mobile phones and desktop computers to Head Mounted Displays

(HMD) (Shahid Anwar et al., 2020). 360° video is a new type of video based on VR technology, which has great application potential in the field of education (Liu et al., 2022). 360° video may vary depending on the setup, equipment, and digital content utilised (Queiroz et al., 2022). The 360° content has two main categories: Natural Images (NI) and Computer-generated Graphics (CG) (Shafi et al., 2020; Queiroz et al., 2022). Based on different methods of viewing, 360° video can be classified into immersive 360° video (also known as 360° VR video) and non-immersive 360° video (Liu et al., 2022).

4. VR-BASED EDUCATIONAL ANIMATION DESIGN OPTIMISATION

In terms of development process or steps, 360° videos having three-dimensional (3D) content (e.g., animation) are slightly different from 360° videos that only have real-world content (e.g., actual footage of real scene) due to specific steps like 3D modelling (Hussian, 2020). The paper by Liao et al. (2021) discusses optimising the production of 360° animation video, but the guidelines and considerations primarily focus on entertainment artistry presentation. Instructional video design theory, like the Cognitive Theory of Multimedia Learning (CTML), might need to be considered to assist learners in processing the concept delivered (Fyfield et al., 2019). Besides, since the content is presented using animation, some animation design principles or animating techniques like kinematics may be involved (Schulz et al., 2019). Animation should be utilised in moderation because multi-animation tends to produce unnecessary visual effects (Jeetha & Krishna, 2021). In 360° animation video, informational elements such as directions, labelling and additional text can be incorporated easily to augment such content (Allman et al., 2022). Regarding VR-based educational animation design optimisation, there have been efforts to propose strategies for collaboration with animators, improve video quality, test the effects of informational elements, and derive design guidelines to enhance video design.

Regarding “proposing strategies to collaborate with animators”, it has been stated that educators are required to take up new roles as the creators of 360° videos (Ranieri et al., 2022). Nevertheless, some people have less time to self-educate and create their own educational materials, e.g., 360° animation media or VR animation (Kayler et al., 2020; Sutrisno et al., 2023). In cases like this, collaboration with animators is needed (Ala et al., 2022; Kayler et al., 2020). There have been efforts to report the challenges encountered and respective strategies (short-term and long-term) for three aspects when collaborating with animators to facilitate the production of educational animation. The three aspects are timely design refinement, users’ and

stakeholders' input, and communication with the animator (Kayler et al., 2020). Besides, it has been mentioned that if a sound framework, like a list of design elements, is available, a common understanding can be achieved, reducing confusion when communicating about design choices or decisions (Radianti et al. 2020). An example of terminology usage in the literature that may cause confusion in communication and make impact comparison difficult is that Liu et al. (2022) treated the term 'visual cue' as one type of cueing element appearance (e.g. visual cueing element and textual cueing element). In contrast, in the study by Huang et al. (2024a), 'visual cue' is considered as cues that act on particular sensory channels (e.g. visual channel and auditory channel), of which textual cueing element is part of the 'visual cue'. Moreover, among the available literature, the information on animators' perspectives on the design process (e.g., how they rationalise their design decisions and apply design choices) for VR-based educational animation is still limited.

Concerning "improving the video quality", some 360° video-related studies focus on investigating several aspects of video quality in a VR environment, for instance, cybersickness and presence (Tran et al., 2018). The sensory output of a VR system can contribute to the sense of presence, i.e., the subjective experience of being in a specific environment. Nevertheless, cybersickness can be caused by the addition of sensory information (Narciso et al., 2020). It is worth noting that quality optimisation for the delivery of 360° video is also considered in several studies (Tran et al., 2018). Virtual environments modelled in 3D possess limited capabilities to provide high degrees of realism, which may restrict the effectiveness of virtual training applications. Much effort in terms of time and a high computational cost for rendering all the elements in the scene are needed for modelling photorealistic environments in 3D (Ritter III & Chambers, 2021). Inspired by Wuebben et al. (2023) paper, combining a few recorded real-world elements with virtual animated elements might be a potential option. As stated by Choi et al. (2018), there are research works regarding the creation of 360° content that concentrate on resolution improvement, image-based lighting effects, accurate stitching, and distortion correction of images from wide-angle cameras. Some researchers investigated how to enhance the interactivity of image-based VR content by changing scenes with button clicks and adding uniform resource locators (URLs) to 360° images (Choi et al., 2018). According to Dogan and Sahin (2024), the learning of procedural knowledge seems can be facilitated by realistic experiences simulated using design elements (i.e., interactivity and realism).

As for “testing the effects of informational elements”, the effects of cues that act on two sensory channels (i.e., visual and auditory), macro- and micro-level signalling, narrative style and subtitle presentation were explored (Huang et al., 2024a; Beege et al., 2024; Huang et al., 2024b). Visual and audiovisual cues can reduce cognitive load, improve learning retention performance, effectively direct visual attention, and increase implicit attention. In comparison, auditory cues were found to distract implicit attention. All the cues show no significant effect on emotion, knowledge transfer and long-term memory (Huang et al., 2024a). It has been found that both macro- and micro-level signalling show no effect on disorientation, which could be due to sufficient orientation within the 360° environment. Macro-level signalling improved learning performance, whereas micro-level signalling did not affect learning performance. The result suggests that including macro-signalling in a 360° environment may be necessary. In cases where learners struggle with orientation, micro-signalling could be viewed as a factor that overwhelms the learners (Beege et al., 2024). The human voice could assist humans in learning better than the computer voice. The lack of emotion in computer voice may reduce learning emotion and sense of experience. Besides, for 3D videos, having no captions is better than a presentation with captions because using subtitles in videos could lead to distraction and increase the cognitive load (Huang et al., 2024b). It has been noted that future research should investigate the effects of other elements in 360-degree virtual environments like animation and colour, the cueing elements that act on other sensory channels like olfactory and tactile, as well as learners’ subjective preferences on design elements of 360° video, e.g. narrative style (Huang et al., 2024a; Huang et al., 2024b). Beege et al. (2024) also mentioned the need to establish adaptive signalling techniques for creating 360° content and further investigate signalling techniques at both macro- and micro-levels.

Regarding “deriving design guidelines to enhance the video design”, some researchers put effort into deriving design guidelines based on the video production process or using article review. However, the design guidelines created are either for the creation of specific content, i.e. research communication (Wuebben et al., 2023) or for the makeup of general features that created impact only, as the description on the video designs was not made clear enough in the majority of the paper reviewed by researchers (Evens et al., 2023). Due to unclear design description, Evens et al. (2023) were unable to dive deep into identifying the design feature(s), element(s) or choice(s) that could further make the virtual environment more conducive and engaging for learning, as well as can be personalised or customised depending on the learning content, goal, and context. The guideline by Evens et al. (2023) revealed that the adaptation of 360° video complexity should act according to the learner’s

level. This is because there are times when novices have difficulty concentrating when placed in overwhelming environments, and primarily, they receive benefits from 360° video that is less complex (Evens et al., 2023). Both guidelines suggest using add-ons and complementary elements like animation and virtual actors to help guide learners' attention or aid with content explanation (Evens et al., 2023; Wuebben et al., 2023). Moreover, it has been stated that upcoming studies could concentrate on questions related to the utilisation of add-ons (i.e. text, image, voice-over, chapter idea, switch location, question, 2D-video, object, and virtual actor), for example, how long, for whom, how many, when to utilise add-ons that lead to optimal learning experiences (Evens et al., 2023). Wuebben et al. (2023) mentioned the need for continuous attempts to create 360° videos for knowledge dissemination and the need to identify features of successful science videos on YouTube.

5. DISCUSSION AND CONCLUSION

From the overview of the previous section, several literature gaps or loopholes can be observed among the efforts explored. It has been noted that future research should look into the effects of other elements in 360° virtual environments, such as animation and colour, as well as the cueing elements that act on sensory channels other than visual and auditory (Huang et al., 2024a; Huang et al., 2024b). The creation of adaptive signalling techniques and further investigation of signalling techniques at both macro- and micro-levels are also needed (Beege et al., 2024). Besides, papers that reported on animators' experience of designing VR-based educational animation are scarce, as the literature reviewed either mentions the collaboration with animators to create animated media (Ala et al., 2022; Kayler et al., 2020) or reports on the challenges encountered and respective strategies during the collaboration (Kayler et al., 2020). Since it has been mentioned by Evens et al. (2023) that upcoming studies could focus on exploring the way to utilise add-ons like text, images, and virtual actors to promote an optimal learning experience, thus exploring animators' design experience of practical VR-based educational resources (i.e. finding out the way to utilise the add-ons or design choices using design expert or animator's perspective) could be a solution to fill in the above-mentioned gaps. This is because the multimedia tools creators have their expectations regarding the way the tools will be utilised, perhaps educational (entailing the instructional designs, processes, and impact) or functional (concentrated on the interface) (Abdulrahman et al., 2020).

Despite learner experience design being an emerging field (Schroeder et al., 2023) and the recommendation for 360° video complexity adaptation should be based on the level of the learner (Evens et al., 2023), the overview revealed that the subjective

preferences of learners (learning motivation and learning style) on-screen elements (narration and subtitle) of 360° video has yet to be explored and discussed (Huang et al., 2024b). As stated by Alamäki et al. (2021), learner experiences related to VR are significant as they support learner's inner motivation and active participation. According to Lange and Costley (2020), obtaining learners' perceptions can help the researchers understand why such media delivery negatively impacts learning, investigate instructional intervention recommendations to tackle these problems, and present new recommendations to solve existing pedagogical concerns. Huang et al. (2024b) noted that the creation of 360° video images should consider learners' experiences and contribute to the development of accurate visual impressions in learners, i.e. the content delivered must be accurate. The essential state of things should be reflected objectively and truthfully. Including many late "virtual" elements that could lead to learner's discomfort and visual loads should be prevented. Therefore, another loophole in the literature regarding design elements is limited information on learner's subjective preferences, which is worth exploring.

The overview also revealed that the description of the 360° video designs was not made clear enough in the majority of the papers reviewed by Evens et al. (2023), where attention is scarce on explaining the embedding of 360° videos in actual context or even the 360° videos design principles (Even et al., 2023). This has made it difficult for Evens et al. (2023) to investigate what video design has created an impact among the 360° videos investigated. The authors emphasise that future research should consider including the following information when describing 360° videos: (1) video content category (i.e. demonstration, situation, environment), (2) the utilisation of (interactive or non-interactive) add-ons, as well as (3) video length and context (Evens et al., 2023). Hence, in any future research that involves the creation of educational 360° videos, the researchers could adopt a direction in providing a clear description of the 360° video design to make it easier for readers and researchers to explore the video design and the impacts created. Having more research papers providing a clear description of the 360° video design may further assist any future study that seeks to explore and identify design elements or choices that could further make the virtual environment more conducive and engaging for learning, as well as can be personalised or customised depending on the learning content, goal, and context. This also may further lead to the establishment of another new design framework that can serve as a guide for animators when designing and developing VR-based educational animation, thus may assist in tackling the issue mentioned by Mustafa (2023), i.e. the lack of principled guidance in terms of how to design certain elements of animations to promote a better understanding of the content presented. Hence, a clear definition and unified term for each design element

within the new framework may also make communication between educators and animators on selecting suitable design choices that fit the instructional goals that can be done more efficiently. Radianti et al. (2020) stated that the generalisation of design elements facilitates the creation of new VR-based educational resources and aids with a better acceptance of VR in higher education.

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REFERENCES

- Abdulrahman, M. D., Faruk, N., Oloyede, A. A., Surajudeen-Bakinde, N. T., Olawoyin, L. A., Mejabi, O. V., Imam-Fulani, Y.O., Fahm, A. O., & Azeez, A. L. (2020). Multimedia tools in the teaching and learning processes: A systematic review. *Heliyon*, 6(11), Article e05312. <https://doi.org/10.1016/j.heliyon.2020.e05312>
- Adnan, A. H. M. (2020). From interactive teaching to immersive learning: Higher Education 4.0 via 360-degree videos and virtual reality in Malaysia. In S. Z. S. I. Al Saggoff, W.A. Wan Mustafa, & M. A. Jamlos (Eds.), *IOP Conference Series: Materials Science and Engineering* (p. 012023). IOP Publishing Ltd. <https://doi.org/10.1088/1757-899X/917/1/012023>
- Alamäki, A., Dirin, A., Suomala, J., & Rhee, C. (2021). Students' experiences of 2D and 360° videos with or without a low-cost VR headset: An experimental study in higher education. *Journal of Information Technology Education: Research*, 20, 309-329. <https://doi.org/10.28945/4816>
- Ala, N. A., Ishyaku, A. M., Adamu, S. B., & Onojah, A. O. (2022). Computer-animation on NCE students' academic performance in vertebrate anatomy and physiology in colleges of education. *Indonesian Journal of Educational Research and Review*, 5(3), 449-459. <https://doi.org/10.23887/ijerr.v5i3.52872>
- Allman, S.A., Cordy, J., Hall, J. P., Kleanthous, V., & Lander, E.R. (2022). Exploring the perception of additional information content in 360° 3D VR video for teaching and learning. *Virtual Worlds*, 1(1), 1–17. <https://doi.org/10.3390/virtualworlds1010001>
- Atabhotor, I. S., & Kofoworola, O. M. (2020). Science teaching and learning using animation and simulation strategies in Nigeria. *Iconic Research and Engineering Journals*, 4(2), 73-82. <https://www.irejournals.com/paper-details/1702458>
- Beege, M., Nebel, S., Schneider, S., & Rey, G. D. (2024). The effect of micro-level and macro-level signalling on learning with 360° videos. *Applied Cognitive Psychology*, 38(2), Article e4192. <https://doi.org/10.1002/acp.4192>
- Cevahir, H., Özdemir, M., & Baturay, M. H. (2022). The effect of animation-based worked examples supported with augmented reality on the academic achievement, attitude, and motivation of students towards learning programming. *Participatory Educational Research*, 9(3), 226-247. <http://dx.doi.org/10.17275/per.22.63.9.3>

- Choi, K., Yoon, Y. J., Song, O. Y., & Choi, S. M. (2018). Interactive and immersive learning using 360° virtual reality contents on mobile platforms. *Mobile Information Systems*, 2018(1), Article 2306031. <https://doi.org/10.1155/2018/2306031>
- Dogan, E., & Sahin, F. (2024). Mapping the research agenda in virtual reality studies within education. *Turkish Online Journal of Distance Education*, 25(3), 265-293. <https://doi.org/10.17718/tojde.1427725>
- Elmqaddem, N. (2019). Augmented reality and virtual reality in education. Myth or reality? *International Journal of Emerging Technologies in Learning*, 14(3), 234-242. <https://doi.org/10.3991/ijet.v14i03.9289>
- Evens, M., Empsen, M., & Hustinx, W. (2023). A literature review on 360-degree video as an educational tool: Towards design guidelines. *Journal of Computers in Education*, 10(2), 325-375. <https://doi.org/10.1007/s40692-022-00233-z>
- Fyfield, M., Henderson, M., Heinrich, E., & Redmond, P. (2019). Videos in higher education: Making the most of a good thing. *Australasian Journal of Educational Technology*, 35(5), 1-7. <https://doi.org/10.14742/ajet.5930>
- Hashim, M. E. A., Albakry, N. S., Mustafa, W. A., Grahita, B., Md Ghani, M., Hanafi, H. F., Md Nasir, S., & ana Ugap, C. (2024). Understanding the impact of animation technology in virtual reality: A systematic literature review. *International Journal of Computational Thinking and Data Science*, 1(1), 53–65. <https://doi.org/10.37934/CTDS.1.1.5365>
- Huang, G., Chen, C., Tang, Y., Zhang, H., Liu, R., & Zhou, L. (2024a). A study on the effect of different channel cues on learning in immersive 360° videos. *Frontiers in Psychology*, 15, Article 1335022. <https://doi.org/10.3389/fpsyg.2024.1335022>
- Huang, G., Zhou, L., Chen, D., Chen, W., & Liu, R. (2024b). Research on the design of panoramic virtual learning environment screen elements. *Frontiers in Psychology*, 14, Article 1314076. <https://doi.org/10.3389/fpsyg.2023.1314076>
- Hussain, A. (2020). Interactive 360-degree virtual reality into e-learning content design. *International Journal of Innovative Technology and Exploring Engineering*, 10(2), 1-4. <http://dx.doi.org/10.35940/ijitee.B8219.1210220>
- Jeetha, J. & Krishna, P. K. (2021). Animation for learning: Enhancement of learning through animation - a review of literature. *International Research Journal of Modernization in Engineering Technology and Science*, 3(1), 1053 -1071.
- Kalkofen, D., Mori, S., Ladinig, T., Daling, L., Abdelrazeq, A., Ebner, M., Ortega, M., Feiel, S., Gabl, S., Shepel, T., Tibbett, J., Laine, T. H., Hitch, M., Drebenstedt, C., & Moser, P. (2020). Tools for teaching mining students in virtual reality based on 360° video experiences. In L. O'Conner (Ed.), *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 455-459). IEEE. <https://doi.org/10.1109/VRW50115.2020.00096>
- Kayler, L. K., Dolph, B. A., Ranahan, M. E., Keller, M. M., Cadzow, R. B., & Feeley, T. H. (2020). The KidneyTIME educational health animation development process: Lessons learned. *Trends in Transplantation*, 13(3). <https://doi.org/10.15761/TiT.1000283>
- Lange, C., & Costley, J. (2020). Improving online video lectures: learning challenges created by media. *International Journal of Educational Technology in Higher Education*, 17, Article 16, 1-18. <https://doi.org/10.1186/s41239-020-00190-6>

- Le, T. T. Y., Chen, J. S., & Nguyen, N. B. (2022). The effects of attributes of non-immersive virtual reality on customers' experience of video tours under social distancing for COVID-19. *International Journal of Human-Computer Interaction*, 40(3), 885-902. <https://doi.org/10.1080/10447318.2022.2131251>
- Liao, W. C., Wu, C. T., & Chung, S. M. (2021). Optimisations of VR360 animation production process. In A. L. Brooks, E. I., Brooks & D. Jonathan (Eds.), *Interactivity and Game Creation* (pp. 320-330). Springer International Publishing. http://dx.doi.org/10.1007/978-3-030-73426-8_19
- Liu, R., Xu, X., Yang, H., Li, Z., & Huang, G. (2022). Impacts of cues on learning and attention in immersive 360-degree video: An eye-tracking study. *Frontiers in Psychology*, 12, Article 6672. <https://doi.org/10.3389/fpsyg.2021.792069>
- Mustafa, B. (2023). Impact effect of using computer graphics animation in education. *IDA: International Design and Art Journal*, 5(1), 1-12. <https://www.idajournal.com/index.php/ida/article/view/180>
- Narciso, D., Melo, M., Vasconcelos-Raposo, J., & Bessa, M. (2020). The impact of olfactory and wind stimuli on 360 videos using head-mounted displays. *ACM Transactions on Applied Perception*, 17(1), 1-13. <https://dl.acm.org/doi/abs/10.1145/3380903>
- Queiroz, A. C. M., Fauville, G., Herrera, F., Leme, M. I. S., & Bailenson, J. N. (2022). Do students learn better with immersive virtual reality videos than conventional videos? A comparison of media effects with middle school girls. *Technology, Mind and Behavior*, 3(3), 1-15. <https://doi.org/10.1037/tmb0000082>
- Radianti, J., Majchrzak, T. A., Fromm, J., & Wohlgenannt, I. (2020). A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda. *Computers & Education*, 147, Article 103778. <https://doi.org/10.1016/j.compedu.2019.103778>
- Ranieri, M., Luzzi, D., Cuomo, S., & Bruni, I. (2022). If and how do 360 videos fit into education settings? Results from a scoping review of empirical research. *Journal of Computer Assisted Learning*, 38(5), 1199-1219. <http://dx.doi.org/10.1111/jcal.12683>
- Ritter III, K. A., & Chambers, T. L. (2022). Three-dimensional modeled environments versus 360-degree panoramas for mobile virtual reality training. *Virtual Reality*, 26, 571-581. <https://doi.org/10.1007/s10055-021-00502-9>
- Rosendahl, P., & Wagner, I. (2024). 360 videos in education: A systematic literature review on application areas and future potentials. *Education and Information Technologies*, 29(2), 1319-1355. <https://doi.org/10.1007/s10639-022-11549-9>
- Schroeder, N. L., Siegle, R. F., & Craig, S. D. (2023). A meta-analysis on learning from 360° video. *Computers & Education*, 206, Article 104901. <https://doi.org/10.1016/j.compedu.2023.104901>
- Schulz, T., Torresen, J., & Herstad, J. (2019). Animation techniques in human-robot interaction user studies: A systematic literature review. *ACM Transactions on Human-Robot Interaction (THRI)*, 8(2), 1-22. <https://doi.org/10.1145/3317325>
- Shafi, R., Shuai, W., & Younus, M. U. (2020). 360-degree video streaming: A survey of the state of the art. *Symmetry*, 12(9), Article 1491. <https://doi.org/10.3390/sym12091491>

- Shahid Anwar, M., Wang, J., Ahmad, S., Ullah, A., Khan, W., & Fei, Z. (2020). Evaluating the factors affecting QoE of 360-degree videos and cybersickness levels predictions in virtual reality. *Electronics*, 9(9), Article 1530. <https://doi.org/10.3390/electronics9091530>
- Stadlinger, B., Jepsen, S., Chapple, I., Sanz, M., & Terheyden, H. (2021). Technology-enhanced learning: A role for video animation. *British Dental Journal*, 230(2), 93-96. <https://doi.org/10.1038/s41415-020-2588-1>
- Sun, X., & Ch'ng, E. (2024). Exploring Miao culture: The differential effect of traditional 2D and immersive 360° documentary formats on viewer learning. *Social Sciences & Humanities Open*, 10, Article 101061. <https://doi.org/10.1016/j.ssaho.2024.101061>
- Sutrisno, A., Pramono, A., Wardhana M. I., & Samodra, J. (2023). 360 degree animation videos for learning basic animation principles. *AIP Conference Proceedings*, 2706(1), Article 020085. <https://doi.org/10.1063/5.0120747>
- Tran, H. T., Pham, C. T., Ngoc, N. P., Pham, A. T., & Thang, T. C. (2018). A study on quality metrics for 360 video communications. *IEICE Transactions on Information and Systems*, 101(1), 28-36. <https://doi.org/10.1587/transinf.2017MUP0011>
- Weitz, D. A. (2015). Effectiveness of animation as a learning strategy in a classical control theory introductory course. *World Journal Control Science and Engineering*, 3(1), 8-12. <https://www.sciepub.com/abstract/abstract.aspx?id=WJCSE&num=3809>
- Wuebben, D., Rubio-Tamayo, J. L., Barrio, M. G., & Romero-Luis, J. (2023). 360° video for research communication and dissemination: A case study and guidelines. *IEEE Transactions on Professional Communication*, 66(1), 59-77. <https://doi.org/10.1109/TPC.2022.3228022>

APPLICATION OF INTERDISCIPLINARY TEACHING IN MUSEUM ART EDUCATION: CASE STUDY AND ENLIGHTENMENT

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Abstract: Museum art education offers a dynamic platform for interdisciplinary learning. While many researchers have explored interdisciplinary approaches within traditional classrooms, few have examined how museums integrate multiple disciplines to enrich educational experiences. Some scholars have identified challenges in developing cohesive interdisciplinary models within non-traditional learning environments. Therefore, this study aims to develop a framework that combines constructivist theory, interdisciplinary teaching models, and case study methods to investigate effective interdisciplinary practices in museum art education. Using a case study approach, this paper highlights the integration of STEAM, project-based learning (PBL), and inquiry-based learning (IBL) within museum settings. Given the limited research on interdisciplinary teaching in museum art education, this paper focuses on two central questions: First, how does interdisciplinary teaching impact student engagement and comprehension in museum art education? Second, how does interdisciplinary teaching in museum education influence the development of students' creativity and critical thinking skills? This study employs qualitative thematic analysis to assess learning outcomes, specifically examining the effectiveness of interdisciplinary methods in enhancing student engagement and comprehension in museum contexts.

It also investigates whether interdisciplinary teaching significantly fosters creativity and critical thinking in students. These research objectives aim to uncover the potential applications and challenges of interdisciplinary teaching in museum education, ultimately providing practical insights for future educational models.

Keywords: Constructivism theory, creativity, museum art education, Inter-disciplinary teaching

1. INTRODUCTION

The rapid advancement of society and technology has brought significant shifts in educational models, underscoring the growing importance of interdisciplinary approaches. Traditionally seen as repositories of cultural and historical artifacts, museums are now recognized as dynamic educational spaces that foster innovative thinking and interdisciplinary learning. This paper explores the intersection of museum art education and interdisciplinary teaching methods, aligning closely with the International Conference on Application and Creative Arts (ICACA)'s theme of promoting creativity and applied arts through innovative educational practices. By examining the theoretical foundations, practical applications, and future implications of interdisciplinary approaches in museum art education, this study aims to highlight museums' pivotal role in advancing educational paradigms.

This paper argues that integrating various disciplines into museum education not only enriches the learning experience but also equips learners with the composite skills needed to navigate an increasingly complex world. Through qualitative research and case studies, it offers insights and practical recommendations for educators, policymakers, and museum professionals, contributing to ongoing discussions on educational innovation and interdisciplinary collaboration.

In the evolving field of education, interdisciplinary teaching has emerged as a powerful approach to foster deeper learning by integrating multiple domains of knowledge. Museums, as repositories of culture, art, and history, provide unique opportunities for interdisciplinary education by bridging gaps between academic disciplines through real-world context (Kaye, 2023). In museum art education, an interdisciplinary approach enables a more comprehensive understanding of art by connecting it with history, science, and social studies, thereby enriching the learning experience (Akmal, 2022).

The integration of interdisciplinary teaching methods within museum settings has proven effective in engaging students more deeply, encouraging critical thinking, creativity, and a broader perspective on art and culture (Sevilla et al., 2023). This approach is particularly relevant to 21st-century education, where complex, real-world problems require the ability to synthesize interdisciplinary knowledge (Bammer et al., 2020). By utilizing museums as interdisciplinary educational spaces, educators can provide students with a more immersive and meaningful learning experience.

Despite its recognized benefits, the application of interdisciplinary teaching in museum art education remains underexplored, particularly within non-Western

contexts. Shandong Museum, one of China's largest provincial museums, serves as a significant cultural and educational institution with an extensive collection of artifacts and artworks.

However, its traditional art education programs tend to focus narrowly on art techniques and historical context, often excluding connections to other domains of knowledge (Sobanova & Jiroutová, 2020).

Using Shandong Museum as a case study, this paper examines the application of interdisciplinary teaching methods in museum art education. The project integrates elements from art, history, science, and cultural studies, offering insights into the potential of interdisciplinary teaching to enrich museum-based learning.

Through an analysis of the outcomes from Shandong Museum's interdisciplinary teaching program, this study aims to provide practical recommendations for museum educators and art teachers on effectively implementing interdisciplinary approaches in their teaching. Additionally, it will discuss the broader implications of these findings for museum education and inspire similar educational innovations in other museums.

2. LITERATURE REVIEW

2.1 Constructivist Learning Theory

Piaget's theory of cognitive development emphasizes that learners accumulate knowledge through active engagement with their environment, making museums ideal spaces for experiential and interdisciplinary learning (Weber, 2022). Vygotsky's social constructivism highlights the importance of social interaction and collaboration (Mishra, 2023), which are critical in group-based interdisciplinary projects. Together, these theories underscore the value of active, experiential, and socially interactive learning environments within museums.

2.2 Interdisciplinary Teaching Models

Three prominent interdisciplinary teaching models are currently recognized. The STEAM approach (Science, Technology, Engineering, Arts, Mathematics) provides an ideal interdisciplinary framework (Al-Mutawah et al., 2022), incorporating scientific and technological principles through a creative arts education lens. Project-Based Learning (PBL) encourages students to explore real-world issues and challenges through collaborative, cross-disciplinary projects (Chang et al., 2022). Inquiry-Based Learning (IBL) prompts students to investigate questions and develop solutions based on interdisciplinary research, fostering critical thinking skills (Joseph et al., 2022).

Museums can serve as platforms for these types of projects, utilizing their artifacts and resources to address interdisciplinary questions.

2.3 The Application of Interdisciplinary Methods in Museum Education

Current research suggests that traditional museum teaching methods are relatively straightforward, typically limited to exhibitions and guided explanations, with insufficient student engagement and interaction (Othman et al., 2021). While various interdisciplinary models have been applied in education, museums provide an untapped resource for their fuller realization. Consequently, a growing number of educators and researchers are exploring the use of interdisciplinary teaching methods within museum education (Santaolalla et al., 2020), aiming to foster deeper understanding and interaction, enhancing both learner experience and educational outcomes.

Most existing studies focus on interdisciplinary teaching in science and natural history museums, while interdisciplinary research in art museums is relatively limited (Tenenbaum et al., 2020). This gap in the literature highlights the need to explore effective ways to implement interdisciplinary teaching in museums, as well as strategies for utilizing museum resources to stimulate students' creativity and critical thinking (Wilson et al., 2021).

2.4 Museums as Interdisciplinary Educational Environments

Museums provide a rich cultural and historical context, creating unique opportunities for interdisciplinary teaching. "Museum Learning Theory" suggests that the learning environment in museums is influenced by various factors, including social interaction, personal background, and the physical environment. Museums are not just repositories for artworks but are also centers for knowledge and cultural dissemination. Through exhibitions and interactive displays, museums can effectively support the implementation of interdisciplinary teaching (Gigerl et al., 2022). Interdisciplinary teaching models not only integrate knowledge from different fields but also inspire learners' creativity and critical thinking.

2.5 Case Studies and Practice

Existing studies have explored successful cases of interdisciplinary teaching in museum environments. For example, projects combining science and art have shown that students gain a deeper understanding of artworks and enhance their scientific literacy after participating in museum activities. This integration of art and science fosters deep learning within an interdisciplinary framework (Trott et al., 2020). Furthermore, studies demonstrate that Project-Based Learning and Inquiry-Based Learning can be effectively integrated into museum settings, significantly increasing student engagement and creativity (Domenici, 2022).

3. METHODOLOGY

3.1 Research Design

This study adopts a qualitative case study design to explore the application of interdisciplinary teaching in museum art education. The choice of a case study approach enables an in-depth examination of how interdisciplinary teaching can engage students in a museum setting (Gómez-Hurtado et al., 2020), aligning with the research goal of gaining practical insights to enhance museum-based art education. The qualitative approach, utilizing participatory observation and interviews, provides a detailed understanding of participants' experiences and perspectives, capturing the complexities of their interactions with interdisciplinary teaching methods.

This study is guided by constructivist theory, combining STEAM, PBL, and IBL models to leverage the museum environment, guiding students toward active exploration, autonomous learning, collaborative learning, and reflection to deepen understanding. Through this teaching approach, the aim is to increase student engagement and cultivate creativity and critical thinking skills.

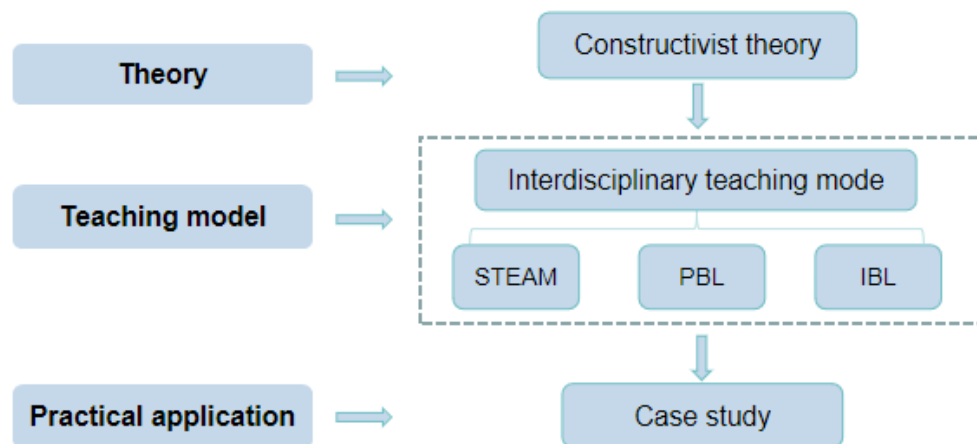


Figure 1. Research Design

3.2 Participants

The study involves 20 fourth and fifth-grade students aged 9 to 11 from the same primary school. Gender was unrestricted, and both male and female students were included. Participants were recruited through collaboration with a local school, with parental consent obtained after being informed of the research's objectives. These students were selected based on their consistent participation in museum art education activities, providing them with the ability to reflect on and discuss their

learning experiences. A sample size of 20 was chosen to ensure both a rich depth of participant experience and manageability for detailed observation and interviews.

3.3 Sampling Method

Purposeful sampling was employed to select students most likely to provide meaningful insights into the research topic. This method ensures that participants possess relevant art education experience and can actively engage in museum-based interdisciplinary activities. School administrators distributed research information to parents, detailing objectives and ethical considerations, with parental consent obtained. Out of 93 eligible students, 20 agreed to participate with their parents' consent. Although purposeful sampling ensures participants' rich background and experience, it may limit the generalizability of the findings.

3.4 Data Collection Methods

3.4.1 Observation

Observations took place during museum-based teaching, focusing on how students engaged with interdisciplinary teaching activities. The researcher observed student behaviors, including independent exploration, cooperative learning, creativity, reflective ability, and engagement with art and other subject content.

Table 1: Observation Table

Observation Dimension	Indicators	Rating (1-5)	Notes
Behavioral Performance	Demonstrates independent exploration of exhibits		Notes on independence shown in exploring exhibits
	Seeks additional information on own initiative		Instances of seeking extra details or insights autonomously
	Shows active interest in interdisciplinary activities		Level of enthusiasm in engaging with integrated subjects
Collaboration Level	Participates in group tasks willingly		Frequency of active participation in collaborative activities
Engagement Level	Encourages and respects contributions from peers		Examples of listening and acknowledging peers' input
	Shares insights or observations during group activities		Cases of sharing personal thoughts or insights within group
	Engages actively with both art and non-art content		Engagement with both artistic and scientific/historical content

Creativity	Shows sustained interest in the subject matter	Moments where sustained interest or focus is displayed
	Proposes innovative or alternative viewpoints	Instances of proposing novel perspectives or ideas
	Applies knowledge from other disciplines	Examples of interdisciplinary connections made by students
Reflective Thinking	Generates original questions or interpretations	Observations of unique questions or interpretations offered
	Evaluates own understanding of the exhibits	Instances of students assessing their understanding of topics
	Reflects on learning experience meaningfully	Examples of personal reflections on learning process
	Makes connections between exhibit content and broader concepts	Cases of connecting exhibit themes to larger concepts or ideas

3.4.2 Student Focus Groups

Focus groups were conducted with groups of 8 students after the teaching implementation, encouraging in-depth discussions about their learning experiences. This method helps capture group perspectives, fostering interaction among students and gathering rich data on their views of interdisciplinary teaching methods.

Interview questions focused on their museum learning experiences, exploring their engagement, comprehension depth, and perceptions of interdisciplinary content:

1. What did you learn from this museum activity? Which part impressed you the most?
2. Do you think combining art with other subjects (such as history, science) helped you understand the exhibits better? Can you give a specific example?
3. Did you find it easier to collaborate with others or work independently during these interdisciplinary activities? Why?
4. After participating in these interdisciplinary activities, did you become more interested in subjects like history or science? If so, which ones?
5. Did you face any difficulties during learning? How did you resolve them?
6. Do you feel these interdisciplinary activities inspired your creativity? Could you share a specific example?

These questions aim to gather students' impressions and understandings of interdisciplinary teaching, providing valuable data for further research.

3.4.3 Expert Interviews

Semi-structured interviews with education experts were conducted to evaluate and analyze the effectiveness of the interdisciplinary model on student engagement and creativity.

Key interview questions included:

1. Do you find my interdisciplinary course design reasonable? Are there areas for improvement in content structure or teaching flow?
2. Do you feel students gained a better understanding of the history, art, or science behind museum artifacts through this interdisciplinary approach? What areas could be strengthened?
3. What additional methods could be used to further stimulate student engagement?
4. How effective do you think the interdisciplinary course is in fostering student creativity? Do you have any specific suggestions to help students better express and develop their creative thinking?
5. Is the course effective in encouraging students' critical thinking? What improvements could help students analyze and understand artifacts more deeply?
6. What major challenges do you foresee in implementing this course? Any suggestions for overcoming them in future implementations?
7. What is your overall assessment of this interdisciplinary course? Does it have the potential for wider adoption in museums? If so, what areas should receive particular attention?
8. These questions aim to understand experts' feedback on course design, student reactions, and implementation outcomes, providing insights for future course refinement and promotion.

3.4.4 Additional Data Points

Photos from classroom and museum activities, along with student presentations, served as supplementary data points to illustrate students' learning process and creativity.

3.5 Procedure

Week 1: Students were introduced to the museum setting and the interdisciplinary art education program, participating in an interactive lecture that combined art with history and science to introduce interdisciplinary learning concepts.

Weeks 2-3: Weekly activities combining art and other disciplines took place. Prior to each museum visit, students conducted preliminary investigations and discussions on assigned topics. On the activity day, students were guided to interpret exhibits from multiple disciplinary perspectives, such as history, art, and science. The researcher observed and recorded student participation and themes of interaction, as well as their collaboration with peers. Interdisciplinary tasks included creating artworks that blended historical themes with scientific concepts, cultivating creativity and critical thinking.

Week 4: At the project's conclusion, the researcher conducted focus groups with students, emphasizing how interdisciplinary methods affected their learning experience and engagement with museum art exhibitions. Students reflected on their learning outcomes and how they connected various disciplines through the museum program. Meanwhile, education experts assessed the effectiveness of interdisciplinary methods in museum art education and provided suggestions.

3.6 Data Analysis

Qualitative data collected from interviews, observations, and focus groups were analyzed using thematic analysis. Initially, the researcher read all interview and observation notes to gain an initial understanding of the data. NVivo software was used to code data, identifying emerging themes based on patterns observed in the interviews and observations. Key themes were then organized into broader categories, with particular focus on how interdisciplinary teaching impacted student engagement, creativity, and critical thinking. Themes related to the research questions were reviewed and refined to ensure they accurately represented students' experiences with interdisciplinary methods.

3.7 Reliability

Triangulation was conducted by employing multiple data collection methods, including interviews, observations, and document analysis. This approach aids in verifying the results from various perspectives, enhancing internal consistency, and reducing the bias that may arise from a single data source.

During data collection, each interview and observation was meticulously documented, with both audio recordings and written notes retained for double verification. This practice ensures that data can be accurately reviewed and allows for similar studies to be conducted in the same context to validate the findings of this research.

3.8 Ethical Considerations

This study adheres to strict ethical guidelines to ensure the safety and privacy of all participants. Parental consent was obtained prior to the study, and students gave informed consent, fully understanding the research purpose and their role within it, agreeing to participate voluntarily.

To address confidentiality and anonymity, all student data were anonymized, with pseudonyms used in analysis and reporting. No identifiable personal information was shared, and all data were securely stored with access limited to the principal researcher.

By ensuring all questions were age-appropriate and phrased non-intrusively, any potential emotional discomfort during interviews was minimized. Additionally, students were informed of their right to withdraw from the study at any time without any consequences.

The study was reviewed and approved by the university's ethics review board, ensuring all procedures complied with ethical standards for research involving minors.

3.9 Limitations

The study's limitations include reliance on a relatively small, non-random sample, potentially limiting the generalizability of the findings. Additionally, the qualitative nature of the research means results are specific and may not easily transfer to other museums or different student groups. Lastly, the short project duration may not fully capture the long

4. DATA FINDINGS AND ANALYSIS

4.1 Data Analysis Method

Data collected through observations, focus group discussions, and semi-structured interviews were analyzed using thematic analysis, a widely recognized qualitative method suitable for identifying, analyzing, and interpreting patterns within data. This method was selected because it aligns with the study's goal of exploring students' interdisciplinary learning experiences in a museum environment, allowing in-depth insights into how this approach influences their engagement and learning. Thematic analysis follows guidelines by Braun and Clarke (2006), involving a systematic process of familiarizing with the data, coding, theme development, and theme refinement. This method is particularly effective in determining how interdisciplinary teaching strategies impact students' engagement and learning outcomes within the

museum setting. NVivo software was used to facilitate the coding process, enabling efficient management and organization of qualitative data, which enhances the reliability of the analysis.

4.2 Analysis Process

After concluding the focus group interviews with students, the discussions were manually transcribed by the researcher, coded using NVivo software, and categorized into broader themes based on similar or related codes. For example, codes related to students' interactions with museum artifacts and other subjects (such as history and science) were classified under the broader theme of “interdisciplinary learning,” ultimately resulting in six primary themes: interdisciplinary learning, collaborative learning, self-directed learning, creativity, critical thinking, and engagement.

4.3 Analysis Results

4.3.1 Observation Results

Observations were conducted during the museum art education activities incorporating interdisciplinary teaching. Based on records in the observation tables and video footage, an observation report was created. Students showed a high level of initiative in exploring exhibits independently, especially toward artifacts containing elements of history and science. Many students actively sought additional background information, indicating that interdisciplinary teaching encouraged self-directed inquiry.

Collaboration within groups was high, with students engaging in active communication and mutual encouragement during group tasks. Most students displayed a respectful attitude toward others' opinions, aiding in a better absorption of knowledge across disciplines. Particularly during discussions involving integrated knowledge (e.g., historical context or scientific principles), students shared and discussed more enthusiastically. Student engagement noticeably increased with the inclusion of interdisciplinary content, as they found it more appealing—especially when content was visually demonstrative (e.g., scientific examples). Students who consistently engaged deeply often developed a sustained interest in the interdisciplinary aspects of museum artifacts, indicating that this approach can enhance interest in both art and other subjects. Students exhibited creative behaviors during museum interactions, particularly when interpreting art uniquely or integrating knowledge from related disciplines. Some students demonstrated flexibility in

applying knowledge and presented novel insights, indicating a notable enhancement of creative thinking through interdisciplinary teaching.

Most students showed a degree of self-reflection after the activities, revisiting and reassessing the learning content in their self-evaluations. Reflective ability improved by the end of the activities, particularly in demonstrating how subject knowledge was applied to understanding exhibits and broader concepts. In conclusion, interdisciplinary teaching in the museum setting significantly enhanced students' engagement, creativity, and reflection. Improvements in behavior and collaboration also highlighted how such activities encourage active knowledge exploration and teamwork. This teaching approach provides students with a more comprehensive learning experience, helping them establish effective connections between art and other subjects.

4.3.2 Data Analysis from Student Focus Groups

After coding focus group data, a thematic analysis was conducted. Interdisciplinary teaching combining art with history and science enhanced students' holistic understanding and curiosity. Students found the interdisciplinary connections between art, history, and science stimulating; many reported that linking art projects to historical artifacts made both subjects more meaningful. For instance, students creating artwork based on ancient artifacts expressed a deeper understanding of the historical context.

Group collaboration facilitated mutual inspiration during discussions and explorations, proving particularly effective in grasping complex concepts. Collaboration boosted communication skills and team awareness, offering students diverse perspectives during the learning process. The museum provided a rich learning resource, allowing students to choose learning content based on their interests, thereby enhancing their sense of self-directed learning. Unlike in classrooms, students in the museum felt freer to explore. Some reported that the physical presence of historical artifacts and art pieces inspired them, making the learning process more immersive and engaging. However, observations also noted challenges, such as distractions due to the open space and difficulty maintaining focus during lengthy sessions.

Interdisciplinary activities sparked students' creativity, enabling them to express unique viewpoints. For example, students were inspired by the historical background of artifacts, attempting to understand knowledge from different perspectives, which promoted creative thinking.

Students exhibited strong critical thinking in interdisciplinary learning, especially in discussions about the cultural backgrounds of artifacts, learning to analyze and question information. Rather than accepting surface-level explanations, they formed personal viewpoints.

4.3.3 Data Analysis from Expert Interviews

Five themes emerged from coding the expert interview data: curriculum design rationality, student comprehension and engagement, fostering creativity and critical thinking, implementation challenges, and curriculum promotion potential. The analysis based on these themes is as follows: Experts widely acknowledged the interdisciplinary structure of the curriculum, agreeing that combining history, art, and science aids comprehensive student understanding. Some experts suggested further refining the teaching process, such as detailing the objectives for each phase so that students can grasp the learning focus at every stage. This indicates that while the curriculum design is generally well-received, there is room for process optimization.

The interdisciplinary curriculum significantly enhanced students' interest in and engagement with knowledge, with students achieving deeper artifact comprehension, especially when activities included interactive elements. Experts suggested incorporating more opportunities for discussion and expression, as this could both spark students' curiosity and deepen understanding. Thus, the interdisciplinary curriculum proves effective in boosting student engagement and can be further enhanced through increased interaction. Experts observed that students displayed strong creativity in interdisciplinary activities, particularly during artifact exploration. They suggested providing more opportunities for students to showcase their creativity, such as through discussions or creative work, to further enrich the learning experience. This theme analysis shows that the curriculum effectively fosters creativity, yet more practical activities could allow for a fuller expression of students' creative abilities.

Experts noted that interdisciplinary content helped develop students' critical thinking, though they suggested incorporating deeper guidance in the curriculum. For example, adding discussion sessions to encourage students to think more broadly about the historical and cultural backgrounds of artifacts would stimulate their analytical and questioning abilities. This theme indicates positive effects on critical thinking, but more structured guidance would aid deeper understanding. Experts pointed out challenges in teaching resources and time management, with some activities not fully developed due to time constraints. They suggested increasing curriculum flexibility and providing more applicable resources. Additionally, experts believed the curriculum has promotion potential but that issues like resource

allocation and curriculum adaptability need to be addressed for broader application. This theme analysis indicates that with sufficient resources, the curriculum has a greater potential for wider implementation.

4.3.4 Triangulation of Data Sources

Triangulating findings through literature, observations, focus groups, and interviews provided a multi-angled evidence chain, enhancing the reliability of conclusions on integrating interdisciplinary teaching within museum art education. This approach minimizes bias and ensures more generalizable results. Data showed consistency and variability in interdisciplinary teaching outcomes. Both student interviews and observation data indicated that interdisciplinary teaching significantly boosted students' interest and engagement in museum educational activities. Students reported high engagement with the interdisciplinary course content, and observations recorded students' active involvement. This outcome was supported by expert interviews, with experts agreeing that the interdisciplinary design effectively motivated students and increased their willingness to participate.

Student and expert interviews both highlighted the positive impact of interdisciplinary teaching on students' creativity and critical thinking. Students displayed flexible knowledge application and creativity, and critical thinking in discussions and answering questions, aligning with experts' observations and feedback. This triangulation strengthens the conclusion that interdisciplinary teaching promotes creativity and critical thinking.

Observation data documented active collaboration and interaction among students during group tasks, though some students reported a preference for individual work. This variability suggests that while interdisciplinary teaching generally supports collaborative learning, implementation should consider individual learning preferences. Experts noted the general applicability of interdisciplinary teaching, though they pointed out possible influences from students' diverse backgrounds. Student interviews and observation data mostly reflected the appeal and engagement of interdisciplinary content, without significantly showing the impact of background differences on learning outcomes. Thus, further research could examine background influences on interdisciplinary teaching to improve curriculum adaptability.

Triangulating student interviews, observation data, and expert interviews provides comprehensive evidence for the effectiveness of interdisciplinary teaching. The consistency across data sources demonstrates its effectiveness in improving student engagement, creativity, and critical thinking, while minor differences offer insights for

targeted curriculum enhancements. Integrating multiple data sources reinforces the study's reliability and persuasiveness, providing robust support for applying interdisciplinary teaching in museum education.

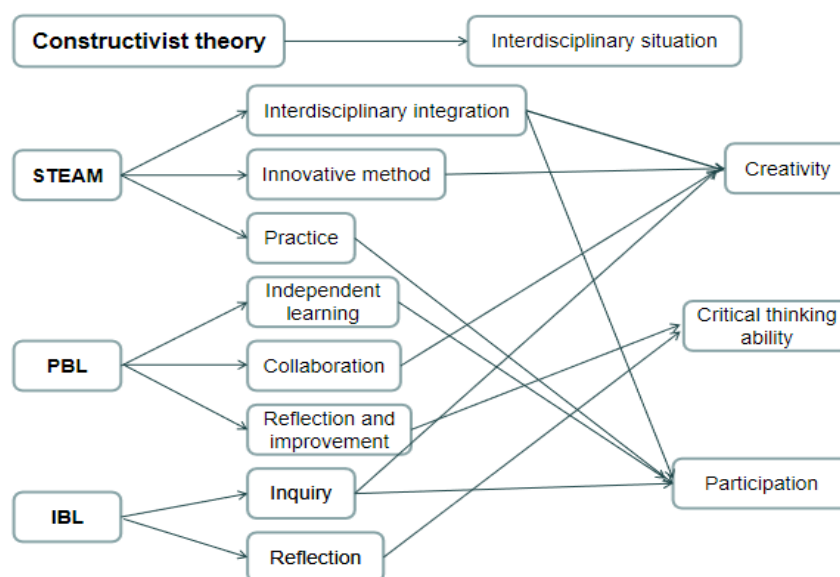


Figure 2. Interdisciplinary Teaching Framework

5. DISCUSSION

5.1 Summary of Findings

The main findings of this study indicate that interdisciplinary teaching significantly enhances student engagement and creativity in museum art education. By integrating art with other subjects like history and science, students not only gain a deeper understanding of the knowledge but also stimulate their creative thinking. These results align with our initial research questions, emphasizing the importance of interdisciplinary teaching in promoting students' comprehensive development.

5.2 Theoretical Significance of Findings

Our findings support the theoretical perspectives on the effectiveness of interdisciplinary teaching presented in existing literature (Santaolalla et al., 2020). By integrating multidisciplinary knowledge, students form a more holistic understanding. Additionally, the high levels of engagement and creativity observed in student activities further confirm the hypothesis that interdisciplinary teaching enhances learning outcomes. This result helps expand the current theories on museum education and interdisciplinary teaching, providing new theoretical insights.

5.3 Practical Significance of Findings

These findings hold significant practical value for museum educators, policymakers, and related professionals. By applying interdisciplinary teaching to museum art education, educators can design more engaging and interactive programs, helping students connect classroom knowledge to real-life applications. Promoting this teaching model can provide effective strategies for museums to attract a broader student audience while also fostering students' overall development. Policymakers should consider incorporating interdisciplinary teaching concepts into education policies to drive educational innovation and improve students' comprehensive competencies.

5.4 Limitations of the Study

Despite providing valuable insights, this study has certain limitations. First, the small sample size—limited to 20 students from one primary school—may affect the generalizability of the results. Second, as a qualitative study, the findings may be influenced by the subjective factors of the interviewees. Additionally, the study did not control all possible confounding variables, such as individual differences or background factors among students, which may impact the interpretation of the results to some extent.

5.5 Directions for Future Research

Based on the results of this study, future research could explore the application of interdisciplinary teaching on a larger scale to examine its impact on students from different backgrounds. Researchers could also consider adopting mixed-method studies, combining quantitative and qualitative data to obtain a more comprehensive understanding. Furthermore, future research could investigate how interdisciplinary teaching can be implemented in different types of museums (e.g., natural history museums, science museums) to assess its effectiveness and applicability. Finally, researchers should focus on how to integrate the results of this study into practical teaching practices to advance museum education.

6. CONCLUSION

The main findings of this study demonstrate that interdisciplinary teaching in museum art education effectively enhances student engagement and understanding, while also significantly impacting students' creativity and critical thinking. These results align closely with the research questions posed in this paper, further confirming the educational potential of interdisciplinary teaching. Students participating in museum programs gain a more comprehensive understanding of knowledge in history, art, and science.

At the same time, the interdisciplinary approach effectively stimulates their creativity and critical thinking. These findings not only validate the hypothesis in the research objectives but also provide practical evidence for museum educators, proving that interdisciplinary teaching positively impacts students' comprehensive development. This study calls for continued innovation and collaboration to promote the sustainable development of museum education and meet the evolving needs of society.

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REFERENCES

- Akmal, A. (2022). Integrative learning in history education: A systematic literature review. *Dinamika Ilmu*, 22(2), 375–392.
- Al-Mutawah, M. A., Thomas, R., Preji, N., Alghazo, Y. M., & Mahmoud, E. Y. (2022). Theoretical and conceptual framework for a STEAM-based integrated curriculum. *Journal of Positive School Psychology*, 5045–5067.
- Bammer, G., O'Rourke, M., O'Connell, D., Neuhauser, L., Midgley, G., Klein, J. T., Grigg, N. J., Gadlin, H., Elsum, I. R., & Bursztyn, M. (2020). Expertise in research integration and implementation for tackling complex problems: When is it needed, where can it be found, and how can it be strengthened? *Palgrave Communications*, 6(1), 1–16.
- Chang, T.-S., Wang, H.-C., Haynes, A. M., Song, M.-M., Lai, S.-Y., & Hsieh, S.-H. (2022). Enhancing student creativity through an interdisciplinary, project-oriented problem-based learning undergraduate curriculum. *Thinking Skills and Creativity*, 46, 101173.
- Domenici, V. (2022). STEAM project-based learning activities at the science museum as an effective training for future chemistry teachers. *Education Sciences*, 12(1), 30.
- Gigerl, M., Sanahuja-Gavaldà, J. M., Petrinska-Labudovikj, R., Moron-Velasco, M., Rojas-Pernia, S., & Tragatschnig, U. (2022). Collaboration between schools and museums for inclusive cultural education: Findings from the INARTdis-project. *Frontiers in Education*, 7, 979260.
- Gómez-Hurtado, I., Cuenca-López, J. M., & Borghi, B. (2020). Good educational practices for the development of inclusive heritage education at school through the museum: A multi-case study in Bologna. *Sustainability*, 12(20), 8736.

- Joseph, V., Sheikh, I., & Rajani, S. (2022). Inquiry-based learning method of teaching in education: A literature review. *Webology*, 19(3).
- Kaye, C. (2023). Global perspectives on art museums as third spaces for inquiry-based support in core curriculum. In *Third-space exploration in education* (pp. 195–220). IGI Global.
- Mishra, N. R. (2023). Constructivist approach to learning: An analysis of pedagogical models of social constructivist learning theory. *Journal of Research and Development*, 6(1), 22–29.
- Othman, M. K., Aman, S., Anuar, N. N., & Ahmad, I. (2021). Improving children's cultural heritage experience using game-based learning at a living museum. *Journal on Computing and Cultural Heritage*, 14(3), 1–24.
- Santaolalla, E., Urosa, B., Martín, O., Verde, A., & Díaz, T. (2020). Interdisciplinarity in teacher education: Evaluation of the effectiveness of an educational innovation project. *Sustainability*, 12(17), 6748.
- Sevilla, E., Jarrín, M. J., Barragán, K., Jáuregui, P., Hillen, C. S., Dupeyron, A., Barclay, J., Burneo, T. A., Cupuerán, M. I., & Zapata, C. (2023). Envisioning the future by learning from the past: Arts and humanities in interdisciplinary tools for promoting a culture of risk. *International Journal of Disaster Risk Reduction*, 92, 103712.
- Sobanova, P., & Jiroutová, J. (2020). Connecting art education learning tasks with the artistic field: The factor of quality in art lessons. *CEPS Journal*, 10(4), 33–54.
- Trott, C. D., Even, T. L., & Frame, S. M. (2020). Merging the arts and sciences for collaborative sustainability action: A methodological framework. *Sustainability Science*, 15(4), 1067–1085.
- Weber, K. E. (2022). The role of museums in educational pedagogy and community engagement.
- Wilson, H. E., Song, H., Johnson, J., Presley, L., & Olson, K. (2021). Effects of transdisciplinary STEAM lessons on student critical and creative thinking. *The Journal of Educational Research*, 114(5), 445–457.

An Integrative Review: A Standard Practice of Proofing and Labelling Process Terminology in Printmaking

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Abstract: Printmaking, as an artistic and varied technique, involves a particular proofing and labelling process that ensures the reliability and quality of multiple impressions derived from a matrix. Printmakers face persistent challenges in achieving consistent print quality and accurate reproduction of the original design. The need for standard proofing and labelling procedures and tools for assessing and improving these issues poses a barrier to achieving the desired level of precision and consistency in print editions. This research aims to identify the standard proofing and labelling process terminology in printmaking techniques in current practices. An integrative review of the literature on the proofing and labelling process in printmaking was conducted and is suited for early-stage identifying inquiries, allowing for close investigation of data from various sources. The importance of the proofing and labelling process in maintaining artistic integrity, enhancing print quality, and contributing to the overall value of printmaking in the future. A conceptual framework was constructed to strengthen printmaking development towards the proofing and labelling process phase. Conversations and further research to explore possibilities in the proofing and labelling process could increase the relevance opportunities in printmaking.

Keywords: printmaking, proofing and labelling process, standard practice, technique

1. INTRODUCTION

Printmaking, an ancient and intricate art form, has evolved over centuries, offering artists a unique avenue for creative expression and the production of multiple copies of a single image. An ancient art form, printmaking dates back hundreds of years. One of the first types of reproducible media, it was used to exchange images before photography (.art, 2021). Central to the success of any printmaking endeavour is the proofing and labelling process, a critical stage where the artist assesses and refines the initial impressions before committing to the full edition (wpgmembers, 2020). Establishing a standard proofing process is essential for achieving consistency, precision, and artistic integrity in reproducing images (ISO /TC 130 Graphic technology, 2019). The proofing process implemented in the printing industry is very much related to the printmaking process. This standardised approach ensures that each print faithfully represents the printmaker's vision and contributes to the overall quality and value of the edition.

The standard proofing and labelling process terms encompass a series of arranged steps, from preparing the matrix, plate or block to the final inspection and approval of the proof. It involves particular attention to details such as ink application, paper selection, and printing techniques. By adhering to standardised procedures, printmakers can systematically address image clarity, colour accuracy, and overall composition challenges, thereby minimizing variations within the edition. If the use of proofing and labelling is not applied in the process of producing works, it will interfere in terms of documentation and the process of arranging according to the discipline of imperfect printmaking.

1.1 Problem Statement

Visual art encompasses a wide range of artistic activities, and it includes various forms of expression such as painting, sculpture, drawing, and printmaking. Each of these disciplines has its unique characteristics and techniques, allowing artists to convey their ideas, emotions, and perspectives in diverse ways.

According to William (n.d.), artists may utilise the conceptual framework to aid in investigating the relationships among the four notions. A connection between the exploration and the creation of art will improve the knowledge and comprehension of both. All aspects of the visual arts can be fairly and successfully explored. These artistic activities collectively contribute to the rich tapestry of visual art, offering artists a diverse set of tools and mediums for creative expression. Each discipline has its

history, traditions, and contemporary practices, allowing artists to explore and push the boundaries of visual language. Overall, visual arts activities include a process of artwork making.

However, as seen in William's (n.d.) conceptual framework, the activities provided are mostly comparable with the art discipline and different from printmaking activities, some activities need to be relooked at in this conceptual framework.

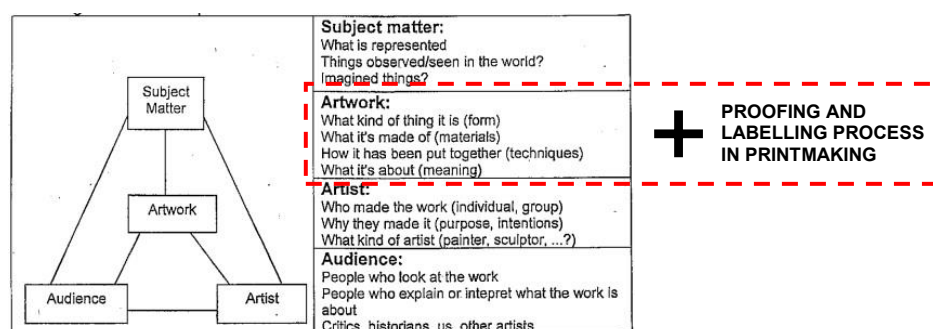


Figure 1. Adaptation Conceptual Framework for Proofing and Labelling Process in Printmaking from Fred William Conceptual Framework (Fred William, n.d.)

In Figure 1, printmaking's proofing process is not included as a part of the activities in visual arts. The highlighted activity above is the process printmakers need to produce an artwork. In the printmaking proofing and labelling process, printmakers face continued challenges in achieving consistent print quality and accurate image reproduction. This adaptation shifts the work movement process in the aspect of artistic activity as stated by William in Figure 1. Factors such as ink distribution, plate preparation, and printmaking techniques contribute to proof variations, leading to potential inconsistencies within an edition. The lack of standardised proofing procedures and tools for assessing and correcting these issues poses a barrier to achieving the desired level of precision and consistency in printmaking editions. Addressing these challenges is essential to ensuring that each print accurately reflects the artist's vision and maintains the intended artistic and market value.

1.2 Motivation

The use of non-aligned terms in the proofing and labelling process in printmaking became a shift to concern in the production of printmaking artwork. The printmaker's understanding differs from the aspect of views and opinions. This is a platform to standardise the terminology used in the proofing and labelling process in printmaking artwork making.

1.3 Objective

To identify standard proofing and labelling process terminology used in printmaking techniques for practitioners and areas for current practice.

2. LITERATURE REVIEW

2.1 Printmaking

In printmaking of artistic reproduction, the proof serves as a crucial checkpoint, allowing the artist to refine and perfect the image before embarking on the production of the entire edition. Implementing a standard proofing and labelling procedure requires both technical skill and a thorough comprehension of the selected printmaking technique, such as relief, intaglio, lithography, or any other approach (Printin' Online, n.d.). It's a visual art form that involves creating images or designs on surfaces and transferring them to other materials, usually paper. This process allows the artist to produce multiple copies of the same image, known as print (Beth Grabowski & Bill Fick, 2009). Modern printmakers have access to both the newest and oldest hand printmaking techniques since printmaking has embraced technological advancements (Vojvodić & Sredanović, 2020). Aside from sketching, the printmaking documents the entire process and records it in the proofing and labelling process. There are several techniques and methods of conventional print art, each of which has its unique features (Gabor F. Peterdi, 2023). The techniques have been categorized into two categories which are conventional and non-conventional printmaking. Printmaking techniques and processes are forms of visual art that involve creating images or designs on the surface of a matrix, which is then applied to other media such as paper or fabric. Printmaking techniques include a variety of methods, each with unique characteristics and processes with a diverse and fascinating art form that involves creating multiple impressions or copies of an image from a master surface or matrix (Eyitayo Tolulope Ijisakin* et al., 2019; The Met, n.d.). According to Nelia Verano (2021) printmaking is among the myths that existed while printmakers were creating it. Even though printmaking has a long history and is a highly esteemed art form, advances in technology, intricate inventions, and the development towards reproduction have contributed to the misunderstandings of the definition of a fine art print, the printmaking's creative process, and its status as an original work of art is still on demand (Tribeca Printworks, n.d.).

2.2 Proofing and Labelling

Proofing in the context of printmaking, printing, and photography refers to the process of creating a trial or test print to evaluate and adjust various elements before producing the final edition (Hang Up Gallery, n.d.). The purpose of proofing is to

ensure that the final output meets the artist's or designer's expectations, and it allows for adjustments to colour, contrast, composition, and other aspects before committing to a larger print run.

Printmaking: Artist's Proof: Printmakers often create an initial set of prints known as "artist's proofs" after producing the entire edition. Beforehand, this proof process allows the artist to assess the quality of the print, make any necessary adjustments to the plate or matrix, and ensure that the final edition meets their artistic vision (Handprinted Blog, n.d.; Printed Edition, 2021).

Printing: In the printing industry, especially in offset printing, a printer's proof is a test print used to check for any errors, colour discrepancies, or other issues before starting a full print run. It helps printers identify and correct potential problems, ensuring the quality and accuracy of the final printed materials (Professional Graphic Inc., n.d.).

Photography: In photography, proofing involves creating test prints to evaluate the exposure, colour balance, and overall quality of an image before producing a final print. Photographers may make adjustments to the image file or the printing process based on the results of the proof (Trimper Gallery, n.d.).

Proofing and labelling are also known as numbering and signing in printmaking. The proofing process of printmaking artwork allows for repeated, similarly applied creation of an image, making it an important medium for producing affordable and accessible works of art (Danny Print Gonzalez, n.d.). Each technique offers a unique aesthetic, and artists often choose a specific method based on their intentions and artistic preferences. This is what the proofing of the printed work says (Fineart Multiple, n.d.). During the proofing process of printmaking artwork, it is necessary to follow certain stages. There are other markings and labels used in countries with different standards.

2.3 The Reality of Understanding Proofing and Labelling Practice

In the context of printmaking, proofing refers to the process of creating trial prints to evaluate and refine the image before producing the final edition. The proofing and labelling stage is a crucial aspect of printmaking, and it serves several important purposes. Many opinions concern the proofing process of substances. Each terminology discussed follows the understanding and current practice of the artist in that place. According to Dieter Wanczura (2023), many artists give in to increasing the original copies of a limited edition to profit from additional sales. One common practice is to sell the assigned 10–15% Artist Proof (AP) prints in addition to creating

extra "épreuve d'artiste" (E/P) or "Artist Proof" copies. Dieter also mentioned the worthlessness of a limited edition is rendered meaningless because most printmakers hardly ever record or mark the prints to indicate the number of artist proofs in existence.

The use of AP is not the only way that art buyers can get beyond the strict requirements of limited editions and potentially undermine their investment. The purpose of proofing and labelling in printmaking is important because they are the last chance for any errors to occur before the artwork-making is executed (Professional Graphic Inc., n.d.). The most discussed issue is about the equivalent quality guarantee on each print. Proofing allows the artist to identify and address any flaws or imperfections in the image. This includes fine-tuning details, adjusting colours, and ensuring that the final print accurately represents the printmaker's vision. Printmaking often involves intricate techniques such as etching, engraving, or lithography. Proofing helps the printmaker ensure that these technical aspects are executed with precision, resulting in high-quality prints. Achieving accurate colour can be challenging in printmaking due to variations in inks, papers, and printing techniques. Proofing allows printmakers to adjust colour balance and ensure that the final print closely matches the intended colours. However, this situation gives a point of question where the creation of a new print, using the same matrix, requires a more accurate proofing understanding. On the other hand, Blake (2013) mentioned a proofing that is known as "progress proof," which enables the printmaker to assess the current state of work on the plate. "Progressive proofs" are progress proofs taken at various points during the creation of a single print.

Traditionally, proofing and labelling is the process of creating an artwork which not intended for sale. However, print enthusiasts started to appreciate proofs for their uniqueness, their incomplete appearance, and their confident, original clarity (Erin Blake, 2013b). Standardisation and consistency are crucial in printmaking editions. Proofing helps establish a standard for the entire edition, ensuring that each print closely resembles the others in terms of colour, contrast, and overall quality. By creating proofs, artists can identify any inconsistencies or defects that may arise during the printing process. This helps in maintaining a high level of quality across the entire edition. A proofing process as documentation itself can become valuable artefacts, documenting the evolution of the artist's work. They provide insight into the creative process, showing the decisions and revisions made before arriving at the final print.

Furthermore, proofing and labelling are an integral part of the printmaking process, offering printmakers a means to refine their work, achieve technical precision,

maintain consistency, explore creative possibilities, and ensure buyer satisfaction. It is a step that not only contributes to the quality of individual prints but also plays a role in preserving the historical and artistic context of the creative journey.

3. METHODOLOGY

An integrative review, a comprehensive and inclusive methodology is to inform the literature search involved accessing scholarly literature available through various online databases such as web pages and blogs, including article journals, and books. Through integrative reviews, researchers can explore a wide variety of literature available in the area of study. The following keywords were used to guide searches on the databases: printmaking, proofing process, labelling process, technique process, and current practice. To make sure that the search results included all the possible combinations of keywords, alternative terms such as numbering and signing process were also used. Second, the proofing and labelling process in printmaking that is used in the process of artwork making was identified from the data collections. Each identification will lead to the framework of the proofing process. Finally, a conceptual framework that attempts to integrate the proofing process from varied sources was developed for future directions that will be widely used internationally.

4. DATA FINDINGS AND ANALYSIS

4.1 Data Finding

In this section, the selected literature review which is related to the research is used to identify proofing process terminology used by artists around the world. Before analysing the literature, studies related to proofing and labelling processes, and techniques in printmaking were introduced first and divided into categories namely conventional and non-conventional printmaking. Next, the artwork-making process for each of the techniques specified in the table is briefly described. It facilitates understanding for researchers and studies in the future. The proofing process and technical aspects of printmaking, which have long served as vehicles for the delivery of ideas and emotions, are drawn upon by contemporary practice.

The printmaking art and techniques listed are the most implemented by print artists or art practitioners and within each technique, artists often experiment and combine methods to achieve unique effects. Printmaking offers a rich and diverse range of possibilities for artistic expression. Proofing processes are applicable in conventional

or non-conventional printmaking techniques. The major printmaking techniques and their processes are in the table below:

Table 1: Conventional and non-conventional printmaking techniques and process
(Beth Grabowski & Bill Fick, 2009)

Types of Printmaking	Technique	Types of Technique	Process Description
Conventional	Relief print	Woodcut	In pieces of wood, the image is carved into a wooden block, leaving the raised part to be inked and printed. The block is then pressed on paper or other surfaces.
		Linocut	
		Collograph	
		Acidic Print:	
	Intaglio Print	Etching	Scratching is a process in which images are created on metal plates by using acid-resistant soil and then using acid to bite exposed areas. The plate is inked, and the image is transferred on paper using a press machine.
		Aquatint	
		Spitbite Aquatint	
		Photogravure	
		Non-acidic Print:	
		Drypoint	
		Mezzotint	
		Engraving	
	Screenprinting	Reduction	Also known as silk screening, screen printing involves the use of a stencil or screen to apply ink to the surface. Photo emulsion is used as an intermediary material on the mesh screen.
		4 color separation	
		Stencil	
Non-Conventional	Lithograph	Pochoir	The stencil is attached to the fine mesh screen, and the ink is forced through the screen to the printing surface by using a squeegee.
		Lithograph	Lithography is based on the principle that grease and water push each other. Images are drawn or painted on a flat surface, usually stones or metal plates, with oily ink or crayons. The surface is then moisturized, and ink is applied, sticking only to the oily image.
	Monotype	-	A specific printmaking technique. It involves creating a unique, one-of-a-kind image on a smooth surface, such as a plate or glass, and transferring it onto paper. The process typically involves applying ink or paint to the plate, manipulating the image, and then pressing the plate onto paper to create a print.
	Monoprint	-	A monoprint is a unique and one-of-a-kind print. Unlike traditional printmaking methods where multiple copies of an image can be produced, a monoprint is a singular impression created through various techniques. The term "mono" refers to the fact that each print is intended to be a single, standalone artwork. The process of creating

The technique's process mentioned is a straightforward description to understand how the techniques work. The process is most likely but the difference can be seen from the material used and technicality in terms of transferring the image or design onto the matrix prepared. Each printmaking technique may have its unique considerations, but the principles of creating trial prints, making adjustments, and achieving the desired result before producing the edition are fundamental to the proofing process. Identifying the proofing that has normally been used by the printmakers, the list of proofing processes was collected from various literature. Each proofing terminology has its acronym. It indirectly helps and facilitates the artist to document his printed work (Composition Gallery, 2022).

Conventionally, the sequence in proofing practice in the current printmaking art depends on printmakers to decide which proofing terminology sequence to use. The printmaking proofing process involves creating trial prints to check the image quality, colour accuracy, and overall appearance before producing the final edition. Here is a common procedure for the printmaking artwork-making process:

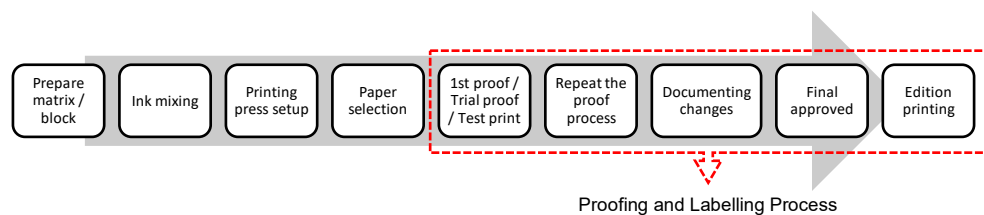


Figure 2. Printmaking artwork-making process (Elen Turner, 2021; Elizabeth Bilyeu; Kelsey Ferreira; Luke Peterson; and Christine M. Weber, 2022)

The proofing process is visible in the printmaking artwork-making process. The proofing process was illustrated in the above framework for conventional techniques printmaking process. Under the artist's vision and concerns, the proofing terminology aids in printmaking artwork making that is consistent to achieve high-quality outcomes. Proofing process documentation also depends on changes that occur in the matrix, colour (ink) or paper. Unlike non-conventional techniques in printmaking, the process of producing printmaking artworks uses a temporary matrix and cannot be repeated in print. The result of the work depends on the matrix provided. The diagram below is a process practised in producing non-conventional printmaking artwork:

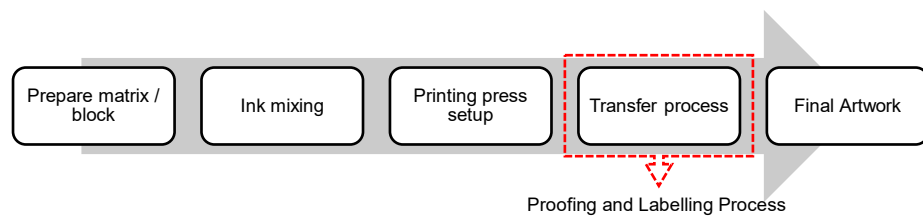


Figure 3. Non-conventional printmaking artwork-making process (Art Gallery of Peel, n.d.; Elen Turner, 2021)

Considering the diagram above, the proofing labelled on the work is also different from the conventional techniques. The process of producing non-conventional printmaking artworks often requires a unique method to ensure the desired result. There are several considerations in determining the proofing of non-conventional techniques as each print produced will vary and will not be consistent from various aspects such as image, ink transfer, effect from matrix, registration and others. The expression through this printed artwork indirectly gives an experiment of material beyond the norm of printmaking practice.

4.2 Data Analysis

This research opted for a broad search to report on all articles about the use of proofing process terminology and therefore no specific proofing terms were documented according to the current practice. Time of publication was not initially considered a selection criterion of keywords but also reviewing the article that provides similarity as well as an understanding of proofing process terminology which is relevant to the current practice. Data from variable sources were identified and listed under current requirements.

Table 2: Data Matrix of Proofing Terminology in Printmaking

Author/Source	Title	Proofing/Acronym	Contribution
Bynd Prnt (2023)	Making Your Mark: How to Sign and Number Your Art Prints	Edition Number	To create a polished and coherent portfolio, keep your numbered system consistent. The possibility of printer's proofs (PPs) and artist's proofs (APs), which are usually marked differently from the main edition, should be considered.
		A/P	
		P/P	
		Signature	
Composition Gallery (2021)	A Guide to Print Editions Acronym	O.E.	The elusive relationships between prints, editions, acronyms, and their value.
		Edition Number	
		A/P., P.A., or E.A	
		P/P or P.I.	
		B.A.T.	

		T/P S/P H.C. M.P or M.T. U/P, U/S or V/E H.M.P, H.P.M or H.M.M. E.V.	
Danny Print Gonzalez (n.d.)	Printmaking 101 Series: A Guide to Editioning and Signing Fine Art Prints	Edition Number A/P., P.A., or E.A P/P, P.I. or E.I. B.A.T. or R.T.P T/P S/P H.C. C/P M.P or M.T. U/P, U/S, V/E Imp. H.M.P, H.P.M or H.M.M. E.V.	A full set of proofing processes has been mentioned in the web page's article.
Dieter Wanczura (2023)	What is an Artist Proof?	A/P, E.P. T/P H.C.	One common practice is to sell the assigned 10–15% AP prints in addition to creating extra "épreuve d'artiste" (E/P) or "artist proof" copies.
Erin Blake (2013)	Proof prints, part one.	T/P Progress Proof	Stated the difference between the proof and the final product here is that the proof was a working document.
Fineart Multiple (n.d.)	What is a printer's proof (PP)?	A/P P/P H.C.	A copy of the image not included in the numbered edition, known as an artist proof or AP was created as a test and kept for the artist's collection or exhibition in a gallery.
Handprinted blog (n.d.)	Editioning Print.	Edition Number A/P P/P T/P E.V. B.A.T. or R.T.P. Documentation	The ability to produce a whole edition of prints from a single design is one of the best things about printmaking. It can be difficult to figure out how to edition, sign, and number your prints.
Hang Up Gallery (n.d.)	A Guide to Understanding Print Editions and Techniques	A/P B.A.T. P/P	Technical terms regarding print editions and techniques.
Nelia Verano (2021)	The Fallacies and Facts of Fine Art Prints: Originals or	Open edition	Not mentioning the proofing process terminology indirectly but indicating the impression number specific to that edition (number on the top or left) and the size of the

	Copies?		edition (number on the bottom or right). Prints are usually made in small editions rather than in vast quantities, and they require special printing media.
Printed Edition (n.d.)	What is an Artist's Proof?	H.C. P/P B.A.T. T/P	Even though many artist's proofs are nearly similar to the editioned prints, their uniqueness and limited supply make them worth more than other prints in the edition.
Professional Graphic Inc. (n.d.)	What Is Print Proofing and Why Is It Important?	-	Not mentioning any acronym but emphasizing the importance of proofing.
Trimper Gallery (n.d.)	Artist Proof or AP vs. Numbered Edition Print	A/P P/P Edition Number T/P E.V. BAT or RTP Documentation	A print that is pulled ahead of the edition to see how it looks at that point in development is called a trial proof, or TP for short. Trial proofs may be produced in any quantity, but each print was unique. Before the A/P, the artist and printmaker corrected the image at this stage.
Wpgmembers (2020)	Printmaking 101: Edition Numbers	Matrix Edition Number E.V. A/P T/P, CTP	These five stages are the basic acronym used by the artist as matrix also been mentioned as a part of the proofing process.

In every study, there was a pattern that indicated how acronyms should be arranged to verify terms during the process of creating printed artwork. Through a comparison of articles from the collection of literature reviews, a list of terms most commonly used by artists worldwide throughout the proofing process was found including the description of proofing terminology. The terminology was compiled and stated in the table below.

Table 3: Standard proofing and labelling process in printmaking from various points of view

Proofing Terminology	Proofing Acronym	Description
Matrix	-	A matrix is essentially a template and can be made of wood, metal, or glass. The design is created on the matrix by working its flat surface with either tools or chemicals (wpgmembers, 2020).
State Proof	SP	This mark designates the print as a working proof and as being further worked on after the edition was created. Sometimes etchings will be assigned this mark as the printmaker experiments with acid exposure to the plate creating darker lines or variations in the design (Composition Gallery, 2022; Danny Print Gonzalez, n.d.).
Trial Proof Test Print	TP	These prints are made during the process of adjusting and developing the image. Even though technically they are unfinished prints, in the art market they are worth much more than the regularly editioned work because they reveal the

		process of the artist in creating the finished work (Danny Print Gonzalez, n.d.).
Bon à Tirer	B.A.T.	A print signed with this mark (French for “good to pull”) means that this is the first print in the edition that meets the standards of the artist or printmaker and is used to measure the quality of the rest. These prints usually are the property of the studio that produced them (Danny Print Gonzalez, n.d.; Trimper Gallery, n.d.).
Ready To Print	RTP	
Edition Number	1/15 2/15 etc.	An edition is the total number of prints produced by the printmaker with the same matrix. For example, if the printmaker produces 15 prints, the prints exist together in an edition of 15. The edition number is usually written as a fraction. For example, 3/15 means that the work is the third out of a total of 15 prints (Hang Up Gallery, n.d.).
Open Edition	OE	Unlimited and have no pre-determined number of prints. The artist may go on printing more if there is demand (Handprinted Blog, n.d.).
Artist Proof, Prueba de Artista or Epreuve d’artist	A/P P.A. E.A.	If the artist is creating an edition for a dealer, the artist can keep a few prints for personal use from the edition. These are part of the edition and are kept to the same standard but are labelled A/P for Artist Proof, or more traditionally E.A. which is the French equivalent. The standard is to only have 10% of your edition be made up of these kinds of prints (artst, n.d.).
Printer’s Proof Prueba de Impresor Epreuve d’imprimeur	P/P P.I. E.I.	These are proofs that the printmaker keeps, usually only one (Danny Print Gonzalez, n.d.).
Hors Commerce	H.C.	French for “For Commercial Use”, these prints are sometimes unsigned by the artist and used to promote the edition and are supposedly not to be sold (Dieter Wanczura, 2023).
Cancellation Print	C/P	After the edition has been printed, some artists and printmakers alter the original plate, block or stone so that it cannot be reprinted again. Usually, a line is drawn on the matrix across and then a print is made as proof that the original has been changed and no more prints from it can be made (Danny Print Gonzalez, n.d.).
Colour Trial Proofs	CTP	Prints are pulled before the print is ready to be editioned. Essentially, the artist is getting an idea of what the image looks like so they can make changes to the matrix as needed (wpgmembers, 2020).
Monoprint	M.P.	This is reserved for unique prints most commonly using a serigraphic process or flat plates of non-porous material where the printmaker draws a design and only one print can be pulled from it (Composition Gallery, 2022; Danny Print Gonzalez, n.d.).
Monotype	M.T.	
Unique Print	U/P	Prints labelled with these marks have some kind of unique feature that can’t be reproduced again. These kinds of prints as well as, monoprints and monotypes may be labelled as 1/1 (edition of 1) (Composition Gallery, 2022; Danny Print Gonzalez, n.d.).
Unique State	U/S	
Variable Edition	V/E	
Impressit	Imp.	Abbreviation for the Latin word “impressit”, this mark may be found after the signature if the artist printed their work (Danny Print Gonzalez, n.d.).
Hand Modified Print	H.M.P.	Sometimes artists add features to a print by hand after creating the edition. These are most commonly found in serigraph prints (Danny Print Gonzalez, n.d.).
Hand Painted Print	H.P.M. H.M.M.	
Hand Modified Multiple		
Edition Varied	E.V.	Editions made on different paper or printed with a different colour ink are sometimes labelled with this mark. Some

		artists and printmakers choose to number these prints with Roman numerals instead of Arabic numerals Eg. I/X - X/X (Danny Print Gonzalez, n.d.; Handprinted Blog, n.d.; wpgmembers, 2020).
Signature	-	Although it's customary for artists to sign their prints in the lower right corner, there's no hard and fast rule dictating this location. The placement of the signature will blend in with the print work's composition, enhancing its visual attractiveness without detracting from it (Bynd Prnt, 2023).
Progress Proof	-	Allows the printmaker to check how work on the plate is going so far and develop a progress proof from different stages in the making of the same print, it is called "progressive proofs"(Erin Blake, 2013b).
Documentation	-	Produce a documentation portfolio through the proofing process and production of printed artwork(Handprinted Blog, n.d.; Trimper Gallery, n.d.).

The table above shows terminologies from various points of view used in the proofing process. With the above proofing list, the artist or practitioner can refer more clearly and keep up to date with the terminology used by artists from various places. The proofing process allows artists to refine their work, troubleshoot technical issues, and achieve the desired aesthetic quality before committing to the entire edition. It is an integral part of the printmaking workflow and requires a combination of technical skill and artistic judgment.

4.3 Result: Data Statistic

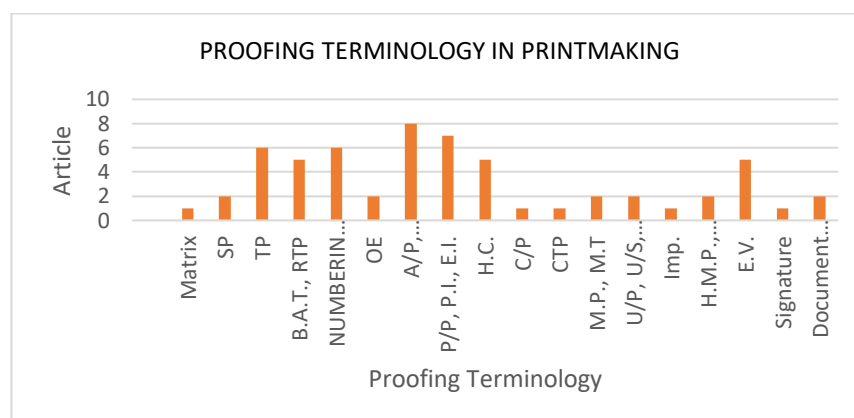


Figure 4. Proofing and labelling process terminology in printmaking analysis

Analysis of proofing terminology can prove its importance in the process of producing printed artwork. The proofing order according to the frequency of findings in the search is as per the following table:

Table 4: Proofing and labelling process terminology in printmaking analysis frequency

Proofing Terminology	Proofing Acronym	Frequency
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Artist Proof,	A/P	
Prueba de Artista or Epreuve d'artist	P.A. E.A.	8
Printer's Proof	P/P	
Prueba de Impresor	P.I.	7
Epreuve d'imprimeur	E.I.	
Trial Proof		
Test Print	TP	6
Bon à Tirer	B.A.T.	
Ready To Print	RTP	5
Hors Commerce	H.C.	5
Edition Varied	E.V.	5
State Proof	SP	2
Open Edition	OE	2
Monoprint	M.P.	
Monotype	M.T.	2
Unique Print	U/P	
Unique State	U/S	2
Variable Edition	V/E	
Hand Modified Print	H.M.P.	
Hand Painted Print	H.P.M	2
Hand Modified Multiple	H.M.M.	
Documentation	-	2
Matrix	-	1
Numbering Edition	1/15 2/15 Etc.	1
Cancellation Print	C/P	1
Colour Trial Proofs	CTP	1
Impressit	Imp.	1
Signature	-	1
Progress Proof	-	1

As a result of the above analysis, the frequency shows off the dominant proofing terminology and the routines used by some printmakers around the world. This frequency displays the mechanism of the proofing and labelling process practices depending on the printmakers' whether to implement all terminology mentioned based on the data search. This result is a combination of conventional and non-conventional printmaking technical. The highest frequency in this proofing terminology analysis is Artist Proof (AP) which is important for printmakers in producing an artwork. An understanding of the use of proofing process terminology

when producing a print artwork has a high impact on the work quality as it is produced with detailed observation. In addition, the discipline of using the proofing process as a rule in producing printmaking artworks gives high value to printed artworks when exhibited or purchased.

5. DISCUSSION

5.1. Proofing and Labelling Process

Through the observations and analyzes performed, the artist or practitioner adopts several possible conclusions. The understanding and practice of proofing in the process of producing printmaking artwork are based on the techniques used. The selection of techniques essentially affects the proofing process and leads to the work that has been designed. The proofing process is a matter that is classified as a mandatory item in print art to identify the degree of authenticity of a print artwork. The order or position of proofing labels on works is the same for conventional and non-conventional techniques. What distinguishes is the use of acronyms according to the technique used.



Figure 5. Proofing and Labelling template in printmaking artwork

The image above shows the template of edition proofing used in printmaking artwork the number label on the lower left, followed by the title and the artist's signature. Usually, the artist or practitioner will insert the date or year under the signature to better keep track of the artwork. One effective technique to establish your artistic personality, record your creative process, and validate your work is to sign and number your art prints (Bynd Prnt, 2023). The proofing process in printmaking can pose various challenges for artists. The common difficulties that printmakers may encounter during the proofing stage are uneven inking application, pressure and printing issues, registration problems, paper absorption and texture, ink drying time,

plate or block integrity, over-inking or under-inking, edition consistency, image clarity and detail, and colour mixing and saturation. This probably leads the proofing process to unfinished work.

Through observation and current practice, the use of proofing and labelling is highly emphasized because, through this process, the production of printed artworks is in order. Referring to Figure 1, Figure 2 and the proofing description in Table 3, a conceptual framework is constructed to respond to the objectives of this study.

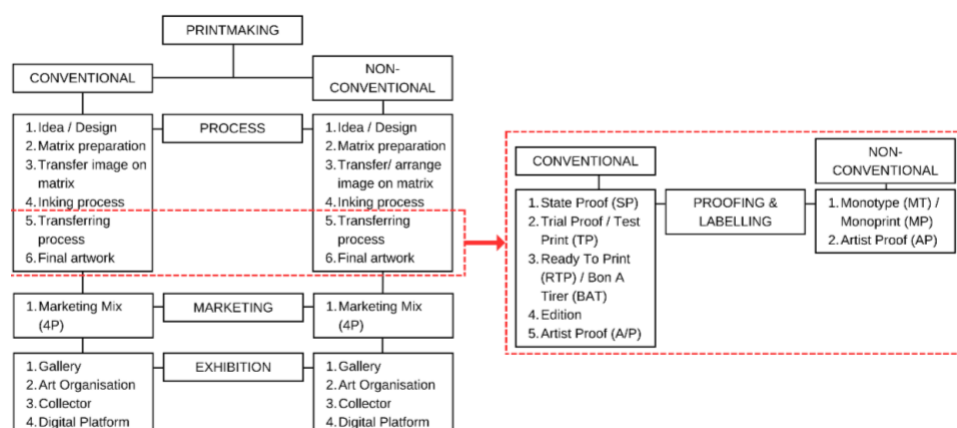


Figure 6. A Conceptual Framework for Proofing and Labelling Phase

Specifically, this conceptual framework applies not only to conventional printmaking techniques but also to non-conventional techniques. Artwork execution with this proofing and labelling process provides an arranged and more efficient work movement. This conceptual framework is also built on the understanding of the academic aspect where the proofing and labelling rules are more organized and follow the standards implemented.

5.2. The Significance of Proofing and Labelling in Printmaking

The significance of implementing a proofing and labelling process in the printmaking artwork-making process is a fundamental role in ensuring the high quality and consistency of printmaking artworks. Among these proofs, one may start to see one that is getting close to the outcome of the artist's expectations (West Dean, 2019). As researchers who also produce printmaking artworks, the results of observations during the production process of works, proofing and labelling processes help elevate some things as important in printmaking. Here are the important factors that are taken into account indirectly:

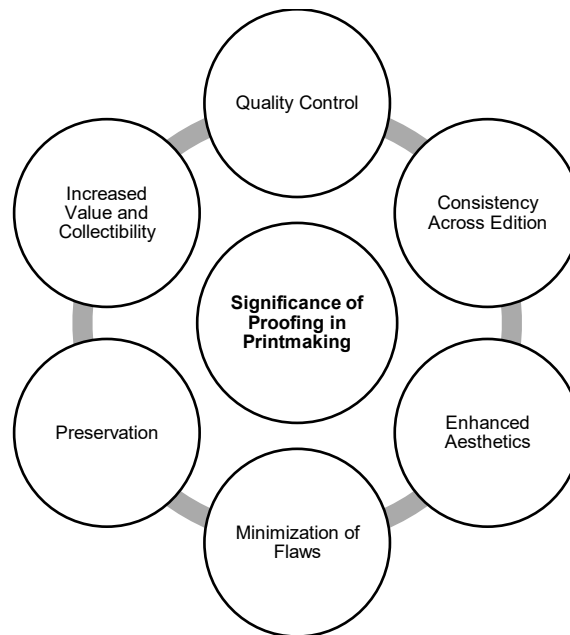


Figure 7. Significance of Proofing and Labelling in Printmaking

Each of the criteria for the significance of proofing and labelling in printmaking is explained as follows:

Quality Control: Accurate quality control is possible thanks to the proofing process. Other printmakers may spot and fix flaws in each proof by closely inspecting it so that only the best prints are included in the edition set.

Consistency Across Editions: Consistency throughout the entire process is ensured by proofing. Printmakers can ensure consistency in colour, ink dispersion, and overall picture quality across the edition by optimising the printing process and making appropriate adjustments during proofing.

Enhanced Aesthetics: Proofing repetition enables the creative vision to be refined. To enhance the visual appeal of the prints and create a more visually pleasant exhibition, printmakers may choose to explore different techniques for applying ink, types of paper, and other artistic components.

Minimization of Flaws: Proofing is a procedure that involves identifying and reducing any possible defects in the printing process, such as smudges, registration mistakes, or unintentional changes. The focus on particular aspects enhances the overall refinement and professionalism of the exhibit's presentation.

Increased Value and Collectability: The apparent worth of the prints is enhanced by the use of high-quality proofreading. Collectors and art fans frequently value the

precision involved in the production process, and skilfully conducted proofing can augment the desirability of the exhibited prints.

Artist's Intent Preservation: The proofing process guarantees that the finished prints conform precisely to the printmaker's initial intention. Through the process of proofing, printmakers can enhance the quality and accuracy of their prints, ensuring that their original artistic vision is preserved. This leads to a more genuine and powerful portrayal of their artwork in the show.

Generally, the proofing and labelling process is an important process that serves as a platform for printmakers to maintain the aesthetic value of a printmaking artwork so that it continues to be the best in terms of work production. The disciplined production process of printed artwork helps printers produce quality work that adheres to the technical specifications of a particular print.

6. CONCLUSION

This paper attempted to provide a holistic perspective of the proofing and labelling process dimension in the context of knowledge sharing, interest factors, and co-existence acronyms that have been discussed. The suggested conceptual framework by Fred William (n.d.) sheds light on further understanding of the artwork-making process but the process provided did not comply with the printmaking area. The knowledge of the proofing and labelling process has been largely confined to examining the proofing process structure in printmaking artwork making. Since printmakers usually have vital knowledge of the proofing process, a closer look at professional opinion within art organizations will enable them to take a more active role in enhancing the proofing process structure. This process emerges as a connector between artistic expression and the production of multiples, showcasing the meticulous craftsmanship inherent in the world of printmaking. It is a part of printmaking practice to ensure the completeness of printmaking artwork. The proofing and labelling process in printmaking stands as a foundation, ensuring the success and excellence of the final printmaking artworks. This stage serves a numerous crucial aspect, indirectly highlighting its necessary role in the overall printmaking journey.

Further research is needed through another range of studies where printmakers can expand their knowledge and detect possible interactions. The difference of opinion and views in using proofing and labelling on printmaking artwork certainly gives a direction to this area of print art. The printmaker needs a better understanding and implementation of the proofing and labelling process because the printmaker is the association of the work with the audience. Professional artists, researchers or academicians' opinions regarding the proofing and labelling process in printmaking will expand the opportunities for this research not only in the academic, and visual art practice but also in marketing in the visual arts, and intellectual property sector. Indirectly, it gives opportunity in society and raises the standard of printmaking art. Thus, an in-depth investigation of how printmakers use the proofing process intelligence to share knowledge using formal and informal channels in visual art organizations is very much needed. This will help art practitioners, researchers and scholars become more informed about proofing and labelling that occurs in art organizations.

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REFERENCES

- art. (2021, January 22). *The Art of Printmaking; Ink, Lots of Fun and Possibilities*. <https://art.art/blog/the-art-of-printmaking>
- Art Gallery of Peel. (n.d.). *The Printmaking Process*. Visual Arts Brampton (VAB). Retrieved February 28, 2024, from <https://www.visualartsbrampton.com/resources/articles-tutorials/printmaking-process>
- artst. (n.d.). *What is an Artist Proof?* Retrieved April 2, 2024, from <https://www.artst.org/what-is-an-artist-proof/>
- Beth Grabowski, & Bill Fick. (2009). *Printmaking: A Complete Guide to Materials & Processes 1st Edition* (1st ed.). Pearson.
- Bynd Prnt. (2023, February 1). *Making Your Mark: How to Sign and Number Your Art Prints*. <https://beyondprint.co.uk/2023/02/01/making-your-mark-how-to-sign-and-number-your-art-prints/>
- Composition Gallery. (2021, April 20). *A Guide to Print Editions Acronyms*. <https://www.composition.gallery/journal/a-guide-to-print-editions-acronyms/>

- Composition Gallery. (2022, April 20). *A Guide to Print Editions Acronyms*.
<https://www.composition.gallery/journal/a-guide-to-print-editions-acronyms/>
- Danny Print Gonzalez. (n.d.). *Printmaking 101 Series: A Guide to Editioning and Signing Fine Art Prints*. Retrieved January 23, 2024, from
<https://www.printgonzalez.com/hellbox/2018/4/3/printmaking-101-series-a-guide-editioning-and-signing-fine-art-prints>
- Dieter Wanczura. (2023, December 28). *What is an Artist Proof?*
<https://www.artelino.com/articles/what-is-an-artist-proof.asp>
- Elen Turner. (2021, July 7). *Your Guide to the Printmaking Process*.
<https://www.skillshare.com/en/blog/your-guide-to-the-printmaking-process/>
- Elizabeth Bilyeu; Kelsey Ferreira; Luke Peterson; and Christine M. Weber. (2022). *A Revolution of Process & Technology*. Open Oregon.
<https://openoregon.pressbooks.pub/understandingnewmediaarts/chapter/printmaking/>
- Erin Blake. (2013a, May 28). *Proof prints, part one*.
https://www.folger.edu/blogs/collation/proof-prints-part-one/?_ga=2.137081588.511734115.1706514319-265854059.1706514319
- Erin Blake. (2013b, June 25). *Proof prints, part two; or, Proofs and proofiness*.
<https://www.folger.edu/blogs/collation/proof-prints-part-two-or-proofs-and-proofiness/>
- Eyitayo Tolulope Ijisakin*, Babasehinde Augustine Ademuleya, & Olusegun Jide Ajiboye. (2019). The Making of Prints: Forms and Techniques of Printmaking in Nigeria. *Arts and Design Studies*. <https://doi.org/10.7176/ADS/71-06>
- Fineart Multiple. (n.d.). *What is a printer's proof (PP)?* Retrieved January 29, 2024, from https://fineartmultiple.com/glossary-of-prints-and-editions/what-is-a-printers-proof?__store=en/
- Fred William. (n.d.). *THE CONCEPTUAL FRAMEWORK*. Retrieved January 29, 2024, from <https://fredwilliamsedar.weebly.com/concpetual-framework.html>
- Gabor F. Peterdi. (2023, December 9). *Printmaking*. Britannica.
<https://www.britannica.com/art/printmaking>
- Handprinted Blog. (n.d.). *Editioning Print*. Retrieved January 26, 2024, from <https://handprinted.co.uk/blogs/blog/editioning-prints>
- Hang Up Gallery. (n.d.). *A Guide to Understanding Print Editions and Techniques*. Retrieved January 24, 2024, from <https://www.artsy.net/article/hang-up-gallery-a-guide-understanding-print-editions-techniques-ap-hc>
- ISO /TC 130 Graphic technology. (2019). *Guidelines for using print production standards* (Vol. 1).
- Nelia Verano. (2021, May 8). *The Fallacies and Facts of Fine Art Prints: Originals or Copies?* <https://www.luxlifestyle-magazine.com/the-fallacies-and-facts-of-fine-art-prints-originals-or-copies>
- Printed Edition. (2021, February 10). *What is an Artist's Proof?* <https://www.printed-editions.com/blog/what-is-an-artists-proof/>
- Printed Editions. (n.d.). *What is an Artist's Proof?* Retrieved January 26, 2024, from <https://www.printed-editions.com/blog/what-is-an-artists-proof/>
- Printin' Online. (n.d.). *What Is Printmaking?* Retrieved January 26, 2024, from <https://onlinearchive.open-printsshop.org.hk/en/wikiprint-online/basic-printmaking-techniques/>
- Professional Graphic Inc. (n.d.). *What Is Print Proofing And Why Is It Important?* Retrieved January 28, 2024, from <https://www.professionalgraph.com/what-is-print-proofing-and-why-is-it-important/>

- The Met. (n.d.). *What Is Printmaking?* Retrieved January 23, 2024, from <https://www.metmuseum.org/about-the-met/collection-areas/drawings-and-prints/materials-and-techniques/printmaking#:~:text=Traditional%20printmaking%20techniques%20include%20woodcut,wood%2C%20metal%2C%20or%20glass.>
- Tribeca Printworks. (n.d.). *About Printmaking Through the Ages*. Retrieved January 28, 2024, from <https://www.tribecaprintworks.com/history-of-printmaking/>
- Trimper Gallery. (n.d.). *Artist Proof or AP vs. Numbered Edition Print*. Retrieved January 27, 2024, from <https://trimpergallery.com/docs/photography-terms/artist-proof-or-ap-vs-numbered-edition-print/>
- Vojvodić, M., & Sredanović, J. (2020). Methodological aspects of the implementation of Printmaking in Pre-school, Primary and Secondary education. *Arte, Individuo y Sociedad*, 32(2), 451–466. <https://doi.org/10.5209/aris.64206>
- West Dean. (2019, October 23). *THE IMPORTANCE OF PROOFING IN PRINTMAKING*. <https://www.westdean.ac.uk/blog/the-importance-of-proofing-in-printmaking>
- wpgmembers. (2020, May 30). *Printmaking 101: Edition Numbers*. <https://dcimprint.wordpress.com/author/wpgmembers/>

TRADITIONAL ETHNIC MUSIC: DIVERSE PRESENTATIONS AND CONTINUITY OF HERITAGE THROUGH THE LENS OF “NÜSHU MUSIC”

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Abstract: "Nüshu," the world's only existing script exclusively used by women, is inherited, and utilized among females in the Jiangyong region of Hunan Province. It represents a unique female cultural heritage, notable not only for its distinctive script but also for its expressive nature. Although a written language, "Nüshu" is also conveyed through singing, making it a syllabic script where each character represents a single syllable. Comprehension of its content necessitates performance through singing. Due to its unique reading method of "singing," "Nüshu" is inextricably linked to music, rendering it of significant value for musicological research. This paper delves into the modern representation of "Nüshu" music, employing methods of data collection and literature analysis to explore how traditional ethnic music, under the illumination of technological advancements, can be integrated with technological means to offer diversified and enriched forms of presentation. The primary research objective is to convey the beauty of traditional ethnic music to the public in a more intuitive manner and to facilitate its teaching and transmission through innovative approaches. It hopes to provide support for the transmission and education of traditional folk music.

Keywords: Traditional Ethnic Music, Traditional Culture Heritage, Nushu music, Music Education

1. INTRODUCTION

“Nüshu”, meaning “women's script,” is a unique female script created, inherited, and used exclusively by women in the Jiangyong area of Hunan Province, making it the only surviving female script in the world. It is a precious global cultural heritage. However, due to significant changes in the natural, cultural, and social environments, as well as the passing of “Nüshu” inheritors, the original “Nüshu” culture is gradually facing extinction.

Jiangyong, located in the remote mountainous region of southern Hunan Province, is an area of multiple ethnicities neighboring the Yao Autonomous Region. The “Nüshu” culture, prevalent in the northeast part of the region along the banks of the Xiao River, features distinctive characters, unique pronunciation, and is limited to usage among local women. As local women marry and move to other areas, the culture gradually spreads. Notable villages where “Nüshu” is widely practiced include Puwei Village, Jingtian Village, Tongkou Village, Xiawan Village, and Heyuan Village. Due to the presence of Yao ethnic minority residents in the transmission areas, the region is also known as the “Yao-Han mixed residence area.”

During the late Ming and early Qing dynasties, “Nüshu” culture flourished locally. Women in the area embroidered, engraved, and wrote this script, which was unfamiliar to men, on paper, fans, handkerchiefs, and other objects. They recorded marriage, family, life experiences, and expressed their emotions and hardships. Women shared their inner thoughts through “Nüshu”, finding solace and relief. These works were often burned as funerary items upon the death of the author.

The uniqueness of “Nüshu” lies not only in its script but also in its mode of expression. Although it is a written language, it is also a sung language, referred to as a syllabic script. Each character represents a single syllable, and to understand its content, it must be sung to fully express its emotions and meanings.

In the 1980s, against the backdrop of the cultural exploration movement, Gong Zhebing, a former teacher of the Political Science Department at the original Zhongnan Nationalities Institute, brought “Nüshu” into academic circles. This quickly aroused strong interest and widespread attention from scholars. After years of research and advocacy by experts and scholars from various fields such as anthropology and linguistics, the protection of “Nüshu” culture has gradually gained attention and recognition from society and the government, achieving certain results. However, the protection and transmission of the most important aspect of “Nüshu”

culture, besides its script, namely its music and “Nüshu” music-related materials, remain insufficient.



Figure 1. Nüshu-The woman script

The works of “Nüshu” serve as expressions of emotions and depictions of daily life by local creators, embodying their genuine aspirations and crystallized wisdom. These works are handwritten on paper, fans, handkerchiefs, or embroidered on cloth. After years of research, scholars have compiled several hundred well-preserved “Nüshu” works. “Nüshu” works are generally composed in a seven-character poetic form, occasionally featuring five or mixed characters. They are meant to be sung and recited, making them musical compositions in their own right.

Based on their content, “Nüshu” works can be classified into five main categories: prayer texts, records of events, women's songs, letters, and autobiographies. Nüshu works encompass various forms and categories, including congratulatory works such as “Congratulatory Letter for Three Generations” and “Wedding Song,” ritual works involving mourning for loved ones and praying to deities, works for social interactions encompassing communication, gratitude, and consolation, memory works comprising autobiographies and biographies of others, as well as educational and entertainment works like ethical works such as “Four-Character Women's Scriptures,” historical stories like “The Taiping Army Passing Yongming,” and legendary tales such as “Meng Jiangnu.”

2. BACKGROUND

2.1 TAN DUN'S “NÜSHU” MULTIMEDIA SYMPHONY

“Nüshu” is a multimedia symphony composed by Tan Dun in 2013. Through in-depth re-search and collection in Jiangyong, Hunan, thirteen short films were produced and combined with symphonic music to present the ancient and mysterious culture of “Nüshu” in a audiovisual manner for the first time. The composition consists of thirteen interconnected movements, blending Eastern culture with Western musical forms through multimedia platforms, resulting in a work that transcends time and space.

Tan Dun's "Nüshu" consists of 13 short films, harp solo, and symphony. The composition is divided into 13 movements, starting with the unveiling of the "Mysterious Fan" that reveals the origin of Nüshu. It then proceeds to share stories of mother-daughter relationships, bonds between sisters, the ancient village scenery of Nüshu, and the longing of daughters for their mothers. It depicts the lives of women in Jiangyong and emphasizes the triple juxtaposition of ancient Nüshu and futuristic sounds, music and film, and the spatial-temporal relationship between films.

Table 1: 13 Short Film of Nüshu from Tan Dun

Name of Chapter	Main idea of Chapter
"Secret Fan"	Unveiling the origins of Nüshu.
"Mother and Daughter"	Exploring the bond between mothers and daughters.
"Sisters"	Depicting the close relationships between sisters.
"Ancient Village"	Showcasing the historical landscapes of Nüshu villages.
"Yearning"	Portraying the longing of daughters for their mothers.
"Ancient Script"	Highlighting the significance of the ancient Nüshu script.
"Wedding Ceremony"	Presenting the traditional wedding customs associated with Nüshu.
"Paper Windows"	Reflecting on the symbolic meaning of paper-cut windows.
"Silk Embroidery"	Showcasing the intricate artistry of Nüshu embroidery.
"Harmonious Life"	Illustrating the pursuit of harmony in daily life.
"The River of Time"	Symbolizing the passage of time and the continuity of Nüshu.
"Echoes of the Past"	Celebrating the enduring legacy of Nüshu and its impact on women's lives.

Tan Dun has achieved a unique fusion of tradition and modernity, Eastern and Western influences, as well as the merging of time and space. Through concrete creative practices, he has overcome numerous barriers to communication, including differences in musical systems, tonal structures, and cultural languages. In summary, Tan Dun's "Nüshu" is a brilliant composition that ingeniously blends modern technology and diverse musical elements, uniting the ancient and contemporary and fusing Eastern and Western influences. It serves as an exemplary model for the diverse presentation of traditional music and sets a guiding example for its dissemination and preservation.

2.2 CHORAL COMPOSITION-"SENTIMENTS OF NÜSHU"

"Sentiments of Nüshu" is a choral composition created by composers Liao Fubao and Liao Yuchen from Yongzhou, Hunan. This piece received funding from the China

National Arts Fund in 2016 and has been performed in multiple concerts. It stands as one of the representative works of Nüshu-related music. Nüshu originates from the Jiangyong area of Yongzhou, Hunan. Beyond being a language and script, Nüshu is also a form of musical notation, with its expression relying on singing. A prominent feature of Nüshu script is its phonetic nature, where a character has only one pronunciation, but in different contexts, it may carry various meanings. Communication through Nüshu involves singing the written words rather than reading them verbatim. "Sentiments of Nüshu" is constructed based on this characteristic, utilizing different tonalities to compose the melody. It incorporates local folk music modes and skillfully combines several classic Nüshu folk songs using modulation techniques, accompanied by various traditional Chinese instruments, to present the musical culture and human emotions of Nüshu.

In terms of performance style, the choral piece "Sentiments of Nüshu" incorporates elements of modern dance. Compared to traditional dance, modern dance emphasizes a closer connection between dance and music, allowing dancers to convey more emotional tension and exhibit a more diverse dance language. Thus, throughout the choral performance of "Sentiments of Nüshu," starting from the prelude and the humming interludes, and culminating in the conclusion, modern dance choreography inspired by the story of "Kai Shan Ge" from Nüshu is integrated. Through the dancers' expressive movements combined with the melodious music, the audience can visually and aurally experience the fusion of the past and present, embracing the grace and strength inherent in femininity.

2.3 MUSIC FUSION OF ETHNIC ELEMENTS AND POP MUSIC - "NÜSHU"

Ethnic music embodies the distinct characteristics of various ethnic groups, representing their unique cultural styles. Over thousands of years, ethnic music has evolved from folk traditions, preserving its spirit and cultural heritage to this day. This resilience demonstrates the enduring vitality of ethnic music. By incorporating elements of ethnic music into popular music, exploring and innovating historical and time-honored ethnic music through con-temporary music forms can offer audiences a refreshing experience.

"Nüshu," composed and written by Chinese musician Deng Jianchao, is an exemplary fusion of ethnic and popular music. The prelude showcases instruments such as the *konghou*, *zheng*, keyboard, bass, and *pipa*. The main vocal section features alternating male and female voices, accompanied by a relatively simple texture with a predominant use of single notes. As the rhythm gradually intensifies, the music transitions to the chorus, becoming more powerful with rich harmonies and a fuller accompaniment, evoking the emotional cries and yearnings of "older sisters."

The song vividly portrays the image of women in that era—lonely, suffering, yet unable to voice their thoughts.

Ethnic music is a treasure in China's artistic landscape, representing the wisdom of a nation and bearing witness to its historical development. In today's culturally enriched era, it should also be presented on stage in a way that resonates with contemporary audiences, extracting the essence while discarding the extraneous elements. This allows contemporary musicians to pass down the soul of ethnic music through means that are familiar and relevant to this generation.

3. DEVELOPMENT OF HYPOTHESIS

3.1 The Inheritance and Exploration of Nüshu Culture

As a unique cultural phenomenon among women during the late Ming and early Qing dynasties, Nüshu culture inevitably reflects the feudal ethical and moral values of its time, such as the "Three Obedience and Four Virtues," hierarchical societal structures, and the concept of male superiority and female subordination. These works primarily served to impart moral values and dictate the roles and behaviors expected of women within a patriarchal society. Women in these feudal settings, including those from Jiangyong County, were deeply oppressed and restricted by prevailing ideologies, leaving them with limited means to voice their emotions and aspirations. Nüshu, as a shared female script, became their outlet—a cultural medium to express grief, articulate hardship, and convey their longing for change and a better life.

Consequently, much of the Nüshu literature and music is steeped in melancholy, centering on themes of suffering, resilience in the face of pain, and emotional release. While these works often adhered to feudal morality and reflected a sense of self-pity, they also contained elements of subtle resistance against traditional societal norms. In particular, autobiographical narratives such as the "Autobiography of Juyin," "Autobiography of Yiyin Yin," and "Wang Shi Nü" reveal vibrant depictions of female characters who exhibit individuality and courage, even as male characters are portrayed as weak or immoral. These portrayals reflect a process of constructing female identity, underscoring women's spirit of defiance and nascent self-awareness. This resistance, embedded in their cultural expressions, highlights an early form of female awakening, linking Nüshu culture to the gradual rise of feminist consciousness.

Hypothesis 1: The inheritance and exploration of Nüshu culture are positively correlated with the rise of feminism.

3.2 The Integration of Nüshu Culture And Music With Modern Technology

The survival and inheritance of traditional ethnic music often face significant challenges in the modern era, including shifts in cultural consumption patterns and the impact of globalization. Nüshu culture and its associated musical expressions, as a niche cultural phenomenon, are no exception. However, the integration of modern technology, such as digital recording, virtual performances, and artificial intelligence, offers innovative pathways to sustain and propagate such cultural heritage.

For instance, digital archives and online platforms enable the systematic documentation and dissemination of Nüshu music, making it accessible to a global audience. Technologies like 3D modeling and virtual reality create immersive experiences, allowing individuals to engage with the cultural context of Nüshu music in unprecedented ways. Additionally, artificial intelligence can assist in analyzing and recreating traditional melodies, ensuring their preservation and even providing adaptive innovations that resonate with contemporary tastes.

The fusion of Nüshu music with modern technology not only extends its reach but also revitalizes its cultural significance. For example, the use of Nüshu music in multimedia productions, including films and interactive performances, exemplifies how traditional music can find a place in modern artistic expressions. This dynamic interaction between tradition and innovation not only preserves the essence of Nüshu music but also enriches its cultural value, ensuring its continuity in an evolving cultural landscape.

Hypothesis 2: The integration of Nüshu culture and music with modern technology is positively correlated with the continuation and inheritance of traditional ethnic music.

4. METHODOLOGY, VARIABLES AND DATA

In this paper, the primary research methodology adopted is a comprehensive literature review. This method involved systematically gathering, analyzing, and synthesizing statistical data and documented information from a variety of sources, including libraries, information institutions, and online databases. The aim of this literature review is to extract intelligence relevant to the study, ensuring that the research is built on a solid foundation of existing knowledge and scholarly work.

To ensure the robustness of the research, content analysis was employed as a key component of the methodology. This involved coding and categorizing the data extracted from the Nushu texts to identify recurring themes, patterns, and insights relevant to the study's objectives. This systematic approach allowed for an in-depth exploration of how Nushu has been transmitted across generations, as well as its cultural, linguistic, and societal impact.

In summary, this study leverages both primary and secondary sources to provide a comprehensive analysis of Nushu. The methodology is centered on a critical review of textual archives, coupled with a robust content analysis that highlights Nushu's cultural and academic significance. By incorporating both historical documents and modern texts, this re-search offers a holistic view of Nushu's past, present, and potential future within the broader scope of gender studies and cultural preservation.

The author conducted an extensive investigation into Nüshu music through comprehensive literature searches, covering the historical background of Nüshu music's transmission, its evolution and development over time, and explorations into integrating this traditional folk music with modern musical expressions to better sustain its essence. Using a broad collection of literature and materials, the author employed Maxqda software to conduct a detailed analysis, organizing, coding, and categorizing the data to extract core themes and trends in Nüshu music's presentation and evolution. Through this process, qualitative analysis was applied, with a focus on the socio-cultural function, transmission forms, and adaptability of traditional music in modern contexts.

To further explore the diverse presentations and transmission pathways of Nüshu music, the author performed a multi-layered analysis, with particular attention to the social function and cultural meaning of Nüshu music across different historical periods. Initially, using Maxqda software, the literature data were systematically organized into three major themes: historical background, formal evolution, and integration with modern practices. These themes were further refined through qualitative coding, capturing specific characteristics of Nüshu music across periods and its adaptability within various cultural contexts.

Throughout this process, qualitative coding and categorization offered a solid basis for identifying critical development points in Nüshu music. Specifically, the author utilized thematic network analysis to compare collected literature with core codes to construct the trajectory of Nüshu music's shifts across social environments.

Table 2: Nüshu Music: Themes and Evolution Analysis

Theme	Sub Theme	Main Content Description	Literature Frequency	Development Points
Historical Background	Emotional Exchange	Nüshu music serves as a means of intimate communication among women, conveying daily	12	Nüshu as a symbol of identity

		emotions		
Historical Background	Ritual Use	Used in traditional rites and ceremonies as a form of group solidarity among women	9	Reinforces social bonds and cultural continuity
Formal Evolution	Melody and Lyrics Evolution	Nüshu music evolved from folk styles to more ceremonial forms	7	Formalization of melody for specific occasions
Formal Evolution	Instrumentation Adaptation	Introduction of new instruments over time,	7	Broadens musical expression and appeal
Modern Integration	Cross-disciplinary Artistic Expression	Nüshu music incorporates visual elements in modern art	15	Fusion innovation between traditional and modern art
Modern Integration	Digital and Media Adaptation	Use of digital media and platforms to preserve and promote Nüshu music to younger audiences	13	Expands reach and cultural relevance
Transmission Pathways	Family and Community Teaching	Passed down through community gatherings, often taught by older women within the family	9	Maintains tradition within local communities
Transmission Pathways	Educational Programs	Integration into school programs and cultural	12	Broadens accessibility to diverse

workshops to raise awareness	audiences
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5. EMPIRICAL RESULTS AND ANALYSIS

The inheritance of "Nüshu" music had its early forms, primarily passed down from mothers to daughters or among relatives and friends. During this period, there were no specific pre-scribed methods or designated places for transmission, resembling more of a family tradition.

In modern times, the inheritance of Nüshu music has been gradually declining. Most young people are reluctant to learn traditional folk ethnic music, and the older generation of folk artists is fading away. At present, there are only a few direct successors of Nüshu music, and many other forms of traditional folk music are also facing challenges in terms of inheritance and dissemination due to the impact of multiculturalism and technological advancements.

In addition to Nushu and its associated traditional cultural arts, China also has many long-standing traditional folk music and dramas. These arts have faced similar challenges as Nushu, falling out of favor with mainstream culture and trends and consequently facing difficulties in inheritance. However, with proactive efforts to combine modern technology and enrich performance forms, there have been successful cases, such as the innovation in Yueju Opera.

As one of China's traditional opera genres, Yueju Opera shines brightly across the Chinese landscape with its unique performance style and artistic charm. However, with the changing times and evolving aesthetic preferences of the audience, Yueju Opera also faces the challenge of keeping pace with the times and attracting younger viewers. The explosive success of the Yueju Opera "New Dragon Inn" provides valuable insights for the inheritance and innovation of Yueju Opera and even other traditional folk cultures.

The success of "New Dragon Inn" can be attributed to several factors. Firstly, the adaptation of classics and the stunning stage presentation. "New Dragon Inn" is adapted from the classic martial arts film of the same name and has received enthusiastic responses and unanimous praise from audiences since its premiere. The female actors, with their exquisite acting skills and unique performance styles, vividly portray the characters from the original work, captivating the audience with their

charm. Through delicate performances and rich emotional expressions, they showcase the artistic charm of Yueju Opera and win the love of younger audiences. Secondly, the use of immersive theatrical experiences enhances interaction with the audience. Another innovative aspect of "New Dragon Inn" is its immersive theatrical experience. The entire theater is arranged like an inn filled with hidden passages and mechanisms, immersing the audience in the world of the story. Actors interact with the audience multiple times during the performance, transforming spectators from mere "audience members" into "participants," thus providing a completely new theatrical experience that allows the audience to deeply experience the charm of Yueju Opera.

In addition, the youthful energy and fashionable expression have also made this Yueju Opera popular among many young people. The creative team behind "New Dragon Inn" consists of directors born in the 1980s, screenwriters born in the 1990s, and stage designers born in the 1990s, along with a new generation of actors, injecting youthful energy and fashionable expression into this work.

Therefore, combining modern technology and multimedia for dissemination, while preserving their traditional essence, and presenting them in a more diverse manner, is the best approach to keep these historically profound and unique artistic treasures alive and thriving on the stage of this era.

6. DISCUSSION AND CONCLUSION

When facing Chinese ethnic folk music, it is not enough to merely preserve its essence; instead, continuous development, innovation, and promotion should be embraced to inject new vitality and leave a mark for the traditional ethnic folk music culture of this generation.

Traditional ethnic folk music mostly exists and circulates orally among the folk. For a long time, the dissemination of Chinese ethnic folk music has mostly been unconscious and derived from folk cultures of various ethnic groups for self-entertainment. With the development of society, this mode of dissemination has gradually evolved into a conscious direction. Currently, schools play a significant role as platforms for inheritance and development. Teachers impart knowledge about Chinese ethnic and folk music culture to students through instructional modes, gradually fostering their understanding and confidence in traditional music culture.

The education systems of most schools are relatively complete. Therefore, once they absorb the music culture of ethnic folk, they can organize, summarize, and restructure it based on their rules, making it more systematic and presenting it as teaching

materials. This provides an excellent opportunity for the inheritance and development of traditional ethnic folk music culture.

In today's rapidly advancing technological era, dissemination media and channels have undergone revolutionary changes compared to the past. The choices for the dissemination and presentation of traditional folk music have become more comprehensive and multidimensional.

Regarding dissemination formats, serving as film scores is one of the most effective ways to spread ethnic music. With the maturation of the global film industry, numerous films from different cultural backgrounds have cultivated many loyal audiences. Leveraging film scores to disseminate ethnic music among specific target audiences is undoubtedly targeted. As one of the dissemination methods for ethnic music, film scores combine music with visuals, not only influencing and catalyzing the audience's thoughts and emotions, but also expressing the emotions and content of the films. They can also use the fusion of Chinese and Western music to expand the expressive space of ethnic music. For example, when Tan Dun composed the music for the film "Crouching Tiger, Hidden Dragon," he innovatively fused and integrated Western music's romance and grandeur with the characteristics of Chinese ethnic music.

Ethnic music represents a distinctive form of music associated with a particular ethnic group and serves as an epitome of human culture. The variety of elements in music, including instruments, rhythms, and melodies, showcases its diversity and innovation. The fusion of traditional ethnic music with modern music styles exemplifies the appearance and cultural value of ethnic music, providing people with a better understanding and experience of the allure of diverse cultures. Preserving and developing traditional ethnic folk music culture is the direction and mission we should strive for. Through protection, inheritance, promotion, and innovation, we can better maintain the unique features and diversity of Chinese ethnic music culture, while also injecting new vitality into cultural development.

REFERENCES

- Chen,X.,& Xiong, Y.(2019). Research on the Inheritance and Development of Nüshu in Jiangyong under the New Media Background. *Jouenalism Research Guide*, 11 , 15-16.
- Dong, Q., Zhou, Y.P., & Tao,Y. (2023). A Preliminary Exploration of Nüshu Music in Yongzhou. *House of Drama*, 01, 101-103.

- Liu, D (2017). Dialogue between the Past and the Future: An Analysis of Tan Dun's Microfilm Symphony "Nüshu" (Master's thesis, Southwest University).
- Li,F.,& Su, C. (2015). The Impact of Emerging Media on the Cross-cultural Transmission of Chinese Ethnic Music. *Music Communication*, No.24.01, 85-8
- Liu,T.Y.(2022). Exploring the Cultural Elements of Ethnicity in Chinese Pop Music. *Cultural Industries*, 13, 40-42
- Tan, Y. (2017). Research on Nüshu Music in Jiangyong from the Perspective of Ethnic Musicology (Master's thesis, Jiangxi University of Science and Technology Normal)
- Wang, G. (2019). "Narrative Discourse" in Narrative Dance Themes: A Case Study of the Dance Work "Nüshu·Yin." *Art and Sea*, 12, 53-55.
- Yang, L. (2019). Analysis of Humanistic Characteristics in Tan Dun's Microfilm Symphony "Nüshu." *Voice of the Yellow River*, 11, 136-137. doi:10.19340/j.cnki.hhzs.2019.11.107.
- Yaang,J. (2021). Multiple Structures of Auditory Music and Visual Images in Cognitive Context: Some Thoughts Triggered by the Analysis of Tan Dun's Multimedia Music Works "Map" and "Nüshu." *New Sounds of Music*, 02, 18-26.
- Zhang, Y. (2006). A Study of Nüshu Music in Jiangyong, Hunan (Master's thesis, Wuhan Conservatory of Music)

CULTURAL VALUE EXPLORATION: BRONZE PATTERNS IN THE CHINESE MUSEUMS

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Abstract: This paper aims to deeply explore and analyze the profound cultural value of ancient Chinese bronze patterns, adopting a qualitative research strategy that involves image analysis, case study and in-depth interviews. The aim is to comprehensively reveal the historical background, artistic achievements, and multiple meanings of these motifs in the social and cultural fields. Through systematic research, we expect to gain a deeper understanding of the wisdom and aesthetic pursuits of ancient civilizations, and at the same time provide a theoretical basis for the protection and transmission of cultural heritage. The study reveals that the rich variety and exquisite design of motifs on bronzes reflect the religious beliefs, social organization, and people's understanding of beauty in ancient societies. In addition, these motifs played a key role in cultural inheritance, artistic innovation, and historiography, not only highlighting the unique charm of ancient civilization but also establishing a cultural link between history and modernity. In addition, travelers critically evaluate the existing research on these motifs reveal their limitations and provide novel insights and guidelines for future research.

Keywords: Bronze motifs, Cultural heritage, Cultural value, Qualitative research.

1. INTRODUCTION

Bronze, as a milestone in the process of human civilization, not only witnesses the significant transition from the Stone Age to the Metal Age but also is a visual manifestation of the ancient civilization's technological achievements, aesthetic sense, and cultural characteristics. As one of the earliest civilizations in the world to enter the Bronze Age, China's bronzes, with their exquisite craftsmanship and unique decorative techniques, are of great artistic and historical value, and as Howard et al. (2006) have clearly stated in their study, bronzes were not only a key symbol of ancient Chinese culture, but also a visual manifestation of the social structure, religious philosophy, and governmental power of the Chinese people. In ancient China, bronzes were widely used in ceremonial, military, and official activities. This reflects the social power structure and hierarchical order of the time.

Museums are not only an important channel for the dissemination of history and culture but also an efficient platform for the presentation of cultural relics and a hub for cultural inheritance, Agus et al. (2021) emphasized that with the revival of traditional culture and the enhancement of aesthetic cognition, the dissemination of excellent traditional culture through museums to the global arena has entered an increasingly mature stage. Based on the profound traditional cultural heritage, museums regard bronzes as artistic carriers to show the historical changes of the nation, and their exquisite modelling design and deep decorative patterns not only reflect the artistic aesthetics of the ancient people but also contain a rich variety of historical and cultural connotations and values, which are a precious cultural heritage that is gradually becoming a valuable asset that needs to be studied and inherited urgently by today's society.

Patterns on bronze objects were woven into the ritual systems, religious beliefs, and daily life of ancient societies. Bronze ritual vessels of the Shang Dynasty displayed a complex and deeply symbolic artistic style in their decorative patterns, and from the middle to late Shang Dynasty, these ritual vessels were gradually transformed into mediums carrying spiritual values and connecting people with the divine world (Wu, 2015). Patterns on bronze vessels not only show rich diversity and complex structures in form and layout but also contain deep cultural connotations and historical memories at a deeper level. During the Shang and Western Zhou periods, bronze vessels were commonly used as ceremonial utensils for sacrificial offerings and feasting, with their surface patterns often closely related to rituals and religious beliefs. Taking the owl-shaped pattern depicted on the "Fu Hao Owl Zun" as an example (Figure 1), this unique design vividly demonstrates ancient society's deep worship of birds and belief concepts, while also highlighting high praise and recognition for women's roles and important contributions at that time. This kind of recognition is fully and profoundly displayed in the patterns on bronzeware; these decorations are not just aesthetic embellishments

but symbols of historical culture that highlight ancient society's cherished and continued essence of specific cultures. This phenomenon serves as an important clue to revealing the cultural characteristics and social organization models of ancient societies.



Figure 1. Fu Hao Owl Zun

Today, bronze patterns not only hold a pivotal position as precious cultural heritage but also exhibit their distinctive worth and charm across various domains including artistic creation, cultural tourism, and product design. These innovative uses not only breathe new life into the ancient art of bronze patterns but also offer fresh perspectives and thought-provoking avenues for people to reevaluate and gain a deeper appreciation of its profound cultural implications.

2. LITERATURE REVIEW

2.1 ORIGIN AND DEVELOPMENT OF BRONZES

The origin and development of bronzes, as a landmark achievement of ancient Chinese civilization, can be traced back to the Xia Dynasty, and during the Shang and Zhou Dynasties, the art reached an unprecedented peak of prosperity. Bronzes not only represented the role of practical tools and combat weapons but also assumed the dual significance of ceremonial tools and symbols of power.

The earliest bronze artefacts in China date back to the end of the Neolithic period. According to archaeological excavations, around 3,600 BC, i.e., before the sixteenth century BC, some five hundred early bronze objects have been found on Chinese soil in more than fifty regions. The distribution of these bronzes shows obvious geographical characteristics, concentrated in four geographical regions. Among them, the oldest bronze artefacts found date back to 4,500 B.C. (Bai, 2002). Early bronzes were made of red copper, and then gradually developed and eventually reached a

mature stage with bronze as the main component. The creation and application of bronzes symbolized the entry of ancient Chinese society into the Bronze Age, which began two thousand years ago (Huang, 2018).

During the Erligang period, the early stage of the Shang Dynasty, and the subsequent continuation of the Late Shang Dynasty, the casting of bronzes had already reached an unsurpassed artistic peak in the history of human civilization. The bronzes of this period not only reached an unsurpassed level of skill but also contained deep and rich cultural and historical significance. From the beginning of the Erligang period to the end of the Yinxu period, bronzes underwent remarkable changes and development, which profoundly reflected the evolution of the social structure of the Shang Dynasty, the change of political power, and the innovation of cultural thought.

During the Erligang period, the forms and decorative patterns of bronzes were already characterized by complexity and delicacy. These bronzes not only showed innovation in technology but also embodied remarkable artistic pursuits in the artistic design of decoration, such as taotie and kui dragons (Li, 2012). These exquisite decorations are not only the embodiment of aesthetic value, but also deeply imply the rich connotation of religious beliefs and social culture.

Stepping into the era of Yinxu culture, the craftsmanship and artistic expression of bronzes reached the ultimate. Bronze vessels of the Yinxu period, such as jars, horns, jia, and divorces, not only increased significantly in number but also became more complex and exquisite in shape and ornamentation (Zhang, 2016).

The changes in the form of bronze ritual vessels not only reflect the trajectory of technological development but also a miniature display of social change. In addition, the use of bronze vessels and the ideograms of the decorations also changed in different periods, from the ritual vessels and weapons in the early period, to the realistic contents in the middle and late Western Zhou period, and then to the theme of social life scenes in the Eastern Zhou period.

2.2 CLASSIFICATION OF BRONZE PATTERNS

Bronze patterns of the Shang and Zhou periods are divided into three categories: animal patterns, geometric patterns and portraits, this classification and the characteristics embodied in them profoundly reveal the aesthetic tendency and religious meaning of the society at that time, and also reflect the exquisite development of craft art. Shang and Zhou bronze patterns can be roughly divided into the following categories, and summarize their characteristics:

2.2.1 ANIMAL PATTERNS (Table1)

Beast-face pattern (Taotie pattern): the iconic decorative pattern on Shang and Zhou bronzes, inspired by the front of imaginary monsters, combines elements such as the head of a bull, a tiger and a dragon's horn, displaying a unique charm that is both







mysterious and solemn. The taotie motif, as the main decorative pattern on bronzes, vividly demonstrates the ancient ancestors' reverence and worship of the powerful life force of nature.

Kui Long Pattern: An abstract art form that incorporates the characteristics of many animals, representing a fictional creature that is both exotic and mysterious, created through the creative imagination of ancient ancestors.

Phoenix Bird Pattern: Its appearance is designed like a peacock, with a raised head, several upright plumes on top of the head, a beak like that of a phoenix, with large round eyes and broad wings, and the overall shape contains a distinctive sense of abstract art. These features make the phoenix and bird motifs look solemn and caracal in beauty (Pang, 2003).

Other animal prints: include but are not limited to tiger prints, bird prints, rhinoceros prints, rabbit prints, cicada prints, tortoise prints, elephant prints, frog prints, cow prints, sheep prints, and a variety of other patterns.

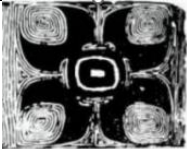
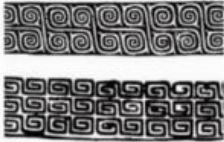



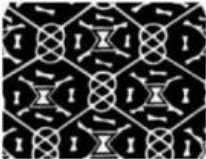
Table 1: Animal Patterns

Name	Diagram
Beast-face pattern	
Kui Long Pattern	
Phoenix Bird Pattern	
Fish pattern	
Serpentine Pattern	
Cicada stripe pattern	

2.2.2 GEOMETRIC PATTERNS (Table 2)

Four-petal eye pattern: its features include a centred design in the key portion, surrounded by four petal-like elements of equal size evenly distributed around it, with the edges of the petals remaining open rather than completely closed (Yang, 2019).
Cloud and Thunder pattern, Hui patterned: With their concise lines and symmetrical compositional design, the cloud and thunder pattern and Hui pattern vividly embody the ancient people's profound understanding of the pursuit of aesthetics and the cognition of the harmonious order of the universe.

Table 2: Geometric Patterns

Name	Diagram
Four-petal eye pattern	
Cloud and Thunder pattern	
Hui Pattern	
Vortex Pattern	
Twisted pattern:	
Latticework pattern:	

2.2.3 STORYTELLING PATTERNS

Unusually, this design focuses on daily life, vividly demonstrating the richness and diversity of social life at that time. At this time, the image of human beings broke free from the constraints and passivity, and fully demonstrated its inherent vitality and potential. Take the Warring States Feasting and Dancing Copper Pot as an example (Figure 2), its decoration is wonderful and varied, covering vivid scenes of feasting, music and dance, archery, hunting, etc., showing a high artistic vitality and sense of reality.



Figure 2. The Warring States Feasting and Dancing Copper Pot Pattern

The classification of bronze patterns and their characteristics during the Shang and Zhou periods not only profoundly reveal the aesthetic tendencies and religious beliefs of the society of that era, but also highlight the craftsmen's excellent technical level and design ideas. The integration of these patterns and object designs not only realized the unity of functionality and artistry but also revealed the aesthetic pursuit and cultural spirit of the Shang and Zhou periods (Fang, 2018).

2.3 THE CULTURAL CONNOTATION OF BRONZE PATTERNS IN THE SHANG AND ZHOU PERIODS

First, the decoration of the Shang Dynasty bronzes visualized the religious cognition and social functions of the society at that time. During the Shang and Zhou dynasties, bronze vessels, as the main ritual objects, carried deep religious beliefs, and their decorations conveyed rich humanistic connotations and symbolic meanings through abstract patterns (Liu, 2010). The merchants' sense of gods, nature, and social belonging, as well as their cognition, were fully and vividly reflected in the decoration of bronze vessels. Regarding the evolutionary trajectory of bronze decoration, its main feature can be summarized as the shift from the symbols of gods and spirits to the themes of human life, which marks a significant innovation in the ideology of ancient people from the Shang Dynasty to the Western Zhou Dynasty (Xie, 2008).

Once again, we will explore the close connection between the bronze decoration of the Shang Dynasty and the spirit of the times that it embodies. The evolution of Shang bronze decoration from the dominance of animal-face motifs to the centrality of bird

motifs is a clear trend that reflects the shift in the focus of Shang society on the worship of gods and ancestors and thus demonstrates the complex dynamics of the intertwining and interaction between divine power and royal power in the structure of social organization (Qiu, 2021). At the same time, the evolution of Shang bronze decoration symbolizes the transition from primitive intuitive cognition to preliminary logical reasoning, which triggered a fundamental reconstruction of the Shang and Zhou cultural framework.

Finally, an analysis of the artistic characteristics of Shang dynasty bronze ornamentation reveals that bronze objects from the Shang and Zhou periods present a simple and elegant style, with a wide variety of decorative motifs and an emphasis on the perfect harmony between the motifs and the shape of the objects (Lu, 2006). These artistic elements are closely related to their overall mission as ceremonial objects and sacred objects (tools used to communicate with the gods). They carry the core structure and expressive form of the political rational guidance and religious emotional inculcation of a particular period and are the unique crystallization of the corresponding era (Zhou, 2007).

To summarize, the bronze culture of the Shang Dynasty is profound, not only in the artistic expression of high aesthetic interest but also in the religious concept, social role and the characteristics of the times and other dimensions, have shown its unique influence and profound value.

3.0 USE OF BRONZE PATTERNS IN MODERN DESIGNS

Application in Cultural and Creative Product Design: Bronze decorative patterns of the Shang and Western Zhou dynasties have been widely used in the field of contemporary creative commodity design (Figure 3), and these products not only carry and continue the core values of traditional Chinese culture but also skillfully incorporate the trends of modern aesthetics and the needs of market consumption, which successfully realizes the harmonious fusion of traditional art and modern lifestyles (Wu, 2020).



Figure 3. Bronze Patterns in Cultural and Creative Products

Application of Visual Communication Design: In the field of modern visual communication design, bronze patterns are widely used in various aspects of posters (Figure 4), packaging logo design, etc. This integration not only greatly enriches the

aesthetic expression of design, but also provides the public with a window to deeply understand and appreciate the beauty of traditional Chinese culture (Pan, 2021).



Figure 4. Bronze Patterns in Poster

Home Design: Bronze ware patterns have shown great application value and creative integration in contemporary home design and are widely used in furniture (Figure 5), lighting equipment, screens, wall decorations and other elements. Design experts draw on the beauty of lines, the wisdom of layout and the essence of the colour of bronze ware motifs to carefully create a living environment that exudes classical flavour and deep cultural connotations (Jin, 2019). Traditional motifs such as taotie motifs and dragon motifs are innovatively applied in furniture design, which not only gives practical value to the furniture but also transforms it into an artistic masterpiece that carries and displays the profound traditional culture.



Figure 5. Bronze Patterns in furniture

3. METHODOLOGY AND FINDING

This study applies the theory of iconography to the exploration of the cultural value of bronze vessel patterns, aiming to deeply analyze the history and interpretation of the images of bronze vessel patterns, and then to explore the fusion of visual art symbols and traditional culture, as well as how to transform the traditional cultural elements into innovative research in the modern context. Through this method, we can

comprehensively analyze the meanings embedded in the images of bronze vessel patterns and deeply understand their core values, so that viewers can not only passively receive the information, but also actively interpret the deeper meanings of these images and the cultural spirit behind them based on combining their knowledge backgrounds, to realize the in-depth understanding and cross-generation dialogues from the surface to the connotation and from the tradition to the modernity. This ensures the rigour and scientificity of this study and effectively achieves the intended research goals.

Pannovsky uses a three-layer system to realize the interpretation of image symbols from direct to indirect meanings (Figure 6), which makes the research on images go from disorder to order, and systematically launches in-depth research on the art of images. He first builds a systematic structure for the theoretical analysis of iconography, and then gradually deepens it, orienting the artistic analysis of iconography to the exploration of its deep humanistic values and connotations. This process motivates the viewer to go beyond the direct visual experience and focus on the symbolic elements of the work, and then explore and comprehend the deeper spiritual essence of the work. This analytical approach is highly compatible with the core idea of iconographic theory advocated by Pannowski.

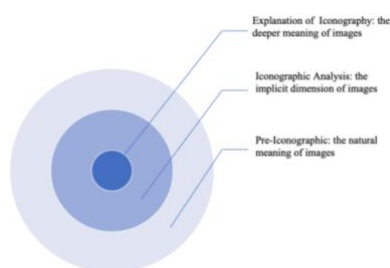


Figure 6. The three dimensions of Iconographic

3.1 QUALITATIVE RESEARCH

3.1.1 VISUAL ANALYSIS

Visual analysis is an exploratory method that examines and decodes visual materials to uncover their cultural, social, and historical meanings and information. By exploring the cultural value of bronze decoration, this path can lead us to explore the design principles, symbolic meanings, and hidden historical and cultural depths. As the quintessence of ancient art, bronze decoration shows us the design concept, cultural symbolism, and social functionality through its visual interpretation, which contains deep historical and cultural values.

For the visual interpretation of this theme, we plan to collect a library of bronze images. This library will not only contain full-view images of bronzes but also enlarged close-ups of their characteristic motifs. We have a particular preference for bronzes that are typical of the historical period, geographic area, or artistic style, or that have a unique

cultural significance to be explored in depth. This strategy ensures that the samples we use for our research are not only diverse and wide-ranging, but also specific and representative. The goal is to explore and analyse in depth the cultural significance and historical value of bronze decoration.

The core of this research method focuses on the fine delineation of the visual attributes of patterns, and in-depth analysis of the constituent elements of patterns, covering key aspects such as form, colour, arrangement and decorative features. In addition, it is necessary to analyze the artistic expression of the pattern, including its layout and symmetry, to determine whether it follows or exceeds the aesthetic principles and laws. The use of the visual analysis method can reveal the visual characteristics of the pattern, thus laying a solid foundation for the subsequent cultural value assessment.

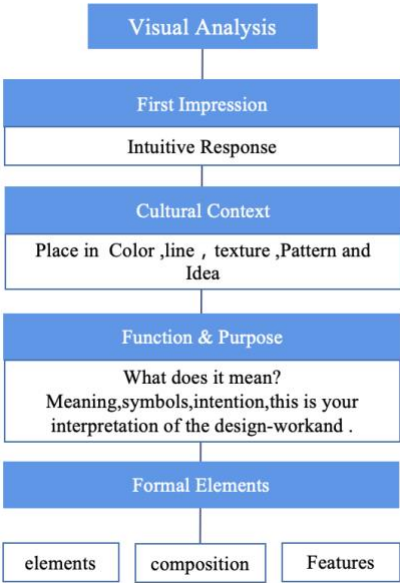


Figure 7. Visual Analysis Structure

3.1.2 CASE STUDY

Through case studies, this study delves into the cultural connotations carried by bronze motifs in Chinese museums and their levels of interpretation. This study aims to reveal that patterns not only remain as cultural artefacts but also actively contribute to the visual narrative of Chinese cultural heritage through the curation of multi-layered aesthetics and the symbolic meanings they carry.

As stated by Yin (2011), a case study is an empirical method that aims to explore contemporary phenomena in real-life contexts. In this context, the method provides an in-depth analysis of a particular curatorial practice, meticulously examining the selection, layout, and display of bronze patterns in museum exhibitions. By comparing and analysing the curatorial practices of the two museums, this study aims to provide an empirical basis for the importance of understanding the historical and artistic values embedded in bronze patterns through exhibitions.

Case 1: 'Jijin Casting History - Ancient China in Bronze' Exhibition (Figure 8)

The National Museum of China has taken the lead in curating a thematic exhibition of bronzes in the 'National Museum Hall' of the Xinjiang Museum, which is systematically presented in five sections, exploring the stylistic aesthetics, decorative patterns, inscriptions, calligraphy, craftsmanship, and patina characteristics of bronzes, respectively. Over one hundred bronze objects are selected and systematically categorised to reveal the evolution of the symbols of Chinese civilisation at various stages of history. The curatorial team has carefully analysed the qualities of each section to ensure that visitors can fully appreciate the unique aesthetic and historical dimensions of the bronzes during their visit.

To deepen the public's understanding of bronze culture, the National Museum of China creatively launched the "Mystery of Ancient Bronze Patterns" social education programme through this exhibition. The programme, which focuses on the explanation of cultural relics, copying, making and creation of decorations, aims to stimulate the public's interest and enthusiasm in bronze patterns, as well as to deepen their respect for the decorative art of bronzes. Through the interactive experience, participants will not only appreciate the aesthetic and craftsmanship value of bronze decoration but also deeply understand the spirit and cultural significance of the ancient Chinese nation. The curators have cleverly integrated the exhibition with educational activities, successfully transforming static cultural lively cultural and educational resources, thereby promoting the dissemination and continuation of bronze culture in modern society.



Figure 8. 'Jijin Casting History - Ancient China in Bronze' Exhibition

Case 2: 'Bronze Grandeur of a Minor State' Four Bronzeweares from Marquis of E in the Early Western Zhou Dynasty' Exhibition (Figure 9)

The Tsinghua University Museum of Art's special exhibition, 'The Great Production of a Small State: The Four Vessels of the Early Western Zhou Dynasty', focuses on the beauty of smallness and delicacy with a selection of 51 early Western Zhou bronzes, with the highlights being the Four Vessels of the Divine Faces unearthed from the tomb of the Marquis of Qi, which display a unique artistic charm.' By dividing the bronzes into five categories according to their forms and uses: weapons, food vessels, wine vessels, water vessels, and car and horse ornaments, the curators aim to present a comprehensive picture of the functions and craftsmanship of early Western Zhou ceremonial vessels and provide visitors with a richly layered viewing journey through which to explore the mysterious glamour of this ancient land.

The bronzes from the Tomb of the Marquis of Qi are notable for their subtle shapes and intricate craftsmanship, and the unique blue lustre on their surfaces, in contrast to the traditional green patina, is particularly intriguing, casting a veil of mystery over this archaeological discovery. These bronzes not only contain deep historical significance but also highlight the excellence of bronze craftsmanship in the early Western Zhou and even the Shang and Zhou dynasties. Visitors to the exhibition will not only be able to directly appreciate the aesthetic appeal of the bronzes but will also be able to deeply understand the historical, cultural, and ritual significance of the bronzes, and gain a comprehensive cultural understanding through the combination of intuitive experience and deep context.

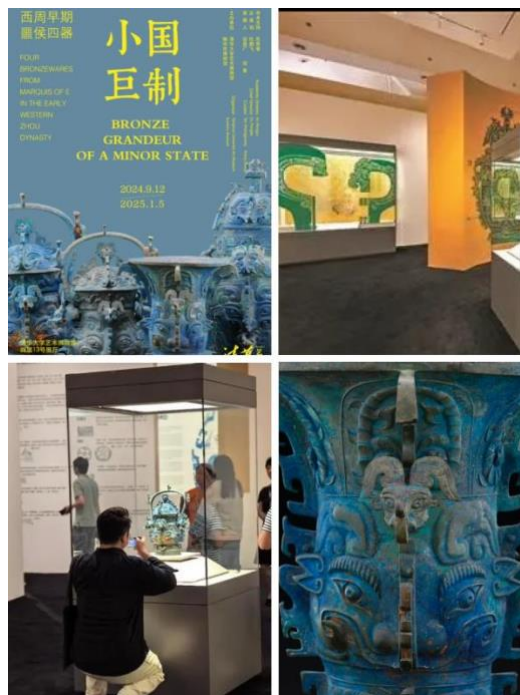


Figure 9. 'Bronze Grandeur of a Minor StateFour Bronzeware from Marquis of E in the Early Western Zhou Dynasty' Exhibition

3.1.3 IN-DEPTH INTERVIEWS

The use of the interview method in the study of bronze patterns is mainly through in-depth communication with senior experts, well-known scholars in the field and craftsmen directly involved in the design and manufacture of bronze wares, to obtain multi-dimensional insights and understandings on the structure of bronze pattern, design concepts, cultural connotations and its historical evolution. This method can not only make up for the lack of literature but also directly capture the essence of traditional techniques and the unique insights of modern researchers, providing a vivid perspective and an in-depth analytical basis for the study of bronze patterns.

Through interviews, the researcher can learn the key information about the inspiration of pattern design, the details of the production process, and the evolution of pattern symbolism, to interpret the artistic value and historical and cultural background of bronze vessel patterns more comprehensively and accurately. This method helps researchers to explore the cultural connotation, symbolism, development, and role of bronze patterns in social life in a multi-dimensional way, thus providing key perspectives and rich information for in-depth interpretation of bronze patterns.

I. Selecting research targets and choosing experts or practitioners with rich experience in the fields of bronze research, archaeology and art history as interview subjects can ensure the professionalism and depth of the interviews. For example, we can invite archaeologists who have personally led the excavation of key bronzes and made remarkable contributions, or academic experts who are well versed in the historical lineage of bronze art and have profound theoretical skills to conduct in-depth interviews.

The second step is to design the interview outline. The interview questions for the cultural value of bronze patterns should include the meaning of patterns, the evolution process, political culture, and other aspects. When conducting interviews, a semi-structured approach is used to record the interview content. This method can effectively capture detailed and deep information and contribute rich resources for subsequent data analysis.

Questions:

- (1) What do you think about the symbolism of common motifs (e.g., dragons, phoenixes, clouds, etc.) on bronzes? What cultural or religious messages did these motifs convey in ancient societies?*
- (2) What were the major evolutions in the design and decorative styles of bronze motifs? What major changes in society at the time were associated with this evolution?*
- (3) What role did bronze motifs play in religious rituals? Are certain motifs associated with specific religious ceremonies or rituals?*

(4) Was the design of bronze motifs influenced by the aesthetic standards of the society of the time? How did these standards influence the design and decorative style of the motifs?

(5) Did changes in bronze motifs during different historical periods reflect changes in social structure, political institutions, or cultural attitudes? How did these changes affect the design of motifs?

(6) What do you think are the under-explored areas in the study of bronze motifs? In what ways can future research go further?

Step 3, Data Parsing: Organize and analyze the interviews to extract core insights and consensus. Interview transcripts were carefully read and coded to identify common themes and ideas.

The fourth step is to integrate the discussion. Integrate the results of expert insights, literature analysis and visual analysis to construct a comprehensive understanding. For example, the insights of several authoritative experts can be compared and analyzed with the findings of existing academic research to explore in depth the cultural significance embedded in bronze patterns and the evolutionary dynamics of their social functions (Huang, 2023).

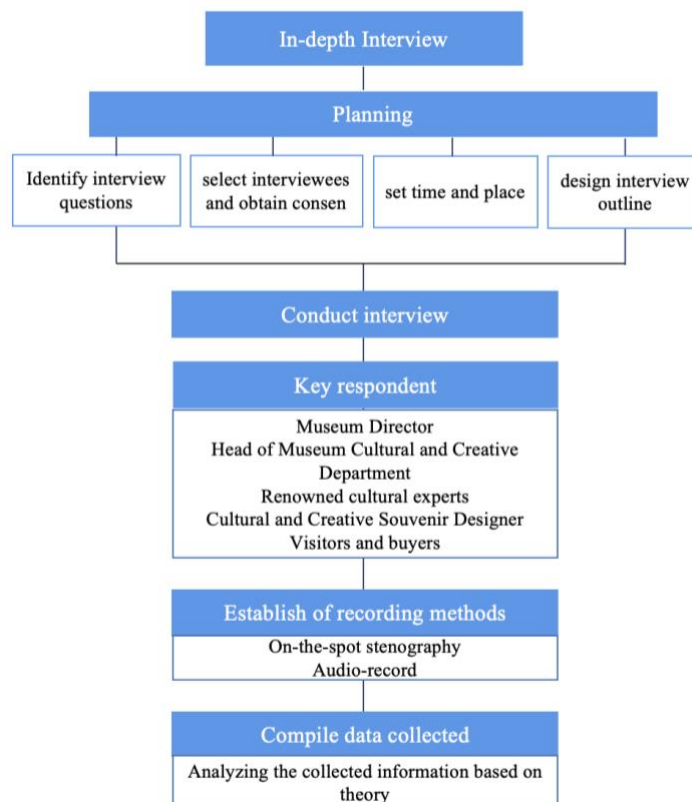


Figure 10. In-depth interviews Structure

3.2 SAMPLING

The objective of this study is to deepen the understanding of the cultural connotations of bronze decoration; therefore, the purposive sampling method is adopted. This strategy is designed to ensure the high relevance and typicality of the sample, to significantly enhance the quality, effectiveness, and credibility of the research output. By carefully selecting samples that are highly relevant to the research topic, we can more accurately analyse and understand the historical value, social background, and artistic connotations of bronze decorations, and thus contribute more profound and credible knowledge to the academic community.

Purposive sampling, also known as judgmental sampling, selective sampling or subjective sampling, is a method in which the researcher, based on a specific objective or research hypothesis, actively selects individuals or groups that are considered highly relevant to the research topic or that can provide an in-depth understanding of the topic, and incorporates them into the sample. This method is widely used in social science research, market research, case studies, etc., and aims to generate targeted and in-depth insights through in-depth exploration of a specific phenomenon, group, or situation. Although the sample sizes selected using a purposive sampling strategy are small, each sample is important because of its unique attributes. This methodology is designed for projects with a clear research direction that aims to analyse a specific group or phenomenon in depth. Given our research needs and objectives, purposive sampling was the best choice as the primary sampling strategy.

3.3 POPULATION

Museum visitors: A sample of museum visitors based on diverse background characteristics (not limited to age, gender, education level and cultural roots) was selected for the study. This observation will help to reveal and compare the visual experience of several types of visitors and their understanding of cultural values when viewing bronze decoration.

Artistic designers: especially those who have deep research or insights in the field of bronze decoration design, their unique insights can effectively reveal the artistic and cultural meanings of the design process.

Cultural researchers: Especially for scholars and experts who specialise in the study of bronzes, symbol analysis, image interpretation and its related fields, they can contribute in-depth theoretical discussions and unique insights.

Sample Distribution: Ensure that the sample is highly diverse in terms of age, gender, cultural background, and other dimensions, to fully capture and reflect the unique perspectives and needs of a wide range of audiences and their specialized fields.

4. DISCUSSION

The purpose of this chapter is to analyse in depth the achievements and limitations of this study and to reveal the possibilities and potentials for future research. In-depth documentary analysis, visual analyses and in-depth interviews are the core pillars of this study, aiming to explore and reveal the deeper meanings and values of bronze motifs as a valuable ancient cultural heritage. This study has analysed the complex and multi-dimensional symbolic meanings of these motifs and successfully revealed their cultural and historical connotations. At the same time, the study also focuses on how the uniqueness of the artistic style of bronze patterns, which is visually distinctive, influenced and shaped the direction of subsequent artistic development. In addition, the study analyzes in depth the profound impact of bronze motifs on subsequent cultures, revealing their key roles and functions in the process of cultural exchanges and social evolution, thus revealing the precious value of these motifs as living fossils of history.

With the help of comprehensive visual element analysis and in-depth interviews, this study opens a new dimension in exploring ancient civilization, not only deepening our understanding of the intrinsic meaning of bronze motifs but also providing a solid theoretical basis for a more comprehensive strategy of cultural heritage preservation and transmission. We observe that these motifs not only visually reflect the power structure, belief system and aesthetic taste of ancient societies, but also serve as a key medium for the fusion of cultural heritage transmission and modern creativity, contributing extremely valuable resources for current design innovation activities.

However, there are limitations to this study that should not be underestimated. Given the limitations of time, resources, and access to data, we were not able to analyze all the bronze motifs thoroughly and comprehensively, which may have led to bias in our findings. Secondly, in analyzing the symbolism of the motifs, although we tried our best to be objective and fair, subjective bias could not be avoided, which may have affected the accuracy of the research results to a certain extent.

There is still much potential and room for expansion in this area of research. Secondly, we should broadly expand the scope of the samples, integrating bronze ornaments from different geographic regions, historical periods, and several types, which is aimed at deepening the dimension of the research and enhancing the universality and breadth of the conclusions obtained. In addition, along with the continuous evolution of technology, the use of digital technology in the field of antiquities preservation and academic research has become increasingly popular. In the future, through the adoption of such advanced technologies, we will be able to analyze and display the motifs on the bronzes in a more in-depth and detailed manner, thus opening new concepts and strategies for the inheritance and renewal of cultural heritage.

5. CONCLUSION

In this study, we are committed to exploring the cultural connotations of bronze motifs from both the broadest and deepest perspectives and through the establishment of a comprehensive research framework, we aim to reveal the multidimensional cultural values and meanings hidden behind these historic motifs. The goal of this research is not only to focus on the artistic analysis of the motifs, but also to explore them as the bearers of history and culture, to explore how the motifs mapped the ideology, religious concepts, and power structures of ancient societies.

Through detailed research and analysis, we reveal the depth and complexity of these motifs in terms of their artistic expression, symbolism, and cultural inheritance. In addition, we also focus on the use of bronze motifs in the present day, actively exploring the possibility of integrating them as traditional cultural symbols with modern aesthetics. This study opens a new way to explore the cultural connotations of bronze decoration, provides valuable insights and inspiration for scholars in related fields, and demonstrates a high academic reference value. It is expected that this study will ignite more individuals' interest in traditional motifs and in-depth exploration, thus actively promoting the inheritance and prosperity of excellent traditional culture.

REFERENCES

- Agus, C., Saktimulya, S. R., Dwiarto, P., Widodo, B., Rochmiyati, S., & Darmowiyono, M. (2021). Revitalization of local traditional culture for sustainable development of national character building in Indonesia. *Innovations and Traditions for Sustainable Development*, 347–369.
- Bai, Y. (2002). The origins of early Chinese copper and bronze vessels. *Southeast Culture*.
- Fang, R. (2018). Artistic characteristics of decoration patterns on Shang and Zhou dynasty bronze vessels. *Art Education Research*, 185(22), 30–31.
- Howard, A. F., Hung, W., Song, L., & Hong, Y. (2006). *Chinese sculpture*. Yale University Press.
- Huang, H. (2023). Two perspectives on bronze vessel pattern studies and the construction of "relational aesthetics." *Journal of Nanjing University (Philosophy, Humanities and Social Sciences)*, 60(02), 115–124, 158–159.
- Huang, W. (2018). *History of the discovery and study of ancient Chinese bronze vessels*. Shaanxi Normal University.
- Jin, Z. (2019). Application of Shang and Zhou dynasty bronze vessel patterns in modern furniture design. *Western Leather*, 41(22), 23–24.
- Li, D. (2012). Types and functions of Shang dynasty bronze vessel decorations. *Journal of Jiangxi Science & Technology Normal University*, 146(04), 125–128.
- Liu, C. (2010). Iconographic metaphors in bronze vessel decorations from the Shang and Zhou periods. *Literary and Artistic Contention*.
- Lu, Y. (2006). Study on the composition forms of decorative patterns on Shang and Zhou dynasty bronze vessels. *Decoration*, 11, 91.
- Ministry of Culture et al. (2013). *Pang Xunqin Art Pattern Exhibition Collection*.
- Pan, Y. (2021). Study on the application of bronze ritual vessel patterns in visual communication design. *Qingdao University of Technology*.
- Qiu, J. (2021). A brief analysis of the changes in major patterns on Shang dynasty bronze vessels. *Cultural Relics Appraisal and Appreciation*, 206(11), 78–80.

- Wu, C. (2020). Research on the application of Shang dynasty bronze vessel decoration patterns in cultural and creative products. *Art Appreciation*, 29, 31–32.
- Wu, D. (2015). Visual value of Shang dynasty bronze ritual vessel decoration patterns. *Design*.
- Xie, Y. (2008). The return from divinity to humanity: An initial exploration of changes in bronze vessel decorations from the Shang and Zhou dynasties. *Inner Mongolia Social Sciences (Chinese Edition)*, 168(02), 113–115.
- Yan, G., & Liang, S. (2020). A brief discussion on the evolution of the shape and decoration patterns of ancient Chinese bronze vessels. *Cultural Relics Appraisal and Appreciation*, 184(13), 52–54.
- Yang, H. (2019). Study of the four-petal eye pattern on Shang and Zhou dynasty bronze vessels. *Acta Archaeologica Sinica*, 212(01), 23–46.
- Yin, R. K. (2011). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.
- Zhang, C. (2016). The casting technology and development of bronze vessels from Erlitou culture to Yin ruins culture. *Cultural Relics*, 724(09), 56–68.
- Zhou, L. (2007). The spirit of the times in Shang and Zhou dynasty bronze vessel decoration. *Beauty and Times*.
- Zhu, Z., & Shao, J. (2003). Aesthetic characteristics of Shang dynasty bronze vessel decorations. *Journal of Anhui Normal University (Humanities & Social Sciences Edition)*, 01, 98–102.

EXPLORING CHINESE FLOWER-AND-BIRD PAINTING'S IMPACT ON PORCELAIN DESIGN: AESTHETIC PHILOSOPHY AND CREATIVE EVOLUTION REVIEW

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Abstract: This comprehensive review explores the synergy between the aesthetic philosophy and creative inspirations found in Chinese Flower-and-Bird Painting, examining its role as a pivotal subject matter in shaping the artistic evolution of Porcelain Surface Design. Grounded in the profound cultural appreciation for the natural world, artists employing this medium become conduits for conveying their innermost thoughts, encapsulating the essence of the Chinese aesthetic value philosophy. Identifying a critical gap in understanding, the study introduces a novel variable emphasizing the creative inspiration derived from the aesthetic value philosophy of Chinese Flower-and-Bird Painting. Identifying a critical gap in understanding, the study introduces a novel variable emphasizing the creative inspiration derived from the aesthetic value philosophy of Chinese Flower-and-Bird Painting. Findings reveal a nuanced interplay of variables, encompassing the aesthetic value of Chinese painting and porcelain art, intrinsic variables associated with Chinese aesthetic value philosophy, and those pertinent to creative inspiration. This review defines the variables significantly influencing the aesthetic value philosophy and creative inspiration evident in Chinese Flower-and-Bird Painting, illustrating its pivotal role in the evolution of Porcelain Surface Design.

Keywords: Aesthetic value philosophy, Creative inspiration, Chinese flower-and-bird painting, Porcelain surface design

1. INTRODUCTION

The forthcoming study endeavors to center its investigation on Chinese flower-and-bird painting, considering it as the primary research object. In doing so, the study aims to undertake a nuanced exploration that extends beyond mere artistic representation. Rather, it aspires to integrate traditional Chinese painting forms and aesthetics seamlessly into the realm of porcelain painting, thereby imbuing the decorative medium with cultural depth and historical resonance. By incorporating traditional Chinese painting forms, the study seeks to enhance the cultural level of porcelain painting decoration. This entails a deliberate effort to infuse the artistic expression with a heightened sense of cultural significance, drawing from centuries-old traditions that have shaped Chinese art. Moreover, the integration of traditional aesthetics aims to refine the aesthetic taste associated with porcelain painting, elevating it beyond mere craftsmanship to a realm where each stroke carries cultural weight, and each composition resonates with historical continuity.

The International Conference of Applied and Creative Arts' (ICACA) theme encourages reflection on how creative arts can serve as positive agents of change, whether in social or cultural aspects. In essence, this study envisions a dual impact: first, in revitalizing and preserving traditional Chinese artistic forms within the contemporary medium of porcelain painting, and second, in elevating the cultural and aesthetic dimensions of porcelain painting decoration. Through this scholarly pursuit, the study aims to contribute not only to the preservation of cultural heritage but also to the ongoing dialogue between tradition and innovation within the evolving landscape of Chinese artistic expression which confirm the ICACA theme.

2. BACKGROUND

Porcelain painting, an indispensable decorative technique within ceramics, stands as a cornerstone of Chinese ceramic art. Functioning as a canvas for artistic expression, it becomes a tangible manifestation of the aesthetic values cherished by the Chinese people. The technology underpinning porcelain painting is not merely a craft; it is revered as an intangible heritage of the Chinese nation, embodying a rich cultural legacy that warrants preservation and transmission. Porcelain painting technology is the intangible heritage of the Chinese nation and the wealth of Chinese civilization, 8 which needs to be protected and passed on. Among them, the objects of porcelain flower and bird paintings not only refer to flowers and birds but also include various plants and animals, such as flowers, animals, vegetables and fruits, grass and insects, birds, and so on. Artists often express their inner thoughts and emotions by painting flowers and birds, reflecting the Chinese love of nature (Liu,2022). The study will take

Chinese flower-and-bird painting as the research object and integrate traditional Chinese painting forms and aesthetics into porcelain painting. This thematic choice, rich in symbolism and cultural significance, reflects not only an aesthetic preference but also a broader resonance with the natural world that has been an integral part of Chinese cultural identity.

3.DEVELOPMENT OF HYPOTHESIS

Aesthetics is a broad research topic covering various issues, which can be interpreted differently according to the field. Aesthetic value refers to the positive value of objects, events, or things people enjoy in aesthetic appreciation or experience. Aesthetic value philosophy is influenced by philosophy, and Chinese aesthetic value philosophy is influenced by Chinese classical philosophy (Zhang,2008). Only the Aesthetic value philosophy of Chinese ceramic flower-and-bird painting is discussed to avoid misunderstanding. However, there is a lack of research investigating the variables affecting the aesthetic value of flower-and-bird paintings as subject matter for Porcelain surface design. So, the study needs to find out a lot about the aesthetic value of Chinese painting, the aesthetic value philosophy of Chinese painting, the aesthetic value of Chinese ceramic painting, and the aesthetic value of Chinese and Western Art to analyze the aesthetic value philosophy of Chinese ceramic flower and bird painting items.

4. METHODOLOGY

In crafting an effective search strategy for our systematic review, we meticulously selected keywords categorized into four distinct sections: Aesthetic value philosophy, Painting Creative inspiration, Chinese flower and bird painting, and Porcelain surface design. Recognizing the varied nomenclature used in previous studies, encompassing terms such as "painting aesthetic value," "artistic beauty value," and "Beauty value philosophy," we strategically incorporated the keywords "Aesthetic value philosophy" and "Beauty value philosophy." This deliberate choice ensures a comprehensive exploration of the aesthetic dimensions inherent in painting.

Given the pivotal role of flower-and-bird painting in Chinese artistic tradition and its relevance to Porcelain surface design, we opted to focus specifically on this genre. Although "flower-and-bird painting" is commonly employed, our research aims for precision. Thus, we included additional keywords such as "Chinese flower and bird painting," "Chinese flower and bird artworks," and "Porcelain surfaces design" to provide nuanced insights and capture a comprehensive range of relevant literature. Recognizing the broad nature of the term "Creative inspiration," we further refined our search strategy. To encompass the intricacies of creative impulses within painting, we

introduced more specific keywords, namely "painting creative inspiration" and "art creative impulse." This deliberate choice aims to add granularity to the exploration and enhance the clarity of our investigation's thematic focus.

In summary, our systematic review relies on the strategic use of keywords: "Aesthetic value philosophy" or "Beauty value philosophy," "Painting Creative inspiration" or "artworks Creative impulse," and "Chinese flower and bird painting" or "Chinese flower and bird artworks," "Porcelain surfaces design." This meticulous keyword selection ensures a comprehensive and focused exploration of the intersections between aesthetic philosophy, creative inspiration, and the specific artistic and cultural nuances associated with Chinese flower-and-bird painting in the context of Porcelain surface design.

5. EMPIRICAL RESULTS AND ANALYSIS

5.1 *The Aesthetic Value of Chinese Painting*

Chinese painting has a long history. The aesthetic value of Chinese painting embodies the values of Chinese people at different times. Artists often express their noble qualities through painting. In Chinese painting, ink, color, line, white space, and other forms are often used to show the beauty of Chinese painting. The theme of Chinese painting usually indicates the meaning of auspiciousness, and its aesthetic value profoundly affects the aesthetic value of Chinese ceramic painting (Lin, 2010).

From 2008 to 2023, As shown in Table 1, specific research on the aesthetic value of Chinese painting has explored various variables that determine the aesthetic value of Chinese painting. These variables include religion, literature, painters, artwork, social structure, color, culture, aesthetic psychology, composition, emotions, interests, and lines. For example, 8believed that Chinese painting had formed its unique aesthetic system and values in thousands of years of development in China. The aesthetic of Chinese painting is embodied in visual intuition and sense of form. Zhang (2023) mainly mentions the modelling language of Chinese painting, such as line, color, and composition beauty. 8also believes that the aesthetic value of Chinese painting comes from the following aspects: culture, religious thoughts, literary works, and emotions. Among them, religion significantly influenced the creation of Chinese painting. For example, Taoism advocates nature, while painters often advocate indifference and elegance in Chinese paintings. Wang (2016) found that literature, painter, material, and aesthetics influence the aesthetic value of high-temperature color enamel painting. He emphasized that the unique texture created by the high-temperature glass coincides with the aesthetic vision pursued by the painter, forming an aesthetic realm of "harmony between heaven and man." Zhao (2017) observed that the development mode of the aesthetic orientation of contemporary ceramic flower-and-bird paintings is diversified, and the aesthetic value comes from emotion and material. He (2016) studied the

reasons for the development, evolution, and eventual decline of ink flower-and-bird painting. It is found that the aesthetic value of flower-and-bird painting mainly comes from religion, literary works, painters, artistic works, social structure, culture, and so on. Among them, the weakening of court aesthetics and the rise of literati aesthetics in the social structure significantly impacted the development of ink flower and bird aesthetics. Peng (2016) explored the aesthetic orientation of contemporary flower-and-bird painting from social structure, color, culture, emotion, and taste. He also believed that Chinese flower-and-bird painting is a means of emotional expression and cultural inheritance, providing individuals with a pleasant spiritual experience. In addition, he proposed that the unique aesthetic consciousness inherent in contemporary flower-and-bird painting is the source of creativity and spirit of contemporary artworks. Wang (2022) conducted a study examining the Chinese aesthetic works of the artist Li Man Fang, pointing out that religious and literary works influenced the works of the artist Li Man Fang. Besides, Li Wen Fang inspired Chinese painting from religious and literary elements to preserve and promote traditional Chinese culture. Zhu (2022) explored the emotional aspects of the aesthetic value of flower-and-bird painting, focusing on the aesthetic value of freehand flowers and birds. In his view, Chinese painting attaches great importance to transmitting "emotion," which is the essence of freehand flower and bird painting. This style is not simply a reproduction of natural scenery but is intended to express the artist's subjective feelings. The aesthetic value of freehand flower-and-bird painting lies in its charm and ability to convey and evoke emotions effectively. He (2023) further explored the aesthetics of craft in contemporary experimental ceramic painting, noting that materials, aesthetic psychology, emotions, and interests influence it. A brief analysis of Jingdezhen's experimental ceramic painting is made, and the traditional craft aesthetics reflected in its creation are investigated. To sum up, each study studies the aesthetic value of Chinese painting from different angles. Still, most studies are from the perspective of religion, literary works, painters, artistic works, and emotion. As influential individuals, painters often use rich creative means to inject their aesthetics and emotions into their works of art. Painters attach importance to spiritual products and strengthen aesthetic functions. Secondly, under the influence of literary works and culture, painters have sublimated the expression forms of painting so that Chinese painting often reflects the connotation of Chinese culture. In addition, the three religious' cultures of Chinese painting, namely Taoism, Confucianism, and Buddhism, have directly influenced the development of Chinese painting from the perspectives of neo-Confucianism, philosophy, and aesthetics. According to the above literature research on the aesthetic value of Chinese painting, it comes from many aspects. Still, the emphasis is on religion, literature, painters, artworks, and emotions.

Table 1: Correlations among the Five Factors of Perception

Author/Year	Religion	Literature	Painter	Art works	Social structure	Colour	Culture	Emotion	Aesthetic psychological	Composition	line
Zhang L (2008)	√										
Lin W (2010)								√			√
Lei P (2015)		√								√	√
Zhao S (2017)	√	√	√	√	√		√				
Hao X (2018)					√	√	√	√			
Yao Rui (2020)								√			
Zhang Y (2021)								√		√	
Sangid (2022)	√	√									
Ting Y (2022)									√		
Ernesto (2022)		√				√	√	√			
He Y (2023)								√			
2023	√	√	√	√				√			

5.2 The Aesthetic Value of Chinese Ceramic Painting

Chinese traditional art aesthetic thinking influenced the development of Chinese ceramic art aesthetic value. The aesthetic value of ceramic painting is significant for the innovative creation of ceramic painting. The aesthetic value of ceramic painting emphasizes the interaction between man and nature. In the creation of ceramic painting, painters often place themselves in nature, learn from nature, and express their feelings about nature so that people and nature can be "perfectly integrated."

As shown in Table 2, Many studies have shown the aesthetic value of Chinese ceramic paintings. Religion, literature, painter, artworks, social structure, color, material, emotion, aesthetic psychology, composition, technology, and nature are the indicators of the aesthetic value of Chinese porcelain painting. For example, Philippe (2022) and Yao (2022) proposed that the aesthetic appreciation of ceramic painting is related to the material used because the material reflects natural aesthetics. The material itself is an essential part of ceramic art creation. 6 believed that artists and their religious beliefs influence the aesthetic appreciation of ceramic painting, and the traditional aesthetics in Chinese ceramic painting integrates the religious beliefs of ancient artists as the basic principles of artistic creation and aesthetic thought. He also emphasized that literature embodied Chinese culture, influencing Chinese ceramic painting. Wang

(2016) believed that the aesthetic value of the high-temperature colored glazed ceramic painting is reflected through various aspects such as material texture, process, and color. Only through a comprehensive understanding and mastery of these materials can the artist create beautiful high-temperature colored glaze art. In addition, he found that in high-temperature-colored glazed ceramic paintings, vibrant and diverse colors were often added to the overall beauty of the artwork. Ting (2015) analyzed the aesthetic characteristics of light red porcelain in the late Qing Dynasty and the early Republic of China. The technical and material aspects of light red porcelain are analyzed, and the color itself is influenced by the humanistic spirit rooted in Oriental aesthetics and traditional Chinese religious thought. The composition and color of light red porcelain have prominent aesthetic characteristics and unique personality characteristics. Zhao (2017) studied the aesthetic value of ceramic flower-and-bird paintings. He believed that the development mode of the aesthetic orientation of contemporary ceramic flower and bird painting is diversified, and its aesthetic value comes from emotion and material. In addition, he also found that the rapid development of information technology enabled artists to obtain works of art in various aesthetic styles, enriching and diversifying the aesthetic orientation of ceramic flower-and-bird paintings. Hao (2018) pointed out that the aesthetic value of high-temperature colored glaze ceramic painting is deeply affected by color, material, and process factors. Among them, the high-temperature enamel ceramic paint is bright but also harmonious and unified. The combination of color and unique texture is consistent with the aesthetic image pursued by the painter. 38 pointed out that based on ceramic painting, starting from the development status of contemporary ceramic art, and taking Jingdezhen experimental ceramic painting as the entry point, the aesthetics of traditional ceramic painting was briefly analyzed from material, emotion, and psychology. In addition, some studies have explored the inspiration of porcelain painting from the perspectives of history, characteristics, and aesthetics (Wu,2013). Yu (2019) also uses ink painting techniques in his porcelain painting techniques. Analyze inspiration from multiple perspectives. Zhang (2021) studied the aesthetic influence of Song Dynasty literati paintings on porcelain aesthetics and its source of inspiration from three perspectives: history, characteristics, and aesthetics. Through comparative study, it is concluded that the literati paintings of the Song Dynasty had a particular influence on the enamel color, texture, and spiritual connotation of porcelain. In 2022, another author Mo studied the decoration of blue and white porcelain figures in the late Ming and early Qing Dynasties from aesthetics, artistic styles, and patterns. He believed that the figures painted by the painters in the late Ming and early Qing Dynasties included literati, hermits, ordinary people, and mythological figures.

To sum up, through the research and analysis of the above documents, the aesthetic value of ceramic painting is influenced by religion, literature, painter, painting, social structure, color, matter, emotion, aesthetic psychology, composition, and technology.

But like the aesthetic value of Chinese painting, most various studies are conducted from the perspectives of religion, literature, painter, artwork, and emotion.

Table 1: Aesthetic Value of Chinese Ceramic Painting

Author/ Year	Religion	Literat ure	Painter	Art works	Social structure	Color	Material	Emoti on	Aestheti c Psycholo gical	Comp osition	Techn ology
Ding X (2008)		√	√				√		√		
Sheng S (2008)	√	√		√						√	
Wang S (2016)	√	√								√	
He Q (2016)						√	√			√	
Zhou H (2017)								√			
Yu P (2019)			√			√	√				
Zhang X (2023)							√	√	√		
2023	√	√	√	√					√		

5.3 Aesthetic Value Philosophy of Chinese

Philosophical theory is a discipline that studies fundamental and universal problems, generally has a rigorous logical system of cosmology, and explores the nature of the universe, man's place in the universe, and other fundamental issues. The philosophy of aesthetics is driven by philosophical theory; beauty is a kind of value, and the philosophy of aesthetic value is closely connected with human beings. Based on this conception, Sheng (2014) defined philosophical aesthetics as the science of studying nature, society, and human thinking. Aesthetics investigates natural and social beauty, a kind of understanding of nature and society. Kong (2015) discusses how to treat the poetic characteristics of aesthetic value from the perspective of philosophy. From the point of view of philosophy, value has objective reality, and aesthetic value is the self-confirmation and self-identification of people's understanding of the world. In short, people use the power of nature to create a spiritual lamp that illuminates the spiritual home of human beings and allows people to live poetically on the earth.

As shown in Table 3, From 2004 to 2023, it was evident that Chinese aesthetic value philosophy is mainly reflected in emotion, objectivity, literature, subjectivity, Chinese classical philosophy, nature, and culture. These variables have many similarities with the items of aesthetic value of Chinese painting and Chinese ceramics. 2believed that the perspective of aesthetic value philosophy adds the view of nature. He thinks that to understand beauty, one must have a rich understanding of nature (Huang, 2004). Zhao (2006) believes that the essence and function of aesthetics lie in transforming the needs of human survival and development into the pursuit of human emotions.

Sentiment is more fundamental in aesthetics and artistic activity, and if it is lost, the value of understanding will be lost. The emotional effect brought by beauty activities will unconsciously influence and promote people's various social behaviors and actions so that the human social system can reach the goal of health, all-around development, and harmonious integration to form a virtuous circle trend.

In ancient Chinese, the representative figures of aesthetic philosophy were Laozi, Zhuangzi of Taoism, and Confucius of Confucianism. For example, Rong (2017) believed that Laozi 's Tao Te Ching is one of the classical works in the treasure house of Chinese traditional philosophy. Lao-tzu's philosophical thoughts are also often applied to Chinese paintings and calligraphy. He also wrote in the article that Lao-tzu's idea of "presence and absence" often appears in Chinese paintings and calligraphy, referring to art as the unity of "presence" and "absence," and "presence" is tangible, a form of concrete expression of beauty. "Nothing" is the internal existence. Yao (2020) mentioned that Zhuangzi's view of life and death is essential to Chinese philosophy of life. His thoughts shone with the wisdom of ancient Chinese ancestors. It is embodied in two aspects: natural ontology and spiritual transcendence. Philippe (2020) mentioned the philosophical study of Confucius in the article "Benevolence," which is the highest moral standard in Confucius's core thought and stresses that people should consciously observe etiquette and pay attention to practice. These subjects, therefore, frequently appear in paintings, often reminding people to have a heart of benevolence and justice and to observe basic etiquette.

Table 2: Chinese Aesthetic Value Philosophy

Author/Year	Emotion	Objectivity	Literature	subjectivity	Chinese classical philosophy	Nature	Culture
Huang J (2004)	√			√	√	√	√
Zhao B (2006)	√			√			
Sheng M (2014)	√	√		√	√	√	
Kong F (2015)	√	√					
Feng L (2020)	√				√		
Hu T (2021)	√		√			√	
2023						√	

In summary, past studies from different angles to study the Chinese Aesthetic Value Philosophy, but after comparing religion, literature, and nature is the most. The aesthetic value philosophy of Chinese flower-and-bird painting has a close relationship

with classical Chinese philosophy, which also has a close relationship with traditional Chinese religious thought, including Taoism and Confucianism. Only by completely following the objective laws of all things in nature can the artist reach the highest realm of painting. Any artistic creation cannot be separated from the painter's ideological state and living environment, and painting is the process of the creator's creative thought and social and cultural background. Through the analysis of traditional Chinese painting theory, philosophy system, and cultural belief, Chinese flower-and-bird painting is the organic combination of subjective aesthetic feelings and objective aesthetic objects. Only through the careful observation of the painter can the "beauty" of nature be vividly displayed. Therefore, it is necessary to study Chinese aesthetic value philosophy from the perspective of nature.

6. DISCUSSION AND CONCLUSION

The study is a blind spot for the variables affecting the aesthetic value philosophy creation inspiration of flower-and-bird paintings as subject matter for Porcelain surface design. We need to identify the aesthetic value and philosophical, creative inspiration of Chinese flower-and-bird paintings as subject matter for porcelain surface design. First, this study probes into the aesthetic value and the philosophical definition of aesthetic value. In terms of aesthetic value, it focuses on the aesthetic value of Chinese painting and Chinese ceramic painting and introduces variables. In the field of aesthetic value philosophy, this paper focuses on inquiring about the aesthetic value philosophy of China and introducing the variable. Secondly, since this study takes Chinese flower and bird painting as the theme for porcelain surface design, it uses the creation source of porcelain painting as the keyword query and introduces the creation source variable. As shown in Table 1 and Table 2, the aesthetic value studies are focused on Chinese painting and Chinese ceramic painting and come from religion, literature, painters, artworks, and emotion, and several perspectives are the most frequent.

In Table 3, from 2004 to 2023, it can be found that Chinese aesthetic value philosophy is mainly reflected in the aspects of emotion, objectivity, literature, subjectivity, classical Chinese philosophy, nature, culture, etc. These coincide with the variables of aesthetic value. But a new item in the Chinese philosophy of aesthetic value: nature is fundamental. This study will study Chinese aesthetic value philosophy from the perspective of nature.

Through the research and analysis of Peng (2021) published articles on the aesthetic value, aesthetic value philosophy, and creative inspiration of Chinese painting and Chinese porcelain painting, we find that the aesthetic value philosophy of Chinese ceramic flower and bird painting is a blind spot in the research. Still, it is closely connected with the above analysis. We review all the studies by analyzing and sorting the above variables. To identify aesthetic value philosophy, the creative inspiration of

flower and bird paintings as subject matter for Porcelain surfaces design is Religion, Literature, Painter, Artwork, Emotion, and Nature.

REFERENCES

- Li, L. (1991). A new exploration of the philosophical nature of aesthetic studies. *Journal of Guangxi University for Nationalities*, 13(1).
- Huang, J. (2004). A philosophical discussion on the origin and nature of beauty. *Journal of Yuling Teachers College (Philosophy and Science)*, 25(2).
- Zhao, B. (2006). A brief analysis of axiology aesthetics from a philosophical view. *Xian University*, 23(4).
- Zhang, L. (2008). The aesthetic value of Lao Zhuang's thought and its influence on Chinese art. *Grand View of Art*, 12 (2).
- Ding, X. (2008). The aesthetics of the mutual influence of painting and ceramics. *Artistic life*, 45(6).
- Sheng, S., & Zhu, Y., & Wu, N. (2008). A brief discussion on the aesthetic influence of Chinese traditional aesthetic thoughts on ceramic painting, *Chinese ceramic*, 44(10), 1001-9642.
- Lin, W. (2010). Try to discuss the aesthetic value of Chinese painting. *New Curriculum Learning*, 21(2).
- Jia, T. (2013). *Art aesthetics*. Henan Elephant Press Books.
- Wu, X. (2013). Comparison between Chinese ceramic painting art and Chinese painting art. *Hundred Schools in Arts*, 2(131), 0196-04.
- Shen, M. (2014). On the philosophical, aesthetic value and significance of "One painting." *Hubei Social Sciences*, 16(2).
- Kong, F. (2015). The characteristics of poetic philosophy of aesthetic value. *Gansu Social Sciences*, 83(2), 1003-3637
- Ting, W., & Lei, M., & Oshin, V., & Jonathan, S., & Gerald, C. (2015). An investigation of the neural substrates of mind wandering induced by viewing traditional Chinese landscape painting, *Frontiers in Human Neuroscience*, 23(8).
- Wang, S. (2016). The aesthetic characteristics of the Qing Dynasty and early Ming Dynasty [master's thesis, Chinese National Academy of Arts].
- He, Q. (2016). On the inherent regularity of the formation of natural aesthetic style in high-temperature color glazed ceramic painting, *Chinese ceramic*, 55(12), 1001-9642.
- Zhao, S. (2017). An analysis of the origin and development of ink flower-and-birds and the mining of its aesthetic value [master's thesis, Chinese National Academy of Arts].
- Zhou, H. (2017). The diversified development pattern of contemporary ceramic flower-and-bird painting aesthetic orientation. *Jingdezhen ceramic*, 34(3).
- Rong, H. (2017). "Artistic features of colors in traditional flowers and birds based on color science." * *International Conference on Social Sciences, Arts and Humanities* *, 2017.
- Gao, J. (2018). Lao Tzu's philosophical thoughts and Chinese calligraphy and painting art aesthetics. *Journal of Peking University*, 24(2)
- Hao, X. (2018). "Aesthetic Orientation of Contemporary Mogu Flower-bird Painting." **International Conference on Social Sciences, Arts and Humanity* *, February 2018.
- Yu, P., & Wu, S. (2019). Exploration of the aesthetic theory of high-temperature color glaze ceramic painting. *Art Observation*, 56(289).
- Qi, Y. (2018). "Mountain· Spirit" --The Application of Sprinkling Ink Techniques in Color Glazing [master's thesis, Chinese National Academy of Arts].
- Yao, Rui. (2020). "Analysis of Aesthetic Expression of Line in Chinese Painting." **International Conference on Humanities, Cultures, Arts and Design* *, February 2020.
- Feng, L. (2020). The aesthetic value of Zhuangzi's philosophy of life and death. *Journal*

- of Hubei Open Vocational College, 33.
- Philippe, C., & Burcu, K., & Burcu, K. (2020). Investigation of the Pigments and Glassy Matrix of Painted Enamelled Qing Dynasty Chinese Porcelains by Noninvasive On-Site Raman Micro spectrometry. *Heritage*. (3),915-940.
- Zhang, H., & Hou, J. (2020). The framework of Confucius' philosophical thoughts in the *Analects of Confucius*. *Cultural philosophy*,4(12).
- Hu, T. (2021). The aesthetic value of life philosophy. *Study and Exploration*, (1)
- Shu, M., & Xiao H., & Yue, Y. (2021). Exploring the Visual Beauty of Pastel Porcelain in the Qing Dynasty. *International Journal of Frontiers in Sociology*, 3(9).
- Zhang, Y. (2021). On the aesthetic value of "blank space" in Chinese painting. *Comedy World*, 23(4).
- Wu, S., & Huang, X., & Shao, Y. (2021). On the Aesthetic Influence of the Song Dynasty Literati Painting on Porcelain Aesthetics. *International Journal of Frontiers in Sociology*,3(9).17-23.
- Guo, X., & Min, R. (2022). Beyond Representation: Shan Shui Motif on Chinese Porcelain and Portuguese Faience. *Arts*, 11(5),103.
- Luiza, A. (2022). The style of "botany" in porcelain of the 18th and 19th centuries influenced contemporary art—*Eurasian Journal of Humanities and Social Sciences*. 14(6).
- Wang, C., & Yang, X. (2022). Exploring the Visual Beauty of Pastel Porcelain in the Qing Dynasty. *Art and Performance Letter*, 3(1).
- Sangid, Z. (2022). Aesthetic Chinese painting technique by artist Lee Man Fong. *Cultural art internationa1*, 1 (2).
- Ernesto, C. P., & Jose, D. E. (2022). Aesthetics and cultural characters of Chinese traditional mountain painting, *International Journal of Heritage art and multimedia*, 5(16), 32-58.
- Mo, G., & Rui, M. (2022). Beyond representation: Mountain painting, the motif on Chinese porcelain, and Portuguese faience. *Arts*. 13(103).
- Zhu, (2022). Decoration Research on the Figures of Blue-and-white Porcelain in the Late Ming and Early Qing Dynasties-Taking Figure Decoration on Blue and White Porcelain of Jingdezhen Kiln as the Object. *Chinese Ceramic*.10(58).10-0085-07.
- He, Y. (2023). A brief analysis of the aesthetic value of miniature freehand flower-and-bird painting. *Art appreciation*, 23(2).
- Zhang, X. (2023). Blooming and Flourishing Craft Aesthetics in Contemporary Experimental Ceramic Painting. *Ceramic study*. 12(2).
- Yu, K. (2023). Chinese calligraphy and painting electronic creation software based on computer-aided technology. *scholar Publishing Group*.4(1),1-9.
- Li, L. (2018). Famous paintings of the past dynasties. [Master's thesis, Chinese National Academy of Arts].
- Peng, L. (2016). Study on "Picture Seeing and News Records." [Doctoral dissertation, Wilmington University].
- Zhang, Y., & Yang, T. (2022). The traditional literati painting was taken as an example to examine the aesthetic psychological distance. *Comedy World*,22 (4).
- Liu, L. (2022). Exploration and research on creating new-color ceramic paintings on glaze--take the Western Regions landscape series as an example. [Master's thesis, Chinese National Academy of Arts].
- Peng, M. (2021). Study On the Application of Decorative Techniques of Ceramic Painting. [Master's thesis, Chinese National Academy of Arts].
- Feng, Z. (2021). On meaning and image in Chinese traditional panting under the background of psychology. *Psychiatria*.33(8),18-569

THE IMPACT OF AIGC TECHNOLOGY ON SMART MUSEUM DEVELOPMENT AND CULTURAL HERITAGE TRANSMISSION

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Abstract: The rapid advancement of artificial intelligence (AI) technology has significantly accelerated the development of smart museums, enhancing their capabilities in cultural preservation and inheritance. However, researchers have identified numerous challenges in integrating AI technology into traditional museum frameworks, particularly in advancing smart museum construction. This study employs a narrative review methodology and adopts the Diffusion of Innovations Theory as its theoretical framework to analyze the current state of digitalization and smart development in museums. It explores the application of Artificial Intelligence Generated Content (AIGC) technology in building smart museums, emphasizing its critical role in cultural heritage preservation, transmission, and interactive cultural education. This study aims to provide new perspectives and innovative strategies for smart museum construction to support museums' sustainable development in the digital era as there is limited financial support from governments.

Keywords:

Artificial Intelligence, AIGC Technology, Smart Museum, Cultural Heritage Transmission

1. INTRODUCTION

1.1. Each Word in the Subheadings Should be Capitalized

Your introduction should include a definition of your paper's topic and an explanation of its relevance to the International Journal of Applied and Creative Arts' (IJACA) theme. The introduction should clearly reflect the central concern of your paper or the main argument of the paper.

1. INTRODUCTION

Museums serve as a bridge that connects the ancient with the modern and links the present with the future. It was stated by Chen Qian (2013) that museums are not only repositories for traditional tangible cultural heritage, but also play a crucial role in the preservation of intangible cultural heritage and play a key role in this. While museums play an essential role in preserving the memory of nature and human society, its also transmitting culture, educating the public, inspiring wisdom, cultivating feelings, and providing leisure and entertainment (Wang, 2022). According to Hong Lihua (2022), the diversity of display forms of museum artifacts has promoted the influence and spread of traditional Chinese culture. In fact, museums have a concentrated expression of national culture and world civilization.

With rise of social media has an impact to the way museums communicate with public in which these platforms are becoming the ideal, cost-effective, and interactive communication tools for museums given the high consumer participation through electronic word of mouth (eWOM). Further to this, the AIGC technology has become a core discussion in many organizations including museums as a cultural institution. Discussion on AIGC focusing on how it can significantly improve the connection between museums, visitors and public and contribute to the sustainability and management of the organization. Ciolfi & Bannon (2007) indicated that the core of AIGC technology lies in utilizing AI algorithms to generate creative and high-quality content, encompassing audio, text, image, video generation, and cross-modal generation. Brown (2020) noted that AIGC is a content-generating technology based on AI methods such as Generative Adversarial Networks (GAN) and large pre-trained models. Goodfellow (2020) discovered deep learning algorithms, represented by GANs, that provide strong technical support for AIGC. In 2018, NVIDIA released StyleGAN-XL, a model for automatic image generation (Sauer et al., 2022). In 2019, DeepMind introduced the DVD-GAN model (Clark et al., 2019), which can learn and understand human language for conversation and interactive chat. Open AI launched DALL-E in 2021 (Ramesh et al., 2021) and DALL-E-2 in 2022 (Marcus et al., 2022),

enabling secondary creations based on original images, marking the maturity of AIGC technology.

This paper primarily explores how AI-powered AIGC technology enhances smart museum development while contributing to the sustainability and management of the organization. The application of this technology not only better meets public demand but also significantly improves museum service quality and operational efficiency (Hao & Wu, 2024). AI technology provides new approaches and methods for the digital and smart development of museums, offering novel means and channels for the preservation and transmission of traditional culture while also fostering innovation in cultural dissemination and promoting the prosperity of the cultural industry.

2. LITERATURE REVIEW

2.1 Transformation Of Museums

In 2021, the National Development and Reform Commission of China, the CPC Central Committee Publicity Department, the State Administration of Cultural Heritage, and nine other ministries issued the "Guiding Opinions on Promoting the Reform and Development of Museums." This document clearly outlined two main development directions: first, vigorously develop smart museums, gradually achieving smart services, protection, and management; second, vigorously develop museum cloud exhibitions and cloud education, building an integrated online and offline museum communication system. Many researcher have defined smart museums from different perspectives. Song Xinchao (2015) and Wei Jun (2019) consider brilliant museums as an ecosystem from the standpoint of core business. Further explanation stated that smart museum as "an intelligent application ecosystem based on physical museum resources, utilizing next-generation network communication technologies such as the Internet of Things, cloud computing, mobile internet, and big data to serve the core business functions of museums (such as display, protection, service, and communication)." From the perspective of serving the public, Shi Chuankun (2018) views a smart museum as an innovative service model. He describes a smart museum as "a new model of museum development that is guided by the service needs of the public, led by the core business of physical museums, and enhanced through the application of new technologies to provide integrated, intelligent public cultural resources, offering menu-based, customized, and convenient services to the public." From the perspective of technological iteration, Chen Gang (2013) and Shao Xiaolong (2015) believe that a smart museum can be expressed with a formula. They mathematically define a smart museum as "Smart Museum = Physical Museum + Digital Museum + Intelligent Museum + Internet Thinking," where the physical museum is responsible for the research, display, and visitor experience of cultural relics; the digital museum is responsible for the data processing, storage,

analysis, and expression of all museum components; and internet thinking is responsible for the collection and sharing of public wisdom. Although those researchers define smart museums from different perspectives, these definitions share some five common characteristics. Firstly, they are based on physical museums; second, they use network science and technology as tools; third, they aim to intelligent various types of data; fourth, they focus on the connection between people and objects; and finally, they aim for a user-centered service concept. By adapting the industrial sector that the concept of "Museum 4.0" has emerged.

This innovative classification reflects different stages in the development of museums. As stated by Zhang Zixin (2014) that Industry 4.0 represents a new industrial revolution era led by informatization and intelligent technologies. Similarly, Museum 4.0 signifies that the museum industry is entering a new development stage, characterized by a highly integrated, dynamic, collaborative network of "people-objects-environment-data." The current era we live in is the backdrop for Museum 4.0. Another study by Lin Shaoxiong (2018) shows that the development of museums and identified three important stages or forms of museum evolution. In the Museum 1.0 era, museum space design mainly exhibited a "container-like" characteristic, focusing on basic functionality. With the advent of Museum 2.0, exhibition space design significantly improved, with designers creating dedicated spaces for each exhibit and striving to make the museum architecture an artwork. Interestingly in the Museum 3.0 era, the artistic value of the architecture and the display value of the space were given equal importance, transforming museums into comprehensive venues for various cultural experiences. Although the formation of Museums 1.0, 2.0, or 3.0 demonstrate the evolution by years, however it was considered under the category of traditional museums.

Following the rapid development of digital technology around 1987, museums entered the 4.0 era (the digital museum era). In this era, the narrative approach of museums underwent a fundamental change, no longer confined to traditional single-narrative modes but evolving towards more diversified and immersive directions. According to Fang Ling (2023), he believes that Museum 4.0 utilizes the most advanced technological means to enrich exhibition content and forms while enhancing audience interaction experiences. By engaging the multiple cognitive senses of the audience, it aims to achieve "multi-sensory cognition." Smart museums, on the other hand, are new types of museums formed by continuously evolving and developing technologies based on the digitalization of traditional museums. The transformation of museums in China has promoted the upgrading of traditional museums. This extension of digital museums allows cultural relics to transcend time and space, presenting themselves in richer forms and with deeper content.

2.2 Current Status of Museum Development under the Background of AI

As AI technology is becoming increasingly important in various industries, modern museums have also begun to gradually apply this technology to play its multifaceted role. Some forward-looking museums have already introduced AI technology in corporate research and visitor services [Gong, 2023]. For example, the National Museum of American History held an exhibit, "Defense Innovation: Artificial Intelligence and Cybersecurity Challenges," in September 2017, which featured a specially designed AI network defense system designed to protect increasingly vulnerable devices from hacking. In 2018, the National Museum of Maritime Affairs of China introduced AI technology for information release verification and augmented reality large-scale construction. The guide screen of the exhibition hall is based on AI technology and enables a variety of functions such as personalized member services and intelligent questions and answers.

2.2.1 Digital Construction of Museums and Its Characteristics

At the end of the 20th century, with the development of digital technology, a new form of museum emerged - the digital museum. The digital construction of museums refers to the use of advanced information technology to comprehensively upgrade the transformation of traditional museums to improve display effects, management efficiency, and service quality. Museums are digitizing their collections and creating digital exhibition databases through high-resolution photography, three-dimensional scanning, and other technologies. After 2010, with the popularization of mobile devices, museums have developed mobile applications to provide guided tours, explanations, and interactive functions, promoting the development of museums towards intelligence (Gui, 2022). Visitors can receive exhibition maps, introductions, and descriptions of the exhibits through cell phone applications or devices for guided tours, and they can even use indoor navigation positioning technology to find exhibits of interest. Through the digital management system, museums can efficiently manage collections, dynamically adjust and update exhibitions, improve the accuracy and safety of cultural relics protection, and use data analysis and statistics to provide a scientific basis for decision-making (Zhang, 2023).

Combined with the existing digital museum constructions, digital museums have two display functions: the first is to realize the integration of exhibition information and guided tour information. The museum uses digital technology to establish a comprehensive service system that contains information on all cultural relics. Visitors can freely browse the information on cultural relics and change their way of visiting. For example, the map on the website of the Chinese Palace Museum (**Figure 1**) integrates the information on the exhibits and the guides. Visitors can choose the place they want to visit according to their needs. The pictures of various cultural relics

and collected artworks can be viewed and downloaded online. The visitors can freely navigate through the museum with high image clarity.



Figure 1. Chinese Palace Museum Website Guide Map

Secondly, virtual space exhibitions allow digital museums to integrate virtual displays with physical exhibits, enabling people to explore the real stories behind cultural relics and interact with them by entering the virtual space, thus establishing an emotional connection. This approach is widely used in cultural heritage preservation, and its effectiveness has been widely recognized. For example, at the 2010 Shanghai World Expo, the China Pavilion featured a large-scale dynamic version of “Along the River During the Qingming Festival” (see **Figure 2**), which combined the classic Chinese painting with 3D animation technology and giant screen projection to showcase the customs and life of the Song Dynasty (Liu, 2019).



Figure 2. Digital Display Chinese “Along the River During the Qingming Festival”

Another example is Digital Dunhuang, a digital project launched by the Dunhuang Museum (see Figure 3), which uses MR technology to digitize the treasures of Dunhuang, overcoming the limitations of time and space to meet people's interest in Dunhuang culture.



Figure 3. Digital Dunhuang Home Page Notes

Source: <https://www.e-dunhuang.com>

It can be seen that the process of museum digital construction is from simple exhibition and dissemination through interaction and participation to protection and research. It should be noted that different museums have differences in the process of digitization and intelligence. Some museums adopt these technologies earlier, while others start relatively late. With the continuous development and innovation of technology, the digital construction of museums has brought new development opportunities and challenges.

2.2.2 Intelligent Construction of Museums

Smart museums use advanced technology and digital means to combine traditional museums with digital technology to provide a richer, more interactive, and personalized visitor experience (Fang, 2023). The construction of smart museums includes the construction of museum infrastructure and the construction of AI systems for museums.

The first task of a smart museum is to complete the infrastructure build, including integrating management, service, control, and decision-making modules into a single system. With the help of 5G communication technology and artificial intelligence, these modules can be efficiently connected in series to improve the system's transmission efficiency and response speed (Yang, 2021). In this process, big data technology is the core, and the efficient connection is achieved through 5G, while the intelligent connection is done with artificial intelligence. Environmental data such as

temperature, humidity, and light collected by sensors and data on traffic flow and cultural relics monitoring are analyzed and processed by artificial intelligence to achieve intelligent management and optimization. In 2018, for example, the Beijing Palace Museum developed the "Play the Forbidden City" applet. In 2021, the project was upgraded to the "Smart Open" project. In order to achieve efficient data transmission, the project integrates 5G technology, uses big data to collect and analyze environmental data and visitor behavior accurately, integrates management, service, control, decision-making and other functions into one system, optimizes the museum's operation and resource allocation, and adds new functions such as online ticket purchase, exhibition reservation and online shopping, integrating the concepts of "zero waste," "age-friendly" and "barrier-free" to provide tourists with convenient inquiries, visits, and other services. The project also explored AR navigation capabilities in the Forbidden City, providing tourists a realistic experience.

The construction of an AI-integrated system in museums primarily refers to using intelligent systems to collect large amounts of data, analyze it to identify patterns and correlations, and then classify, clean, and integrate it to build a comprehensive database. This intelligent management and service approach enhances museum operational efficiency and drives the modernization of museum development. For example, the Los Angeles Natural History Museum installed hundreds of sensors to monitor temperature, humidity, light intensity, and visitor flow within the museum. The data collected by these sensors is analyzed by an AI system, helping the museum adjust environmental controls in real time to ensure optimal preservation conditions for artifacts (Los Angeles Natural History Museum, 2021). Similarly, the Metropolitan Museum of Art uses AI technology to analyze visitor behavior data. By assessing the popularity of different galleries and visitor interests, the museum optimizes exhibition layouts, adjusts the order of exhibits, and provides personalized recommendations to enhance the visitor experience (The Metropolitan Museum of Art, 2020).

The construction of AI application systems in museums primarily involves integrating systems for collections management, storage management, exhibitions, artifact conservation, public services, cultural product management, ticketing, and visitor flow monitoring and alerts (Gui, 2022). When designing these systems, it is essential to consider both current and future needs for intelligent development and extract relevant equipment and technical requirements (Zhang, 2023). The information systems in smart museums must also meet the needs of public areas, such as information inquiry terminals, multimedia displays, and smart navigation, supporting intelligent sensing, digital on-demand services, and automated responses. Museums can use relevant technologies to design electronic tags for artifacts, establish an intelligent integrated management platform for real-time tracking and remote

management, and create an audio service system and intelligent voice guidance network.

For example, on May 3, 2018, the Shanghai Museum completed the construction of an entirely data-driven digital management platform, transforming its management approach from “experience-driven” to “data-driven.” This system enables data interaction and collaborative work, allowing for real-time tracking and remote management of the museum’s collections, thus ensuring the safety and efficiency of artifact management. The Shanghai Museum has introduced the latest machine-learning technologies to analyze elements and features of ancient Chinese paintings using high-definition image data. By employing deep convolutional neural networks (CNN), the system extracts deep visual features through multi-level convolution and pooling operations at various scales, followed by object classification using Softmax. Position regression calculations were also performed to recognize object locations. After algorithm optimization, the machine learning model has stabilized, successfully extracting thousands of samples from dozens of feature elements, including mountains, trees, houses, pavilions, rocks, and boats. This provides a quantitative foundation for further applications such as clustering analysis, similarity matching, feature discovery, recreation of paintings, and machine learning-based curation, pioneering new methods for research on Chinese paintings (Liu, 2019). The AI application system must support various museum services, ensuring the foundational infrastructure's scientific and rational development.

3. METHODOLOGY

This paper adopts a narrative review method for research. Narrative reviews aim to identify and summarize what has previously been published, avoid duplications, and seek new areas for study that have not yet been addressed (Ferrari, R. 2015). Narrative literature review articles describe and discuss the state of the science of a specific topic or theme from a theoretical and contextual perspective. Such review articles do not typically list the types of databases and methodological approaches used to conduct the review nor the evaluation criteria for including articles retrieved during the database search (Bernardo et al., 2004). A narrative review critically analyzes the literature published in books and electronic or paper-based journal articles (Rother, 2007). Through a synthesis and qualitative analysis of the existing literature, this paper provides an in-depth understanding of the development status of AIGC technology in the process of smart museum construction.

Initially, relevant literature was searched in databases such as China National Knowledge Infrastructure (CNKI), Google Scholar, and Web of Science using

keywords like “AIGC,” “smart museum,” “digital museum,” “AI and cultural heritage,” and “generative AI.” The search covered articles, industry reports, and foundational literature on AI integration in museum practices from the past decade to build the theoretical foundation of this research. Key literature from the last ten years on topics such as digital museum construction, museum cultural preservation and transmission, and AIGC technology applications in museums was selected, while articles outside these topics or the defined timeframe were excluded. Finally, a thematic analysis was conducted to systematically summarize the role of AIGC technology in cultural heritage preservation, transmission, and educational interactions.

This paper applied the Diffusion of Innovation (DoI) theory (Figure 4) to explain the application and dissemination of AIGC technology within smart museums. The Diffusion of Innovation theory is a social process in which subjectively perceived information about a new idea is communicated. It is based on the premise that a new idea, practice, or object has observable channels, a timeline, and an adoption mode by individuals or organizations (Rogers, 1983). Diffusion is a specific “communication process by which an innovation, in the form of new ideas, practices, or products, is spread through certain channels, over time, among the members of a social system” (Rogers & Scott, 1997). From this definition, four main concepts arise—innovation, communication channel, time, and social system—which form the four core elements of the diffusion process (Minishi-Majanja et al., 2005). An innovation is defined as an idea, practice, or object perceived as new by members of a social system (Rogers & Scott, 1997). In other words, diffusion of innovation explains the speed at which new ideas and technologies spread. Marketers widely use the theory to understand how quickly consumers adopt new products or services (CFI Team, 2024).

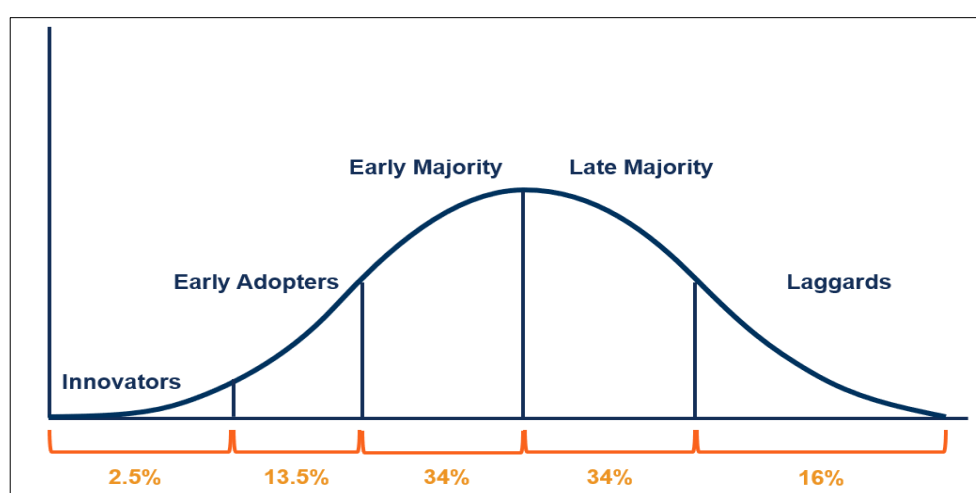


Figure 4. The Diffusion of Innovation Theory

In this paper, the Diffusion of Innovation theory helps analyze the innovative features of AIGC technology within museums, explaining the factors influencing its diffusion and guiding large museums to drive industry-wide adoption through a demonstration effect. Throughout the diffusion process, AIGC technology can showcase its substantial potential in areas such as cultural heritage digitization, personalized education, and interactive exhibits. Thus, by leveraging this theory, the paper can deeply explore the impact of AIGC technology on smart museum development and cultural heritage transmission.

4. DATA FINDINGS AND ANALYSIS

The above content introduces the development status of museums and the construction of museum intelligence under the background of artificial intelligence. In this section, we mainly analyze two aspects: one is the application of AIGC technology in smart museums, and the other is how AIGC technology can help museums inherit culture.

4.1 Application of AIGC technology in smart museums

The application of AIGC technology in smart museums is mainly explained from four aspects: the generation of personalized content, virtual exhibitions and immersive experiences, intelligent guides and services, and data analysis and management optimization.

4.1.1 Personalized Content Generation

When tourists visit a museum, their needs are different. AIGC technology uses big data to generate personalized tours based on tourists' needs and interests, recommend interesting exhibits, provide detailed background information about the exhibits, and optimize their visit experience. AIGC technology can generate and update dynamic exhibition content. For example, the history of the exhibition is dynamic, the background information is simplified, and the interactive games are lively. This not only enhances the cultural understanding of the exhibits but also enhances the educational value of the exhibitions. AIGC has powerful functions and can customize cultural and educational materials for tourists of different ages, including text explanations, video content, and interactive questions and answers, significantly enhancing the museum's educational value (Hao, M., & Wu, D., 2024). The content generation of AIGC technology improves tourists' interactive experience. Tourists can generate personalized responses through voice or AI interaction, create content (text, images, and videos) that is more suitable for social media, and dynamically adapt to the exhibition and visitors' feedback to attract more attention and participation.

4.1.2 Virtual Exhibitions and Immersive Experiences

Nowadays, museums are using AI technology to build digital platforms. Museums use 3D modeling and virtual reality (VR) technology to show realistic virtual exhibitions on digital platforms. Virtual exhibitions break geographical limitations, provide more diverse options for museum cultural relics display, and make exhibition content more prosperous and interactive (Kenderdine, 2016). AR technology overlays virtual content with the natural environment. Visitors can use smartphones or AR glasses to view augmented reality displays, enter an entirely virtual exhibition space, and experience historical events, cultural scenes, etc. This immersive experience allows visitors to experience a more accurate and interactive exhibition.

AIGC technology can digitize exhibits, build virtual exhibition spaces, and share data globally, allowing visitors to experience cultural relics and artworks in an immersive way. This makes it easier to understand the historical background and production process of museum exhibits. Visitors can get more information about the historical background, production process, etc., by clicking on the digital platform exhibits and watching related videos and animations (Smith, 2021). For example, in May 2017, the China Garden Museum held the "Seeing the 'Old Summer Palace'" digital experience exhibition, which selected 26 scenic spots such as the "Western Mansions," "Great Light," and "Diligent Government and Love for the People" from the Old Summer Palace. Modern digital technology was used to recreate the overall layout of the Old Summer Palace, providing audiences with a more intuitive and profound experience. In 2018, Baidu launched an AI project to present rich cultural heritage more intuitively and vividly to the audience; at the Mausoleum of the First Qin Emperor, users could use AI technology to photograph artifacts, making the Terracotta Warriors "speak" and allowing viewers to see the details of the armor from 100 meters away. In 2018, Google used AI technology to automatically identify 30,000 images for the Museum of Modern Art in New York and create interactive archives for the museum exhibition. These innovations not only enhance the visitor experience but also promote cultural dissemination and the realization of educational functions (Jiang, Zhao, & Zhang, 2023).

4.1.3 Intelligent Guide and Services

AIGC technology can generate personalized tour routes based on visitors' interests and history. By analyzing visitor preferences, the system can recommend exhibits they might find interesting and provide detailed background introductions and interactive content. For example, with the widespread use of smartphones, the rapid development of app software has significantly improved convenience. Apps can deliver information instantly and quickly, utilizing users' fragmented time and

increasing customer engagement during use, greatly enhancing visitor satisfaction (Yang, 2021).

In May 2019, the "5G Museum" was established at the Hubei Provincial Museum, achieving full 5G network coverage. The Smart Museum App transforms the traditional methods of disseminating text and images, enabling a "millimeter-level" display of a batch of precious artifacts such as the Zeng Houyi chime bells and the Sword of Goujian. The Zeng Houyi chime bells, over 2400 years old, are grand and resonant. However, since their excavation in 1978, the chime bells have only been struck three times, making the music they produce a curiosity for visitors. Through the Hubei Provincial Museum App, combined with VR gaming technology, visitors can wear VR equipment and use 5G to virtually strike the chime bells, experiencing the music-playing process as if they were there.

4.1.4 Data Analysis and Management Optimization

AIGC technology can collect real-time data through various sensors and devices within the museum, gathering information such as visitor behavior patterns, dwell times, and interaction frequencies. By analyzing this data, museums can better understand visitor interests and preferences, allowing for optimized exhibition content and layout. With advancements in machine algorithms, AIGC technology enables the optimization of big data and management in museums. For instance, when a large number of visitors are present, the museum can analyze visitor flow to efficiently position staff and security personnel and adjust environmental systems (e.g., lighting, air conditioning) through intelligent control systems, thereby optimizing resource utilization and reducing operational costs (Chen, 2023).

For example, the Data Center of the Shanghai Museum is a data analysis and management information system that relies on digital technology and is deeply rooted in museological principles. This system focuses on museum management by categorizing detailed information on personnel, venues, and exhibits to streamline process management. In terms of data collection, the center comprehensively covers collection information, visitor flow, social media influence, audience behavior patterns in exhibition areas, and sales records of cultural and creative products, providing a complete picture of the museum's core functions in collection care, academic research, and cultural dissemination. As for data application and analysis, the system delves into museum operational data, performs precise analysis, and vividly presents results through intuitive visualizations.

In summary, AIGC technology enables museums to achieve significant progress and innovation across multiple dimensions. With the evolution of robotics, deep learning,

and artificial intelligence, museums rapidly advance toward a new phase of comprehensive intelligent transformation.

4.2 AIGC Technology Assisting Museum Cultural Heritage Preservation

4.2.1 Cultural Heritage Preservation and Transmission

At the 2024 World Artificial Intelligence Conference, the capabilities of AIGC technology in ancient manuscript restoration were fully demonstrated. With high-precision scanning and intelligent analysis, this technology accurately captures details such as stains, missing strokes, and blurred characters on ancient manuscripts, enabling highly detailed restoration work. This allows damaged portions of precious manuscripts, like the Dunhuang manuscripts, to be meticulously revived, paving a new path for the long-term preservation and transmission of ancient texts (Hao & Wu, 2024). Compared to traditional artifact preservation methods, which may lead to accelerated aging and damage due to frequent displays, AIGC technology presents unparalleled advantages.

Firstly, this technology seamlessly combines digitalization with virtual reality to create intricate 3D digital models and virtual exhibition platforms for artifacts. This innovation ensures that artifacts can be preserved indefinitely without physical deterioration, significantly reducing the need for physical displays and effectively lowering the risk of damage due to human intervention. Moreover, it allows global audiences to appreciate the unique charm of these artifacts up close, regardless of geographic or temporal limitations. Secondly, AIGC technology's powerful data analysis capabilities enable continuous monitoring and assessment of preservation environments, including critical factors like temperature, humidity, and vibrations. This allows for precise predictions of potential aging trends and risks to artifacts, providing preservation personnel with timely scientific alerts and decision support to ensure artifacts are maintained in optimal conditions. Finally, AIGC technology also demonstrates irreplaceable value in the field of artifact restoration. Advanced image processing and simulation techniques aid in formulating more precise and efficient restoration plans, providing robust technical support for restoration work. This not only significantly enhances restoration efficiency but also ensures the accuracy of restoration and the authenticity of artifacts, revolutionizing the field of artifact restoration.

4.2.2 Cultural Education and Interaction

AIGC technology also plays a crucial role in advancing cultural research and education. As vital carriers of cultural heritage, museums hold a wealth of historical and cultural treasures; however, these valuable resources are often challenging to disseminate widely due to the high threshold for expert interpretation. Through in-depth digital methods, AIGC technology organizes and analyzes vast amounts of

historical documents, artworks, and artifact data, creating a more comprehensive and detailed knowledge repository for researchers and learners, significantly expanding the boundaries of knowledge accessibility. Furthermore, AIGC technology has transformed traditional cultural education by breaking free from static displays and conventional explanations, introducing more engaging and interactive educational experiences. Students can "travel through time and space" to experience the grandeur of ancient architecture, participate in re-enactments of historical events, and even engage in dialogues with virtual historical figures. This immersive learning approach greatly enhances students' enthusiasm and interest in learning, allowing the essence and value of cultural knowledge to be displayed in a more vivid and intuitive manner.

Additionally, AIGC technology has led to the development of interactive educational tools and gamified learning platforms, encouraging students to explore the cultural world more actively and passively. These innovative tools and games not only deepen students' understanding and retention of cultural knowledge but also inspire their creativity and critical thinking, breathing new life into cultural education through entertainment and exploration.

5. DISCUSSION

With the advancement and rapid updating of technology, museums' digitalization and intelligent transformation have accelerated. AIGC technology drives this transformation, enhancing smart museum construction, cultural preservation, and educational outreach. Firstly, AIGC technology can analyze visitor preferences to generate personalized tour routes, customized guide information, and immersive exhibitions, enhancing visitor interaction and making museum visits more enjoyable. For example, the British Museum uses VR and AR technology to offer virtual tours, allowing visitors to view recreated historical scenes through mobile and tablet devices, immersing them in the ancient world (British Museum, 2020). Similarly, the National Air and Space Museum in the United States uses motion-sensing interactive devices to let visitors simulate astronaut training, increasing engagement and interest (National Air and Space Museum, 2019). The Louvre in France has also implemented smart guidance systems that recommend exhibits based on visitor preferences (Louvre Museum, 2023). Secondly, as a "second classroom," museums can leverage AIGC technology to innovate educational models, generating interactive courses, themed games, and diverse learning experiences for children and visitors of all ages. Thus, AIGC technology supports museum visitor experiences and education, accelerating the transformation of museums. As discussed in the second section of this paper, AIGC technology promotes smart museum construction. Traditional in-

person museum exhibits are often limited by physical space and display format. Still, intelligent technology has opened up new formats, including online virtual exhibitions and digital artifact displays, alongside in-person personalized services and immersive experiences, enhancing online and offline visitor engagement. Moreover, based on big data, AIGC technology can generate personalized content, optimize resource management, and improve museum operational efficiency. AIGC technology can also digitize artifacts, create 3D models, and form virtual exhibitions, converting artifacts and historical scenes into high-precision digital representations. This digital transmission is not limited by time and space, allowing artifacts to be displayed and preserved in new formats, significantly expanding the scope and depth of cultural dissemination. This promotes a deeper understanding and resonance with culture, advancing digital construction and supporting smart museum development, cultural preservation, educational outreach, and intelligent management.

6. CONCLUSION

Artificial intelligence technology plays a crucial role in museum construction and cultural heritage transmission. Through digital and smart development, museums have enhanced service quality and operational efficiency and provided more prosperous and interactive visitor experiences. The application of AIGC technology, in particular, has opened new pathways for cultural heritage preservation and transmission, revolutionizing cultural education and interaction and promoting the modernization of the museum industry. Future research should focus on the following areas: first, further developing and improving AI technology to enhance its efficiency and effectiveness in smart museum development; second, exploring and documenting best practices of AI applications across different museum contexts to build a collection of successful case studies; and finally, strengthening interdisciplinary collaboration to foster more profound integration of AI with museology and cultural heritage preservation. Through these efforts, the goal of smart museum construction will be better realized, advancing cultural heritage preservation and transmission and providing new insights and methods for museum development in the digital age.

REFERENCES

- Bernardo, W. M., Nobre, M. R. C., & Jatene, F. B. (2004). Evidence-based clinical practice. Part II: Searching for evidence in information sources. *Revista da Associação Médica Brasileira*, 50(1), 1-9.
- British Museum. (2020). Augmented Reality Tour. Retrieved from <https://www.britishmuseum.org>
- Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., ... &

- Amodei, D. (2020). Language models are few-shot learners. arXiv preprint arXiv:2005.14165.
- CFI Team. (2024). Diffusion of innovation: The rate at which new ideas and technology spread. Retrieved from <https://corporatefinanceinstitute.com/resources/economics/diffusion-of-innovation/>
- Chen, G. (2013). Trends and challenges in the development from digital museums to smart museums. In *Fusion, Innovation, and Development: Digital Museums and Cultural Strength Construction – Proceedings of the 2013 Beijing Digital Museum Symposium*, 281-287. China Communication University Press.
- Chen, Q. (2013). The role of museums in the protection of intangible cultural heritage (Master's thesis). Zhengzhou University, Zhengzhou.
- Chen, X. (2023). Research on smart museum construction under digital empowerment. *Information System Engineering*, (12), 94-97.
- Cioffi, L., & Bannon, L. J. (2007). Designing hybrid places: merging interaction design, ubiquitous technologies and geographies of the museum space. *CoDesign*, 3(sup1), 159-180.
- Clark, A., Donahue, J., & Simonyan, K. (2019). Adversarial video generation on complex datasets. arXiv preprint arXiv:1907.06571.
- Colby, C., & Parasuraman, A. (2016). The future of consumer decision making. *Journal of Service Research*, 20(1), 120-138.
- Dai, T. (2023). Review of the development of smart museums. *Museum Management*, (2), 83-84.
- Fang, H. (2023). Innovation paths of interactive cultural product design from the perspective of smart museums. *Journal of Anshan Normal University*, 25(4), 93-98.
- Fang, L. (2023). Interaction design of knowledge graphs in smart museums (Master's thesis). Nanjing Academy of Art.
- Ferrari, R. (2015). Writing narrative style literature reviews. *Medical Writing*, 24(4), 230-235.
- Gong, Y. W. (2023). Attempts and thoughts on the application of AI scenarios in museums – A case study of the Shanghai Museum. *Museum Research*, (3), 30-36.
- Goodfellow, I., Pouget-Abadie, J., & Mirza, M., et al. (2020). Generative adversarial networks. *Communications of the ACM*, 63(11), 139-144.
- Hao, M., & Wu, D. (2024). Exploration of the construction and cultural heritage development of smart museums based on AIGC technology. *Cultural Relics Identification and Appreciation*, (02), 76-79. <https://doi.org/10.20005/j.cnki.issn.1674-8697.2024.02.019>.

- Hong, L. H. (2022). Analysis of the problems and solutions in museum cultural product innovation. *China Nationalities Expo*, 07(14), 211-213.
- Hu, H. Y. (2020). Development trends from smart museums to AI museums – A case study of Hunan Provincial Museum. *Beauty and Times (Urban Edition)*, (5), 89-91.
- Jiang, S., Zhao, M., & Zhang, G. (2023). Analysis of the application progress of artificial intelligence generated content. *Mobile Communications*, 47(12), 71-78.
- Kang, S., & Gretzel, U. (2012). Perceptions of museum experiences: A study of museum adoption of social media. *Journal of Travel & Tourism Marketing*, 29(1), 69-82.
- Karras, T., Laine, S., & Aittala, M., et al. (2020). Analyzing and improving the image quality of StyleGAN. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 8110-8119.
- Kenderdine, S. (2016). Embodiment, entanglement, and immersion in digital cultural heritage. *Journal of Cultural Heritage*, 23, 326-331.
- Lin, S. X. (2018). Material narrative and spatial integration in the Museum 4.0 era. *Aesthetics Journal*, 9(4), 18-23.
- Liu, J. (2019). Exploration and practice of museum data visualization – A case study of the Shanghai Museum's digital construction. *Museum Research*, (2), 91-97.
- Los Angeles Natural History Museum. (2021). Smart Sensor System for Environmental Monitoring. Retrieved from <https://www.nhm.org>
- Louvre Museum. (2023). Smart Guide System. Retrieved from <https://www.louvre.fr>
- Marcus, G., Davis, E., & Aaronson, S. (2022). A very preliminary analysis of DALL-E 2. arXiv preprint arXiv:2204.13807.
- Minishi-Majanja, M. K., & Kiplang'at, J. (2005). The diffusion of innovations theory as a theoretical framework in library and information science research. *South African Journal of Libraries and Information Science*, 71(3), 211-224.
- Museum of Modern Art. (2020). Digital Art Exhibition. Retrieved from <https://www.moma.org>
- National Air and Space Museum. (2019). Interactive Astronaut Training Exhibit. Retrieved from <https://airandspace.si.edu>
- Ramesh, A., Pavlov, M., & Goh, G., et al. (2021). Zero-shot text-to-image generation. *International Conference on Machine Learning*, 8821-8831.
- Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). New York: Free Press.
- Rogers, E. M., & Scott, K. L. (1997). The diffusion of innovations model and outreach from the National Network of Libraries of Medicine to Native American communities: Draft paper. Retrieved from <http://nnlm.gov/pnr/eval/rogers.html>

- Rother, E. T. (2007). Systematic literature review X narrative review. *Acta Paulista de Enfermagem*, 20, v-vi.
- Sauer, A., Schwarz, K., & Geiger, A. (2022). StyleGAN-XL: Scaling StyleGAN to large diverse datasets. *ACM SIGGRAPH 2022 Conference Proceedings*, 1-10.
- Shao, X. L. (2015). Advancing smart museum construction with an Internet mindset. *Chinese Museums*, (3).
- Smith, J. (2021). Virtual exhibitions in modern museums. *Journal of Museum Technology*, 15(3), 45-58.
- Song, X. C. (2015). Thoughts on the construction of smart museum systems. *Chinese Museums*, 32(2), 12-15.
- The Metropolitan Museum of Art. (2020). AI-Driven Visitor Behavior Analysis. Retrieved from <https://www.metmuseum.org>
- Wang, X. (2022). Investigation of museum audience preferences and influencing factors for cultural and creative products. *Cultural Innovation Comparative Study*.
- Wei, J. (2019). New directions in the development of Chinese museums. *Southeast Culture*, (2).
- Yang, Z. (2021). The informatization construction of museums in the era of big data – A case study of the information platform at the Palace Museum. *Beijing Cultural Heritage Series*, (3), 101-106.
- Zhang, C. (2023). Brief discussion on digitalization and smart construction of museums. *Smart China*, (12), 72-73.
- Zhang, Z. X. (2014). Wisdom in museum cultural products – Reflections based on 21st-century information technology and Industry 4.0. *Museum Development Anthology*, (0), 3-13.
- Zhang, W., & Fan, K. X. (2019). Deciphering “homogenization” and exploring “new design”: Intelligent development and research of museum cultural products in the AI era. *New Art*, 40(4), 117-120.

CURATORIAL CHALLENGES IN THE WAVE OF NEW MEDIA : THE TRANSFORMATION AND INNOVATION OF CONTEMPORARY CHINESE ART

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Abstract: Chinese art has undergone significant transformation, blending traditional cultural elements with modern media and techniques. This evolution has sparked interdisciplinary dialogue and innovative practices, reshaping global perceptions of Chinese identity and heritage. This paper explores the dynamic relationship between tradition and innovation in contemporary Chinese art, highlighting the critical role of curatorial practices in shaping artistic narratives. Drawing on recent research, it examines emerging trends in curating, focusing on technology integration, cultural heritage preservation, and audience engagement, with the aim of helping curators navigate challenges and contribute to the field's growth.

Keywords: Curatorial Challenges, New Media Wave, Transformation, Innovation, Contemporary Chinese Art

1. INTRODUCTION

Over the past three decades, the field of contemporary art has experienced rapid development, particularly in the evolution of display concepts. For this discussion, we limit our focus to the realm of modern art. Within China's cultural context, the exhibition industry has followed two distinct trajectories: one led by state-controlled museums and the other by art galleries. Unlike the intertwined development of museums and art galleries in many countries abroad, these two sectors in China have historically operated independently and in parallel. It is only in recent years that they have begun to gradually converge. The outbreak of the pandemic significantly impacted the art world, compelling art institutions and exhibition practitioners to pivot toward online exhibitions, which garnered widespread public attention. Online display, broadly speaking, traces its origins to the United States in the 1960s, when digital museums and the use of Internet technology in museum practices began to take root. The emergence of computer art and network art in the late 1990s and early 21st century further fueled interest in the role of online displays in contemporary art. Despite the proliferation of online exhibitions, their formats vary greatly. Some are straightforward transpositions of traditional displays onto digital platforms, while others demonstrate remarkable creativity and innovation, leaving a lasting impression on audiences. This diversity in online presentations stems from structural variations in the display process. While some replicate conventional content in a virtual space, others leverage the unique capabilities of digital media to create powerful and refreshing artistic experiences.

This difference is not only reflected in the display content, but also in the application of display concepts and technical means. Therefore, the development of online display is not only the advancement of technology, but also the continuous exploration and innovation of display concepts and practices. As time goes by, we can expect online presentations to play an increasingly important role in the field of contemporary art, providing a broader communication platform for the artists, curators, and audiences. For more in-depth analysis, current curatorial research focuses on exploring innovative methods and ideas in curatorial practice and their application in the field of contemporary art. Researchers are working to understand how curators are responding to the changing art environment, especially in the context of increasing globalization, digitalization, and cross-cultural exchange. They focus on how curators can enrich the exhibition experience through the use of new technologies, multimedia presentations, and interdisciplinary approaches to engage a wider audience. At the same time, recent research explores the social and cultural factors in the curatorial process, as well as the interactive relationship between curators, artists, and audiences. These research

efforts highlight the challenges and opportunities curators face in curatorial practice and provide important theoretical support and practical guidance for the future development of the curatorial field. Through the in-depth study of all aspects of curatorial practice, recent curatorial research aims to promote innovation and progress in the field of the curatorial work, foster the interaction between art and society, and open up new possibilities for future curatorial work. In the Figure 1, the summary of curatorial challenges are illustrated.

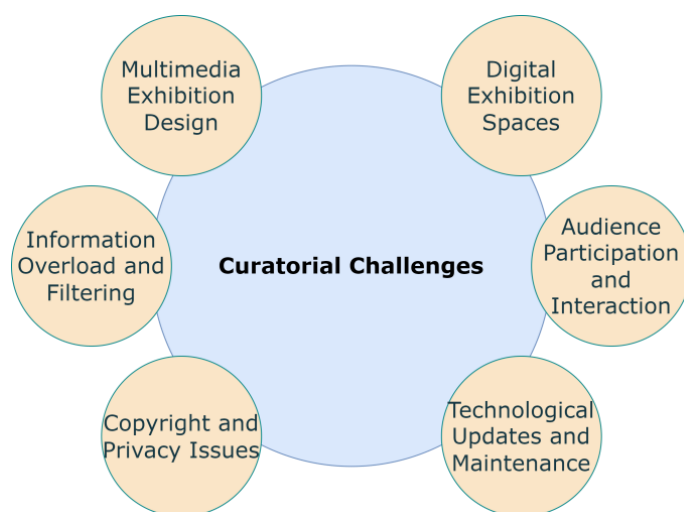


Figure 1. The Summary of Curatorial Challenges

2. PROBLEM STATEMENT

This paper primarily addresses the transformation and innovation of Chinese contemporary art amidst the rise of new media, as well as the challenges curators face during this process. It specifically examines how traditional cultural elements can be harmoniously integrated with modern technology in new media art and how curatorial practices can shape artistic narratives, foster a deeper understanding of contemporary Chinese art, and guide its progression toward a more prosperous and diverse future. Furthermore, the paper delves into the strategies employed by curators in navigating the complexities of new media exhibitions. These strategies include addressing issues related to cultural heritage preservation, managing censorship, and negotiating the intricate relationship between art and technology. Through this exploration, the study aims to highlight the pivotal role of curators in bridging tradition and innovation within the dynamic landscape of contemporary Chinese art.

3. PURPOSE OF THE RESEARCH

This study delves deeply into the landscape of contemporary Chinese art, tracing its evolution, emerging trends, and significant milestones. By providing a comprehensive analysis, we aim to establish a foundation for understanding the distinct curatorial challenges posed by new media art. As technological advancements continue to influence and redefine artistic expression, contemporary Chinese art is undergoing continuous transformation and innovation. Our analysis highlights how Chinese artists have embraced new media technologies—such as digital art, virtual reality, and interactive installations—to transcend the boundaries of traditional artistic forms. This shift toward new media not only broadens the scope of artistic creation but also introduces unique challenges for curators. These challenges include the seamless integration of technology within exhibition spaces, the preservation of digital artworks, and the development of immersive experiences that captivate and engage diverse audiences. Furthermore, this study examines the nuanced strategies curators employ to navigate the complexities of curating new media exhibitions in the context of contemporary Chinese art. Particular focus is placed on addressing issues of cultural heritage preservation, managing censorship, and negotiating the intricate relationship between art and technology within Chinese society. By addressing these multifaceted curatorial challenges, this research provides valuable insights into the dynamic interplay between art, technology, and culture, offering a deeper understanding of the ever-evolving contemporary Chinese art landscape.

4. RESEARCH METHOD

The research method of this paper mainly discusses the integration of traditional cultural elements and modern technology in new media art through literature review and case studies, and the central role of curatorial practice in shaping artistic discourse. The article analyzes the challenges faced by curators in the field of new media art, including technological integration, cultural heritage preservation and engagement with diverse audiences, and explores the role of educational initiatives in promoting cultural understanding and artistic innovation. In addition, the paper focuses on how multimodal approaches to artistic discourse can provide new insights into cultural representation and narrative construction.

5. RESEARCH RESULTS

The research results of this paper focus on the integration of traditional cultural elements and modern technology in new media art, and the central role of curatorial practice in shaping artistic discourse. The study found that the challenges faced by

curators in the field of new media art include technological integration, cultural heritage conservation and engagement with diverse audiences. At the same time, educational initiatives play a key role in promoting cultural understanding and artistic innovation. In addition, the multi-modal approach to artistic discourse provides new insights into cultural representation and narrative construction. The study also explores the evolution of contemporary art in China, emerging trends and important milestones, and how artists are embracing the possibilities offered by new media technologies, such as digital art, virtual reality, and interactive installations, to transcend the boundaries of traditional art forms.

6. FINDINGS

In the review, the contemporary creative landscape in China has undergone a profound transformation, characterized by the fusion of traditional cultural elements with modern media and techniques. This core fusion has sparked interdisciplinary discourse and innovative artistic practices, reshaping perceptions of Chinese identity and cultural heritage in a global context. Autotheory, as explored by Gu and Su (2022), is emerging as a notable paradigm in contemporary Chinese art, challenging the binary opposition between abstract thought and practical application. Intertwining introspective reflection with communal and personal identity, auto-theory offers a nuanced approach to artistic expression. Case studies illustrate its adaptability, particularly evident in feminist art, where it reflects cultural and historical trajectories and expands notions of individual identity within artistic practice. Religious resurgence intersects with artistic ingenuity, as discussed by Karetzky (2023), who highlights the influence of Daoism and Buddhism on contemporary Chinese art. Artists are exploring spiritual themes through a variety of media, bridging tradition and modernity. Using installations, digital media, and traditional techniques, they reinterpret sacred narratives and reflect on identity and social change. Materiality is emerging as a central theme in contemporary Chinese art, challenging monolithic narratives of national identity. Burchmore (2021) explores the appeal of materiality, tracing its evolution from the 1980s to the present. By emphasizing adaptability over fixed heritage, artists redefine "material Chineseness," transcending geographical boundaries and recontextualizing cultural artifacts within a global framework.

Educational initiatives play a critical role in promoting cultural understanding and artistic innovation. Lim et al. (2022) highlight the importance of teaching contemporary Chinese art in American classrooms to address the under-representation of Asian art. By showcasing prominent artists and facilitating meaningful engagement, educators broaden students' cultural horizons and promote cross-cultural dialogue and appreciation. Multi-modal approaches to art discourse offer new insights into cultural

representation and narrative construction. Chen (2021) explores how diverse visual arts reshape Chinese culture in contemporary picture books, using paper-cutting, painting, and sculpture to convey nuanced narratives. Through multi-modal analysis, these artworks transcend linguistic barriers and promote cross-cultural understanding and appreciation. The integration of Western art styles into Chinese art education reflects ongoing cultural exchange and pedagogical innovation. Hou and Moyao (2023) examine the impact of Western influences on oil painting education, challenging traditional frameworks and promoting artistic diversity. By embracing new methodologies, educators are enriching students' creative experiences and fostering a generation of the adaptable and globally aware artists. Contemporary art education transcends disciplinary boundaries and embodies a holistic approach to aesthetic development. Liang (2023) highlights the transformative potential of art education in cultivating emotional intelligence and critical thinking. By emphasizing creativity and aesthetic appreciation, educators shape individuals capable of navigating complex sociocultural landscapes with empathy and insight. Rhizomatic learning emerges as a dynamic pedagogical model for engaging with experiential contemporary art. Lu and Chang (2022) advocate a rhizomatic approach that prioritizes autonomy and collective exploration, empowering students to construct meaning through immersive encounters with art. By facilitating dialogue and reflection, educators encourage deeper engagement with diverse artistic practices, fostering a culture of lifelong learning and creative inquiry. The intersection of traditional craft and contemporary artistic practices exemplifies cultural resilience and innovation. Gomboeva and Ivanova (2023) examine the revival of animalistic styles in contemporary art, drawing on ancient cultural motifs to create new expressions. Through adaptive reinterpretation and technological experimentation, artists bridge past and present, enriching cultural discourse and fostering cross-cultural dialogue. Finally, the fusion of the traditional opera elements with contemporary pop music reflects ongoing cultural negotiation and innovation. Wang (2022) explores how this integration serves as a conduit for cultural exchange and preservation, offering new avenues for the dissemination of Chinese opera culture. By embracing hybridity and innovation, artists navigate the complexities of cultural globalization and enrich the cultural landscape with the dynamic and inclusive expressions.

Then, in Table 1, the recent development trends are demonstrated.

Table 1: The Recent Development Trends

Trend	Details
Materiality and Cultural Identity	- Challenges monolithic narratives of national identity. - Redefines "material Chineseness," transcending geographical boundaries.
Education and Cultural Understanding	- Addresses the under-representation of Asian art in American classrooms. - Expands students' cultural horizons through prominent artists.
Multimodal Representation and Narrative Construction	- Reshapes Chinese culture through diverse visual arts. - Transcends linguistic barriers, fostering intercultural understanding.
Integration of Western Art Styles	- Challenges traditional frameworks, fostering diversity in art education. - Enriches students' creative experiences with new methodologies.
Holistic Art Education	- Transcends disciplinary boundaries, emphasizing creativity and aesthetic appreciation. - Cultivates emotional intelligence and critical thinking.
Rhizomatic Learning and Experiential Art	- Empowers students through autonomy and collective exploration. - Fosters dialogue and reflection, nurturing lifelong learning.

7. THE PROPOSED METHODOLOGY

7.1 The Transformation and Innovation of Contemporary Chinese Art

Over the past two decades, contemporary art in China has experienced remarkable growth. However, this progress has coincided with a gradual decline in interest in traditional art forms. Amid the rapid transformations of the present era, China's distinctive humanistic spirit and artistic heritage face unprecedented challenges. The tensions between tradition and Westernization, continuity and transformation, and the influences of political movements have disrupted and hindered China's cultural trajectory. In this context, the validation of cultural identity often appears reliant on museum exhibitions and reproductions of cultural artifacts. Yet, traditional cultural elements are increasingly marginalized within the realm of contemporary art, overshadowed by the dominance of modern technology and globalization. Artists are frequently drawn toward innovation and contemporaneity, often at the expense of preserving and perpetuating tradition.

Nevertheless, the enduring value of traditional Chinese culture in contemporary art cannot be understated. As a repository of a rich history and profound ideological legacy, traditional culture forms the essence and foundation of Chinese civilization. Therefore, its preservation and transmission remain imperative. At the same time, integrating tradition with modernity while leveraging international expertise is crucial to guiding Chinese contemporary art toward greater diversity and vitality.

Despite the challenges confronting Chinese contemporary art, there is optimism for the continuity and innovation of traditional culture. On the global stage of cultural exchange, China's distinctive artistic charm is poised to shine, enriching the broader artistic discourse. The establishment of the art academy system catalyzed a paradigm shift in

the conception of contemporary art in China, fostering a profound transformation and fusion with traditional Chinese art.

For example, incorporating traditional ink painting into the art college curriculum has transcended its traditional boundaries, encouraging integration and dialogue with Western art forms. As a result, traditional aesthetic principles and evaluative standards have begun merging with Western conceptual frameworks, offering a novel cognitive approach to art. Within the educational setting of art institutions, traditional Chinese art has undergone substantial evolution, gradually developing its evaluative criteria and core values, often rooted in Western art paradigms.

Traditional art forms like ink painting are no longer viewed in isolation but are contextualized within a broader spectrum alongside Western art. This evolution has facilitated greater openness and diversification in contemporary Chinese art, enriching its conceptual depth and expressive range. Over time, Chinese contemporary art has embraced a more complex identity, characterized by mutual influence between traditional and Western art. This symbiosis has propelled the continuous development and innovation of Chinese contemporary art, imbuing it with renewed vitality and appeal. Figure 2 summarizes the innovation of contemporary Chinese art.

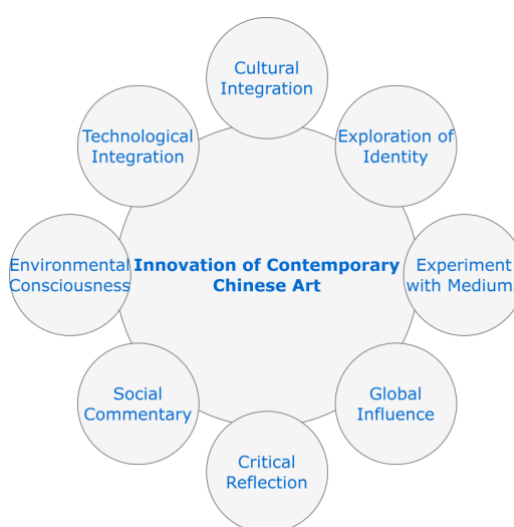


Figure 2. The Innovation of Contemporary Chinese Art

From the special perspective, the symbols, as perceptual tools that carry meaning, are an important part of contemporary art. Art serves as a profound form of expression, utilizing symbols to convey rich connotations and evoke emotions that transcend the confines of the material world, offering profound insights to its audience. Ernst Cassirer's theory underscores the pivotal role of symbols in human culture, emphasizing humans' reliance on symbols for comprehending the world and their indispensable role in cultural formations. Over time, societal progress and the evolution

of civilization continually reshape the meanings and significance of symbols, gradually accruing a wealth of diverse cultural connotations. Within artistic creations, symbols transcend mere imagery or language, carrying rich cultural, historical, and emotional implications through intricate symbolism and metaphors. Through adept manipulation of symbols, artists craft thought-provoking works that stimulate audience associations and emotional resonance, endowing their creations with enduring influence that transcends temporal and spatial boundaries, leaving a meaningful cultural legacy. The incorporation of traditional cultural symbols into contemporary art not only entails the preservation and evolution of traditional culture but also serves as a commentary on contemporary social and cultural phenomena. Through reinterpretation and reinvention, artists infuse traditional cultural symbols with modern meanings, revitalizing traditional culture within contemporary art. This innovative approach not only revitalizes traditional culture but also enriches contemporary art with deeper connotations, fostering diverse development and prosperity within the artistic realm.

7.2 The Transformation and Innovation of Contemporary Chinese Art

Curatorial challenges and opportunities in the new media wave continue to evolve and deepen, taking on more complex and diverse characteristics. First, as new technologies continue to emerge and develop, curators need to constantly update their knowledge and skills to cope with the challenges posed by new media art works. For example, the application of artificial intelligence, virtual reality, blockchain and other technologies has brought new possibilities to artistic creation and display. Curators need to have an in-depth understanding of the principles and applications of these technologies to better understand and display related works. Secondly, the digital nature of new media art has brought more complex display and preservation issues to curators. The preservation, copyright protection and display methods of digital works require in-depth thinking and planning by curators to ensure the integrity and long-term inheritance of artistic works. At the same time, the interactivity and participatory nature of new media art works also puts forward higher requirements for exhibition design. Curators need to create an attractive and interactive exhibition environment to guide the audience to deeply interact and experience the works. In addition, the cross-border nature and diversity of new media art also bring more challenges and opportunities to curators. Curators need to cooperate with artists, technicians, designers, etc. to jointly create innovative and diverse exhibition content to meet the needs and expectations of different audience groups. Finally, the curators also need to pay close attention to the latest developments and trends in the field of new media art, and constantly reflect on and explore new curatorial concepts and methods to maintain the cutting-edge and innovative nature of curatorial work and promote the continuous development of new media art. and dissemination. To sum up, the curatorial challenges and opportunities

in the new media wave require curators to have higher professionalism and interdisciplinary capabilities to cope with increasingly complex and diverse exhibition needs and promote the continued prosperity and development of new media art.

Considering these perspectives, the online curatorial is considered and improved. Online art exhibitions provide a platform for remote collaboration, facilitating cross-regional and cross-border collaboration with greater ease and efficiency. Geographical cultural barriers are broken down in the spatial dimension, leading to a significant shift in curatorial perspectives. Through web-based curatorial practices, diverse cultural exchanges and collaborations flourish, allowing audiences to transcend geographical boundaries and access a wealth of knowledge through immersive online experiences. At the same time, the flattening of geographical distances in the temporal dimension enables individuals from different locations to engage in synchronous information exchange and collaborative activities. Asynchronous Web-based activities further enhance participation by accommodating participants across time zones, ensuring inclusivity and accessibility. In addition, the persistent and storable nature of online spaces allows exhibitions to be extended indefinitely, fostering prolonged engagement and impact. The evolution of participation modes in online art exhibitions represents a significant departure from traditional norms, driven by the transformative potential of the Internet. Compared to offline exhibitions, online platforms offer a wide range of flexible and dynamic participation methods. The integration of innovative participation mechanisms has become a hallmark of contemporary online curation, in line with the evolving preferences and behaviors of digital audiences. In addition, the democratization of curatorial practices facilitated by the Internet empowers non-professional, independent curators to conduct experimental projects at minimal cost, broadening inclusivity within the art world. As modes of participation transcend temporal and spatial constraints, individuals from diverse backgrounds become active participants in the creation and appreciation of art, reshaping traditional roles. In addition, online art exhibitions serve as a fertile ground for innovative curatorial experiments that challenge conventional norms and push the boundaries of artistic expression. Taking advantage of the diverse platforms and technological tools available on the Internet, curators are exploring new ways of engaging and interacting with audiences. Experimental projects that harness interactive capabilities are paving the way for new exhibition formats and immersive experiences, enriching the artistic landscape and demonstrating the transformative potential of the online curation [12]-[15]. By embracing the dynamic possibilities of online platforms, curators can engage with audiences in innovative ways, fostering deeper connections and dialogues between artists, curators, and viewers. Ultimately, the continued exploration and experimentation of online art exhibitions promises to unlock new dimensions of

creativity and engagement, ushering in a new era of artistic expression and appreciation.

8. RESEARCH SIGNIFICANCE

The research significance of this paper is to explore the integration of traditional cultural elements and modern technology in new media art, as well as the central role of curatorial practice in shaping artistic discourse. The findings reveal the challenges faced by curators in the field of new media art, including technology integration, cultural heritage conservation, and engagement with diverse audiences, and highlight the importance of educational initiatives in fostering cultural understanding and artistic innovation. In addition, the paper also explores multi-modal approaches to artistic discourse, providing new insights into cultural representation and narrative construction. Through these studies, the aim is to provide valuable insights into the dynamic interrelationships between art, technology, and culture in contemporary China, and to drive Chinese contemporary art towards a more prosperous and diverse future.

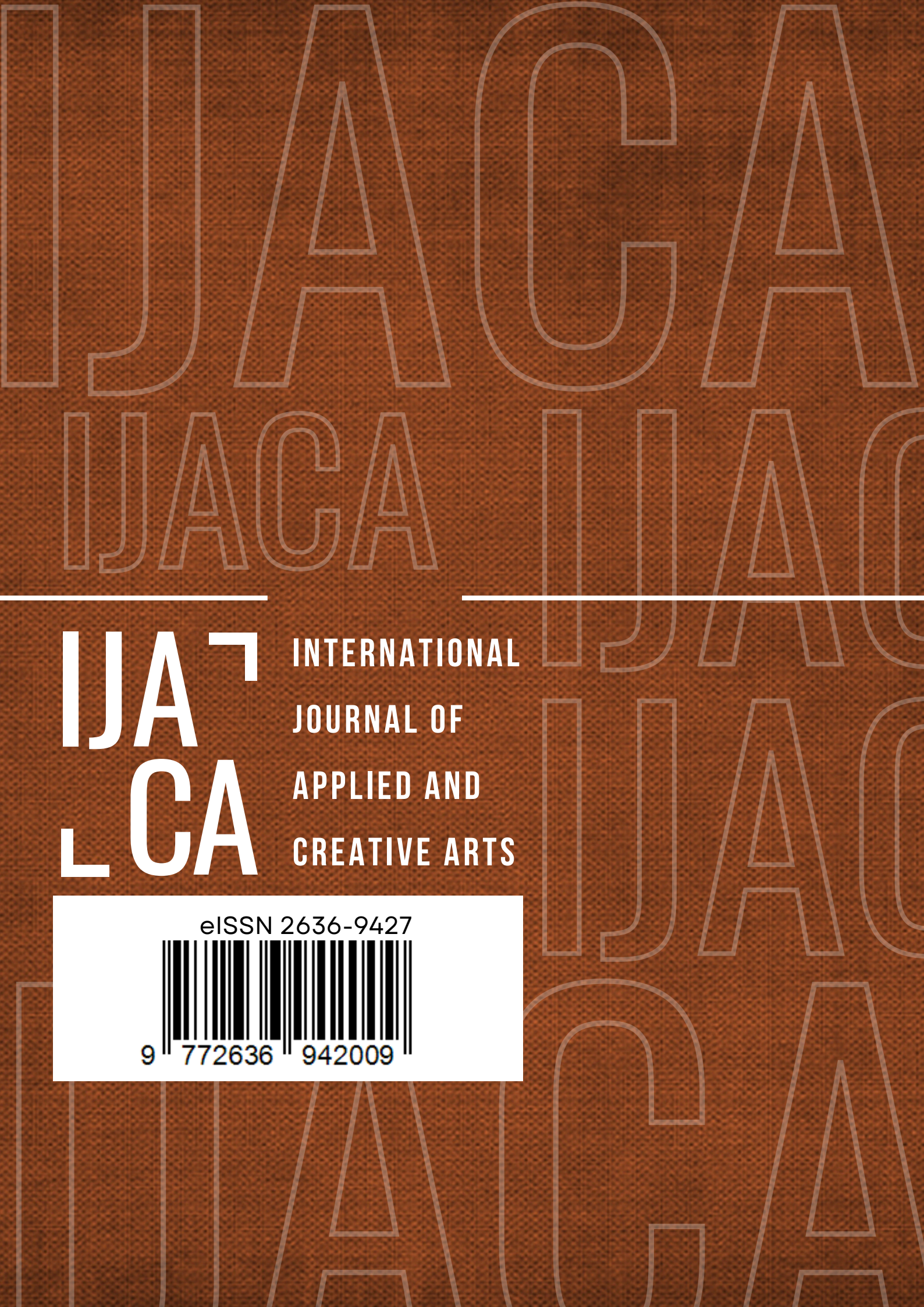
9. CONCLUSION

The transformation and innovation of contemporary Chinese art underscores the dynamic interplay between tradition and modernity, technology and culture. As artists continue to explore new media and interdisciplinary approaches, curators play a crucial role in shaping the narrative and exhibition of contemporary Chinese art. By embracing new technologies, preserving cultural heritage, and engaging diverse audiences, curators can navigate the complex terrain of new media art and foster a vibrant ecosystem of artistic expression. Moving forward, it is imperative that curators remain adaptable and innovative in response to evolving trends and challenges, thereby ensuring the continued prosperity and relevance of contemporary Chinese art on the global stage. Through collaborative efforts and forward-thinking initiatives, the future of contemporary Chinese art holds boundless possibilities for creativity, dialogue and cultural exchange.

REFERENCES

- Burchmore, A. (2021). Material Chineseness: Ink and porcelain in contemporary art beyond national borders. *Australian and New Zealand Journal of Art*, 21(1), 58–74.
- Chen, H. (2021). Some thoughts on the development of contemporary art in the context of artificial intelligence. *Learning & Education*, 9(5), 3–4.
- Chen, X. (2021). Repackaging Chinese culture through diverse visual arts: A multimodal approach to contemporary Chinese picturebooks. *Bookbird: A Journal of International Children's Literature*, 59(1), 4–15.

- Dekker, A., & Tedone, G. (2019). Networked co-curation: An exploration of the socio-technical specificities of online curation. *Arts*, 8(3), Article 86.
- Fotopoulou, A., & Couldry, N. (2015). Telling the story of the stories: Online content curation and digital engagement. *Information, Communication & Society*, 18(2), 235–249.
- Gomboeva, M., & Ivanova, Y. (2023). Animalistic style in creative practices of contemporary artists and creative industries. In *SHS Web of Conferences* (Vol. 164, Article 00067). EDP Sciences.
- Gray, J., Szalay, A. S., Thakar, A. R., & Stoughton, C. (2002). Online scientific data curation, publication, and archiving. In *Virtual Observatories* (Vol. 4846, pp. 103–107). SPIE.
- Gu, W., & Su, K. (2022). Rethinking the spirit of “self” and “theory”: The practice of “autotheory” in contemporary Chinese art. *Arts*, 11(6), Article 115.
- Hou, T., & Moyao, W. G. (2023). The influence of Western art style on oil painting education in Chinese contemporary art colleges and universities. *The Educational Review, USA*, 7(10), 1610–1614.
- Karetzky, P. E. (2023). Deep waters: Art and the revival of religion in contemporary China. In *Religion and Contemporary Art* (pp. 339–356). Routledge.
- Liang, Y. (2023). On the practical role and far-reaching significance of contemporary art education in general universities. *The Educational Review, USA*, 7(6), 726–729.
- Lim, M., Song, B., & Chang, E. (2022). Teaching about contemporary Chinese artists in ceramics, new media, and installation art. In *Teaching Chinese Arts & Culture: Content, Context, and Pedagogy* (pp. 337).
- Lu, L., & Chang, H.-M. (2022). Rhizomatic encounters with inter/transmedia art: A pedagogy for learning and teaching experiential contemporary art. *Studies in Art Education*, 63(1), 9–24.
- Wang, S. (2022). Integration and development of Chinese traditional opera elements and contemporary pop music. In *2022 International Conference on Economics, Education and Social Research*. Clausius Scientific Press.
- Zhong, C., Shah, S., Sundaravadivelan, K., & Sastry, N. (2013). Sharing the loves: Understanding the how and why of online content curation. In *Proceedings of the International AAAI Conference on Web and Social Media* (Vol. 7, No. 1, pp. 659–667).



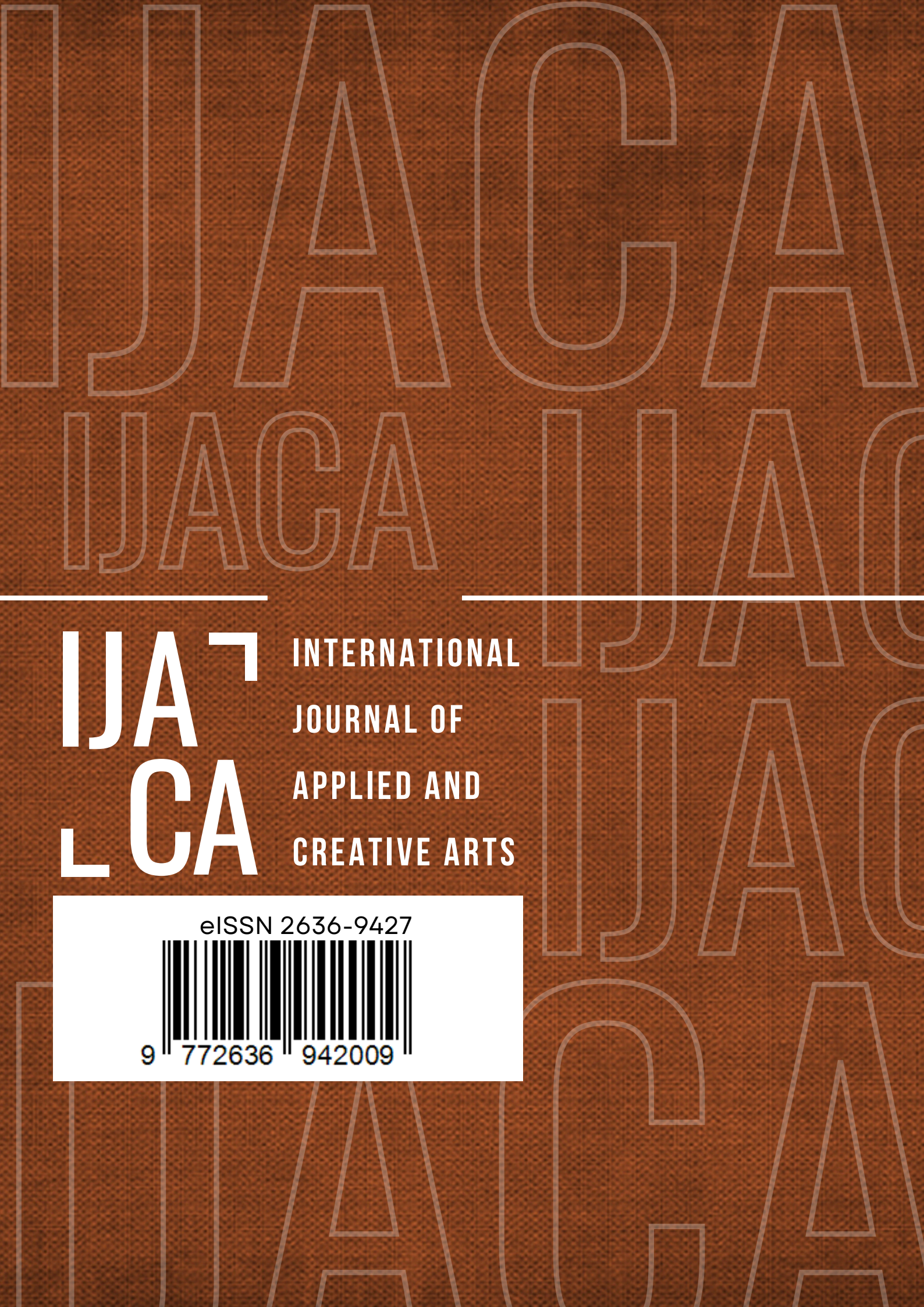
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