

The Role of Computer Technology as Expanded Media on Visual Art, in Malaysia: A Literature Review

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ARTICLE INFO	ABSTRACT
Article history: Received 22 June 2023 Received in revised form 17 October 2021 Accepted 21 October 2021 Available online 28 February 2024	Malaysian visual arts have experienced significant growth and transformation in recent years. This reflects the current development of artists experimenting with new forms and media to convey their ideas and attract the audience's interest. This article explores the role of computer technology as an expanded form of media in the context of Malaysian visual arts. This article looks at how Malaysian artists incorporate computer technology at the work by using technology and net available.
<i>Keywords:</i> Digital Technology; Computer Technology; Expanded Media Digital Technology; Computer Technology; Expanded Media	technology in producing their work by using technology and not expanding the boundaries of traditional media use. This article will explain how artists use computer technology as an expanded media in changing and providing a different perspective in the context of visual art in Malaysia rather than directly giving the identity of the expanded media in Malaysia. This paper aims to provide a deeper understanding of the role of computer technology in the context of Malaysian visual art and shape the future of visual arts in Malaysia.

1. Introduction

As technology continues to advance, it becomes an essential medium in the creation of visual artworks. Computer technology has revolutionized the use of mediums in expressing their views through works of art. At the same time, the use of computer technology as an expanded media makes it possible to produce new, contemporary works of art in line with the development of technology [1]. As an example, the incorporation of augmented reality has a substantial impact on the development of works of art in the context of new media [2,3].

The use of computers in the visual arts began in the 1960s with the development of computer graphics. The first computer-generated artwork was created by Kenneth Knowlton in 1963, using a plotter to create drawings. The result of computer technology in the 1970s has led to the emergence of digital art. Among the pioneers of digital art are artists such as Vera Molnar and Frieder Nake. Their work inspires a new generation of artists to explore the potential of computer technology in the visual arts.

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Computer technology has played an essential role in the development of expanded media to produce works of art. With the development of current technology, such as digital video, animation, and interactive multimedia, artists can now use the latest technology to create complex and dynamic works of art [2]. Among them are Adobe After Effects, Max / MSP, and Unity software programs. This program is a trendy medium for artists of the current generation to create works of art by combining video, animation, sound, and interactivity in their works of art.

2. Expanded Media

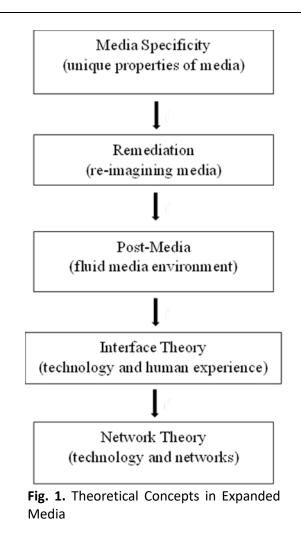
Contemporary artists use computer technology as a form of new media to produce visual artworks. The development and emergence of digital technology is an advantage in exploring and designing expression through works of art because of the emergence and speed of computer-digital technology that did not happen in the past [5,6]. In this context, computer technology can be seen as an extension of traditional art-making materials and techniques to expand the possibilities of that art.

Expanded media involves time elements and has become an increasingly important visual art component in the digital era. With the development of computer technology and multimedia software, artists can now create complex, dynamic, and interactive works of art that involve the audience in new and exciting ways [7]. Expanded media is a term that has different meanings depending on the context. Expanded media, such as television, radio, and newspapers, refers to any form of communication beyond traditional or conventional mass media methods [8,9]. Expanded visual media refers to works of art that go beyond traditional two-dimensional methods, such as painting, instead of combining elements of technology, art, and interactivity [10].

In visual arts, expanded media can mean using photography, audio recording, video, film, digital technology, or other forms of expression to create works of art that are different from previous artists' reasonable practices [11]. It also means exploring new forms and techniques that open any possibility of creative methods by using all available media [5]. Expanded media sources has developed in the practical practice of contemporary Malaysian art since the modern era in the early 1900s and has evolved with various styles and approaches used by different artists [12,13].

3. Theoretical Concepts

Expanded media theory is an expanded field of study that explores the relationship between technology, media, and art. Here are some of the main theoretical concepts in expanded media, as shown in Figure 1 below:



Media Specificity

This concept holds that different forms of media have unique properties and characteristics that should be considered when creating or analyzing a work of art. Media specificity theorists argue that understanding the properties of a particular medium is essential to creating practical art in that medium [14,15].

The idea of media specificity in Malaysia can be seen in the many different forms of art that have developed over time due to different cultural and religious backgrounds. Whether it is traditional batik paintings, calligraphy or modern digital art, each medium has its own unique characteristics that artists consider when making their work [16]. For instance, the intricacy of the batik pattern or the exactness of the calligraphy shows an appreciation for the specific characteristics of each medium.

Remediation

This concept explores how new media technologies "fix" or reimagine earlier media forms, for example, how a film adaptation of a novel reimagines the story in a new medium. Restoration theorists argue that each new medium is influenced by and builds on previous media, creating a complex web of interrelated media forms [17].

Malaysian art history is steeped in the idea of remediation, as it has witnessed the transformation of pre-existing art forms into modern forms. For example, the incorporation of pre-existing motifs

into contemporary digital art or the reimagining of pre-existing cave paintings through modern media illustrate how Malaysian artists interpret pre-existing forms in a modern context [18].

Post-Media

This concept suggests we are moving beyond focusing on specific media forms (such as paintings or films) and towards a more fluid and integrated media environment. Post-media theorists argue that technology has created a situation in which different forms of media are constantly being reconfigured and combined, and this requires new ways of thinking about art and media [19,20].

Post-media is a concept that resonates strongly with Malaysia's art scene. Malaysia's contemporary art scene has adopted a post-media approach, embracing a variety of media, including traditional and digital. In addition, Malaysian artists often go beyond traditional media to produce hybrid artworks, which combine cultural influences with modern technology. The fluidity of the medium reflects post-media, which emphasizes the integration of different forms of art [21].

Interface Theory

This concept explores the ways that technology interfaces with the human experience. Interface theorists argue that how we interact with technology shapes our perceptions of the world and our relationships with others [22,23].

As computer technology becomes more and more prevalent in Malaysia's art scene, the relationship between technology and art becomes more and more important. For example, in the Malaysia context of the below-mentioned artists, the use of software and programming languages, as well as various computer systems, has had a significant impact on the ways in which artists interact with technology [24]. For example, the following artists mentioned in the above context, are known to have interacted with computer technology using software in their creative process.

Network Theory

This concept explores how technology has created new forms of social and cultural networks. Network theorists argue that the internet and other forms of technology have fundamentally changed how we communicate and interact, which has important implications for art and culture [25,27].

Technology has changed the way we communicate and interact with each other in a big way in Malaysia. It is also changed the way we create networks within the art community. Thanks to the internet and digital media, artists can connect, work together, and share their art around the world. This is in line with network theory, which focuses on how communication and interactions change in the digital world [28].

In conclusion, Malaysia's vibrant visual arts scene demonstrates the significance of these theories in the context of its unique cultural and historical background. The combination of traditionalism and modernity, as well as the integration of technology, has resulted in the development of a diverse and dynamic art scene, where theoretical concepts are applied in practice [29].

4. Malaysia Context

Malaysia's visual arts are rich in history and have been shaped by various cultural and political influences. The art history of Malaysia can be seen from ancient times with cave paintings and other

prehistoric art forms, providing some of the earliest evidence of artistic expression in the region [30]. Over time, various cultural and religious influences, such as Hinduism, Buddhism, and Islam, have developed a unique artistic tradition in Malaysia.

In the modern era, Malaysian art has been formed by various social and political factors, including the country's struggle for independence, the rise of multiculturalism, and the challenges of globalization. During the 1960s and 70s, a group of artists known as "Modernists" emerged, who sought to break free from the conventions of traditional art and embrace new forms of expression [30,31]. This period saw the rise of abstraction, experimental painting forms, and the incorporation of new materials and media into art. Computer technology has become an important medium in the Malaysian art scene in recent decades. Artists use the development of computer technology to produce complex and dynamic artworks that transcend the boundaries of traditional media [32]. This development can be seen through some of the earliest artists in Malaysia who used computer technology to produce artwork, namely Kamarudzaman Md Isa and Ismail Zain [8,33].

Kamarudzaman Md Isa is an artist who has been working with computer technology since 1983 until the 2000s. He started with programming systems and turned to DOS prompt until 1987. After 1997, he changed his computer system into MS window. He experimented with programming language to create his self-portrait, but in 1984 he manipulated Basica and GW basic programming language until 1987 where Duluxe Paint offered him more possibilities in his painting. Since 1997, he explored Adobe software, Fractal Painter, Micromedia Director as well as 3DSMax. He used various computers such as Apple IIe, Commodore, IBM PC, Commodore Amiga 1000, and finally used a PC computer with higher RAM, processor, and higher colour display monitor with far better sound quality [33,34].

While Ismail Zain was also an early pioneer of digital art in Malaysia and is known for some of the earliest digital works produced, he used a Macintosh computer to create digital collage works in the 1980s, and his work has been exhibited both locally and abroad [35,36]. He is known and renowned as a Malaysian artist for his contribution to developing contemporary art in Malaysia in the context of expanded media. He is a pioneer of digital art in Malaysia and is praised for using current computer technology to explore the medium's possibilities and its potential to create contemporary artworks.

5. Contemporary Context- The Digital Technology Era

Many contemporary artists in Malaysia are currently using computer technology as a medium in their works. Here are a few examples:

- (i) Baharuddin Arus is a Malaysian artist known for his contribution to the contemporary art world. She is recognized for her experimental and innovative approach. Some of his famous kinetic artworks titled "The Medium is the Message (After Marshall McLuhan)" (1989) combine various forms of movement, from continuous and rhythmic to spontaneous or interrupted. These works of art are dynamic that combine movement, technology, and audience participation, emphasizing the transformative power of media and the role of the individual in influencing its effects [8,37].
- (ii) Bahaman Hashim is a Malaysian artist who is known for his work in the field of fine arts, especially paintings and prints. He has been active in the art world since the 1980s and has participated in various art exhibitions both inside and outside Malaysia. He uses a variety of techniques and mediums in his work, including oil painting, acrylic, and mixed media. in Bahaman Hashim's work entitled Virtual Reality (1993). He uses Adobe Photoshop software on a Macintosh platform to process the works which are then presented in the form of screen silk prints. This artwork intriguingly invites viewers to explore shifts in perception

and representation, traversing from the Renaissance era, symbolized by Durer's line, to the realm of the Macintosh computer platform [8,9].

- (iii) Hasnul Jamal Saidon is one of the pioneers of new media art in Malaysia. He uses digital technology, video, sound, and installation to create works of art that explore cultural identity, social issues and he has been recognized as one of Malaysia's leading new media artists. One of his works is "Kdek-Kdek Ong!" (1994). His exploration of themes related to technology and culture can be seen in this mixed-media and computer-animated video artwork [8,38].
- (iv) Wong Hoy Cheong is a new media artist who uses photography, video, and installation to create artwork that questions the notions of history, identity, and power. One of his works is Re: Looking (2002-2003), is a multimedia project that incorporates photography, text, and digital technology. The artwork explores the representation of history and the construction of narratives within a specific cultural context. It examines the dynamics of power, memory, and identity through a critical re-examination of historical events and their visual representations [9,39].
- (v) Yee I-Lann is a new media artist, primarily engages with photomedia and combines both traditional and new technology methods, including photography, installation, and video. Her work seeks connections between landscape, perception, and cultural identity. One of her works is Sulu Stories (2005), a series of photographs depicting the historical and contemporary connections between Sabah and Sulu [8,40].
- (vi) Sharon Chin is a multi-disciplinary artist who often incorporates technology. She is a Malaysian artist who works across various media such as performance, installation, sculpture, drawings, and text. Some of her notable works include "Making Night" (2006). This video artwork made with a nail, a shoebox, and a mobile phone, and shows constellations of the night sky in Kuala Lumpur on the first night of Ramadan in 2006 [9,39].
- (vii) Niranjan Rajah is a new media artist who uses digital imaging, video, and installation to create works of art that explore the intersections of culture, technology, and spirituality. One of his works is Video Reflux (2007). This video and animation installation, Niranjan Rajah addresses the decline of the power of video in the face of the sharing, recycling, appropriating, and annotating of content over the Internet [8].
- (viii) Liew Kungyu is another new media artist who uses photography, video, and installation to create works of art that reflect his personal experiences and observations. One of his works is "Cermelang, Gemilang, Terbilang" (Excellence, Glory, Distinction) is a Photoshop montage of various Malaysian icons, such as the Petronas Towers and the first Malaysian. This artwork was displayed at the Singapore Biennale in 2008 [8,41].

Starting from the late 70s, some artists in Malaysia experimented and interacted with expanded media with the development of computer technology, as shown by the examples given above [34]. Fairuz Sulaiman is an example of an artist who uses the latest technology in the production of artwork. Fairuz Sulaiman produced a hybrid media artwork in his work titled "Salam 1 Jepun: A Cross-Cultural Response" influenced by the title of P.Ramlee's film "Laksamana Do Re Mi" and combined with the Japanese popular culture icon 'Pikachu'. Idea in this artwork is to convey surrealistic humor between the two countries of Malaysia and Japan. The media he uses is a combination of analog and figures that can be seen in puppets, color tracking and video projectors to create digital effects. This artwork is a hybrid presentation in which digital media helps self-made puppets. At the same time, hybridity reflects the interaction, history, cross-discipline, and mixed media practiced in artworks [42].

Another example is Muhammad Colmann Abdullah with his artwork titled "Bukan Pertarungan Kita" in the form of interactive 3D comics. This artwork is about the two main characters who want to destroy the earth. This interactive game-like piece requires the audience's participation by moving their fingers to remove the comics and look in depth for other scenes. he has used sensors, television, central processing unit (CPU) and programming. Through this work, the audience can experience the space and then describe their emotions while interacting with the artwork. Its appeal lies in observing the audience's reactions and capturing their responses [42].

6. Conclusion

Computer technology has expanded the field of possibilities for the country's visual arts, allowing artists to create creative and innovative artworks. The exploration of computer technology during the past decade was impossible. Although there are some challenges and limitations to using computer technology in the visual arts, the advantages and potentials far outweigh the disadvantages. We expect to see even more exciting developments in computer-digital art as technology advances. Expanded Media has become an essential visual art component in the digital age. The artistic medium centered on computer technology cannot be expected due to the ability to create more complex and dynamic works of art. Computer technology, as an expanded media within the framework of visual art, can reject the conventional limitations of visual art. Something interesting to note is how artists continue to explore and develop the potential of the medium based on time-based media as a medium for producing works of art. The exploration of the potential of computer technology as expanded media can be based on the five components of theoretical concepts of expanded media which span Media Specificity, Remediation, Post-Media, Interface Theory, and Network Theory. Malaysia's art world has a rich and varied history shaped by various cultural and political factors. With the advancement of computer technology, artists in Malaysia now accept new forms of media based on expanded technology in producing artworks and further explore new forms of expression beyond conventional media.

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