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IDENTIFYING INTERACTIVE TOYS' KEY CHARACTERISTICS FOR INTELLECTUAL DISABILITIES CHILDREN IN SPECIAL SCHOOL

Christina Flora

Received September. 30, 2024; Revised October. 28, 2024; Accepted November. 14, 2024.

Abstract: The rising prevalence of intellectual disabilities in Indonesia, notably in Jakarta, raises pressing concerns. Many affected individuals, particularly children, face social challenges that need to be addressed and implemented in education, thus the role of Special Schools, which unfortunately often rely on teaching methods that are deemed unsuitable for intellectually disabled children. Therefore, it is imperative to design a media that is suitable for teaching social relations in Special Schools. The use of interactive toys in play activities has proven to be beneficial in education, due to their contribution to children's emotional and cognitive development. This research aims to identify toy characteristics that enhance learning for elementary students with intellectual disabilities, providing recommendations for developing interactive educational tools for teachers. The methods used in this research will be observation and literature studies. Findings show that it is important to consider the use of color, materials, as well as several engagement aspects in designing interactive toys for Special Schools' elementary students.

Keywords: interactive; toys; intellectual disabilities; game lenses; special school

Introduction

The Ministry of Health states that the number of people with intellectual disabilities in Indonesia tends to increase every year with a prevalence of 1 in 5 people, where the highest percentage is found in the DKI Jakarta province, namely 24.3% of the total population in Indonesia (Widowati, 2023) with 3.3%, specifically 2.197.833, are children aged 5 to 19 years old (Fitri Syarifah, 2023). Until now, people with intellectual disabilities have been excluded from both their lifestyle and social status, with the problems they face becoming increasingly complex (Widyaiswara et al., 2018), due to mental, emotional, and behavioral deficiencies

or limitations (Lestari et al., 2021), characterized by difficulty with adaptive behavior, slower learning rate, irregular learning patterns, and struggling in understanding abstract concepts (Ni'matuzahroh et al., 2024). Children with disabilities find it challenging to reciprocate social interactions, identified by less eye contact, minor facial expressions, and awkward body language, making it difficult to initiate a conversation and communicate their minds (Jacob et al., 2022) (Hodges et al., 2020). Many cases have shown that nearly half of the children with intellectual disabilities were found to have run away at least once which potentially leads to elopement risk, due to their social skills shortfall to check in on their

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parents and have communication and social bonding that most kids have (Anderson et al., 2012) (Hotez & Onaiwu, 2023), as social relations skills are strongly associated with self-awareness, the ability to identify themselves and their close surroundings, as well as interact with them, thus making it an integral part of their viability.

Nevertheless, these shortfalls can still be overcome with proper education and training (Lubis et al., 2023). Applying proper education for intellectually disabled children is not only focused on education at home but also needs to be emphasized in the school education system, which in Indonesia, can be addressed in Special Schools (Sekolah Luar Biasa). Special Schools play a major role in directing education for children with special needs, including developing attitudes, personality, intellectual, and physical abilities to achieve their optimal potential. It was recorded that in 2019, there were 38.545 children with intellectual disabilities registered at Special Schools (Lestari et al., 2021). However, according to field observations and past studies (Maryanti et al., 2021)(Istiyati et al., 2023), many Special Schools provide learning media that relies heavily on rigid textbooks and exam sheets which have unrepresentable visual aids, limiting experiential as well as practical learning, and are deficient in interactive aspects, making them less motivating, inflexible, and difficult to understand for students, causing hindrances in learning performance and dependencies. Not to mention other barriers such as teachers' insufficient ability in facing children with intellectual disabilities and substandard infrastructural support. It is advised that schools and teachers customize the study material to the needs and conditions of disabled students due to their abilities and potential differences (Maryanti et al., 2021).

Preceding studies have proved that

playing therapy, as one of the intervention techniques that is suitable for intellectually disabled children (Lubis et al., 2023), fundamentally accommodates a child's growth, especially in emotional, social, and cognitive aspects (Johry & Poovaiah, 2019) (Hashmi et al., 2022) (Yogman et al., 2018). This type of intervention is carried out using various game tools accordingly to engage with their emotional aspects (Lubis et al., 2023), using toys for instance, where children interact, manipulate, and explore the toy's properties (Yogman et al., 2018).

The use of toys in the educational system to improve children's cognitive abilities is also supported by Bloom's theory which stresses the importance of comprehension, which is a condition where students understand what is being communicated and are able to utilize as well as apply the ideas contained independently. Comprehension success can be measured by how students understand the objectives of a context, as well as students' behavior and responses to information. This requires strength in communication, which can be in verbal and written forms. Basically, communication is carried out to describe, inform, influence, and entertain, yet in certain situations, for communication to be successful, a certain reaction is to be expected. As a result, a particular medium of expression is used to give a 'unique' experience in delivering an idea, a set of operations but an expressive creation, instead of a theoretical framework (Bloom, 1983). This statement shows how a toy in a play activity can be utilized to achieve a learning objective aside from using a conventional teacher-centered approach or textbook learning methods which are no longer considered effective, especially for students with disabilities.

Experts and previous research indicates that interactive toys have educational utility. It enhances cognitive development by offering a potentially superior or

more productive learning experience due to their interactive nature. However, there is a notable lack of studies on interactive toys focused on children with special educational needs and disabilities (Hall et al., 2022).

Therefore, this research was carried out as a preliminary review to identify the key characteristics of an interactive toy as a learning medium for elementary students with disabilities. The output of this research is in the form of recommendations, which we hope can be applied in developing interactive toys for Special Schools' students that can be used by teachers in teaching social relations.

Methodology

The methods used in this paper are direct observation, derived from the concept of purposive sampling to focus on subjects that fit a specific profile (Campbell et al., 2020), and literature review approaches to strengthen the in-depth knowledge of toy playing led by young children with intellectual disabilities in a Special School. Purposive sampling uses a relatively small sample, therefore this study specified to participate 6 intellectually disabled children, ranging from grade 1 to 3 in a South Jakarta Special School.

The observation protocols were conducted by using free play, where children can participate voluntarily in playing activities with two different types of toys, namely Stacking Toy Train and Go Go Gelato!, as seen here in Fig.1, chosen by considering representative characteristics from Kudrowitz and Wallace toy's classification that motivate enjoyment and process-oriented learning, such as sensory, constructive, fantasy, and challenge (Johry & Poovaiah, 2019) (Kudrowitz & Wallace, 2010).



Figure 1. Stacking Toy Train and Go Go Gelato!
(Source: Personal research documentation)

Expanding from Kudrowitz and Wallace's toy categorization, the research indicators will be formulated using Jesse Schell's Game Lenses, namely the lens of emotion, the lens of fun, the lens of motivation, the lens of curiosity, the lens of time, the lens of challenge, the lens of problem solving, the lens of skill, and the lens of accessibility, to evaluate the children with intellectual disabilities' engagement with the provided toys. The lens of emotion discusses the feelings that the player perceives which is the foundation of memorable experiences, strongly related to the lens of fun that emphasizes not simply pleasure but also the aspect of excitement in a game. The lens of motivation is established from the idea that humans are innate explorers thus having a high sense of curiosity and drive for enrichment and satisfaction. Each person's motivations can diverge therefore it is important to work out the targeted audience's true collective motivation. The lens of curiosity talks about how a game can trigger someone's inquisitiveness, answering the player's questions related to their interests. Determining the length of playing activities is associated with the lens of time, taking into account whether a designated game duration will ensure an overall positive experience to avoid boredom or frustration. The lens of challenge refers to how a game can provide a chance to exercise a player's skills in completing a game, for example by presenting obstacles for players to overcome. The lens of skill discusses considerations related to choosing a suitable combination of skills,

generally divided into physical, mental, and social skills, required in completing levels of challenges in the game. Schell stated that every game is a problem-solving exercise approached playfully, hence the lens of problem solving, used to analyze how a game engages players in tackling problems (Schell, 2014). These lenses exist to keep the player engaged and invested in playing the game, therefore creating a stronger emotional connection and leading to playing retention. The indicators as shown in Table 1 will be measured using Likert scale, ranging from strongly agree to strongly disagree.

Table 1. Game Lenses Research Indicator
(Source: Personal research documentation)

Game Lenses	Indicators
Challenge & Skill	Can students remember the contents of the media?
	Can students read content/media content?
	Can students understand the content of the media?
	Can students actively say the content out loud?
	Can students explain using their own words about the context of the media?
	Can students imitate the instructions/words/sounds they hear?
Challenge, Problem Solving, & Skill	Can students differentiate media content based on color/shape/image?
	Can students arrange media content based on color/shape/image?
	Can students solve problems in the media?
	Can students take the initiative/creatively look for alternatives to solve media?
	Can students think logically about media content?
	Can students complete the activities/objectives from the media?
Challenge, Skill, & Accessibility	Can students interact appropriately with the media?

Fun, Motivation, Curiosity, Time, & Accessibility	Can students focus on the media?
	Do students seem to like/be comfortable with the media?
	Do students feel bored with the media?
	Do students are not attracted to the media?
	Do students squint / frown when looking at the media?
	Do students bring the media close to their eyes?
Emotion	Can students express what they feel about the media?
	Do students are prone to tantrums and do not hesitate to hit, throw or bite the media?
	Do students do something that endangers themselves or others with the media?
	Can students be responsible with the media they own?
Emotion & Time	Can students sit quietly?
	Do students' moods change easily?
Emotion & Skill	Can students focus and concentrate?
Emotion & Motivation	Do students look confident?

Result

Observation is carried out by establishing conditions as follows:

1. In order to see the effectiveness of the characteristics of toys that are suitable for social relations learning media, it is imperative to understand thoroughly the teacher’s role in introducing and coaching students using the media provided, therefore observations will be carried out using a one-on-one system, where one teacher will accompany one student.
2. The teacher will introduce two types of toys to students, namely Stacking Toy Train and Go Go Gelato! Toys will be

given one by one to study the interactions between teachers and students, as well as the students’ responses to the media.

Based on the observations conducted on 6 elementary school students in grades 1 to 3 who have intellectual disabilities, the following results are identified in Table 2.

Table 2. Game Lenses Research Indicator
(Source: Personal research documentation)

Indicators	Result
Can students remember the contents of the media?	3/6 agree 3/6 strongly disagree
Can students read content/media content?	6/6 strongly disagree
Can students understand the content of the media?	3/6 agree 3/6 disagree
Can students actively say the content out loud?	6/6 strongly disagree
Can students explain using their own words about the context of the media?	6/6 strongly disagree
Can students imitate the instructions/words/sounds they hear?	6/6 strongly disagree
Can students differentiate media content based on color/shape/image?	3/6 strongly agree 2/6 agree 1/6 disagree
Can students arrange media content based on color/shape/image?	3/6 strongly agree 2/6 agree 1/6 disagree
Can students solve problems in the media?	3/6 agree 3/6 disagree
Can students take the initiative/creatively look for alternatives to solve media?	6/6 strongly disagree

Can students think logically about media content?	3/6 agree 3/6 disagree
Can students complete the activities/objectives from the media?	3/6 strongly agree 2/6 agree 1/6 disagree
Can students interact appropriately with the media?	3/6 strongly agree 3/6 agree
Can students focus on media?	2/6 strongly agree 3/6 agree 1/6 disagree
Do students seem to like/comfortable with media?	3/6 agree 2/6 neutral 1/6 strongly disagree
Do students feel bored with the media?	1/6 strongly agree 2/6 neutral 3/6 disagree
Do students are not attracted to the media?	6/6 disagree
Do students squint / frown when looking at the media?	2/6 agree 4/6 disagree
Do students bring the media close to their eyes?	6/6 disagree
Can students express what they feel about the media?	2/6 strongly agree 4/6 neutral
Do students are prone to tantrums and do not hesitate to hit, throw or bite the media?	2/6 agree 4/6 strongly disagree
Do students do something that endangers themselves or others with the media?	6/6 strongly disagree
Can students be responsible with the media they own?	4/6 agree 2/6 disagree
Can students sit quietly?	4/6 strongly agree 1/6 agree 1/6 disagree

Do students' moods change easily?	2/6 strongly agree 1/6 neutral 3/6 disagree
Can students focus and concentrate?	4/6 agree 2/6 disagree
Do students look confident?	5/6 agree 1/6 neutral

Discussion

Kudrowitz and Wallace’s toy categorization explained how sensory highlights the use of senses in how a toy feels, sounds, smells, and even tastes, which could also involve textures and material aesthetic elements of the toys, such as sandy, tactile, stretchy, and other types of tactile. Fantasy stresses the idea of pretense, imagination, and role-playing. Toys like tea sets, action figures, dolls, toy cars, and other similar toys, can immerse a child in their own make-up world. The construction type revolved around assembling, making, and creating things, not limited to stacking activities, thus including some degree of creativity, for example beading, doodling, arranging new words, and building blocks. Challenge-based can be a form of play that tests someone’s abilities, mentally or physically. Toys that are challenge-based incorporate strengthening the child’s cognitive ability (mental) like puzzles and riddles, as well as fine and gross motor skills (physical), soccer and juggling for instance (Johry & Poovaiah, 2019). Table 3 provides the Stacking Toy Train and Go Go Gelato! type of play affordance based on Kudrowitz and Wallace toy characteristics.

Table 3. Selected Toys Type of Play
(Source: Personal research documentation)

Toy Name	Type of Play	Description
Stacking Toy Train	Sensory	Colourful wood texture and different

Go Go Gelato!		stacking shape variants.
	Fantasy	Encourage imagination by creating scenarios and envision adventures.
	Constructive	Stacking shape blocks and connecting compartments
	Challenge	Motoric activity by pushing and pulling the train, as well as putting each block by matching its hole with the stick.
	Sensory	Colourful and quishy gelato balls, as well as textured cones.
	Fantasy	Encourage imagination by creating scenarios related to engaging with ice cream.
	Constructive	Stacking the gelato balls and cones.
	Challenge	Motoric and mental, involves stacking the gelato balls and cones according to the randomly picked cards.

These toys are then given to children with the aim of observing the quality or property of the toys that define their pos-

sible uses for intellectually disabled children.

Through observations, it was found that most students, even with varying understanding and duration, had better abilities in identifying colors than shapes. This can be seen from the relatively short duration of the students’ responses from when they heard the instructions until finally selecting and grouping objects based on the types of colors mentioned by the accompanying teacher. Past study explained that in designing for children, designers need to consider the fact that color is a form of visual language. Apart from being able to influence a child’s preferences and interest in an object, color enriches and stimulates their visual vocabulary (referring to the elements, characteristics, or visual features used to identify, describe, and categorize an object), especially those who have limited psychological and cognitive development (Xu et al., 2022). It is also showed that children are more interested in color than the shape of an object and tend to easier recognize and interpret colors. The younger a child is, the brighter and more contrasting their color preferences are. In addition, the research results suggest using complementary color combinations rather than complex color schemes due to their undeveloped cognitive abilities to avoid distraction and visual fatigue (Xu et al., 2022).

Meanwhile, the majority of students seemed to have difficulty when given a game with too many variations in object shapes, Go Go Gelato, which only consists of two object shapes, seemed easier for the students to group compared to Stacking Toy Train, which had more shape variations, so instead arranging trains through shapes, students prefer to stack the object based on its colors. It is also debatable due to the fact that there is a possibility that the shape of Stacking Toy Train is not representable enough as the shape is too basic, contradicting with Go Go Gelato!

which looks exactly like ice cream. This idea is supported by the fact that one of the students tried to eat the toy because they perceived it as food.

Another interesting finding is how the students handle the objects. It can be seen that students often have difficulty matching the holes in objects, often drop or accidentally bump toys, and have the habit of placing objects by pressing them, so it is concluded that students are less able to deal with objects with fragile materials, because they will break quickly, or materials that are too hard, because there is a possibility that they will hurt themselves if not handled appropriately.

The game’s engagement needs to be considered so that students stay focused. Several times students were distracted by sounds from friends around them or other objects. Students can return to focus if they are persuaded by their accompanying teacher through words or physical touch on the hands and forehead which are close to the eye area to divert their gaze from other external interventions. Aside from encouraging physical engagements, the use of sound in toys is recommended as a past study explained the importance of sound in toys to increase attention, curiosity, and interest, thus motivating the children to explore the affordance of the toy (Carlson et al., 2019). This sound should be identifiable, commonly heard, and imitable, applied as an interactive mechanism, activated as a respond to the action given to the toy.

Seeing that learning social relations requires a form of habit formation, Skinner’s theory of operant conditioning is also used to assess the observation results. Operant conditioning introduces the concepts of antecedent (stimulus), behavior (response), and consequence (reinforcement). This theory discusses how a habit is first formed due to external encouragement or stimuli, thus the

term antecedent, which will later be responded to with a certain action by the subject. Different responses will give rise to different consequences, whether in the form of reinforcement, namely a situation where something is added or subtracted to strengthen behavior, or punishment to reduce behavior retention (Skinner, 2013). This concept of behavior formation cannot be separated from the duration of the stimulus-behavior-consequence process (time-variable), the action or response of the individual, the object that influences the action, insight or the takeaway through the repeated behavior, and expression or emotions shown through the individual interactions with the object.

Based on the results of observations, it is known that stimuli mostly start from encouragement and instructions by teachers, which are usually communicated verbally or through physical contact to maintain the child’s focus. Instructions are given in stages and adjusted to each child’s ability to respond. If the student succeeds in carrying out the action according to the instructions, then the teacher will give further directions. The responses shown by each student were different, some were able to immediately understand the instructions, others were able to understand but for a long time, view of them looked hampered, while one student even looked frustrated. For those who successfully follow the instructions, the accompanying teacher will give rewards in the form of applause or praise. This action does make the students look spirited, yet for some reason is not effective in creating behavior retention, so it is concluded that students are still not necessarily able to connect how appropriate responses or actions will have certain impacts or consequences.

Therefore creating a playing mechanism that discusses social relations using interactive toy designs is expected to have an integrative breakthrough, not just through technology convergence, but

a new game mechanism, “a new way to play” or so they said (Hall et al., 2022).

Conclusion

In conclusion, the observations indicate that students show a stronger ability to identify colors than shapes, which highlights a potential area for focused development in utilizing colors. Further research regarding the shape of an object, simplified or detailed and representable, is needed as a consideration in designing toys that put forward social relations themes, which in this case highlights the substance of identifying and likening real-life individuals with its illustrative portrayal. Difficulties in handling objects suggest that students struggle with fragile or hard materials, impacting their learning experiences. Effective engagement strategies, such as sound implementation may be able to redirect students’ attention amidst distractions. Additionally, while teachers’ encouragement and structured instructions facilitate learning, the inconsistent retention of learned behaviors indicates a need for enhanced reinforcement strategies. Ultimately, tailored playing mechanism approaches that consider individual student responses and the dynamics of their interactions with materials will foster more effective learning outcomes in social relations and cognitive skills development.

There is a considerable need for interdisciplinary and collaborative research to investigate the development of interactive toys. The participatory design approach is recommended to deepen understanding related to what the teachers need in teaching social relations to students with intellectual disability. Teachers are suggested to be more adaptable in teaching students with variations of intellectual disabilities, adjusted accordingly to their limitations, needs, and potentials. Con-

ventional instructional learning is deemed to be ineffective, thus this research encourages teachers to be more accustomed to the play-learning method, facilitated by Special Schools.

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EVALUATION OF WEBSITE PROTOTYPE BASED ON BASIC UI/UX PRINCIPLES (CASE STUDY: EIGEN NATUR INDO)

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Abstract: In the digital age, businesses, whether small or large, must adapt to advancements and utilize digital technology, particularly in sales and marketing endeavors for products or services, including websites. The company, PT. Eigen Natur Indo, consistently adapts to technological advancements to enhance its sales and marketing efforts through various channels such as marketplaces, social media, and websites. The website is presently under development as a prototype and will thereafter serve as a platform for customer product transactions (e-commerce) and advertising. However, the end users have not undergone evaluation. Implementing user interface (UI) and user experience principles is essential for developing an optimal website. This research evaluates the prototype of the Eigen Natur Indo website according to the essential criteria of UI and UX. The qualitative research method employs data from observation, interviews, analysis, and user testing activities. Five end users conducted user testing on the website prototype, followed by evaluations and interviews to address the observed interface concerns. Overall, insights have been acquired that can be advised for website development, specifically the necessity for a more efficient user or task flow, distinctive navigation with recognizable shapes and sizes that are consistently positioned, the selection of suitable design elements, and notification features.

Keywords: prototype; website; user interface; user experience; usability testing

Introduction

Every business entity or organization tends to use information technology to enhance the effectiveness and efficiency of its business activities, one of which is in digital technology-based marketing (Johan & Utri, 2023). The term “digital marketing” refers to the use of a variety of information technology tools, including e-commerce websites, search engine optimization (SEO), social media, and others (Assuri, 2022), with the goals of reaching an effective market, establishing customer

communication, and achieving predetermined strategic goals.

This digital marketing activity is conducted by PT. Eigen Natur Indo, a business entity engaged in the production and distribution of herbal medicine, which persistently enhances its sales and marketing efforts using digital platforms, specifically marketplaces, social media, and websites. One of the main digital media used is the website, which, besides being an integral part of the digital marketing and sales strategy, also serves as the main gateway

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for the company’s image, providing added value for its users (Yanto & Rusda, 2022). More than just an information medium, a website reflects the overall identity and reputation of a company (Hatmanti & Irwansyah, 2023). The design must encompass tangible aspects, such as brand visualization seen through colors, typography, and a professional layout, so it can attract attention and build trust. Additionally, the design must optimally address intangible aspects such as ease of navigation, user experience, and information or product search. Thus, the website not only serves as an information hub but also creates a representative and positive experience for visitors while simultaneously strengthening the company’s image in the eyes of the audience (Tjantika et al., 2023). In line with the above explanation, the results of interviews with the graphic designer of PT Eigen Natur Indo also indicated that the website is one of the primary marketing media options, having been developed to the prototype stage (high-fidelity). However, end users have not conducted an evaluation yet. According to multiple prior research, the website evaluation process can improve user experience and maximize user services (Gede et al., 2022).

High-fidelity prototyping involves creating a prototype that is fully detailed and closely resembles the final product. So that users can test the interface interactively, both in terms of function and aesthetics (Widhiyanti & Atmani, 2021), the feedback provided can be more relevant because they see how the interface and functionality actually work.

In addition to representing the company’s image, the main focus of using the website for this company in the future is as a medium for customers to conduct product transactions (e-commerce) as well as a medium for publication and promotion for the company, because the website can be integrated with search engines (SEO) and social media. We hope that trans-

forming the website into a product transaction platform will expand the range of channels available for visitors to easily, comfortably, and efficiently shop for the company’s products.

Developing an online platform, such as a website or application, necessitates a comprehensive understanding of user interface (UI) and user experience (UX). UI describes the visual interface that users face while interacting with a website or application. An effective UI design must have aesthetic features, as these improve user engagement (Hartadi et al., 2020). Meanwhile, user experience (UX) influences the perception and response of users during their use of a product, service, or system (Rizkhullah & Voutama, 2024). Therefore, we cannot solely base the development of a website or application design on visual aspects; instead, we must comprehensively plan the function and usability to meet the users’ goals.

This research uses UI/UX principles to objectively evaluate the prototype of PT. Eigen Natur Indo’s website. The aim of this research is to gain a deep understanding and conclusions about the results of the UI/UX dimensions, which will then provide recommendations for future website development.

Methodology

This research uses qualitative methods. The utilization of qualitative methods in research encompasses, among other aspects, the processes of data collection and analysis, utilizing detailed information gathered from respondents or research subjects. (Abidin et al., 2023).

There are several ways to collect data in qualitative research, namely by directly engaging in the field through observation and detailed interviews with the research subject (Sidabutar, 2023).

Based on these stages, we obtained qualitative data through observation and interviews, then conducted a descriptive analysis. We conducted online observations on the website prototype, bolstered by usability testing activities conducted onsite by five end users, to gather user feedback.

Representative users reflect the general target users for the application product. We ideally limit the number of respondents in usability testing to no more than five people. This is because researchers tend to find more similar problems and fewer new issues (Andika et al., 2023).

Evaluation is a process that encompasses various steps or actions. In the context of assessment, evaluation serves to reveal the quality of the object being assessed (Mayasari et al., 2021). Evaluating the UI/UX of a website is important to ensure that it provides the best experience for its users. An attractive design alone is not enough if users have difficulty navigating or finding the information they need. Evaluation allows us to identify and fix issues like long loading times, confusing navigation, or errors in interactive features. UI/UX evaluation helps create an intuitive and user-friendly interface, allowing visitors to interact with the website without obstacles. Additionally, the evaluation ensures that the design and experience provided meet the needs and expectations of users, thereby increasing their satisfaction.

According to Sausan, (Sausan et al., 2023) user testing (usability testing) is one of several UI/UX evaluation methods commonly used to create the best digital products for users. The method involves asking users to perform specific tasks on a digital product, based on a given scenario. During the process, we can review and document any arising user feedback or issues, turning them into crucial notes. We can then conduct user interviews to un-

derstand their reactions to the interface.

To improve the evaluation process, we conducted a thorough interview with a graphic designer in the organization to obtain validation of important data and an understanding of various issues faced during the website development. After that, we analyzed the collected data to gain insights and in-depth knowledge, which we will then summarize in the analysis conclusion.

Result

An interview with the company’s graphic designer revealed that the stakeholders are interested in developing online sales and promotion activities, including the use of a website. With the aim of facilitating consumers’ product transactions through the website, the company can obtain detailed and factual data from consumers as well as implement potential online advertising strategies. Therefore, we deem the website capable of meeting these objectives. The website design was carried out through the prototype stage (high-fidelity), but the evaluation of the prototype has not yet been conducted, especially with end users through user testing activities (usability testing).

A thorough understanding of basic UI/UX principles is absolutely necessary to design a representative user interface (Huda et al., 2023). Among these fundamental principles is simplicity: this principle serves as the cornerstone, requiring the interface design to be easily comprehensible without overuse of elements that could potentially confuse users. Clarity: This principle holds equal importance, guaranteeing the clear communication of information, thereby fostering efficient and productive interactions. Consistency: This principle ensures a uniform design system and interactions throughout the interface, promoting familiarity and com-

fort among users.

In addition to basic principles, it's crucial to consider important UI elements for optimal user implementation. These elements include attractive visuals, which can create the right context and function, thereby strengthening the brand and capturing users' attention. Effective navigation is crucial for facilitating users' exploration of the website through an intuitive structure; responsiveness is crucial for providing a prompt response to user actions; and finally, user testing is a crucial step to guarantee the optimal functioning of the interface design. Direct testing enables users to pinpoint obstacles that the design team might have missed, enabling them to make improvements prior to the launch.

Producing good UX involves several other aspects, such as aligning product or service features with user needs and goals. This means deeply understanding what users want, the challenges they face, and the solutions they expect from the offered product or service.

In addition to enhancing efficiency, a relevant and useful feature guarantees that users perceive the product as genuinely tailored to their needs. Moreover, ease of use becomes a crucial element that can create a positive first impression. If a website has an intuitive interface, new users will feel comfortable and confident in using it. The next aspect is the effectiveness of the product or service in helping users complete their tasks. Effectiveness here refers to the product's ability to help users achieve their goals in an efficient and unobstructed manner (Wiwesa, 2021).

UI Evaluation

The user interface (UI) refers to how a website or application appears through the use of graphic design layouts that in-

corporate elements like lines, colors, text, images, buttons, and more, all of which have aesthetic components (Jamilah & Padmasari, 2022).

Here are the analysis results of the high-fidelity website prototype's user interface and user experience, which are based on UI and UX fundamentals.

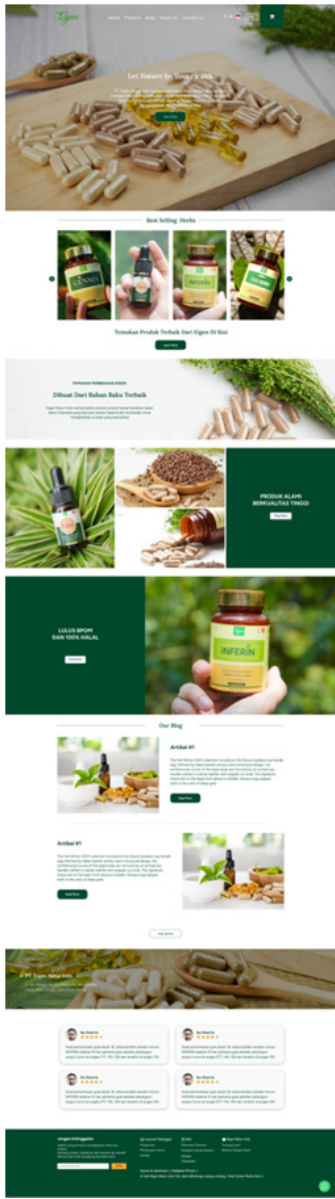


Figure 1. Homepage Display
(Source: Personal Research Documentation)

Simplicity, in general, means that the interface does not use excessive elements and looks proportional. However, it needs to be reevaluated, especially when it comes to using the Serif typeface for lengthy product titles that are formatted as links, especially on the product page where the layout typically consists of 4 to 5 columns. This aims to simplify the product page interface and enhance the readability of titles on each product image.

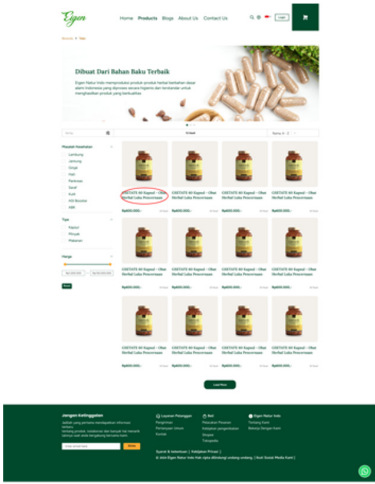


Figure 2. Product Page Display
(Source: Personal Research Documentation)

Clarity: Visitors can easily grasp the essence of the offer due to the well-organized and systematic presentation of information. The primary focus appears to be on selling the product, providing a comprehensive explanation of its advantages and benefits through both attractive supporting images and informative text. The placement of this information shows an effort to help users make quick and informed purchasing decisions. In addition, the website's buttons are easily recognizable due to their use of colors that contrast with the background and their large size, which enables users to easily identify and click on the relevant button. There are still shortcomings in some sections, such as the 'Product Rating' button on the 'My Orders' page. This button appears biased and

lacks clear functionality, both in terms of visuals and placement. This may cause confusion for users who want to leave a review or evaluation of the product they purchased.

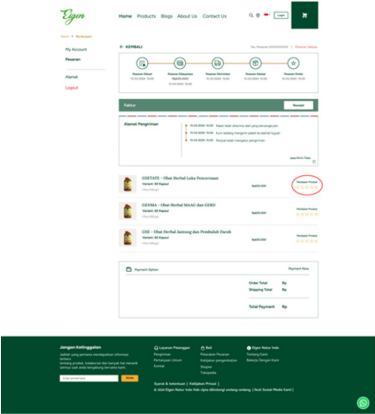


Figure 3. Order Page Display
(Source: Personal Research Documentation)

Consistency and effective navigation: the header and footer contain the same information and navigation on every page of the website. This effectively exemplifies the application of UI principles and elements, and when done correctly, this consistency not only facilitates user navigation but also enhances the website's brand.

Attractive visuals and color elements on the UI that align with the theme and product identity can serve as a strong visual communication tool for the brand's products and services to users. Image elements on the UI in the form of clear photography can help convey the product and service messages visually, especially when text alone is not enough to provide a deep understanding. The typography elements on the UI utilize two types of fonts, namely Sans Serif and Serif, which can create harmony and visual hierarchy, thereby enhancing users' ability to process information more efficiently.

The features offered at the beginning of the website page exemplify responsive-

format. The flow of activities (tasks) refers to the Shopee marketplace application.

- 5. User 5
 - a. Constraints/obstacles

In task 1, the user initially intended to search for a specific product on the homepage (best-selling products), but they were unable to find the intended product, leading them to navigate through the product menu at the top.

In task 3, when the user reached the “My Orders” page, they were unable to find the product rating menu/button.

- b. Development Suggestion

Users, who are accustomed to the general flow of marketplace systems, encounter obstacles with this website prototype, particularly when they attempt to rate a product. Therefore, we recommend triggering a notification to rate the product upon order completion.

Discussion

The PT. Eigen Natur Indo website prototype’s analysis and evaluation of user testing (usability testing) yielded several significant findings that can serve as recommendations for the website’s future development. The observation and analysis process of the high-fidelity website prototype, guided by basic UI/UX principles, concluded that careful consideration should be given to the selection of font type and size. This is crucial for creating a layout that is both simple and easy to read. This is particularly crucial for texts that function as primary and secondary navigation elements, like titles and navigation buttons. A well-chosen font selection can enhance the user experience, facilitating website navigation without causing confusion or difficulty in reading.

Five end users conducted usability testing on the high-fidelity website prototype, identifying several areas requiring improvement. These activities included purchasing a product (task 1), tracking an order (task 2), and providing product ratings (task 3). The workflow of the website should be more systematic; especially after users complete the payment process, they desire easy access to features to track orders and provide ratings for the products they have purchased without having to return to the homepage. Make the website’s workflow more systematic. Users accustomed to large marketplace applications or websites like Shopee or Tokopedia, which offer a more direct and efficient navigation flow, relate to this. Therefore, we need to adjust the navigation flow after payment to better align with user expectations and preferences.

Additionally, we recommend adding a clear and easily recognizable button or menu on the payment page that leads to the homepage. This will make it easier for users to return to the main page after completing the transaction. Similarly, the feature for rating purchased products should have buttons or menus designed with clearer sizes and shapes, making them simple to find and recognize. We also highly recommend adding an additional feature, such as notifications containing reminder messages or instructions to rate the purchased product. Features like this will not only enhance user interaction but also help the company obtain important feedback from customers, which in turn can improve the quality of the products and services provided.

Effective navigation in the digital world has become a significant issue. For example, organizing content on a well-structured web navigation can help users find what they are looking for. Conversely, problems can arise if users struggle to find what they are looking for or understand the purpose of a website

(Nicholas et al., 2023).

Referring to the results of other research, the website development team can provide features such as a simple and easy-to-understand feedback form, which allows users to provide feedback or input after using the website. Users can provide feedback on both the products and services they have received (Nur et al., 2024)

We hope that the conclusions, findings, and insights from this research can serve as a useful reference for future website development. These findings provide an initial overview that can enrich the design and development process of a better website, particularly in enhancing user experience and functionality efficiency. This research provides an important foundation for understanding various technical and aesthetic aspects in designing a website that can meet the needs of its users.

Note that this research is still in its basic evaluation stage, with ample opportunities for further development. In this regard, this research can serve as a foundation for similar studies that delve deeper into the factors influencing the success of a website, ranging from technical aspects and user interaction to its impact on company performance.

Conclusion

In the process of website design, understanding and implementing UI/UX principles are necessary. This is to produce an optimal website, both in terms of appearance (visual) and functionality (usability) as a whole. In this research, we conducted an evaluation of the Eigen Natur Indo website prototype, utilizing the fundamental principles of UI/UX, to gather findings and insights that should accurately reflect end users’ needs for future website development.

The conclusion, based on the analysis

and evaluation activities presented in the previous paragraphs, proposes a development suggestion that comprehensively encompasses the workflow (task), product purchase, order tracking, and product assessment, all of which require a more systematic and universal display pattern. And on the ‘my orders’ page with the status ‘completed’, navigation in the form of a button with a size and shape that is easier for users to recognize is needed, especially on the button that directs users to rate the products they have purchased. Another suggestion is to add a notification feature to the website.

This research is perceived to still have limitations or a lack of diversity in the objects studied, such as the absence of an analysis of basic UI/UX principles on similar e-commerce websites. Additionally, the study lacks visual recommendations from user testing (usability testing). Therefore, we hope that future research will be able to address both of these inputs.

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RIGGING SYSTEM DESIGN FOR THE CHARACTER “GERY” IN A 3D CHARACTER ANIMATION COURSE

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Abstract: A well-planned rigging system design will make it easier for an animator to animate a model. A rigging system is designed to create a controller hierarchy and a joint reinforcement hierarchy to move a model. The rigging system must be created to develop user comfort and to design an efficient system to make it easier for animators to animate the model. This study aims to create an original model named Gery along with a rigging system design that is comfortable and efficient, especially in the design of an innovative facial rigging system. In this study, the author will observe the Stewart model as the foundation for designing the body rigging system and the Mery model as the foundation for designing the facial rigging system. The author applies the leading theory of the rigging system workflow created by Cheryl Briggs as a guideline in the production stage of the work. The author also applies the supporting theory of the body rigging design plan created by Eric Allen & Kelly L. Murdock and the application of the FACS theory reference compiled by Brigita C. Beavis as a guideline in the pre-production stage. The results of this identification will form the basis for designing the Gery model rigging system. This system is efficient and comfortable for learning 3D character animation courses.

Keywords: rigging 3D; body rigging; facial rigging

Introduction

For a 3D animator to be comfortable moving a model, a rigger or rigging artist must speed up the time at the production or animation stage. According to AAA Game Art Studio, a rigger is a job that has a job description to design a movement system through bones and controllers on a 3D character or object so that an animator can move it (AAA Game Art, 2023). In

addition, in her book *Body Rigging, An Essential Introduction to Maya Character Rigging*, Cheryl Briggs emphasizes that rigging is the most basic process before the model is moved, so if the foundation cannot stand firmly, the animation results will not be optimal. Moreover, rigging design must be made as simple as possible so that animators can easily understand the rigging and controller systems that have been designed (Briggs, 2021).

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According to Grant (2024), product manager for animation and rigging at Unreal Engine at Epic Games, he said that a 3D animator is a digital puppeteer, or it can be said that a 3D animator has a job description of only moving a controller on a character according to the principles of animation to bring the character to life through a computer. That is also done by Multimedia Nusantara Polytechnic, where the Digital Animation study program has a course called 3D Character Animation, the purpose of this course is to strengthen students' foundations in understanding how to move the body mechanic model according to the principles of animation, familiarize and understand the controller on the rigging of a model so that students can become reliable animators according to the objectives of the study program.

This research was created based on a case study of students with problems in the course's learning process. Users have constraints on the efficiency and comfort of the rigging system and model controller used during learning. The models used in learning the course are a model named Stewart, a model created by the Animation Mentor team and a model named Mery created by José Manuel García Álvarez and Antonio Francisco Méndez Lora on the Mery Project Free Character for Animator project with evidence of the inefficiency of a learning process. Because the first model does not meet the requirements for one of the learning needs in the course module. The 3D Character Animation 1 course has one of the lessons about facial expression and lipsync, where the first model, Stewart, cannot be used because it does not have a face model topology and face controller system for these learning needs. So when students want to learn facial expressions and lipsync. So, they must use other models, such as the Mery model. This complaint shows that there is a need for

technological development that is interpreted in various methods and produces (Pratama, 2023). The interview audience shows that technology affects both artists' emotions and their works.

The author conducted a case study by distributing the Stewart and Mery model comfort level questionnaire. The questionnaire results stated that in addition to using two models as evidence of the inefficiency of a learning process, the Stewart and Mery models also have problems with their comfort levels, especially in the body rigging and facial rigging systems. Rigger artist needs to study a lot of things. Not only to understand on how to assemble a technical rig in virtual; they must be able to analyze and experiment the rigging system so that the character can be animate perfectly (Arshad* et al., 2019, p. 4138). The following is a description of the case study of the issues in the Stewart and Mery models based on the case study.

Stewart Model Case Study



Figure 1. Stewart Model
Source: Stewart Free Animation Rigs (2014)

Based on the results of the Stewart model comfort level questionnaire data, it can be seen that 20 out of 24 students have several problems with the Stewart model, namely, Inverse Kinematics (IK) & Forward Kinematic (FK) Interface, Pole factor and Facial rigging. The remaining

four students have no problems with the Stewart model. The following is a description of the Stewart model problem analysis:

a. Inverse Kinematics (IK) and Forward Kinematics (FK) Interface

Inverse Kinematics (IK) & Forward Kinematic (FK) Switch is a system in the Stewart model that exchanges the movement support function on a controller located on the hands and feet. Based on the results of the Stewart model comfort level questionnaire data, one of the problems with the Stewart model lies in the naming of the interface or display of the IK & FK switch system found in the controller option, making users confused when looking for the IK & FK switch attribute location.

b. Pole Factor

The Pole factor is a rigging controller that moves the knees and elbows. According to the results of the Stewart model comfort level questionnaire data, the model has one problem: the pole factor controller on the character’s knees and elbows often experiences problems with rotated joints, making the user uncomfortable.

c. Facial Rigging

According to the results of the Stewart model comfort level questionnaire data, it can be seen that the model has one problem, namely the limited expressions that can be used due to limited face topology. Face topology is a mesh creation flow on a model designed according to human facial references. The model does not have a face topology flow, which makes it unable to be moved or used when the user wants to learn to animate an expression.

Mery Model Case Study



Figure 2. Mery Model
Source : Mery Project Free Character for Animator
(2016)

Based on the results of the Mery model comfort level questionnaire data, 20 out of 24 students have several problems with the Mery model, namely naming face controller, limit information, lip sync system, and IK Problems. Only 1 student does not have a problem with the Mery model. The following is a description of the Mery model problem analysis.

a. Naming face controller

According to the results of the Mery model comfort level questionnaire data, the model has a problem with the naming of the face controller located on the face control panel. This naming problem makes users uncomfortable when they want to find a parameter that they want to move. This is inefficient because it makes users lose time when looking for parameters.

b. Limit Information

Based on the Mery model comfort level questionnaire, the face system rigging, particularly the limit information section, has issues. This section, meant to keep character movement within limits, is missing in the Mery system.

c. Lypsync System

According to the results of the Mery model comfort level questionnaire data, it can be seen that the model does not yet have a lipsync system that requires users

to move the lip model topology one by one to have a lip pose according to the reference, this is time-consuming and inefficient compared to having a lipsync system that has been provided.

d. IK Problem

According to the results of the Mery model comfort level questionnaire data, the model has a problem with the IK controller for the feet and hands. Mery mode also has a problem with the model’s elbow being left behind when using the IK system movement feature. This can happen when a rigger incorrectly connects or ignores the constraint hierarchy of a controller, causing the elbow and knee controllers to be left behind when moving the IK controller.

Based on the case study, this research aims to create a comfortable rigging system for students by developing original characters and improving on the Stewart and Mery models. The focus is on addressing previous design issues to enhance the learning experience. Additionally, a character named Gary was developed as the study’s object. This aims to increase the originality of the author’s work besides being an initial effort to create branding. This is because one of the efforts to introduce this brand to the public is to create a visual identity (Rahmadini, 2023), so that the author also makes his own character without using other people’s character models.

This research also creates various questions that are answered through this research:

1. How to design an efficient and comfortable rigging system for Animation students in 3D Character Animation courses?

Methodology

This research was conducted using in-depth interview method, combined with practice-based research obtained. Because the output of this research is useful for animation students, the researcher conducted a survey and interview with animation students in the scope of animation lectures at the Multimedia Nusantara Polytechnic. The researcher’s hope from the character “Gery” is used for internal students, which later from further research if there is further data and can be developed outside the campus, the researcher plans to open this character for animation class learning media in the future.

Technically, The rigging theory in this study is divided into two major stages, namely body rigging and facial rigging. For the execution stages of body rigging and facial rigging are based on the theory from the book entitled “An Essential Introduction to Maya Character Rigging” by Cheryl Briggs as the application of the leading theory in the design process (Briggs, 2021). The author uses two theories when designing a rigging system at the foundation stage of body and facial rigging. At the foundation stage of body rigging, the author uses the theory from the book “Body language: Advanced 3D Character Rigging by Allen & Murdock” (Allen & Murdock, 2008). At the foundation stage of facial rigging, the author uses the research theory from the scientific work of facial rigging design by Brigita Cindy Beavis (Beavis, 2023).

1. Body Rigging.

According to Briggs (2021), body rigging involves designing a joint system and controllers for a model’s body parts, enabling animators to move the model

easily. Briggs outlines three key stages in rigging: skeleton setup, control rig setup, and skinning character, which form the foundation of the research design.

A. Skeleton Setup

According to Briggs (2021), creating a strong and accurate foundation for making a rigging system and character controller will depend on the frame structure or skeleton setup that is placed and built correctly.

B. Control Rig Setup

A rigging controller is an invisible object to the camera with the function of moving bones or joints that have been arranged according to the model’s shape. The controller helps the animator move joints indirectly and set a character’s initial position more easily. Briggs said that if the skeleton setup stage is complete, the next stage is to pay attention to the controller rigging. Control rig setup is one of the crucial stages in the rigging system that connects joints to the controller, designs a comfortable controller, thinks about the hierarchy between controllers, and so on.

c. Skinning Character

The last crucial stage is skinning the character. Briggs said, this stage is crucial for connecting the bone design to the model’s mesh and requires an understanding of weight painting, where the rigger assigns weights to the 3D model’s parts to align character movements with the animator’s expectations.

Rigging is the bridge between the initial modelling phase and the subsequent animation process, bringing characters and objects to life by allowing animators to manipulate 3D movements and expressions with precision (Dupré, 2023). According to Allen & Mudrock (2008), when we want to design a rigging for a character,

we have to think about three things as the primary foundation, namely how to plan the creation of a rigging system (planning your rig), How to create a character that suits the rigger’s needs (creating a character) and finding out what the animator needs in the rigging system (finding what animators need). One of the exciting things is about planning your rig process.

When the model and the animator’s needs are available, the next stage is to start making a rigging design plan based on data that has been obtained from a model that already has a topology that suits the rigger’s needs and the animator’s needs data. The rigging planning stage can be made from the joint placement plan on the character (Planning joints), the controller design plan (Planning Controller) and the attribute plan (Planning Attribute).

2. Facial Rigging

According to Briggs (2021), Facial rigging involves designing a joint system and controllers that mimic the facial muscles of living creatures, allowing animators to easily move a character’s face in an animated scene. Briggs divides several workflow sequences or workflows that discuss facial rigging in detail, as in Figure 3.

According to Briggs (2021), to make facial rigging, two techniques can be used, namely joints and blend shape. This is also supported by the statement from Allen and Murdock (2008) that facial rigging design is divided into two types of techniques: joint-based rig and morphs/blend shapes, where the joint-based rig is a framework that prioritizes the joints system to move geometry. At the same time, morphs/blendshapes is a technique for creating movement gallery assets based on the Facial Action Coding System

(FACS). Briggs divides three major stages in designing a facial rigging system: the blendshape system, face system and face controller.



Figure 3. Facial Rigging Workflow Stages
Source : Briggs, Cheryl (2021)

Meanwhile, According to Beavis (2023), she used the Facial Action Coding System (FACS) developed by Ekman, Friesen, and Hager (2002) as the foundation for creating facial rigging. FACS is a comprehensive system used to measure all observable movements on the human face. FACS uses a series of codes called Action Units (AU) to mark specific movements on the human face (Ekman & Rosenberg, 2005). According to Beavis (2023), The combination of these Action Units reflects facial expressions linked to specific emotions.

3. Creation Method

The author created an original 3D character rig named Gery, inspired by the Stewart body rigging system and the Mery

facial rigging system. The Gery rigging system is developed by applying primary and supporting theoretical foundations to the design and execution stages. For the character itself, it was inspired by the author’s brother when she was 10 years old. The style used is similar to Mary, but the researcher wanted to make it simpler and easier to understand. All types of modeling in Gery’s design affect the mood and style of the characteristics and functions because, in addition to differentiating it from Stewart and Mary, it will also create different demeanours and characters and also have values and feelings for the audience (Arby & Widiastomo, 2024).

The Gery model has a main focus on the superior facial rigging design system that is more comfortable and efficient, especially with the lipsync system feature which is one of the mainstay features to make it easier for users when animating speaking scenes in an animation. The Gery model includes labeled controls for each facial muscle movement, enhancing user comfort in operating the rigging system. Additionally, it features a limited information system on each controller to prevent movements that could cause model penetration or overlap, addressing issues found in older models.

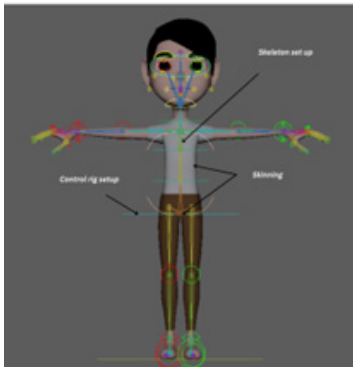


Figure 4. Gery and His Rigging
Source : Author’s Documentation (2024)

The Gery model includes an additional face-mounted controller for movement, providing an alternative to animating the face via a control panel. This design aims to enhance user comfort with the facial rigging system. The model's creation emphasizes comfort and is grounded in theoretical design principles. In terms of shape, the Gery model is designed with an anatomical body shape according to the Stewart model and a facial rigging system that matches the facial anatomy of the Mery model but is updated according to the needs and comfort of the user, because each arrangement and placement of the controller will adjust to the needs of the artist (Satriawan & Apriyani, 2016).

4. Production Work Stage

a. Pre-Production Stage

The pre-production stage in Gery's rigging model design has five stages before designing; namely, the first stage is the stage of establishing an idea or concept. The second stage is observing previous models so the author can design accurately based on data and updated references from previously used models. The third stage is a literature study where the author applies the theory that has been collected. The fourth stage is the form experiment; at this stage, the author provides an innovation plan for an efficient facial rigging system experiment. The fifth stage is the exploration of form and technique, at this stage the author focuses on exploring the lipsync system as a facial rigging system plan that will be the main advantage of the Gery model. In addition, Gery is considered necessary in animating characters with art and emotion from the animation storyline later (Aprianto et al., 2023).

The idea or idea for creating the Gery model rigging system is based on the re-

sults of a case study of the Stewart and Mery model rigging problem which became the author's basis in designing to provide a solution to an existing problem. The researcher seeks references for body and facial rigging systems in their design work. To achieve this, they observe the Stewart model for body rigging and Mery's body for facial rigging, both used in a 3D character animation course.

Implementing rigging for both body and facial also looks at observation and evaluation first. This is important, especially since it allows riggers and animators to identify and correct errors or deficiencies in the rigging process, speeding up production time (Abdillah, 2021). To speed up rigging production, it is crucial to minimize the time spent finding and fixing mistakes. The process involves observation evaluation, where body rigging data is collected from Stewart's model observations. Briggs' theory (2021) guides the rigging design, focusing on key stages such as skeleton setup, control rig setup, and skinning. Allen & Mudrock's theory (2008) is used to understand animator needs, create characters, and plan rigs before production begins. This approach ensures the design system is effective and meets user requirements.

The application of facial rigging theory is divided into three stages, namely observation evaluation, application of main theory, and application of supporting theory. Observation evaluation is the stage where the author collects facial rigging data from observations of the Mery model as the basis for the form and creation system. Using the main theory in body rigging design, the author uses Briggs' theory (2021) as the basis for production. This theory is relevant to the significant flow process of design production, namely blend shape, face system setup, and face controller. In the application of

supporting theories, the author uses references to Beavis' scientific work (2023) as the foundation stage of design, namely the application of the Facial Action Coding System (FACS) before entering the production stage.

Researchers also conduct experiments and explorations before starting production, both in terms of body mechanics and facial expressions, that can be checked and studied. This kind of foundation is considered quite important in starting rigging production because researchers see the need to interpret the visible and more impactful result to touch the heart of the audience with the great system and arts (Pratama & Rosita, 2023, p. 14).

b. Body Rigging Production

The production process of body rigging is divided into two main stages: the foundation stage and the execution stage. The process is informed by theories from literature and user research. The author first studied user needs before starting character production, ensuring that the character design aligns with audience preferences. For the Gery character, the modeling process adhered to these preferences, incorporating a well-designed face topology, joint topology, and five fingers. However, the Stewart character lacks these features.

The researcher used the Mery character as a reference for the facial rigging stage. As for the joints themselves, the researcher designed the thigh, elbow, shoulder, and neck joints with more polygons than other parts to facilitate the joint process and joint movement. The same thing also applies to the production of the finger parts.

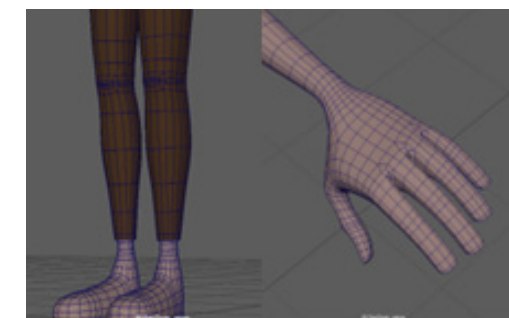


Figure 5. Topology of The Knee and Toes
Source : Author's Documentation (2024)

The researcher mapped the rigging for the character, focusing on the joint hierarchy and necessary controllers, particularly for the arms and legs, which are crucial for movement. They also designed a controller type that fits the body rigging system and will be finalized during execution. Additionally, they created an attribute system to assist users in animating the controller, which is divided into hand and foot parts.

The execution begins with the skeleton setup process by setting the join and designing the body rigging system. The analysis is based on the previous foundation stage. Such as Body Hierarchy Join, Base Left Arm Hierarchy Joint, Base Left Leg Hierarchy Joint, and up to the mirroring stage after all models are completed so that we do not produce twice, so the system on the left will be duplicated for the right body. Then, the process is to perform the Reorientation Joint Axis, install Inverse Kinematic (IK) and Forward Kinematic (FK) Joints and start the Constraint Parent process. The Constraint Parent is an important step that connects systems such as joints and controllers by bringing all values to objects such as translate, scale and rotates. However, here the researcher tries to work effectively by only bringing the rotation value for the needs of the arms and legs, called

Constraint Orient. The flow can be seen in the following image.

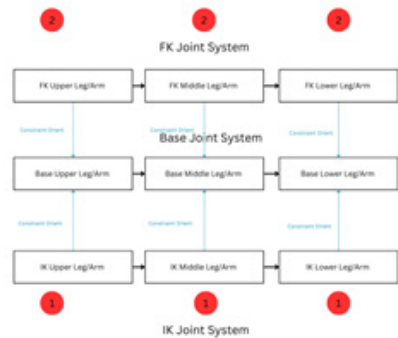


Figure 6. Constraint Orient IK & FK To Base Joint Workflow
Source : Author's Documentation (2024)

The researcher developed a Controller Setup model by arranging the controller based on Hierarchy Points. This approach was inspired by Stewart's character from the foundation stage. Then, the researcher also created a controller for the IK and FK systems where each controller represents a system that the controller parents. Then, the value is set via attribute using the node editor. Then, in the final stage, the researcher does a controller-to-join constraint to connect the controller that has been placed according to the join to each join using the parent constraint earlier.

At the end of production, the researcher performed a skinning setup to connect the model to its joints, allowing it to move using the rigging controller. This involved applying weight painting to ensure natural movement during animation. The process was complex and required trial and error, as improper weight assignments could lead to unnatural movements. Adjustments were necessary to achieve realistic results.

c. Facial Rigging Production

The production process of facial rig-

ging follows the main and supporting theories stated in the literature study. The process is divided into two major stages, namely the foundation stage and the execution stage.

In the foundation stage, the author describes three parts in designing the foundation of facial rigging, namely the description of the results of the FACS analysis between Beavis' work and Gery's model, then using and describing AU with a comparison between Beavis' work model and Gery's model and combining AU to produce an expression foundation. So this stage is divided into three: facial action coding system, action units, facial movement, and expression.

Facial muscles are complicated, especially regarding natural and realistic facial expressions. Of all the muscles in the human head structure, there are eleven types of muscles that produce facial expressions (Faigin, 2008, p. 63). The researcher uses the FACS system to design and map a character's facial expressions and movements through action units. Once mapping is done, they proceed to the facial movement and expression stage, creating expressions that will be used on the expression control panel for the Gery character.

Facial expressions play an important role because almost all aspects of interaction and communication are done face-to-face (Yan et al., 2013). At this stage, in addition to using the foundation stage, the author also uses the main theory from Briggs. According to Briggs (2021), to making a body rigging system is divided into three significant stages in the process: blendshapes, face system, and face controller.

Gery's blendshape model has five asset galleries with a total of 23 blendshapes. The blendshape design includes various

facial expressions and movements: eyebrow up, eyebrow down, eye close, lower eye up, cheek up, open jaw, lips up, lips down, mouth blow, mouth deflated, nose up, and nose down. It also features a lipsync system blendshape and an expression blendshape. The design process involves adjusting the model's side movements using a shape editor's flip target parameter to ensure symmetry by mirroring the right side's vertex displacement to the left side.

Then, the face system design was carried out after the author had completed the blendshape stage. The function of this stage is to connect the overall blend shape parameters to the controller system because when connecting the blendshape to the main controller/main controller, it will not be flexible when used. The reason is that the blendshape only represents one value when connected, meaning that it can only use one translate to represent one blendshape, while to design a controller with a flexible system, other parameters are needed besides one translate. So a face system is needed to bridge the blendshape and the main controller. And keep in mind the more memory is used, adjusting to the number of blendshapes in production (Pirmansah, 2024, p. 27). The researcher minimizes it by using a combination of blendshapes, which will later make the Gery character file size not too large.

At the end of the process, the researcher designed a face controller in two stages. The first stage involved creating a control panel that links the face controller's parameters with a main controller face. This was done after connecting the blendshape to face controller A. The results of this control panel are illustrated in the provided picture.

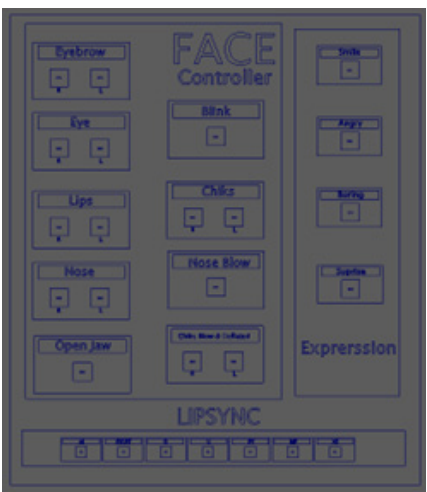


Figure 7. Control Panel
Source : Author's Documentation (2024)

Result

The results of the body rigging system are described based on the results of applying the main theory and supporting theories. The following is a description of the results of applying the theory. With results of the facial rigging system are described based on the results of applying the main theory and supporting theories too.

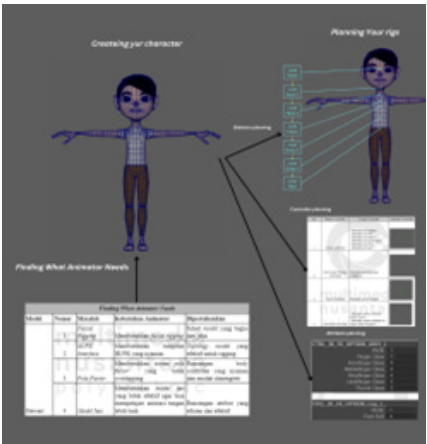


Figure 8. Results of Applying the Theory of Body Rigging
Source : Author's Documentation (2024)

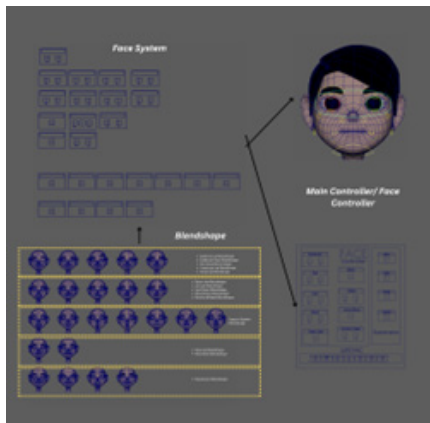


Figure 9. Results of Applying Briggs Theory to Facial Rigging
Source : Author’s Documentation (2024)

Discussion

The researcher experimented by directly providing and interviewing experts from the MNC Animation Studio’s artist rigger. The Gery model is feasible or can be used for animation learning needs, but there are still several rigging systems that can be developed and improved by the author so that the work is even more perfect. Based on expert input, a professional rigging system should incorporate several additional systems. Interviews with students suggest that the Gery model is effective for learning 3D Character Animation, but improvements are needed. Issues such as overlapping extra face controllers causing mesh penetration have been noted. Overall, while the Gery model is suitable for teaching, enhancing it with additional systems could elevate it to a professional standard.

Conclusion

The design of the rigging system on the Gery model is based on the results of data observations on the body rigging and facial rigging systems on the models used

previously in the learning process of the 3D character animation course, namely the Stewart and Mery models. The system design is also based on several theories that the author applies at the stage before the creation of the work or the foundation stage, namely the stage of applying supporting theories and the stage when creating the work or the execution stage, namely the stage of applying the main theory. Technological developments have a huge influence in rebuilding behavior and giving meaning itself (Pratama & Nugroho, 2023, p. 417).

The Gery model is designed to provide solutions to problems obtained from the previous model, especially in the comfort of the facial rigging system, which prompted the author to create an experiment or innovation in the form of a controller and rigging system with experimental results, namely, lipsync system, extra face controller and limit information system as the main advantages of the Gery model. I hope that the model can improve the comfort of learning at Multimedia Nusantara Polytechnic, Digital Animation Department in the 3D character animation learning process. Researchers have also submitted Intellectual Property Rights (IPR) so that no one can copy the legality and ownership of the system because the system has been legalized.

The Gery model has some issues in its rigging system, including problems with the automatic twisting of arm and leg IK systems and the hair system and controller. While it is suitable for learning 3D character animation, experts and users suggest that updating these systems could enhance its functionality and elevate it to a professional standard.

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ANALYSIS OF LYRICS AND VISUALS OF GOOD FAITH FOREVER (2023) LIVE MUSIC PERFORMANCE

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Abstract: As time and technology advances, visualization in music becomes an important role to support the music performance. Good Faith Forever is a live music performance released in 2021, created and performed by Hugo Pierre Leclercq, and is one of the examples of a unique live music performance, by making a narrative with a different perspective from the lyrics itself by blending the music and visuals together, making it an interesting subject to analyze. The objective of this research is to uncover the relationship between the lyrics and visuals of a live music performance of Good Faith Forever in 2023 as a study case. This research uses an interpretative qualitative approach using Roland Barthes’ Semiotics Theory and Geoffrey Leech’s Semantics Theory to analyze the visuals and lyrics. From the 2023 live performance of Good Faith Forever “The Prince” and “Neo Finale”, it is found that the lyrics and the performance tell the same stories but with different focuses, the lyrics itself focuses on the message of story, while the performance focuses on the narrative and characters living in the message of the lyrics. This implies the existence of creative freedom in interpreting the lyrics to form a similar story for the live performance.

Keywords: good faith forever; live music performance; lyrics; music visualization; narratives

Introduction

Music has long existed in this world, with many uses such as in ceremonies, religious rituals, entertainment, as national anthems, and many more, usually in the form of a live performance. Music has been and still is mostly consumed through live performances, even with the discovery of technology for recording music in 1860 (Burgess, 2014: 3). With how live music performances have been evolving, the visual of a music performance has also be-

come a major aspect to pay attention to.

The visualization of music has long existed through the performer’s gestures and facial expressions, but it has only become more important when MTV, an American cable television channel started airing music videos and through this development, visuals in music is to be expected (Thompson et al. 2005: 8). According to Kwiatkowska (2015: 8), musicians now can express themselves not only aurally but also visually, impacting on how

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they present themselves and their music. Music itself has always been multi-interpretative, but the addition of visuals could impact how the audience interprets its meaning (Kwiatkowska, 2015: 222). Live performances also take advantage of visuals to connect with the audience and create more stimulation and capture more of their attention (Lenz, 2010: 34).

Good Faith Forever is a live music performance created and performed by Hugo Pierre Leclercq under the stage name Madeon. Good Faith Forever was originally named Good Faith Live, released in 2019. The show then was improved and updated with new music and visuals added and a new title for it, Good Faith Forever, released in 2021. The show captured the usual electronic dance music live performances but with unique differences, the most prominent example is its visuals. Visuals in live shows are usually used only as an add-on but Leclercq has presented a unique visual presentation by combining the visuals on the screen with his own silhouette, interacting with it. According to Heffler (2022), Leclercq was challenging what was already established in the electronic dance music industry by making the visuals intertwine with the musician himself at the center of the story and Leclercq said in the same article that he wanted to be unobstructed, having his silhouette as a constant presence throughout the show. While the visuals themselves are colorful and dynamic, it doesn't clash or disturb Leclercq's silhouette, instead complimenting each other, creating a cohesive show (Corrál, 2023). The visual aspect of Good Faith Forever is also used by Leclercq to tell a hidden narrative. He would show recurring characters and cryptic messages throughout the show, like the hooded figures and use an alphabet Leclercq made himself, called the Imperial Alphabet, based on the fictional world he created with the intention to tell a story behind the face of a live music performance that fans could try to decipher (Nyugen, 2022).

The live performance Good Faith Forever makes an interesting subject to analyze the connection between its music and visuals and also the narrative that was in the music itself and how it translates to live performance.

There is a similar study conducted by Alek et al. (2020) examining the song and music "Look What You Made Me Do" by Taylor Swift using Fairclough's Critical Discourse analysis for analyzing the lyrics and a semiotic approach for analyzing the video clips. This research will analyze a study case of the live performance Good Faith Forever using Leech's linguistics semantics theory to analyze the lyrics of the song "The Prince" and "Finale" and Barthes' denotation and connotation semiotics theory to analyze the visuals of the live performance Good Faith Forever in 2023.

According to Chandler (2007: 2), semiotics is the study of signs in every type of medium that suggest an appearance of a sign, whether in the form of sounds, images, etc. Saussure, the first figure to explore the field, developed the concept of the signifier, which is the material, and the signified, which is the mental concept or representation, both are the two aspects of a sign (Bouzida, 2014: 1003). Roland Barthes, another important figure in semiotics, would then expand Saussure's concept. According to Aiello (2020: 370), Barthes proposed that visual meaning is connected through two different levels, denotation, the literal meaning, and connotation, the symbolic meaning. Although it doesn't end on those two aspects but continues to the layer myth, which has a connection to ideologies in cultures (Aiello, 2020: 371).

According to Kearns (2017: 1), there's two levels in linguistics studies, semantics, which focuses on what each words mean literally and the meaning of how they are combined, and pragmatics, which focuses on the details of above the words said

and understanding how the sentences are used to express by the speaker. Semantics itself was the theory proposed by Geoffrey Leech in 1981 and it focuses on how the use of linguistics can create meaning and understanding it (Yunira et al. 2019: 105).

This analysis will only focus on the visual meaning of the performance "The Prince" continued until "Neo Finale" in Good Faith Forever in 2023, performed live in the Red Rocks Amphitheatre, Colorado, United States, with the footage provided from a live stream by Madeon on the platform YouTube, released on November 2023. The visuals will be analyzed using Barthes' denotation and connotation semiotics theory and the lyrics will be analyzed using Leech's linguistics semantics theory. This research aims to contribute to the understanding of the relationship between the visuals and the lyrics of a song and how the narrative in the lyrics translate to its live music performance.

Methodology

For an extensive result, this research will use an interpretative qualitative approach by analyzing the connotative and denotative sign in each section from the beginning until the end of the performance "The Prince" and "Neo Finale" in Good Faith Forever in 2023, from the live stream "Madeon – Live at Red Rocks (Live Stream)" from the platform YouTube, performed live by Hugo Pierre Leclercq using Barthes' semiotics theory to analyze the visuals and Leech's linguistics semantics theory to analyze the lyrics of "The Prince" and "Finale".

The research will begin by collecting data through observation by directly observing each component of the performance, including the lyrics and the visuals from the performance. This research also conducts literature review by searching for relevant sources from journals, books,

articles.

The research will begin by analyzing the lyrics from the songs "The Prince" and "Finale". Both different songs need to be analyzed as the performance "The Prince" continues directly to the "Neo Finale" performance with the same lyrics of the song "Finale". For the visuals, sections from the performance will be analyzed by identifying its denotative and connotative sign. The identified data then will be used to identify and conclude the whole narrative of the performance.

Analysis Steps

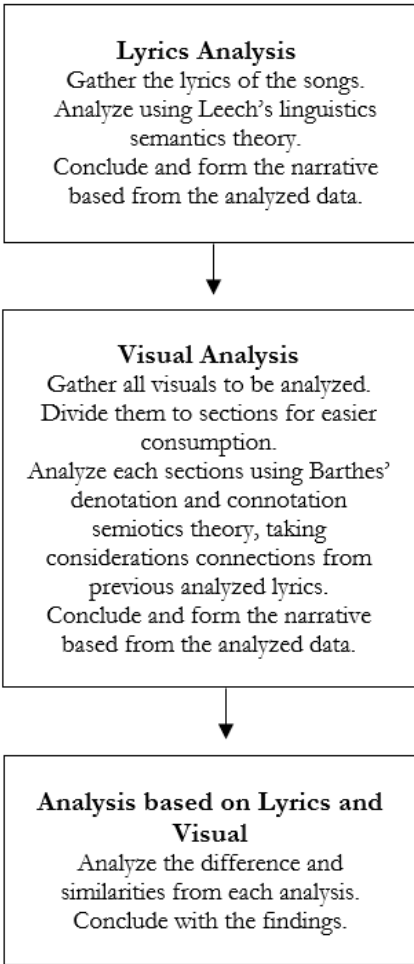


Figure 1. Analysis Steps
(Source: author documentation)

Result

Lyric Analysis

The lyrics are sung from a first-person perspective. There are two characters in this song, The Prince and someone who he refers to as “she”. It is safe to assume the two characters mentioned in the song are The Prince and The Queen because in an interview, Leclercq mentioned in the performance of “The Prince” there is a character called The Queen (Peters, 2021). As for the song “Finale”, the lyrics might not exactly match the story as it isn’t in the song “The Prince”.

Table 1. Data 1
(Source: author documentation)

Lyrics	Analysis
I'm gonna be the story we believed in silence	The Prince and The Queen agreed upon an extraordinary goal that had never been done before. They knew the process wouldn't be easy, but they still believed in it. In this process, The Prince is expected to be the main character.
The rising and the fall	
Like nobody before	
But I get comfortable	The Prince began to have doubts about this goal as he realized that all he had done from his youth until now was for nothing as he's doubting himself about his goal in his life is truly his or not.
"Til I profess my youth to nothing	
I'm running from the floor	The Prince had fallen to doubts and lost faith in his work, 'running' to find a solution to his doubts.

Table 2. Data 2
(Source: author documentation)

Lyrics	Analysis
But if I do	This part of the song is a conversation of The Prince and The Queen that's retold from The Prince's perspective. In this line, The Prince is questioning his own actions but is cut off by The Queen in the next line.
She tells me to believe	The Queen cut him off by getting rid of his doubts before, telling him to believe, whether in her or in himself.
I beg of you	The Prince begging her to understand his perspective or connecting the third and fourth line and making it, "I beg of you, I'm trying to believe."
I'm trying to	
She tells me that the world is up to you	The Queen then decided to tell him that the choices are his to make, whether he believes in her, in himself, or not at all.
And if I knew	This line indicates regret from The Prince. The sentence implies that it's impossible to know the outcome or if he should believe her or not.
This love will do This love will do	The Prince still chooses to keep going, even from all that questioning and doubts he had before. The repetition is him convincing himself that this 'love' is enough to keep going.

Table 3. Data 3
(Source: author documentation)

Lyrics	Analysis
'Cause I fall when I feel	The Prince knows he gets vulnerable when he feels empathetic or when he feels her love. This implies that he knows his judgement gets clouded when he experiences her love.
But if all that you give me	The 'it' here implies his doubts. The Prince is trying to reason with himself to fight his doubts, if what The Queen gives him is enough to fight his doubts. This implies that it wasn't enough before she supports him.
Is enough to fight it	
It's a mess I won't make anymore	These lines indicate that these doubts have happened before many times, and he wasn't able to fight his doubts before. But with the love she gave, he now can fight his doubts, as stated from the lines before this. This means The Queen's love can make him powerful by giving him the ability to fight his doubts, but also a weakness because his judgements have become clouded, stated from the first line.
Like a thousand times before and	
In the time that I wish I was younger	These lines imply The Prince reminiscing his youth, when he was more naive with an expectation to be somebody important and now
With hunger to be somebody	

	failing to be that expected person.
Can I dance at the edge of your love?	'Edge' indicates a transition between two different places. With this context, 'the edge of your love' connotes that half of him is still with her love and the other half is already moving on from her love. 'Dance' here connotes that he's still unsure where to go between her love or moving on.

Table 4. Data 4
(Source: author documentation)

Lyrics	Analysis
Going on every day	These lines quite literally mean he is going to try his best to keep going on every day, convincing himself by repeating the line.
I'm gonna keep going on, try my best	
And now that love has come	This line implies that after all those doubts, he decided to trust her and receive her love to keep him going, even though her love can make him both powerful and weak.
Every day	These lines have the same meaning as the first and second line, but the last line 'try your best' is directed towards The Queen to keep giving him that power.

Table 5. Data 5
(Source: author documentation)

Lyrics	Analysis
Your last chance, last summer	This is his last chance to either make this decision

Your last dance, beat to your own drummer	and encourage him or his last chance to make his conditions around him better.
Go out fighting, go out young	Whatever decision he chooses, he's going to give it his all.
A flash of lightning, eclipse the sun	'A flash of lightning' connotes it as a sign that it exists before fully announcing it. In the context of this story, this could imply their plan was done in silence, teased to the people. According to the Merriam-Webster dictionary, eclipse could mean to outshine or dominate. In the context of the story, eclipse could connote The Prince's doubts being overshadowed by their plan from the beginning.
Brace yourself (Brace yourself) Brace yourself (Brace yourself) Brace yourself for the grand finale	These last lines are the last moments of him preparing himself to make that decision, to go further beyond.

Overall, the lyrics to “The Prince” and the chorus of “Finale” are a story about The Prince and The Queen setting an extraordinary goal for The Prince. As they were working towards this goal, The Prince started to doubt himself. As he shared his concerns to The Queen, she told him to believe in himself. The Prince knows that her love empowers him to fight his doubts, but it also weakens him by

clouding his judgement. Being faced with this dilemma, he wasn't sure if he should trust her or not. In the end he decided to keep persisting, her love empowering him to keep going.

Visual Analysis

1. Section 1



Figure 2. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 00:57:19 – 00:58:03)

Denotative Stage

The visuals started with red lights, then followed up with flashes of black and white images as the song starts. The first image is a hooded figure and the second is an eye. Other images are also flashing, like fire, running water, broken glass, a bird, and another figure with distorted proportions.

Connotative Stage

The flashes of these images are similar to people at the brink of death having their life flash in front of them (Noyes & Kletti, 1977). The flashes of these images connote The Prince at the brink of giving up while his memories flash by. This also correlates to the lyrics in data 3, line 6 “In

the time that I wish I was younger,” As he reminisces his younger self with the passion to be somebody else.

2. Section 2

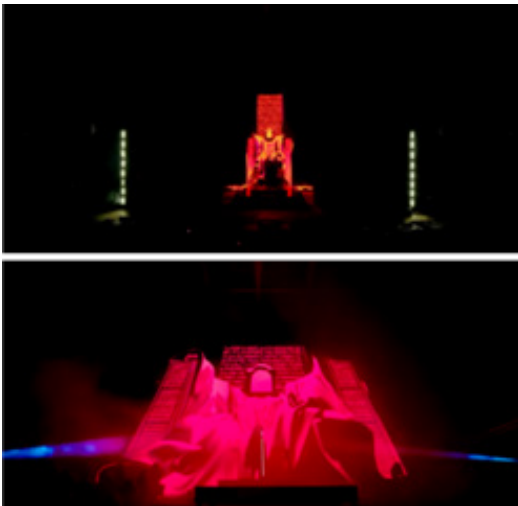


Figure 3. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 00:58:04 – 00:59:33)

Denotative Stage

The visuals in this section shows a large red figure sitting down on a high-back chair, resembling a throne. The figure doesn't show their face and is covered using a robe. There's also a silhouette of Leclercq at the bottom of the figure.

From the context of the song, because Leclercq is singing the lyrics to “The Prince”, this implies that he is The Prince and the large red figure is The Queen, with The Queen taking place at the center and The Prince at the bottom in the composition. As the song goes on, the figure moves towards the audience slowly. Leclercq sings the entire song of “The Prince” from the first verse to the last chorus, shown in data 1 to 4 from the lyric analysis.

Connotative Stage

The composition connotes the differ-

ence in power between The Prince and The Queen. The Queen is shown as an intimidating character with how she's presented from an ant's perspective, her large stature, and the intense red color, which when combined with the color black has quite a forceful nature to it (Kobayashi, 1991: 22). This implies the power that radiates from The Queen.

The Prince is powerless compared to The Queen by making him not dominate the scene, even though he is the main character (Kang & Kim, 2014; Roh, 2017, in Kim, J. et. al. 2019: 2). The context of the song also supports the difference in power between the two characters, as it is The Prince who needs The Queen's 'love' to keep going on. This also means her power is implied to be her 'love'. The Queen giving her 'love' to The Prince then means she is giving her power to The Prince.

3. Section 3



Figure 4. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 00:59:34 – 01:00:54)

Denotative Stage

The section is titled “Power”. The visuals in this section shows fabric flowing from edges of the screen. It starts off with a blue fabric coming up from below Leclercq. At a point in this section, the blue colored fabric is seen being absorbed through the ground and came back black and white. The fabric has some resemblance to silk with how smooth it looks. This section uses the colors blue, red, orange, black and white towards the end of the section.

Connotative Stage

According to Silverman (2011: 12-13), silk was limited only for people in the higher social classes as it was a very expensive and complicated fabric to make, making it rare and valuable. This indicates that this is The Queen’s power that is rare and valuable represented by silk because of her high social class as the queen.

The first couple of seconds in this section, The Queen’s power is shown with blue and red colored silk, but as it was being absorbed through the ground, it comes out black and white and The Prince’s silhouette looks clearer than before. This sequence indicates The Prince has received The Queen’s power, hence the dramatic change of colors.

4. Section 4

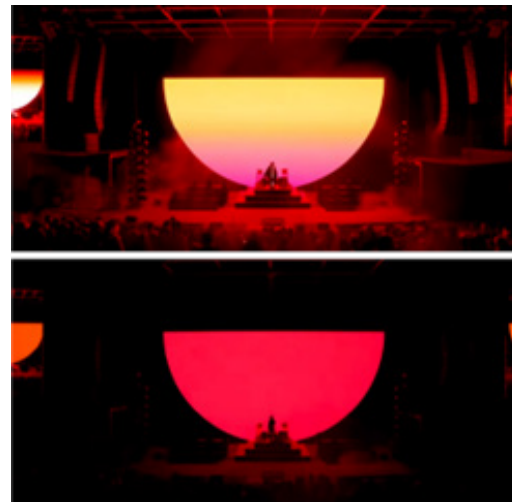


Figure 5. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 01:00:55 – 01:01:26)

Denotative Stage

The visuals in this section shows a half circle with an orange to red gradient, resembling a sunset, which indicates one of the progressions in daytime, twilight. The half circle also changes color to red as Leclercq finishes singing. This color red is also similar to The Queen’s red in the second section. In this section, Leclercq sings the final part of “The Prince”.

Connotative Stage

According to Battistini (2005: 66), twilight is the transition between day and night, and it marks the end of day. Twilight can be connoted as inner reflection or represented as powerful emotions. In the context of this story, twilight and the use of sunset connotes The Prince’s intense emotions right after receiving The Queen’s power and also the transition between his old and new self. The change to red implies the presence of The Queen in The Prince’s emotions as he changes as a person, not only from the power she gave to him, but her as a figure to The Prince.

5. Section 5



Figure 6. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 01:01:27 – 01:02:06)

Denotative Stage

The section is titled “Activate”. The visuals in this section shows different schematics of The Queen’s throne. These schematics go by fast as the energy of the music also rises. This section uses mainly black and white but sometimes would also use red.

Connotative Stage

The title ‘Activate’ implies The Prince is activating or initiating his new powers as in the previous section he only received it but yet to use it. The use of the throne schematics also connotes The Prince’s understanding to The Queen’s position as a queen with all her power, hence why it is showing The Queen’s throne schematics. Schematics diagrams are mostly used to represent a complex system, simplified using icons and symbols. Schematics maps are used as a communicative tool for people to be able to understand the complex system quicker (Avelar & Hurni, 2006: 218).

6. Section 6



Figure 7. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 01:02:07 – 01:02:48)

Denotative Stage

The section is titled “Again”. The visuals in this section shows the silhouette of The Prince is repeated multiple times, each with different poses. Throughout this section, the silhouettes of The Prince sometimes are distorted or would appear bigger than the real character’s silhouette. The schematic visuals also show up here, combined with the visuals of the multiple silhouettes. This section only uses black and white with no other colors.

Connotative Stage

The title “Again” is represented by the duplication of The Prince’s silhouettes. His ability to duplicate himself and the use of black and white in this section indicates that he is now able to control his given power as black and white was also the color that was shown in the third section as the power was given to him by The Queen.

7. Section 7



Figure 8. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 01:02:49 – 01:03:51)

Denotative Stage

This section is titled “Obey”. The visuals in this section shows the silhouette of The Prince kneeling, facing a large side view of a face. The Prince then stands up as another face from the other side shows up with a red background. The Prince kneeling is a sign of him respecting and obeying the heads. The heads are singing the chorus lyrics to the song “Finale” shown in data 5 from the lyric analysis.

Connotative Stage

The two heads singing the lyrics to the “Finale” connotes The Prince’s inner thoughts about the last chance he has to make things right again as he already made the choice to keep going on with

The Queen’s power that was given to him. ‘Obey’ also implies that he is embracing the choice he made and is fully committed to it.

8. Section 8

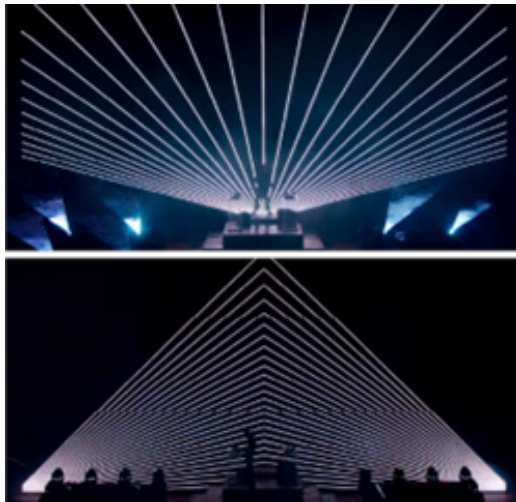


Figure 9. Stills from Madeon – Live at Red Rocks (Live Stream) (Madeon, 2023, 01:03:52 – 01:05:06)

Denotative Stage

This section ends the performance of “The Prince” and “Neo Finale”. As the music drops, fanned out lines from the bottom of the screen. These lines would show from the bottom and top of the screen, some with two vanishing points instead of one. This section ends almost similar to how it starts in the first section, with darkness and red lights.

Connotative Stage

The lines used in this section are similar to the fabric used in the third section. Fabric was used to represent the rare and valuable power The Queen has. The lines in this section have the same function as that of the fabric, now it is a representation of power belonging to The Prince. The use of line indicates that this current

power of his is still at its most fundamental because he is still new to this power and hasn’t discovered how to use this power to its maximum potential.

The story of “The Prince” and “Neo Finale” can be concluded to a story about doubts and overcoming those doubts through trust and help from others. While The Prince doubted himself to the point of giving up his life’s work, he still chooses to keep going, he opens himself to more possibilities using the help from The Queen.

Discussion

There are two ways the story of “The Prince” is told, first is from the lyrics of the song and second is from the live performance. The story itself is about being at the edge of giving up and overcoming that through the help of the encouragement of someone important in their life. The lyrics use a fantasy setting to tell this message while the performance is about the fantasy and the characters and telling the story beyond the song itself, showing when The Prince receives The Queen’s power and how he uses that power. For example, the lyrics use ‘love’ as this driving force for The Prince to keep going. ‘Love’ can be interpreted as actual love, or in the case of the performance, it represents power. In the case of the performance, this power is an actual supernatural power, as The Prince is able to duplicate himself using that power.

The relationship between the visuals and the lyrics are also important as the lyrics drive the visuals to tell the story. But the visuals don’t need to follow the exact same way the lyrics tell the story, instead creating a different way to view the story. For example, power is visualized using flowing fabrics in the performance, but it is also represented by ‘love’ in the lyrics. Even though these representations are different, both work to achieve their own

goal, the lyrics to tell a message, and the performance to tell a fantasy story.

Conclusion

In conclusion, this research reveals the relationship between the lyrics and the visuals of the performance “The Prince” and “Neo Finale” as both tells the same story, but with different perspectives. The lyrics intends to tell the message of the story about overcoming doubts through the encouragement of others and the performance intends to tell a story about these characters living in the song’s message and going beyond the song itself by showing what happened as the main character receives that power, showing the story through a fantasy world perspective.

This analysis shows the creative freedom a creator has when interpreting a story. Even though the song already has a story and message the audience can understand, Leclercq also has the freedom to use different ways to tell the story in the live performance, meaning the visuals matter in terms if he wanted to use the same or different interpretations of the lyrics or further improve the story and tell it beyond what’s written in the song. In this case, Leclercq decided to focus more on the narrative and characters involved for the live performance, creating a different perspective for the song.

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NAVIGATING DISTANCE: SIGNS IN SONS, MOTHER-IN-LAW, AND DAUGHTER-IN-LAW RELATIONSHIPS IN LAHN MAH

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Abstract: In Chinese-Asian culture, sons are often viewed as symbols of luck and hope, which leads parents to invest heavily in their futures. However, when a son is married, this deep connection can lead to tension, especially between his mother and wife. The son then finds himself in the tricky position of balancing both relationships between the Mother-in-Law (MIL) and the Daughter-in-Law (DIL). Lahn Mah (Pat Boonnitipat, 2024) known in English as *How to Make Millions Before Grandma Dies*, captures this dynamic with several scenes exploring the relationships among son, MIL, and DIL. Therefore, this study examines visual signs that convey the distance in the relationships between sons, MIL, and DIL in Lahn Mah. This research employs a descriptive qualitative methodology with Ferdinand de Saussure’s semiotic analysis approach. The findings reveal nine key scenes illustrating varying distances between the son, MIL, and DIL. These distances shift as the story unfolds: wide gaps signify conflict, while closeness indicates reconciliation.

Keywords: distance; sons; in-laws; film; semiotic

Introduction

Family plays a vital role in Chinese-Asian culture, where sons are highly valued within the household. Sons are often considered a symbol of good luck for a family because they can continue the family’s lineage. Therefore, sons usually get special treatment from their parents. Chinese parents even save a lot to buy a house for their son (Wang et al., 2021). However, on the other hand, as the hope of the family, sons often bear various expectations and responsibilities. Not only to continue the lineage but sons traditionally have to support their parents when they are old (Chee, 2021). Therefore, parents, especially mothers, may invest more emotionally and materially in sons.

However, when a son gets married and builds a household with his wife, various challenges can arise because of this “investment.” Conflicts often occur between the son, mother-in-law (MIL), and daughter-in-law (DIL), leading to complex relationships. According to Woolley & Greif (2019), the relationship between a son, MIL, and DIL can be described as a triangular relationship, where closeness or distance between parties can affect the relationship between the two parties (dyadic). For instance, if the DIL and MIL’s relationship is strained, it can impact the satisfaction of the DIL and son’s marriage. The son often becomes the linchpin in the relationship between the two women. A linchpin is someone or something that connects or binds two other parties

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(Woolley & Greif, 2019).

The role of the son as a linchpin is crucial. The family relationship will be more harmonious if the son can mediate in the MIL and DIL relationship. However, if the son is unsuccessful, conflicts will often occur and worsen the long-term relationship (Soeda & Araki, 1999). Therefore, the son's role is crucial in balancing the distance of the MIL-DIL relationship.

One of the films that interestingly depicts the distance between the son, MIL, and DIL relationship is *Lahn Mah* (in English, titled *How to Make Millions Before Grandma Dies*). This film is directed by Thai filmmaker, Pat Boonitipat, which was released in 2024 and managed to attract 3,039,605 Indonesian viewers in 22 days of screening (CNN Indonesia, 2024). *Lahn Mah* tells the story of a man named M who tries to earn money by being devoted to his grandmother (Boonitipat, 2024). This film is rich in Chinese-Asian cultural elements, with several scenes portraying the relationship dynamics between Kiang, a son; Amah, his mother (MIL) and Pinn, his wife (DIL).

Several studies have explored the relationships between a son, MIL, and DIL. However, few have examined how the emotional distance in these relationships is shown visually in film. This study aims to address that gap and answer how visual signs convey the distance in the relationships between a son, MIL, and DIL in the movie *Lahn Mah*. Hopefully, this research will provide valuable insights into film studies, especially in examining this unique triangular relationship visually portrayed in film within Chinese-Asian culture.

Methodology

The method used in this study is descriptive qualitative with Ferdinand de Saussure's semiotic analysis approach.

According to Creswell & Creswell (2018), qualitative methods use various data sources which are then analyzed and interpreted by the researcher. Therefore, the data collection technique in this study is watching *Lahn Mah* film, watching video interviews with the filmmakers, and reviewing other relevant literature.

The analysis focuses on scenes that relate to the interactions between Kiang, Amah, and Pinn. These scenes will be analyzed using Ferdinand de Saussure's semiotics theory. Saussure argues that a sign is formed by a signifier and a signified.

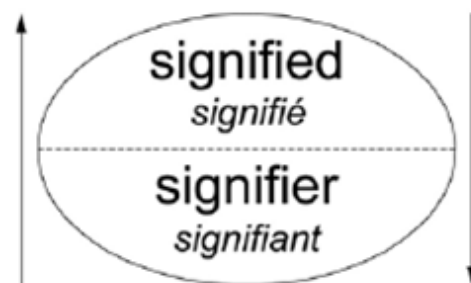


Figure 1. Saussure's sign dyadic model
(Source: Chandler, 2017)

The signifier can be an image, sound, words, and so on, while the signified is the meaning of the signifier. The relationship between the signifier and the signified is arbitrary, so the meaning is not attached to the sign and is determined by sociocultural conventions (Chandler, 2017).

Result

The film scenes selected for analysis are 9 scenes related to Kiang, Amah, and Pinn. The analysis of the scenes is as follows:

1. Qingming Festival (opening scene)



Figure 2. Qingming Opening Scene
(Source: netflix.com)

Signifier: Amah's family members were gathered for the Qing Ming event, except for Pinn and Rainbow, who spoke with Kiang. When Amah approached, Kiang showed her the phone so that Pinn and Rainbow could greet Amah. Then Amah reprimanded the two who had never attended the Qingming festival.

Signified: Son acts as a bridge to fill the distance between MIL and DIL by making them greet each other. However, this effort was not welcomed by MIL, who was already annoyed with DIL. The DIL was considered disrespectful to her husband's family ancestors because she had never attended the Qingming festival, which is passed down through generations in Chinese culture as an important expression of filial piety. This scene, consequently, shows the strained relationship between the DIL, MIL, and the son's family. This scene uses a position where DIL is between the son and MIL. DIL's presence (even though not physically present) feels like a barrier between the son and MIL's relationship because the son prioritizes contacting DIL. He also defends her so MIL cannot reprimand DIL.

2. Visit Amah's house on Sunday



Figure 3. Visit Amah's house on Sunday
(Source: netflix.com)

Signifier: All family members gather at the dining table. Pinn brings chicken from the hotel for Amah. Amah does not respond to Pinn's explanation. Then, Amah invites her children to play cards, but Kiang cannot join because he has to take Rainbow to her class. Chew reprimands Kiang to make time, but Kiang ignores her and asks about Amah's condition. Amah tells them that she already knows about her illness. Then, Kiang and his siblings are shocked and argue.

Signified: This scene shows that DIL's position in the son's family is low and cornered. DIL does not talk much,

turns her face away when there is an internal family discussion topic, and focuses more on caring for her child. At the same time, Sons acts as the head of the family by prioritizing the comfort of his child and his wife. This scene uses many blockings from actors to illustrate that there is always a distance between MIL and DIL. Often, Son prefers DIL over MIL. It can be seen when Son moves away to DIL's side when MIL approaches. This dynamic is highlighted during the family meal at the dining table, where shared dining underscores the distance and tension in their relationships. Group dining, featuring shared food and a small bowl of rice for each person, is deeply rooted in Chinese culture, which believes in maintaining interpersonal relationships (Choi et al., 2020).

3. Amah comes to Kiang's house



Figure 4. Amah comes to Kiang's House
(Source: netflix.com)

Signifier: Kiang finally invited Amah over, upon her arrival, Rainbow and Pinn welcomed her warmly. Pinn showed her around, pointing out things they'd set up to make her comfortable. But Amah still seemed reluctant to move to Kiang's house. Kiang kept encouraging her, even though M sided with Amah and argued against it. After some hesitation, Amah finally accepted, feeling reassured by Kiang's support.

Signified: This scene shows that the strained relationship between DIL and MIL also occurs in DIL's house. When welcoming MIL, DIL does not approach the door and stands behind the wall. When MIL entered the room, DIL was still standing far from MIL. DIL tries to convince MIL, but MIL does not respond positively. In contrast, when the son attempts to convince her, she reacts more positively. When there is a family argument, DIL joins in, even if only a little. DIL shows more of her dislike through body gestures and facial expressions. Son, who initially argued, becomes the mediator in this situation. He manages to calm MIL and DIL down. This could happen because there are gender expectations in Chinese culture, where sons are responsible for taking care of their elderly parents (Lien et al., 2021). As a result, the MIL naturally finds reassurance in her son's words.

4. Go to Temple by train



Figure 5. Go to the Temple
(Source: netflix.com)

Signifier: Kiang and Pinn invite Amah to the Temple. They sit across from Amah and M. Then Kiang asks Rainbow to sit beside Amah. Amah is happy with Rainbow's presence and talks to her. Pinn explains that this Temple accepts coffin donations and can improve health conditions. Amah just smiles. Then Kiang invites Amah to reminisce, and Amah answers happily.

Signified: This scene shows that MIL and DIL still have a distance in public. While DIL and Son sit side by side, MIL sits across them. DIL explains that this Temple can grant prayers, but MIL only responds with a smile. It is different when MIL responds to her grandchild and son by giving several questions or answers in return as a form of excitement.

5. Family's activities at the Temple

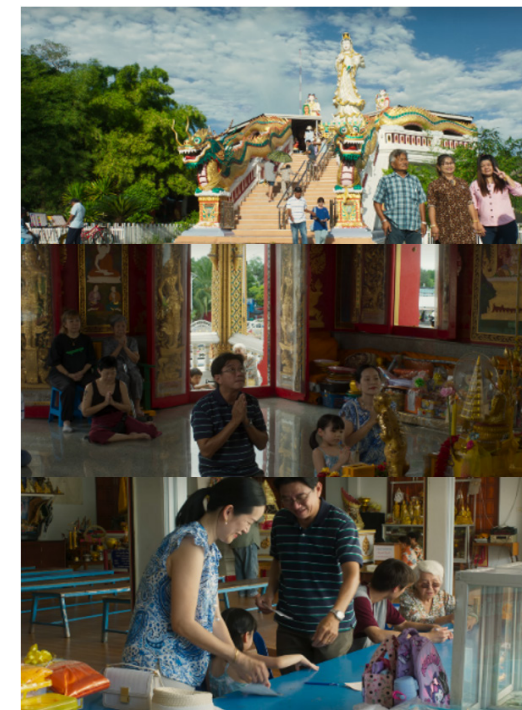


Figure 6. Family's Activities at the Temple
(Source: netflix.com)

Signifier: Pinn, Kiang, and Rainbow went up to the Temple first to pray while Amah was still counting the stairs with M. When Amah reached the top, she shared with M how she once gave Kiang her sandals as a child on a hot day. Then, they each wrote down wishes. Kiang wished for Pinn and Rainbow's happiness, while they wished for themselves. Meanwhile, Amah still wished for her children and M's success, leaving out Pinn and Rainbow.

Signified: This scene shows that the distance between MIL, DIL, and son is still felt. While DIL and Son are inside the temple, MIL looks at them from the outside. There are dividing wall that separates them. When they wrote their wishes, DIL sat far from MIL, while the son sat between them. While writing the wish, MIL does not consider DIL part of her family. Meanwhile, DIL also does not care about MIL's recovery wish. Also, the son only wishes for the happiness of his wife and child over his mother's recovery.

6. Back to Home by train



Figure 7. Train to home
(Source: netflix.com)

Signifier: In this scene, they return home. Rainbow is already sleeping on Pinn's thigh. Then Kiang approaches Amah and asks her to pack her things before moving to his house. Amah nods in agreement.

Signified: This scene shows that the distance between Son, DIL, and MIL is

increasing. They sit opposite each other, separated by a single row. The atmosphere feels gloomy and dark after MIL knows that Son and DIL do not consider her important.

7. Fight over inheritance in Hospital



Figure 8. Fight over inheritance in hospital
(Source: netflix.com)

Signifier: Kiang asked Chew where Amah’s house certificate was. Chew was angry because Kiang brought it up while Amah was still around. Chew said, “Your wife put you up to this, didn’t she?”. Hearing this, Kiang sighed and said, “See? That is why I do not want to be a part of this family. Why do you guys treat Pinn as if she is not a member of our family?”. Chew was speechless hearing this and told Kiang where the certificate was.

Signified: In this scene, the MIL and DIL are not present, but it reveals the reason why the son distances himself from the family. This scene shows that Son’s family often misunderstands DIL. Son, who has been keeping it to himself, finally reveals why he always keeps his distance from his family, which is because his family considers DIL not part of the family.

8. Chinese New Year visit



Figure 9. Visit Amah during the Chinese New Year
(Source: netflix.com)

Signifier: Kiang, Pinn, and Rainbow finally visit Amah, who can no longer speak and move during Chinese New Year. Pinn steps out of the car first to greet M, then goes inside to drop off Rainbow. Kiang sits in the car until Pinn persuades him. Kiang and Pinn finally meet Amah, who begins to cry when she hears Kiang’s voice.

Signified: This scene shows that DIL changes. She dares to enter M’s house first. It shows that DIL can mediate between Sons and MIL when they are in conflict, and she can persuade Sons to meet with MIL and his family. The position in this film also changes; DIL, who is usually at the end or behind Son, becomes in front and the mediator of this family. Once inside the house, DIL remains in a lower sitting position near MIL’s feet.

9. Qingming Festival (closing)



Figure 10. Qingming Closing Scene
(Source: netflix.com)

Signifier: All the families gather to honor Amah during the Qingming festival. Pinn and Rainbow finally attended and helped with the Qingming preparations. Chew instructs Pinn to arrange the food at Amah’s grave. Pinn also tries to arrange it carefully.

Signified: This scene shows that DIL has been considered part of the family. She is actively involved in the preparation of the festival but with a kneeling posture to demonstrate respect toward Amah’s spirit. This posture aligns with Chinese-Asian cultural practices, where kneeling signifies respect for others (Feng & Du, 2015). The DIL’s position in the scene is also close to the other family members, symbolizing her acceptance into the family.

Discussion

Based on the results, it can be seen that there is a distance between the son, Mother-in-Law (MIL), and Daughter-in-Law (DIL) in the film Lahn Mah. There are

three key aspects related to the distance that are visually depicted:

1. There is always a gap between MIL and DIL

The positions of the MIL and DIL in the film are rarely adjacent. There is always someone or a wall separating them. Even when they are side by side, there is always a space between them. This indicates that the relationship between the MIL and DIL is not close. There is a noticeable awkwardness when they meet. This aligns with Morr Serewicz’s (2008) view that the MIL and DIL relationship is one without intention. This relationship exists because the son brings them together in marriage. The less they communicate, the more awkward the relationship becomes (Woolley & Greif, 2019).

In the film *Lahn Mah*, when the DIL tries to communicate with the MIL, she only gets minimal responses from the MIL. In contrast, the son receives enthusiastic responses. Also, when they write wishes, MIL only wishes for her children and DIL only wishes for herself. This indicates that parents are closer to their biological children than their in-laws (Koyano et al., 1995, as cited in Nishi et al., 2010).

Unsurprisingly, in the film, the DIL is often depicted as quiet and reluctant to engage in the intrigues of the son’s extended family. This is also an effect of patriarchal culture that forces the DIL, as an outsider, to adapt to the son’s family and maintain her silence within the family (Srishti & Kumari, 2023). Similarly, in Chinese culture, women are often asked to be submissive and obedient to men because of Confucian understanding, which favors male power (Guo et al., 2017).

2. The Son is in the middle and prefers to be close to the DIL

The Son’s position in the film *Lahn Mah* is often between the MIL and DIL. This supports Woolley & Greif’s (2019) assertion that the son is a linchpin who brings the MIL and DIL closer. As a linchpin, the son balances the relationship between the MIL and DIL. However, the son often chooses to be near the DIL in the film. Consequently, the son’s extended family perceives that he does not care about them. This perception may stem from the concept of filial piety in Asian culture, where children are taught to prioritize the family’s wishes over their wishes and obey their parents (Schwartz et al., 2010). Hence, the son’s actions are seen as neglectful toward the family.

The reason for the son’s behavior is revealed toward the end of the film: he dislikes his wife being misunderstood and treated as if she is not part of the family. This aligns with the research by Gbadamosi et al. (2014), which found that men are more likely to address conflicts using avoidance techniques, meaning they tend to distance themselves from the source of conflict. In this context, the son distances himself from his extended family to minimize conflict between his wife and his family.

On the other hand, in an interview with GSCinemas (2024), Sanya Kuna-korn, the actor who portrays Kiang, stated that Kiang struggles to express his feelings openly, but that does not mean he does not care for Amah and his extended family. For a man, being open about his feelings is not easy. In a patriarchal culture that produces toxic masculinity, men are often taught to appear strong and not to show vulnerability (Pramudiya et al., 2023). This makes it difficult for them to articulate their feelings clearly and leads to misunderstandings with those around them.

Therefore, instead of expressing his feelings first, the film *Lahn Mah* visualizes that the son immediately tries to minimize conflict between the MIL and DIL by living in a different house and not spending too much time with his extended family. If there is criticism from the MIL towards the DIL, as seen in the opening scene, the son will try to ensure the DIL does not hear it. The Son maintains the harmony of his household, as criticism from the MIL towards the DIL is often made explicitly and serves as a primary conflict trigger that can worsen relationship development (Han et al., 2023).

3. In certain situations, the DIL can be a mediator

The DIL, whom the son loves, can mediate in the family when the son is at odds with the MIL. This can happen because the son is willing to listen to what the DIL says. In *Lahn Mah*, The DIL dares to leave her usual position when acting as a mediator. She boldly went ahead of her husband to meet his extended family, then invited him to join her. This action changed the dynamic within the film, closing the distance and improving the DIL’s relationship with her husband’s family.

Thus, it can be observed that the distance between the son, MIL, and DIL evolves as the story progresses. Their relationships improve, and they grow closer during the Chinese New Year celebration, which is believed to be a time to start a new life. Chinese New Year is also a symbol of reunification, where all family members, from wherever they are, gather in one place to celebrate this tradition (Yuan, 2016). In this context, it depicts reconciliation in their family.

Conclusion

This research has shown that nine

scenes in the film *Lahn Mah* depict the distance in the relationships between the son, Mother-in-Law (MIL), and Daughter-in-Law (DIL). This distance changes as the story develops. Whenever the son, MIL, and DIL are in the same frame, there is always a gap between the MIL and DIL. This distance signifies conflict in their relationship, while the son always occupies the center between the MIL and DIL, indicating his role as a linchpin. However, when a dispute arises between the son and MIL, the DIL’s position shifts to the center, acting as a mediator between the MIL and Son. This change in position and proximity signifies family reconciliation, which can be seen at the film’s end.

However, this study still has limitations as it only examines the depiction of the distances between the three actors in the film *Lahn Mah*. Therefore, further research needs to be conducted to explore the cultural myths embedded in this film through Roland Barthes’ semiotic analysis. Additionally, future studies could analyze the distances between each actor in more depth and their relation to broader family issues, as this film is rich in Chinese-Asian culture. Research on Indonesian audience perceptions of the film *Lahn Mah* would also be interesting to conduct quantitatively, considering the film has successfully attracted millions of viewers outside its country of origin and has a culture similar to that found in Indonesia.

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AI-ENHANCED STORYTELLING: INTEGRATING VISUAL, TEXTUAL, AND AUDITORY ELEMENTS THROUGH MULTIMODALITY

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Abstract: This study explores the integration of Artificial Intelligence (AI) in experience design, focusing on its role in creating a multi-sensory experience that bridges visual, textual, and auditory elements. The research centers on the album “Sky of Summer Nights,” where music generated by Suno AI complements illustrations and lyrics created by the author, Evan Raditya Pratomo. The project features three original illustrations, each corresponding to a song: “The Fairy Tale of Pink Summer,” “A Hug for Pink Moon,” and “Freed His Heart.” This research demonstrates how creative expression can be enhanced through multimodal principles, highlighting the challenges of effectively conveying messages through a combination of mediums. The findings affirm that the integration of AI can preserve the integrity of traditional design practices while offering new possibilities for innovation. By applying multimodal design theory, the study illustrates how AI is not only a tool but a catalyst for new emotional and creative experiences across disciplines. This research emphasizes the collaboration between human creativity and Suno AI, driving forward innovation in the fields of visual communication and experience design.

Keywords: sky of summer nights; multi-sensory; multimodal; creative expression; suno AI

Introduction

The rise of AI in the creative industry has changed how artists work. While AI disrupts some traditional practices, it also empowers creators with tools that make it easier to express ideas (Hutchin, 2024).

Recent advancements in deep learning and neural networks have enabled machines to compose music independently, challenging conventional views of creativity and authorship (Briot et al., 2020). Platforms like Suno AI are at the forefront, creating AI-generated music according to

user preferences. Systematically, it takes on the roles of music producer and sound engineer. One example of this implication is the author’s album, “Sky of Summer Nights.” This album combines Suno AI’s music with the author’s illustrations and poetry-turned-lyrics, creating a seamless visual and auditory art blend. The result is distributed via Routenote and available to stream on Spotify, Apple Music, and YouTube. Highlights how AI music can mesh with an artist’s broader vision, turning sound and visuals into a unified artistic experience.

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The use of Suno AI as a tool for creating auditory expressions in the “Sky of Summer Nights” album underscores that AI plays a dual role, serving both as an enhancer of creativity and a collaborator in the artistic process. This study explores how AI can effectively bridge visual, textual, and auditory experiences, transforming art into multi-sensory experiences and represented through multimodality to engage audiences in new and emotionally resonant ways. AI’s ability to heighten emotional engagement is crucial in this method. According to Li et al. (2023), multimodal interaction frameworks provide a helpful way to analyze the emotional impact of digital art. By incorporating various modes, such as visual, textual, and auditory elements, AI can enhance the emotional resonance of a piece, delivering multi-sensory experiences that connect with audiences on multiple levels.

This research explores how listeners emotionally resonate with and aesthetically perceive a music album’s visual and auditory elements. Specifically, the study seeks to understand the relationship between the album’s imagery and sound and how these elements influence the listener’s overall experience and engagement with the album.

Methodology

This study adopts a qualitative methodology to explore the album “Sky of Summer Nights” through three illustrations, “The Fairy Tale of Pink Summer,” “A Hug for Pink Moon,” and “Freed His Heart,” as the main inspiration for the song generated by Suno AI. The study delves into how integrating visual, textual, and auditory elements shapes the listening experience in nuanced, context-dependent ways by focusing on participants’ emotional reactions and perceptions of aesthetic appeal. Using multimodal theory (Kress, 2009), it examines how these combined modes

enhance emotional engagement and creativity while considering how AI’s compositional methods and algorithms influence traditional notions of creativity and authorship (Briot et al., 2020).

The qualitative methods used included in-depth interviews (Eppich et al., 2019) and open-ended survey questions. Participants will be asked to reflect on their emotional responses to the music and album artwork and how these elements interact to create a cohesive or disjointed experience. The data will be analyzed using thematic analysis to identify recurring emotional reactions, aesthetic perceptions, and insights into how the visual and auditory elements work together in the participants’ minds. By adopting a multimodal approach, this research highlights the potential for AI-generated content to complement human creativity, expanding the boundaries of artistic expression

Result

1. Multimodal Theory

Multimodal theory explores how diverse modes of communication, such as visuals, text, and sound, interact to create integrated, multi-sensory experiences (Jewitt, 2008). Rather than isolating these elements, multimodality emphasizes their collaborative potential to deliver more decadent, emotionally resonant interpretations. For instance, in video games, the interplay of visual design, color, sound effects (SFX), and music layers adds emotional depth to the player’s experience.

Building on this foundation, Norris (2011) highlights that multimodal theory transcends language boundaries by focusing on mediated discourse analysis, emphasizing human actions as central to communication. This approach underscores the importance of semiotic resources such as images, gestures, and

posture as essential tools for constructing meaning in interaction. Similarly, Kress (2009) extends this perspective through his metafunctional approach, arguing that modes such as visual grammar and interpersonal metafunctions dynamically interact to establish relationships between visual elements and their viewers. For example, visual features like gaze, distance, and angle evoke emotional connections, while auditory elements enhance these dynamics by contextualizing emotions and narratives. This interplay between modes demonstrates the adaptability of multimodality across diverse contexts, where distinct forms collaboratively generate layered and nuanced interpretations.

In the context of the album “Sky of Summer Nights,” multimodality is evident in the interaction between AI-generated music, poetry, and illustrations. The illustrations, such as “The Fairy Tale of Pink Summer” and “Freed His Heart,” were conceptualized prior to the creation of the audio compositions. This sequence represents a reverse integration process, where visual elements inspire auditory elements rather than the traditional opposite. Using Suno AI as a compositional tool, this project explored how AI algorithms could align with pre-existing visual narratives, resulting in an emotionally immersive multimodal experience. For instance, the dreamlike quality of the illustrations directly informed the musical tones and instrumentation, illustrating a symbiotic creative process between human intention and AI collaboration.

This study applies multimodal theory to analyze how the combination of illustrations, AI-generated music, and poetic lyrics in “Sky of Summer Nights” enhances the audience’s emotional engagement and aesthetic appreciation. Aligning with Hiippala’s (2021) principle that multiple modes evoke meanings more nuanced than any single mode alone, this project demonstrates how multimodal integra-

tion can expand the boundaries of creative expression, blending traditional artistic processes with emerging AI technologies.

2. Creative Design and Exploration

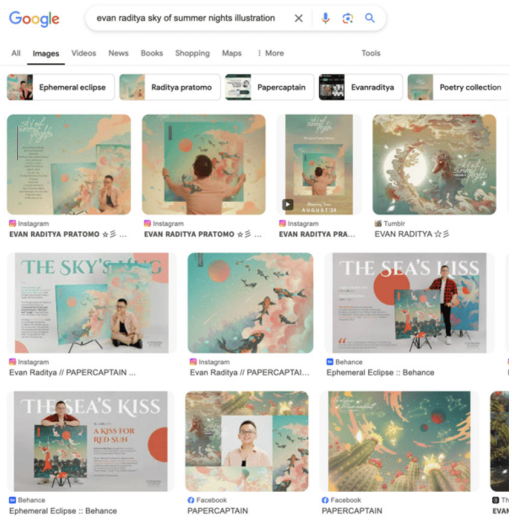


Figure 1. Google search result by inserting author’s name, project, and illustration as keywords (Source: Personal research documentation)

As shown in Figure 1, the author’s creative work spans illustration, design projects, and poetry collections. In 2017, the author published The Koi Fish Rhapsody, a poetry and illustration collection that established a niche approach distinct from other digital illustrators. Recognizing the parallels between poetry and lyrical songwriting, the author expanded their creative process to include music by integrating Suno AI, a platform for generating AI music.

The album “Sky of Summer Nights” in Figure 2, featuring 18 songs, exemplifies this evolution. The process began with illustrations that inspired poetic writing, which later became song lyrics. By adding an auditory dimension to the visual and textual content, the album highlights the synergy between AI-generated music and human creativity, enriching the storytell-

ing and emotional depth of the original artworks.



Figure 2. Cover digital album “Sky of Summer Nights”
(Source: Personal research documentation)

During the research process, the author surveyed 34 Generation Z participants aged 17 to 22, primarily Visual Communication Design students. This demographic was selected for their familiarity with art and design principles, which provided a nuanced perspective on the album’s illustrations and AI-generated music. The author shared three illustrations and the concepts behind them, each of which shares a title with one of the audio tracks in the album. The data was analyzed using thematic analysis to identify recurring emotional responses and aesthetic perceptions. The results highlight how participants perceived the interplay between visual and auditory elements, with many noting that the integration enhanced their emotional engagement and appreciation of the content. This analysis underscores the importance of a multimodal approach in fostering a deeper connection between the audience and the artwork.

3. Segmental Purpose

The album’s storytelling serves as a cornerstone of the project’s value, leveraging a lyricism style that resonates with Generation Z. By exploring themes of love, life, and loss, the album reflects everyday experiences familiar to its audience. This integration of textual, auditory, and visual modes enhances relatability and emotional engagement, directly contributing to the storytelling process.

The album weaves modern vocabulary with poetic narratives, authentically connecting to the experiences of its target audience. This multimodal storytelling amplifies the album’s emotional depth, aligning seamlessly with its listeners’ generational sensibilities.

4. Multi-Sensory Experience

As shown in Figure 3, 48% of the audience for “Sky of Summer Nights” falls within the 18–22 age range. This data aligns with the album’s target demographic of Generation Z, a group known for preferring interactive, emotionally resonant content (Wright et al., 2005). This demographic data supports the relevance of the album’s themes and its multimodal approach to engaging this audience.

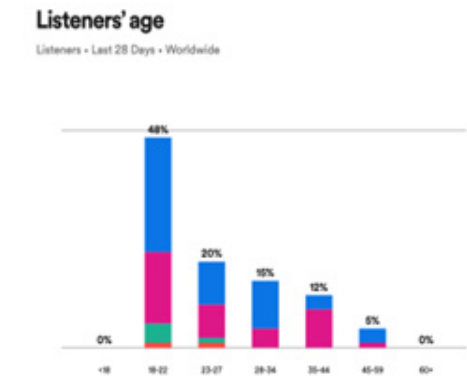


Figure 3. Demographic data for the audience’s age
(Source: Spotify for Artist; personal research documentation)

Integrating visual art, poetry, and music in “Sky of Summer Nights” exemplifies a multidimensional approach that unites visual and auditory art forms (Briot et al., 2020). The album employs consistent color schemes, ambiance, and terminology across its illustrations, lyrics, and music, forming a cohesive multimodal narrative. For example, in “The Fairy Tale of Pink Summer” in Figure 4 below, the recurring imagery of sunset skies, clouds, red panda, and tiger evokes a playful atmosphere. A respondent noted how the mood set by the illustrations connects seamlessly with the songs in the album, enhancing the storytelling experience.



Figure 4. Illustration of “The Fairy Tale of Pink Summer”
(Source: Personal research documentation)

Suno AI’s composition process demonstrates the interplay between auditory and textual dimensions, where poetic elements such as metaphor, vivid imagery, and rhyming schemes enhance the emotional resonance of the songs. For instance, “A Hug for Pink Moon,” as shown in Figure 5, illustrates a fish flying in a turquoise sky along with pink clouds. It is interpreted through the lyrics, which evoke themes of hope and longing.

This imagery creates a layered experience by juxtaposing the natural order of fish as aquatic creatures confined to water with a whimsical reality where they soar through the sky. One respondent noted that this pairing amplified the song’s themes, highlighting the emotional depth achieved through this interplay of visual and lyrical elements.



Figure 5. Illustration of “A Hug for Pink Moon”
(Source: Personal research documentation)

This multimodal synergy reflects multimodal communication, where text, visuals, and sound interact to create meaning richer than any mode could achieve alone (Kress, 2009). For “Sky of Summer Nights,” the interplay of these elements can be seen in “Freed His Heart” in Figure 6. A respondent noted that the illustration feels more cheerful and lighthearted when paired with its song, demonstrating how auditory and visual elements collectively evoke a dynamic narrative interpretation.



Figure 6. Illustration of “Freed His Heart”
(Source: Personal research documentation)

Discussion

1. Visual Resonance

The discussion integrates findings from a qualitative analysis of respondents’ interpretations of the album “Sky of Summer Nights” and its accompanying illustrations. As described in the methodology, participants engaged with the illustrations while listening to the corresponding songs, allowing for an in-depth exploration of how visuals and lyrics combined to evoke emotional and thematic resonance. The responses were analyzed inductively, focusing on recurring patterns, symbolic interpretations, and personal connections articulated by the respondents.

1.1. The Fairy Tale of Pink Summer

As can be seen from Figure 4 in Multi-Sensory Experience above, this illustration, paired with the song The Fairy Tale of Pink Summer, explored themes of friendship and shared experiences through a multimedia lens. Respondents described the illustrations as “inviting” and “soft,” with motifs such as cherry blossoms and sunset skies being interpreted as symbols of fleeting yet beautiful moments of connection. One participant noted, “The colors remind me of warm memories, like spending time with people I care about.”

This qualitative insight underscores how recurring imagery of a pinkish atmosphere and delicate blossoms facilitated emotional engagement with the narrative. By closely examining participants’ descriptions, it becomes evident that the multimodal design strengthens a shared understanding of friendship’s ephemerality. The visual and auditory components work together to amplify and highlight the author’s commitment to designing a cohesive multimedia experience, echoing contemporary art trends that increasingly

employ multimedia techniques to engage audiences more deeply (Haddock, 2024). Haddock adds, “Stories are how we try and make sense of the world around us,” and multimedia storytelling can offer immersive experiences that resonate on a profound level. The integration of these elements can amplify the story, fostering deeper emotional connections and enhancing learning outcomes (Haddock, 2024).

1.2. A Hug for Pink Moon

“A Hug for Pink Moon,” as shown in Figure 5 above, plays a central role in shaping the album’s overall aesthetic. Its prominent color scheme, featuring starry skies, pink clouds, turquoise, the pink moon, and flower petals, directly influences the album’s visual elements, including the cover art shown in Figure 5. The dreamlike illustration for “A Hug for Pink Moon” prompted interpretations centered on longing and hope. As mentioned before, the depiction of fish swimming in the sky was frequently mentioned by respondents, with one interpreting it as a metaphor for transcending boundaries: “It feels surreal but comforting, like even things that seem impossible can feel close.” This interpretation echoed how respondents linked the visuals to the song’s lyrical repetition of “Hug,” reinforcing themes of emotional proximity despite physical separation.

The qualitative responses reveal the significance of symbolism in evoking personal connections. This finding aligns with the study’s focus on understanding how participants interpret and emotionally engage with multimodal. Most comment about this illustration and song version, mainly about the theme of longing and connection, interpreting the moon imagery as symbolic of emotional closeness, despite physical distance. The dreamlike atmosphere, influenced by

night scenes and anime, resonated deeply with respondents, supporting findings that immersive visual environments can enhance emotional depth and creative engagement (Chambel et al., 2013).

1.3. Freed His Heart

“Freed His Heart,” as shown in Figure 6, symbolizes a figure reaching for the moon, eliciting rich and varied interpretations from participants. Many described the artwork as representing personal liberation and the courage to embrace new opportunities. One respondent stated, “The calm colors and the reaching gesture remind me of letting go of something heavy and moving forward.”

These interpretations highlight how the interplay of visuals and lyrics can evoke layered meanings tailored to individual experiences. The emphasis on qualitative data allows the discussion to focus on how participants made sense of these multimodal elements in ways that resonated with their journeys. From the multimodal perspective, the consistency in color schemes, ambiance, and terminology between the illustration, lyrics, and song becomes evident. The colors used in the artwork serve as mood setters, guiding the emotional tone when the author translates the visuals into lyrics and eventually into music.

2. Future Implications

This study underscores the transformative potential of multimodal communication in crafting layered, emotionally resonant storytelling experiences. The album “Sky of Summer Nights” demonstrates how multimodal synergy enhances audience engagement by integrating visuals, music, and text. Respondents highlighted how combining colors, metaphors, and melodies contributed to a comprehensive

multi-sensory experience. For instance, one participant described the illustrations as “soft and inviting.” At the same time, another emphasized the emotional closeness evoked by the song A Hug for Pink Moon, showcasing the role of multimodal coherence in fostering personal connections.

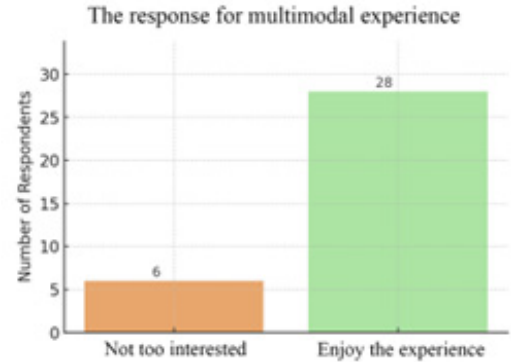


Figure 7. The response to multimodal experience (Source: Personal research documentation)

Based on Figure 7, survey respondents shared predominantly positive responses regarding the multimodal experience. One participant reflected on integrating AI music and illustrations, stating, “Some parts sound strange, especially the falsetto notes, and some melodies feel repetitive. However, even though it does not sound completely human, it does set a nice mood that matches the illustrations. I liked the lyrics too; they hold meaning and are also poetic.” This highlights both the limitations and strengths of the project’s multimodality, where AI-generated music and visual elements are aligned to enhance emotional resonance. Respondents’ acknowledgment of the music’s ability to “set a nice mood” supports the study’s findings that multimodal coherence is key to audience engagement.

The illustrations played a foundational role in setting the tone and guiding the design communication process, and respondents described them as “inspirational.” This observation aligns with the

research question exploring how AI-generated visuals and auditory elements contribute to emotional engagement. By integrating these elements, the project demonstrates AI's potential in expanding multimodal storytelling, even as it reveals areas for refinement, such as improving the naturalness of AI-generated sounds.

This study aligns with the theoretical concept that multimodal communication creates richer meanings by combining different modes (Kress, 2009). It highlights how visuals, text, and music interact dynamically to create cohesive storytelling, offering practical insights for industries such as branding and education. Participants' interpretations of symbolic imagery and lyrical repetition further underscore the importance of multimodal coherence in fostering emotional connections, a principle that can guide impactful multimedia campaigns.

The study points to future directions for creative industries, particularly in leveraging tools like AI for multimodal integration. Respondents noted how the album's blend of illustrations and music amplified emotional resonance, suggesting that AI-generated components could further refine these experiences. However, challenges persist, particularly in balancing technical precision with emotional authenticity. One participant noted that while specific falsetto notes felt "strange," the overall composition successfully complemented the visuals, underscoring the importance of prioritizing emotional impact in AI-driven storytelling.

Finally, multimodal communication offers a framework for bridging artistic innovation with audience engagement. Integrating text, images, and sound provides a template for cohesive narratives in branding, education, and interactive media.

Conclusion

The study confirms that the illustrations successfully stimulated cognitive and emotional engagement when reflecting on the feedback regarding illustrations and their correlation with the final output of AI-generated songs. Respondents appreciated how the visuals complemented the music, noting the evocative mood they set and the deeper connections they fostered with the lyrics. This feedback underscores the effectiveness of multimodal integration in enhancing audience experience and emotional resonance.

The findings also reveal a range of interpretations, highlighting Generation Z's exploratory nature. Their engagement with diverse artistic mediums, as evident in the survey responses, aligns with their broader characterization as "digital natives" (Grow & S, 2018) who have grown up at the intersection of technology and creativity. However, this openness is not merely a generational stereotype but was reflected in their nuanced responses to the project. For instance, participants appreciated the innovative blending of art and technology, even as they critiqued specific aspects like the repetitiveness of melodies or the strangeness of falsetto notes. This suggests a willingness to embrace emerging technologies like AI while maintaining high standards for creative outputs.

From a practical perspective, the study demonstrates the potential of tools like Suno AI to expand the creative possibilities for illustrators and musicians. By enabling seamless visual, auditory, and textual integration, such technologies open new avenues for artists to craft multisensory experiences. Respondents noted that the synergy between illustrations and music amplified the emotional impact, showcasing how multimodal storytelling can bridge gaps between traditional and digital art forms.

While the results highlight promising applications of AI in creative industries, they also underscore challenges, such as ensuring the naturalness of AI-generated sounds and addressing ethical concerns around creative ownership. Future research could delve into these challenges more deeply, exploring how multimodal coherence operates in diverse cultural contexts or emerging technologies like augmented and virtual reality. Such inquiries could further refine our understanding of how art and technology intersect to enhance storytelling.

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CREATING WOMEN CHARACTERS IN HORROR FILMS
USING AI: AVOIDING MALE GAZE CHARACTERS
TEMPLATE

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Abstract: *In screenwriting, one of the most essential elements is character. Characters are usually shaped by three critical factors: physical appearance, psychology, and sociology. In horror films, female characters are often used as protagonists, but in the history of horror films, female characters are trapped by the male gaze. The male gaze functions as a mechanism to dehumanize and commodify women, viewing them solely through the lens of heterosexual male desire. Laura Mulvey, in her seminal 1975 essay “Visual Pleasure and Narrative Cinema,” posits that films serve to strengthen patriarchal structures by portraying women as mere objects for both the male protagonist inside the film and the audience consuming the film. The use of AI in screenwriting continues to grow, although it is still a matter of debate. As we know, AI works by gathering and generalizing information from pre-existing data. This becomes a problem when we want to create female characters that are not considered male-gaze. Of course, not all horror films that have been made use the male gaze, but we must understand how horror films develop occasionally. This paper examines the relationship between artificial intelligence and creating female characters in scriptwriting, especially horror films. A conceptual paper is a paper without data, as it is focused on “integration and proposing new relationships among constructs”. This paper also aims to find the next step for us to create women characters with AI.*

Keywords: *AI; scriptwriting; character; male gaze; horror*

Introduction

In filmmaking, one of the fundamental elements is the screenplay. The screenplay is used as a ‘bible’ throughout filmmaking: development, pre-production, production, post-production, and even in the distribution phase. Screenwriting is a creative and technical process that requires an individual or a group of people, depending on the

project. In screenwriting, one of the most essential elements is character. Characters are usually shaped by three critical factors: physical appearance, psychology, and sociology. Characters are significant because they are the agents to move the plot forward.

In the Indonesian film industry, movies in the horror genre are very popular

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with the public. The horror genre dominates the box office. In horror films, female characters are often used as protagonists, but in the history of horror films, female characters are trapped by the male gaze. The male gaze in film has been extensively analyzed in academic literature, especially in the context of feminist film theory. Mulvey said in her essay “Visual Pleasure and Narrative Cinema” that the function of the male gaze is to dehumanize and commodify women, viewing them solely through the lens of heterosexual male desire (Bayezid et al., 2022).

Barbara Creed (1993) in “The Monstrous-Feminine” and Carol Clover (1992) in “Men, Women, and Chain Saws” analyze the history of horror films, women characters are posited as either victims of violence or as monstrous aberrations. Of course, these perspectives come from patriarchal anxieties about female power and sexuality. Horror movie conventions have ingrained this gendered approach to character development, making it difficult for AI systems that use pre-existing film data to learn from it.

In the Indonesian film context, Krishna Sen (1994) and Michalik (2015). Despite the genre’s popularity and cultural relevance, local horror films frequently repeat problematic gender assumptions, as Sen (1994) and Michalik (2015) noted. This makes it particularly difficult to use AI to build characters for horror movies in Indonesia because the systems may use examples from both domestic and foreign sources that support rather than contradict the masculine gaze.

In recent years, artificial intelligence (AI) has developed into a more advanced and accessible technology for everybody in many sectors. Cinema is not spared from technological advancement; it is part of the advancement itself. In a landscape where new media ceaselessly keeps evolving, experimenting becomes the best

option to apply and inaugurate the latest technologies that constantly carry liberal ramifications to how cinema is created, permeated, and experienced (Sugiarto & Widiastuti, 2021).

As one of the numerous manifestations of technical progress, artificial intelligence also permeates the art form of cinema. Screenwriting, often called scriptwriting, is one area that artificial intelligence is directly affecting. Screenwriting is the first and most important step in filmmaking. The concept of the male gaze within the realm of artificial intelligence (AI) becomes very complicated, especially when AI gathers information from previous films and series that are mostly considered using the male gaze. This becomes a problem when we want to create female characters that are not considered male-gaze. Of course, not all horror films that have been made use the male gaze, but we must understand how horror films develop occasionally.

Understanding these dynamics is crucial for developing AI tools that can help creators craft more nuanced and equitable representations of female characters in horror films, moving beyond the limitations of traditional male gaze perspectives. This paper aims to answer this question: How to create female characters in horror movies using AI without male-gaze stereotypes?

Methodology

Our paper examines the relationship between artificial intelligence and creating female characters in scriptwriting, especially horror films. A conceptual paper is a paper without data, as it is focused on “integration and proposing new relationships among constructs”. This approach is particularly suitable for examining the intersections and ongoing tensions between emerging fields where empirical

data may be limited.

In a conceptual paper. A literature review method is crucial to gather the necessary information. A literature review is “an excellent way of synthesizing research findings to show evidence on a meta-level and to uncover areas in which more research is needed”. The goals of this research is to establishing familiarity and bridging the knowledge of prior researches and papers. We summarize the important parts to highlight the topic, comprehend current developments of the roles of AI in filmmaking (especially scriptwriting), and generate new perspective on the topics.

We studied the concept on feminist theory works in film by academics such as Mulvey, Clover, and Creed. Followed by reviewing fundamental literature regarding the male gaze in horror films. After that, we examined how this male gaze concept related to recent advancements in AI technology, especially on the process of AI system and spotting further potential of gender bias in scriptwriting.

We use the conceptual analysis by involving a narrative literature review across three areas. The first one is feminist film theory. Second is artificial intelligence in filmmaking, especially scriptwriting. And the last one is gender bias in AI system. To understand how these three areas connect with each other, we examined scholarly articles, industry reports, and theoretical frameworks. Finding patterns in the potential effects of AI deployment in the scriptwriting process on gender representation in horror films was a primary focus of the research.

We synthesized insights from studies regarding the male gaze in film with combination of current research on gender bias in AI system. We hope the synthesis will help us to identify potential challenges and opportunities in using AI to avoid traditional stereotypes and male gaze perspective when creating women character

in horror film.

This conceptual paper utilizes a semi-systematic review, effectively identifying themes, theoretical perspectives, or joint issues within a specific research discipline or methodology. The result and discussion in this paper draw from literature about male gaze and

Result

This paper gathered a literature review on creating women characters in horror films using AI and the challenges of avoiding the male gaze.

In her essay, Mulvey (1975) presented the male gaze in film. According to Mulvey, the male gaze views women through the lens of heterosexual male desire. It’s a mechanism to dehumanize and commodify women. The male gaze elaborates on the relationship between men and women characters in the film, as the notion of patriarchy and its mechanism of dominance over women in film (Bayezid et al., 2022).

Patriarchal structures have fundamentally shaped the creation of women characters in the history of cinema. Indonesian cinema demonstrates how the film industry reinforced patriarchal ideologies through its male-dominated production structures. Sen’s analysis stated that with men occupying most key creative positions, women characters were viewed as objects of desire for both male characters and viewers (Sen, 1994). This pattern is continuous in contemporary Indonesian cinema.

In horror films, this woman’s objectification is more noticeable. Previous studies have shown that these representations have endured across decades, indicating deeply embedded cultural beliefs that impact information produced by humans as well as content supported by artificial intelligence.

Pangastusi in her research specifically examines films from different periods - including Sundel Bolong (1981), Gairah Malam III (1996), and Air Terjun Pengan-tin (2009) - revealing consistent patterns of female sexploitation despite changing social contexts. These patterns are so in-grained that they now influence not only human-created content but also AI-generated material (Pangastuti, 2019). As Hari-yadi et al. (2021) observe in their study of contemporary Indonesian horror films, even when female characters display agency and power, their portrayal often remains entangled with traditional modes of objectification.

Artificial intelligence (AI) has become increasingly prevalent in the film busi-ness, impacting all phases of the produc-tion cycle (Li, 2022). Animation films that are based on AI and machine learning technology have produced new visual rep-resentations as a result of the application of artificial intelligence (AI) in the film industry (Wan & Ren, 2021). Additionally, AI has been used in the manufacturing sector of illustration, demonstrating its potential to revolutionize traditional pro-duction techniques (Putra et al., 2022). The impact of AI on the creation of artis-tic digital content, namely in the fields of online poster design and video design, has been examined. The report highlights AI's enormous potential to change content.

Furthermore, it is imperative to con-sider the application of machine learning techniques in the creative industry while developing an artificial intelligence (AI) system for scriptwriting. Gaussian mix-ture regression and Gaussian Process re-gression were used by Osa et al. (2018) to depict mappings from time to states and contexts to trajectories, respectively. Moreover, the creative process has high-lighted the use of AI engines like ALICE, indicating that AI has the potential to aid in scriptwriting (McIntyre et al., 2016). Furthermore, the application of artificial

intelligence and machine learning in the film industry has been demonstrated in predicting box office success and movie performances, underscoring the impor-tance of these technologies in the enter-tainment sector (Kim et al., 2020; Kim et al., 2017; Lee et al., 2018; Liu & Xie, 2018).

Studies show that AI-based deci-sion-making systems can exhibit gender bias, affecting people and communities, giving rise to worries about the develop-ment and application of AI technology (Nadeem et al., 2022). Furthermore, the incorporation of feminine gender char-acteristics into AI products, including chatbots and robots, has affected people's acceptance of AI as well as their percep-tion of them as human-like. This demon-strates the effects on gender that result from AI design and deployment (Borau et al., 2021). The rapid development of AI technology raises concerns because of previous studies that indicate gender bias in AI-based decision-making sys-tems (Nadeem et al., 2022). Researchers have also prioritized examining the con-sequences of gender bias in AI systems in every sector. Algorithmic design can be one of the keys to fixing these biases. Promoting diversity, raising awareness, and incorporating design processes can be taken (Hall & Ellis, 2023).

Concerns about the unintentional ef-fects of artificial intelligence (AI) on bias and inequality in society have been re-kindled by the recent investigation of AI-based facial recognition software. Gupta et al. (2021) have addressed the ethical and social implications of gender bias in AI. Specifically, they have highlighted the potential risks and hazards related to the ethical, legal, and societal elements of us-ing AI, with a focus on gender concerns. In addition, there has been greater dis-cussion about how AI technology might address issues raised by the UN 2030 Agenda for Sustainable Development,

such as issues related to diversity and eth-ics (Parra et al., 2022).

The collection of language data in ar-tificial intelligence (AI) demonstrates bi-ases and raises concerns regarding impar-tiality and equality. For example, there are some occupations words, that are related to gender (Caliskan et al., 2017).

Furthermore, gender bias in coref-erence resolution systems has been suc-cessfully reduced by employing debiasing techniques, such as the use of debiased word embeddings (Webster et al., 2018). However, despite these efforts, concerns about demographic biases in AI applica-tions persist, prompting calls for further research and correction of gender bias in natural language processing (Costa-jussà, 2019).

It has been noted in the natural lan-guage processing (NLP) community that while bias in artificial intelligence (AI) has long been studied, methods for addressing gender bias in NLP in particular are still in their infancy (Sun et al., 2019). Research-ers have also looked into the relationship between gender and artificial intelligence (AI), particularly as it relates to chatbots and digital assistants. The high percentage of female representation in these AI enti-ties has drawn criticism (Costa, 2018). Ad-ditionally, when examining how AI affects gender equality, researchers have found that bias problems in AI systems may make it more difficult for AI to advance gender equality (Özdemir et al., 2021).

Although the literature is increas-ingly acknowledging gender bias in AI, persistent issues remain, especially in domains where AI systems have been observed to perpetuate prejudice and discrimination. The influence of past ex-clusion of women in gathering data and less involvement of women in the field of artificial intelligence have been identified as factors contributing to gender bias in datasets used for machine learning (Dar-

ney, 2020).

Discussion

In the history of cinema, patriarchal structures were the foundation of creat-ing women characters. It happened be-cause the film industry was considered a male industry, where key people were mostly men. Women characters are usu-ally created as objects of desire of male characters and the viewers.

The male gaze widened into contem-porary filmmaking. This phenomenon is distinguished by a prolonged gaze that objectifies the feminine physique and gratifies the male observer with sexual satisfaction. The shot of the male gaze is usually helped by cinematography, edit-ing, and even sound that underlines wom-en as sexual objects, and importantly, the male gaze externalizes the hierarchical power relations and gender portrayals in visual media (Scanlon & Lewis, 2016).

The male gaze appears frequently in modern cinema and is also a theoretical concept. This phenomenon can be identi-fied by a prolonged look that satisfies the male observer's sexual desires while ob-jectifying the feminine physique. Often-times, this visual focus is in rhythm with the film camera, which influences how the spectator relates to the male lead charac-ter and reinforces traditional cinematic dynamics in which men watch. Women are thought to be the focus of male atten-tion. In addition, the masculine gaze is a well-known emblem in feminist theory related to cinema and television, signify-ing the hierarchical power structures and gender representations in visual arts.

In horror films, this woman's objec-tification is more noticeable. In previous studies, these representations have en-dured across decades, indicating deeply embedded cultural beliefs that impact information produced by humans as well

as content supported by artificial intelligence.

The woman of horror is most likely the victim of a string of horrifying crimes; she is harassed, threatened, assaulted, raped, and killed—all for the satisfaction of the audience as well as the satisfaction of the fictional victim. The film’s cinematic architecture encourages the viewer to participate in the terrorization of filmed women, so perpetuating patriarchal institutions in both the media and society at large (Hankins, 2020).

The idea of the “male gaze” in the context of artificial intelligence (AI) has drawn increasing interest and concern due to its potential to reinforce gender bias and have profound effects on society. According to Laura Mulvey’s conceptualization, the male gaze refers to the objectification of women and the sexualized portrayal of them, usually from the perspective of heterosexual men (Long, 2023).

A trend has evolved as AI technologies are used more and more in screenwriting and character development. AI systems may unintentionally reinforce and even magnify gender biases when they rely on preexisting data sets. Our analysis of numerous studies brought to light the serious difficulty this presents in trying to develop female characters who do not conform to the male gaze, since the AI may perpetuate prejudices and preconceptions found in its training set.

With the development of AI in screenwriting, screenwriters can be helped by AI when they create characters. Turns out that creating women characters with AI, especially in the horror film genre is a little bit complicated. As we know, man has monopolized the film industry since the early days. AI may collect data from previous films, especially when it comes to physical appearance, psychology, or sociology of a woman’s character. For example, if we use ChatGPT for creating women’s

physical appearance for horror films, the keywords that come out mostly are to represent beautiful, striking, and sexy women. Meanwhile, in the real world, women are very diverse in terms of physical appearance, but that kind of representation does not appear. In horror films, gender representation is quite problematic. This still proves that the role of the male gaze in horror movies is very strong and hard to let go of. Also in horror films, the Final Girl trope is very popular. Lots of people think it’s very empowering. Even before her ultimate triumph, those women characters have to deal with extreme violence and sexualization.

This begs the big question, if AI is so problematic, why don’t we avoid using AI in screenwriting especially when creating female characters? There have been many anti-AI movements in filmmaking and scriptwriting. Recently in the screening of A24’s Heretic, there was a disclaimer “No Generative AI was used in the making of this film,” where they opposed the use of AI in the film.

On the other hand, many people, such as filmmakers, production houses, or festivals, support the use of AI in filmmaking. The 2024 Bucheon International Film Festival (BIFAN) held an AI film workshop and competition, where filmmakers made films using an AI video generator provided by the organizers. This debate will go on for a long time. But as filmmakers and academics, we feel the use of AI is inevitable. With that, we have to optimize research related to AI and filmmaking.

In recent years, artificial intelligence (AI) and machine learning (ML) have expanded significantly in the context of data analysis and computing, which usually enables the applications to operate intelligently (Sarker, Furhad, et al., 2021). Machine learning (ML) is often considered the most popular current technology of the fourth industrial revolution. It typ-

ically gives systems the capacity to learn and improve from experience automatically without being specifically designed (Sarker, Hoque, et al., 2021).

Gender bias in AI is an issue that is being sought for mitigation, not just in film and script writing but in other areas as well. It suggests that technological solutions alone may not be sufficient to address this issue, and we need a holistic approach, like cultural awareness and critical analysis of gender representations in media.

Conclusion

As AI continues to play an increasingly significant role in media production, including screenwriting, addressing these challenges will ensure that technology contributes to more equitable and diverse representations in cinema, rather than reinforcing harmful stereotypes and biases.

To help writers create women characters in horror films, AI is getting better and better, but we need to gather more data to contribute to datasets used for machine learning, especially from films made by women. It can enrich the representation of women in AI datasets. This paper suggests the following next research directions:

1. Creating and evaluating AI systems particularly meant to produce diverse and non-stereotypical character representations.
2. Investigating how AI might be used to detect and measure gender bias in current stories and scripts.
3. Examining the long-term social effects of media content produced by AI on attitudes and perceptions about gender.
4. Evaluating different debiasing techniques concerning character development and creative writing.

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EXPLORING EDUCATIONAL MEDIA ON INDONESIAN STUDIES FOR THIRD-CULTURE KIDS IDENTITY DEVELOPMENT

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Abstract: Indonesian Generation Z faces challenge in strengthening their national identity because of globalization. This is an urgency as Indonesia is progressing towards “Golden Indonesia 2045” where the goal is to have an advanced cultural richness over shared identity. One segmentation of Generation Z that encounters a challenge in self-identity perception is Third-Culture Kids (TCK). Their disconnection from the national identity during identity development can trigger identity crisis. One way to nurture their national identity is through teaching them Indonesian studies, consists of Indonesia’s cultural heritage, history, tradition, core values, and language. However, many TCKs struggle as they have short attention spans and language barriers towards most conventional educational media delivered in Indonesian language. This paper aims to fill in the gap of the limited research on this topic. The method is through qualitative method by reviewing previous studies on educational media related to Indonesian studies. This goal is to provide recommendations for further education development, in providing educational media for TCKs. The results underline the importance of interactivity aspects and the use of bilingual language, which has significantly helped BIPA students. The results suggest implication to design an interactive educational media that supports TCKs’ learning characteristics with local community involvement. The school managerial implication is to provide educators with inclusive education trainings and support families with transition programs during school induction.

Keywords: third-culture kids; Indonesian studies; educational media; interactivity, golden Indonesia 2045

Introduction

Indonesia is a multicultural country of over 1340 ethnic groups across over 17000 islands. Because of that, Indonesia needs a unification to bridge its cultural, ethnic, and social differences. The unification is through having a shared national identity rooted in Indonesia’s core values. Notably, a strong national identity develops a sense of belonging towards the nation

that spans across generations. It triggers positive pride to contribute to nation’s development, politically and economically. Indeed, it is crucial to ensure the same core values are passed down through generations. Thus, having a shared national identity empowers the nation’s future potential.

Having a shared national identity becomes an important subject due to the

nation’s goal towards “Golden Indonesia 2045”, aiming for an advanced cultural richness over shared identity. One way to keep track of the cultural progress development is through Cultural Development Index with indicators of cultural heritage, socio-cultural resilience, education, cultural economy, gender, literacy culture, and cultural expression. The government has published the 2013 Cultural Development Index score of 57.13 out of 100, which increased only by 2 points from the previous year (BAPPENAS, 2023). Still, the score highlighted remaining gaps of cultural economic across Indonesia.

One way to nurture the national identity is through teaching Indonesian studies; a collection of studies in Indonesia’s cultural heritage, history, tradition, core values and language. Through the Cultural Endowment Fund, the government pushed development of more educational media, commonly offered in Indonesian language. A variety of educational media emerged, such as ebooks (Gogahu & Prasetyo, 2020), comic books (Zakiyah et al., 2022) and websites (Pratama, 2021); which can be categorized into audio, visual, and audio-visual media; chosen based on its effectiveness, efficiency, as well as teacher’s capability to use the media (Nasron et al., 2024).

Despite the advancement of Indonesian studies, it is hard to stay away from foreign cultures’ influences through globalization. While it can empower personalized growth experience, it can also affect a collective identity. Globalization can replace rooted identity from family. It has greater influence on younger generation who feel disconnected as an Indonesian. Indeed, many Generation Z (born between 1997 and 2012) perceived Indonesian studies as monotonous and outdated. A survey conducted found an increased preference over foreign cultures among

Generation Z (IDN Research Institute, 2024). As such, they are not shy to show they prefer to speak foreign language and embody foreign cultures more, which significantly affected their knowledge in Indonesian values (Nugroho & Reswari, 2024; Salsabila et al., 2024).

One segmentation group of Generation Z with significant exposure to globalization is the Third-Culture Kid (TCK), who are exposed to multicultural situations throughout their upbringing. To illustrate, students attending international-setting schools are part of TCKs (Delaere-Maclean, 2021). TCKs are different from their peers attending public schools or living among neighborhoods with strong local influences. TCKs may live among the same neighborhoods but actively embody and believe in different values. They naturally developed their own unique identity; blending their home culture (as their first culture) with the local culture (as their second culture) and a sense of belonging that goes beyond any specific locations, languages, or traditions; which is an in-between space of “third culture”. Thus, they can assimilate different cultural cues and languages naturally. Consequently, it can also hinder them from understanding educational media brought in Indonesian language, including Indonesian studies. Siregar & Rangkuti (2022) previously identified common language errors in pronunciation, intonation, forming sentences, and fluency among Indonesian attending international schools in Jakarta.

But like other Generation Z, Indonesian TCKs need Indonesian studies. Especially when they constantly create their definition of home to describe their belonging. TCKs share a common challenge in self-identity perception, which can lead to identity crisis. Aligned with Erikson’s Identity Development Theo-

ry, TCKs need strong goals, values, and belief to be a whole person (Long, 2016). Equally important, the right educational media needs to consider Generation Z's learning preference towards digital media that allows them to multitask (Ramadhan et al., 2024) as well as cultivate their lack of creativity and collaboration skills. They have notable need of interactivity aspect, in form of class discussion and real-life simulation (Dewi et al., 2021). They need constant movement of images and informative elements to keep them immersed. As such, they have limited attention span when given a conventional media (Nicholas, 2020). It is fundamental to offering the right educational media for their identity development, otherwise there is an identity loss generation.

While there is an increasing awareness on teaching Indonesian values, there is still limited paper review that delve into Indonesian studies subject with focus on Third-Culture Kids. This study aims to review previous research on various media about Indonesian studies. The goal is to give recommendation for further education development, especially in providing the educational media.

Indonesian Third-Culture Kids and Identity Development

Identity development process is complex. It roots beyond where someone live or where their parents are from. The Erikson's Identity Development described the process of how someone understand who they are as a person, a result of facing challenges during the identity formation phase (12 to 18 years old). They collect different values and form their own personal values as they socialize. Meanwhile when someone then becomes unsure about who they are, they experience identity confusion (Long, 2016).

Previous studies have underlined re-occurring cases of identity development challenges among TCKs. Like many Generation Z, TCKs are also influenced by demographics, family dynamics, environmental influences, psychological traits, and socio-cultural aspects. They are natural curious learners in life with open-mindedness (Saputri & Wandebori, 2014) observing, critical thinking, and analytical skills (Hopkins, 2020). However, TCKs commonly feel alienated because they are exposed to extreme differences in value, unlike their peers. Previous studies found a high number of depressive symptoms (Thomas et al., 2021), in adjusting to feelings of loss (Liu et al., 2024), stress, and anxiety (de Vroedt, 2022) among TCKs. As such, they need more time to regulate emotions.

In contrast, TCKs develop stronger multilingual skills during identity development. They develop a keen awareness of cultural differences of body language, social norms, to etiquette when socializing. Mosanya & Kwiatkowska (2023) also mentioned their flexibility in switching between languages as they speak. Regardless of how, not all TCKs possessed the same level of language proficiency. Some face language barrier and labelled as having intellectual disability (Tanu, 2016). Previous research mentioned their challenges in understanding information delivered. Thomas et al. (2021) mentioned the language barrier significantly influenced their comprehension and participation in class discussion. Thus, Jones et al. (2022) suggested mixing language to maintain their home language proficiency. It is a priority to keep in mind their language proficiency when designing an educational media.

Indonesian students at international school fell into the category of what defined TCKs experience. Previous study

mentioned how being exposed to international setting, allows them to juggle between worlds (Tanu, 2016). In other words, TCKs face cultural duality as they blend in values at home and at school. Moreover, most Asian families wanted their next generation to be exposed to diverse cultures to be open-minded. Asian parents expected their children to know other cultures and still know how to be Asian enough. Because of that, teachers at international-setting school are expected to support students with different backgrounds, as they need different treatments (Long, 2016). Ultimately, teachers need to continuously enhance their knowledge and teaching method. This comes to light especially when previous research on hybrid learning during COVID-19 pandemic, found some teachers have a limited awareness of the latest education developments (Hefira et al., 2022). It is important for teachers to expand their knowledge and method to have a positive proactive and resilience attitude. In turn, teachers' proactiveness significantly influenced their innovative work performance (Wenehenubun & Prihanto, 2024), which will conversely promote an interactive class. There should be improvements within school regulation to support TCK's learning characteristics. All in all, TCKs' complex factors and their identity development process, need serious attention if "Golden Indonesia 2045" is Indonesia's next milestone.

Methodology

This study used a qualitative method to answer the research gap in Indonesian TCKs learning Indonesian studies. The goal is to give recommendation for further education development, to provide the educational media. In this context, Indonesian studies is used to classify studies

in Indonesia's cultural heritage, history, tradition, core values and languages. The research reviewed previous studies on various educational mediums about Indonesian studies, through literature review found from 2023 to 2024. The keywords used were "Indonesian studies media", "Indonesian studies" and "Indonesian culture teaching". There were two main phases done. Pre-screening and screening phases were done to filter similar data answering the research objectives. From 51.700 research papers found on database, the pre-screening phase found 237 papers eligible within the criteria of title relevancy to the study objectives. Then, the abstract screening was done to filter journal credibility and relevancy to the objectives, where this research found 6 eligible papers. This research has no intention to reveal distortion of cultural contents published, but only how the information is delivered

Result

The study filtered the research database with keywords of "Indonesian studies media", "Indonesian studies" and "Indonesian culture teaching", and found 6 papers eligible to review; aiming to offer implication for further education development. The chosen papers were filtered based on its journal credibility, published journal time range, title relevancy, abstract screening, and relevancy to the study objective. The following key findings of eligible papers are explained below.

Table 1. Systematic Literature Review

Article Title	Educational Media
Investigating the Implementation of Multimodality and Spherical Video-Based Immersive Virtual Reality in The Indonesian Language for Foreign Speakers’ Learning Materials (Rahmanu et al., 2023)	Spherical video-based immersive virtual reality (SV-IVR)
The Development of Cultural Literacy for Indonesian for Foreign Speakers (BIPA) Students through RPG Games with A Gamification Approach (Yuriananta et al., 2023)	Role-playing game “Legend of Malang”
Representing and Implementing Moral Values to Foreign Students in Indonesian Textbooks for Learners Other Than Indonesians (Pratiwi et al., 2023)	Indonesian Textbook “Sahabatku Indonesia”
Using Social Media for Preserving the Javanese Traditional Arts: Adaptation	Social media (Youtube and Facebook)

Strategy of Sobokartti in the Millenial Era (Yuliati et al., 2023)	
Character Education Values of Pancasila Student Profiles in the Puppet Figure Wayang Arjuna: A Javanese Cultural Perspective (Subiyantoro et al., 2023)	Puppetry “Wayang”
Indonesian National Assessment Support: Can RE-STEM Android App Improve Students’ Scientific Literacy Skills? (Subali et al., 2023)	Android App “RE-STEM”

1. Spherical video-based immersive virtual reality (SV-IVR)

The multimodality and spherical video-based immersive virtual reality (SV-IVR) has proven to improve BIPA (Bahasa Indonesia bagi Penutur Asing) students’ Indonesian language proficiency both in speaking and writing. The SV-IVR answered challenges found in conventional teaching and learning process using handouts and eBooks. The SV-IVR media is a combination of multiple different mediums or a combination of inter-arts, through audio, video, text, and images with immersive virtual reality. With the

help of virtual reality, there is enough user control to explore a 360-experience which significantly influence students’ satisfaction, interaction, and situational experience. The SV-IVR enhanced writing, speaking, and getting familiar with new vocabularies. Consequently, it required high technology to capture the real-life simulation on a higher pricing point. Also, there should be enough time to get users (teachers and student) to be familiar with the new technology.

2. Role-playing game “Legend of Malang”

The role-playing game (RPG), named “Legend of Malang”, also significantly proven to improve BIPA student’s Indonesian language proficiency. The game offered a real-life simulation to explore Malang city’s urban legend, while surviving from natural disaster. With the help of gamification approaches of points, badges, ranks, behaviors, and skills; students learned the sociocultural of Malang city. The teachers’s involvement contributed to the success implementation. The teacher prompted the students’ understanding and explained the new vocabularies found during the gameplay.

3. Indonesian Textbook “Sahabatku Indonesia”

The Indonesian textbook “Sahabatku Indonesia”, which also translated to “Indonesia My Friend”; was another example of media exploration for BIPA students. The textbook is chosen to answer the challenge in limited local moral values mentioned on the existing BIPA textbooks; when it could teach them Indonesian characteristics better. The textbooks used images, biographical and dialogues texts.

The textbook incorporated 13 Indonesian moral values and 5 pillars ideology (religion, pluralism, democracy, social justice, and humanism) throughout various context; from Indonesian tourism to culinary situations. For instance, Indonesian’s friendliness in greeting one another based on situational time and social relationship. The learning goal was to become more familiar with the Indonesian customs and avoid misinterpreted attitudes that may be misconducted Indonesia’s social norms.

4. Social media (Youtube and Facebook)

“Sobokartti”, a traditional dance studio located in Semarang city, Indonesia, introduced interesting insights on utilizing social media as their educational media. During the COVID-19 pandemic, the dance studio maximized the technology to touch wider audience with relatively cheaper production cost, in comparison to live performances. Its modern take can only be a success when it is done together as a team. “Sobokartti” managed to create a sense of belonging, within members and the audience. Using Facebok Group named “Perkumpulan Sobokartti”, which translated to “community of Sobokartti”; their contents revolved around being part of the dance studio. Everyone at the studio contributed to the content creation, ranging from management meeting results to performance documentations. For instance, the trainers uploaded “behind the scenes” videos. The importance of product knowledge to maximize each platform features is essential. For instance, they maximized the use of share feature to facilitate marketing of “word of mouth”. The social media became a successful educational media because it focused on communal theme. It underlined

the influence of local and community's involvement, to offer Indonesian studies subject for those who are not familiar with before.

5. Puppetry “Wayang”

This study focused on empowering Indonesian students with understanding and embodiment of local values. The research emphasized the importance of Indonesian values through Indonesia's traditional visual art performance and UNESCO 2004 intangible heritage, a puppetry known as “Wayang”. It was part of Indonesia's Ministry of Education and Culture program to strengthen Indonesian student's character, named “Profil Pelajar Pancasila” which translated to “Student Profile of Pancasila”. The “Wayang” the puppetry conveyed values within Pancasila foundational principles. The visual art performance depicted urban legend stories with spiritual values. One of the famous character, Arjuna, is chosen as the main character on this subject. Arjuna is known for his noble character and victorious stories fighting the unsettling characters, like Korawa. Arjuna “wayang” character has six dimensions of the “Pancasila” profile: faithful, global awareness, cooperative, independence, critical thinking, and creativity. Arjuna's physical attributes also carried symbolic meanings (such as “liyepan” eyes and “wali miring” nose). Further studies suggested analyzing other “wayang” characters to see how it can convey Indonesian values.

6. Android App “RE-STEM”

This study took a different approach compared to the previous studies, because it answered challenges in studying science. This study is included due to its result in offering an alternative teaching method

on how to incorporate Indonesian studies within interdisciplinary subjects. The use of traditional toys as part of ethnoscience method, significantly improved secondary student's scientific literacy skills, especially in the topic of sound wave. The traditional toys were chosen based on the student's familiarity in daily life, which were “Tarutu” (a traditional flute made from coconut or banana leaves to demonstrate sound length and frequency), “Cup Telephone” (a traditional toy made from paper cups to demonstrate sound wave different mediums), “Calung” (a traditional musical instrument used to study frequency and resonance), and “Sempri-tan Manuk” (a traditional whistle made of bamboo to demonstrate frequency range because of air). With the help of everyday traditional toys, students can connect their local culture understanding with the scientific understanding (ethnoscience). The learning process were done through an app named “RE-STEM” that enabled students to explore the science content easily. The results shown significant increase in engagement rate when expressing scientific analysis among students with higher local culture understanding. On the other hand, a group of students with lower local culture understanding, found difficulties in analyzing the scientific aspects. Overall, the RE-STEM app further expanded variety of education media about Indonesian studies, especially in interdisciplinary subjects.

Discussion

The results have widened perspective on how to offer Indonesian studies on different mediums within various context for TCKs. The interesting findings are the exploration of different interactivity levels incorporated.

To begin with, there was a significant potential in enhancing learning experience through inter-arts media with modern technologies. Combining multiple media to support one another (in this case: audio, video, text, image, and immersive reality) shown promising effort to increase student's participation in class. Thus, the SV-IVR and gamification approaches through “Legend of Malang” role-playing game are suitable for TCKs. This is aligned with previous study where Thomas et al. (2021) mentioned TCK's struggle in adapting and participating in class. The educational media is seen suitable for TCKs who need encouragement in confidence and expressing interest (de Vroedt, 2022; Liu et al., 2024) as well as help in social interaction (Ramadhan et al., 2024). Their adaptation process to new technology potentially promotes peer learning as they learn with friends. The novel modern technology has previously mentioned to enhance speaking and writing skills of BIPA students, who has the same situation of learning Indonesian studies like TCKs. Thus, it will be helpful for TCKs, who need to learn Indonesian language to maintain their connection to rooted identity (Jones et al., 2022).

Next, the interactivity aspect found on the use of social media features. The “Sobokartti” case proved how social media can spread the word and increase community engagement. The creative exploration of social media features is relevant to TCK's digital literacy characteristics that preferred interacting and multitasking digitally (Ramadhan et al., 2024). Additionally, it highly emphasized the role of local community involvement. Thus, designing an educational media for TCKs need local involvement. With their natural cross-cultural understanding, TCKs could learn cultural traits easier from first-hand sources.

Additionally, interactivity was also found on textbooks, named “Sahabatku Indonesia” that filled in the gaps moral values taught in BIPA class. The one-way indirect interaction with local morale consideration has proven to enhance cultural understanding. This is a valuable perspective for educators to consider alternative ways aside from modern technologies, where not all are familiar of. This is aligned with previous research that mentioned that not all educators were aware of the latest educational development, both knowledge and method updates (Hefira et al., 2022).

Next, a study about the use of traditional visual art performance has widened exploration of traditional local wisdoms as part of Indonesian studies, namely Indonesian puppetry named “wayang”. The character Arjuna portrayed Indonesian values of “Pancasila” through its symbolic physical forms and storytelling. In light of this, there were opportunities to involve local visual art performances to deliver Indonesian studies. Puppetry is suitable for TCKs who has a natural curiosity on various subjects, aligned with previous research on their learning traits of open-mindedness and observing (Hopkins, 2020; Saputri & Wandebori, 2014). Again, the puppetry art performance shown interaction level between puppetry master and audience, where it is suitable for TCKs who has short attention span (Nicholas, 2020), which required providing constant objects movement to keep them immersed.

Finally, educators can also integrate Indonesian studies with interdisciplinary subjects, for instance science subject through “RE-STEM” app. By incorporating familiar traditional toys (such as “tarutu”, “cup telephone”, “calung”, and “sempritan manuk”) that students know, with the science subject of sound wave;

the students were able to connect their cultural understanding and academic context. The ethnoscience aspect is suitable for TCKs whose characteristics are able to easily navigate complex subjects by connecting the academic subject with their real-life experiences (Rauwerda, 2021).

All in all, the literature review results introduced interactivity aspects within diverse mediums in teaching Indonesians studies. There were also long-term impacts from exploration of advanced technologies, comparative studies and ethnoscience to create immersive learning experience. Align with this research's goal to give recommendations for further educational development, this study wanted to emphasize the crucial role of the teacher. The teacher's role to facilitate and guide the students throughout the new technology adoption, the new vocabularies, and cooperation is worth noting for. The research further underlined the need for constant improvement of teachers' trainings to keep all stakeholders updated to the latest education trend. Next educational development should focus on how to effectively utilize these innovative and highly advanced technologies as educational tools, without forgetting the focus in Indonesian studies.

Conclusion

The literature review has introduced innovative alternative teaching approaches to offer Indonesian studies on various mediums and into different educational contexts (such as the use of inter-arts media, digital game, social media to traditional visual art performance). This research underlined the need to further explore interactivity aspects within diverse mediums, to support a flexible teaching method in Indonesian studies. The inter-

activity aspect should not be limited to modern technologies, but also through textbook and performance art mediums. From a design perspective, it is crucial to promote localization. The design angle should involve local communities to enhance relevance and effectiveness within the chosen interactivity level. The subject on Indonesian studies should always consider the students' level of understanding of the cultural and contextual needs. Or in other words, educators should continuously bridge real life experience and academic context.

To answer the research's goal to give recommendations for educational development, there are implications that can be drawn from this study. To begin with, designing an educational media for TCKs should start by empathizing with their characteristics. Educators and designers should be aware of their vulnerability, learning styles and language proficiency. The goal is to develop an educational media with interactive aspects to promote engagement. The media should have enough visual aid and an extended vocabulary list.

Continuing, there should be adjustment on educator's teaching style, especially because they need to create an inclusive learning system. First, the school management must acknowledge differences within teachers' understanding level of the updated teaching and learning condition. There must be a given understanding of TCKs characteristics within school regulations and trainings. Second, promote awareness of student's learning gaps that may rise due to disruption in their learning continuity. Indeed, a repetitive practice and training would be beneficial for both educators and students in their teaching and learning. Third, encourage reflection time for personal growth and stress management. It

is important to be mindful of a student's emotional wellbeing in class. Fourth, encourage class engagement that answers challenges in building relationships, namely through peer learning. Finally, the school's curriculum needs to continue incorporating Indonesian studies (including social behaviour norms, traditions, and customs) to promote sense of belonging as Indonesian TCK.

The family's involvement is also crucial. Previous research mentioned the importance of family aspect to identity development. Thus, schools can facilitate induction sessions, namely cross-cultural student transitions, for TCK families about the dynamic learning environment their child is about to experience. Then, friendly reminder families to create a healthy environment at home by maintaining connection with their root, namely through family tradition and home language.

In summary, while the current methods demonstrated significant potential in fostering Indonesian studies, such as improving language proficiency to promote cultural understanding. Further research should focus on refining the interactivity approaches and involve empathy with TCKs characteristics in mind. Until then, Indonesian studies remain as an interesting subject to delve into, both culturally sensitive and technologically accessible.

Limitations

There were limitations that should be acknowledged, particularly for the purpose of further research. It is worth noting that there may be more research papers that contributed valuable insights but were excluded due to the publication time range. Aside from time range, it is also inevitable to acknowledge that there may be other factors during the pre-screening and

screening phase that excluded the papers due to incomplete explanations in the title, abstract, chosen keywords or journal credibility.

Further Research

Further research should dig into the impact of the selected technologies incorporated, with the teaching competencies required, to facilitate an effective teaching. Additionally, the research topic can consider the influence of mixed-language and mixed-culture households on cross-cultural identity formation may present as promising research in the future.

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GENSHIN IMPACT’S ROLE IN PRESERVING CHINESE
CULTURAL HERITAGE

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Abstract: *Genshin Impact*, a popular video game, has attracted attention for its success in integrating elements of Chinese Cultural Heritage into its world design. This study aims to describe the integration of Chinese cultural heritage (CCH) in the world design of *Genshin Impact*, while assessing its success in encouraging players’ interest in visiting China. This study used a qualitative methods approach through literature studies, surveys, and in-depth observations. The results analysis showed that *Genshin Impact* successfully integrated various aspects of Chinese Cultural Heritage, such as traditional architecture and natural beauty into the stunning world design; most players felt the beauty of Chinese culture in the game and expressed interest in visiting the locations that served as inspiration in the game. The findings of this study suggest that *Genshin Impact* has great potential as a cultural promotion tool. By presenting Chinese Cultural Heritage in an engaging and interactive format, the game succeeded in arousing players’ curiosity and encouraging them to learn more about Chinese culture. In addition, *Genshin Impact* can also contribute to increased tourist interest in China.

Keywords: game; cultural heritage; culture; tourism

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Introduction

Tangible cultural heritage encompasses the physical expressions of culture, such as artifacts, monuments, buildings, and other objects that carry historical, artistic, or cultural value. These items are often passed down through generations, serving as visible markers of a community’s identity, values, and traditions (Cesar-ia et al., 2020).

Additionally, tangible cultural heritage plays a vital role in cultivating a sense of pride and belonging within communities. It is often safeguarded by international organizations like UNESCO to ensure its preservation for future generations. Such heritage not only enhances cultural tourism but also serves as an educational tool, helping younger generations connect with their history and heritage. By preserving tangible heritage, societies maintain continuity with their past, fostering cultural diversity and understanding in an increasingly globalized world.

The preservation of tangible cultural heritage is essential for maintaining cultural identity and promoting diversity. It strengthens the bond between communities and their past, encourages a sense of belonging, and supports cultural exchange and understanding (Zhenrao et al., 2021). By safeguarding these artifacts and monuments, we ensure that they are not lost to time and continue to enrich the lives of future generations. Moreover, tangible cultural heritage can significantly promote tourism, economic development, and social cohesion.

Promoting Chinese Cultural Heritage (CCH) presents several challenges. One of the primary obstacles is the rapid modernization and globalization, which can lead to the neglect or destruction of traditional artifacts and monuments (Zwe-gers, 2022). As cities grow and younger generations pursue modern careers, there is a risk that CCH could be undervalued

or forgotten. Additionally, the commercialization of CCH may result in its exploitation or distortion, undermining its authenticity and cultural significance.

The digital era, alongside the challenges of rapid modernization and globalization, adds an additional layer of complexity to the promotion of Chinese Cultural Heritage (CCH). The widespread use of mass media, social media platforms, and online content has significantly changed how cultural heritage is experienced and understood. While this opens up new possibilities for global visibility, it also poses risks of simplifying or distorting CCH, often focusing on entertainment or profit at the expense of its authenticity. For example, cultural elements might be presented in a way that ignores their original context or used purely for commercial purposes, diminishing their deeper cultural significance. This leads to a weakening of the richness of CCH, making it more difficult for future generations to fully appreciate its history and importance. Therefore, while digital technologies can help broaden access, they must be managed carefully to ensure that CCH is promoted in ways that honor and protect its original context.

Another challenge stems from the lack of awareness and appreciation of CCH among the public, both domestically and internationally. Many people are unfamiliar with Chinese historical and tourism destinations. This lack of understanding can hinder efforts to preserve and promote CCH. Additionally, the protection and preservation of CCH often require substantial financial resources, which may be limited in certain regions or communities (Yuan et al., 2022). Government funding, while essential, may not always be sufficient to meet the needs of CCH preservation initiatives.

Genshin Impact, a widely popular open-world action role-playing game de-

veloped by miHoYo, has emerged as an unexpected yet effective platform for promoting Chinese cultural heritage (CCH). Through its immersive world-building, captivating narrative, and diverse character roster, the game seamlessly integrates elements of traditional Chinese culture and natural beauty, introducing them to a global audience in a manner that is both engaging and accessible. One of the key ways *Genshin Impact* promotes CCH is through its meticulously crafted world design. The game’s expansive landscapes, inspired by various regions of China, showcase stunning natural beauty, ancient architecture, and vibrant cultural traditions. Such as, in the Liyue district as a design model sourced from the ancient Chinese district, with artistic references to China’s Zhangjiajie National Forest Park, the area of the Huanglong Landscape, the Guilin landscape, the Fenghuang Ancient District, and the Hanging Temple in Shanxi district. This visual design features traditional Chinese architecture, such as pavilions, temples, and gardens, as well as iconic landmarks like the Jade Harbor and the Jade Chamber. These virtual representations not only serve as visually stunning backdrops but also offer players the opportunity to explore and appreciate the intricacies of Chinese architectural styles (Shi et al., 2024).

Beyond its visual appeal, *Genshin Im-pact* also incorporates Chinese intangible cultural heritage elements into its game-play and narrative. Characters in the game often possess unique abilities and back-stories tied to specific cultural traditions. The game also features various festivals and events inspired by traditional Chinese celebrations, such as the Lantern Rite and the Moonchase Festival. These in-game events allow players to experience the festive atmosphere, participate in cultural activities, and learn about the significance of these traditions (Chang et al., 2023). *Genshin Impact* has the potential to serve as a powerful medium for cultural promotion.

To fully understand the game’s impact on promoting Chinese cultural heritage, it is crucial to analyze how these elements are incorporated into its world design.

Methodology

This study aims to describe the integration of Chinese cultural heritage (CCH) in the world design of *Genshin Impact*, while assessing its success in encouraging players’ interest in visiting China. A qualitative research approach was chosen because it allows for a comprehensive understanding of complex phenomena (Dawadi et al., 2021).

The research design used is descriptive. The stage focused on collecting qualitative data through literature studies, surveys, and in-depth observations of the world design of *Genshin Impact*. The survey was conducted on October 15 - October 17, 2024 via Google Form. Through a survey of 64 *Genshin Impact* players aged 17-22 years. This survey measures players’ perceptions of the appeal of Chinese culture presented in the game, and the extent to which they are encouraged to visit China directly as a result of the playing experience. The geographical parameters to the respondents were used by the researcher to determine *Genshin Impact* players because they were related to the interaction with their geographical space. This qualitative data is used to build a conceptual framework related to the integration of Chinese cultural heritage (Her-da et al., 2023).

Result

Role-playing games (RPGs) have captured the hearts of many gamers. RPGs are essentially a manifestation of a culture that relies heavily on visuals (Thifaldy & Belasunda, 2024). As such, people have begun to view RPGs as a cultural phe-

nomenon that reflects the socio-cultural dynamics of today. One prominent example is *Genshin Impact* which has achieved immense popularity. The game has topped the download list on both the App Store and Play Store (Cao & Yang, 2024). This achievement shows how much cultural influence RPGs have in today's society.

Genshin Impact's success in captivating its players is attributed to the meticulous attention paid to the background details of the game world. The world background design in *Genshin Impact* plays a crucial role in creating an immersive and culturally rich gaming experience (Tasya & Untari, 2024). Every detail, from the architecture of buildings, natural landscapes, to the smallest decorative elements, is carefully crafted to create a distinctive and authentic atmosphere for each region in Teyvat. The world's backdrop serves not only as a canvas for players' adventures, but also as a window that opens their eyes to the rich culture that inspired the design (Utomo et al., 2022). In other words, the world background is a visual narrative that tells a story about the history, traditions, and values of the people in the region. Through a background design rich in detail and symbolism, *Genshin Impact* manages to create a world that feels alive, breathing, and full of meaning (Sianipar & Poerbowati, 2024).

One of the cultures displayed in *Genshin Impact* is Chinese culture. Liyue, one of the world's largest companies in *Genshin Impact*, has a background design that celebrates the richness of Chinese culture. From the architecture of buildings inspired by ancient pagodas and traditional houses, to natural landscapes featuring towering mountains, flowing rivers, and terraced rice paddies, all are powerful visual representations of the beauty of nature and the wisdom of man in China. In addition, other cultural elements such as calligraphy, sculptures and ornaments are also scattered throughout Liyue, giving it

a very authentic feel (Chang et al., 2023).

Liyue is inspired by the cultural heritage of ancient China, including traditional architecture such as pagodas, traditional houses, and famous landmarks like the Jade Harbor and the Jade Chamber. Additionally, its natural landscapes are also influenced by iconic locations such as Zhangjiajie National Forest Park, Huanglong Scenic Area, and the ancient town of Fenghuang. The heritage period primarily aligns with the Ming and early Qing Dynasties, renowned for their exquisite architectural artistry and cultural traditions.

Traditional Chinese architecture showcased distinct characteristics in its design, materials, and functionality during the Ming Dynasty (1368–1644) and the early Qing Dynasty (J. Li, 2024). In the Ming Dynasty, architecture was marked by intricate wooden structures, curved roofs adorned with brightly colored ceramic tiles, and a highly symmetrical layout. Buildings from this period often emphasized social hierarchy, with palaces, temples, and burial complexes like the Ming Tombs serving as key examples. Decorative elements such as dragon carvings and floral motifs frequently appeared, symbolizing power and beauty.

In contrast, during the Qing Dynasty, architecture continued the traditions of the Ming but incorporated greater influence from Manchu culture (Yang & Zhang, 2023). Its distinctiveness lay in the use of vibrant colors such as red, yellow, and green, as well as more complex ornaments, reflecting a closeness to nature and spirituality. Multi-tiered roofs adorned with small statues, including mythical creatures and protective deities, became hallmarks of Qing buildings. Large temples and gardens, such as the Summer Palace and the Forbidden City, became symbols of the grandeur of Qing architecture. Moreover, the surrounding

landscapes were designed to create harmony with the environment, by the principles of Feng Shui.

The design of the Liyue region in *Genshin Impact* captures the essence of these characteristics through pagoda-style buildings, wooden structures with curved roofs, and decorative ornaments rich in symbolism (Xie, 2024). Landscapes such as towering mountains and flowing rivers also reflect the deep aesthetic and spiritual values of Ming and Qing architecture. Thus, players can virtually experience the historical richness and unique designs of these two dynasties.

Genshin Impact, as a popular video game, does not only provide entertainment, but also acts as an effective educational medium. The game indirectly introduces players to the richness of Chinese cultural heritage through captivating visual representations and engaging narratives (Q. Li & Li, 2023). By showcasing various cultural aspects such as traditional architecture, performing arts, and local traditions, *Genshin Impact* succeeds in arousing players' curiosity to learn more about Chinese culture.

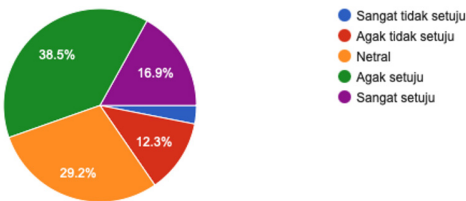


Figure 1. *Genshin Impact* influence to increase interest in Chinese culture
(Source: Personal research documentation)

A survey of 65 *Genshin Impact* players showed that most respondents (55.4%) agreed that *Genshin Impact* had increased their interest in Chinese culture. This indicates miHoYo's success in utilizing stunning visuals and in-depth narrative to introduce players to various aspects of Chinese culture. It also shows that *Genshin Impact* has great potential as an in-

formal educational tool. *Genshin Impact* can be a gateway for players to learn more about various aspects of Chinese culture by presenting cultural information in a fun and easily digestible form.



Figure 2. Liyue *Genshin Impact* in game
(Source: genshin.hoyoverse.com)

Liyue, a region in the Chinese-inspired game *Genshin Impact*, conveys a rich and inclusive cultural feel. Carefully, miHoYo designed the city of Liyue to represent various aspects of life in China. The buildings' architecture, the city's layout, and the background music that uses traditional Chinese instruments are all carefully crafted to create an immersive and authentic experience for players (Feng, 2024). The creation of Liyue took a duration of twelve months and the history of its design is sourced from ancient China, with references from artistic to China's Zhangjiajie National Forest Park, the Scenic area in Huanglong district, the Guilin landscape, the Fenghuang Ancient district, and the Hanging Temple in Shanxi district (Cai et al., 2023). These settings have been positively received, praised as symbols of Chinese culture in the game.



Figure 3. Scenery in Fenghuang ancient town hunan china
(Source: wikipedia.com)

Through exploration in Liyue, players will feel as if they are traveling to China. They will be exposed to various Chinese cultural symbols and elements presented visually and audibly. This experience will indirectly increase players' awareness and appreciation of China's rich culture. More than just a visual display, Liyue's background design also reflects the values and philosophy of life of the Chinese people.

In addition to the visual and auditory representation of Chinese cultural symbols, Liyue's design in *Genshin Impact* also embodies core Chinese values such as harmony, respect for nature, and the importance of family and tradition. The architecture, landscapes, and even the way characters interact with the environment subtly communicate the Chinese philosophical ideals of Confucianism, Taoism, and Buddhism. For example, the tranquil settings, where nature and human-made structures coexist peacefully, reflect the Taoist principle of harmony between humanity and the natural world. Festivals and rituals seen in the game further highlight the deep cultural respect for ancestral traditions and the cyclical nature of life. By immersing players in these thematic elements, Liyue not only becomes a place of exploration but also a vessel for conveying the enduring cultural and philosophical wisdom that has shaped Chinese society for centuries.

To create an enthralling fantasy world, the *Genshin Impact* development team took a creative approach by adapting, rather than simply copying, real-world elements (Greting et al., 2022). Instead of creating perfect replicas of actual locations, the team chose to extract the essence of beauty and unique characteristics from various places in China, and reconstruct them into an original fantasy world. The creative process involved traveling directly to scenic locations in China for inspiration (J. Li, 2024). This integration process results in visuals that are authen-

tic yet distinctive.



Figure 4. Comparison of ingame and real-world visuals
(Source: genshin.hoyoverse.com)

The close collaboration between miHoYo and the Chinese government has created a unique synergy in promoting tourism. Not only limited to presenting stunning visuals in the *Genshin Impact* game, miHoYo has also successfully integrated icons in the game with real tourist locations in China. This has created a beneficial effect for both parties. With such detailed and interesting visual representations in the game, tourist interest in these locations has increased. This was utilized by the Chinese government by building a *Genshin Impact*-inspired portal monument in the real world. This is a special tourist attraction for game players in particular and also for the general public. One form of application can be found in Zhangjiajie National Park, Hunan, China which is the visual inspiration for the Liyue area.

The survey results show that *Genshin Impact* has great potential in encouraging tourists to visit China. A total of 66.1% of respondents expressed interest in visiting the locations that inspired the game. This figure indicates that the stunning visual representations in *Genshin Impact* have succeeded in arousing players' curiosity to explore China's natural beauty and cultural richness firsthand.

Discussion

The results of this study show that *Genshin Impact* successfully integrated many Chinese Cultural Heritage elements into its world design. A analysis of the game world design reveals a deep integration in various aspects, including building architecture, festival celebrations, and character costumes. The architectural designs, such as pagodas and traditional wooden houses with curved roofs, reflect influences from the Ming and Qing Dynasties. Festival celebrations within the game, like the Lantern Rite, are inspired by real-life cultural events such as the Chinese Lantern Festival, which further immerse players into the traditions and cultural depth of China.

These Chinese Cultural Heritage elements are not merely decorative but also serve as a narrative tool that enriches the player's overall experience. For instance, the game's region of Liyue is not only a visual representation of Chinese landscapes but also tells stories of cultural values, folklore, and historical symbolism. The character costumes also include elements derived from traditional Chinese clothing, such as Hanfu and other ethnic garments, enhancing the authenticity and depth of the game world. Through these details, *Genshin Impact* creates a strong sense of immersion while educating players about Chinese traditions in a subtle yet effective way.



Figure 5. Genshin Portal in Zhangjiajie National Park
(Source: genshin.hoyoverse.com)

Genshin managed to elevate the beauty of China in the eyes of global players. This is especially true for Liyue who stands as an example of China and its culture in the eyes of the world. The availability of *Genshin Impact* on various platforms such as the App Store, Play Store, PlayStation, and other consoles supported the creation of a large player base and a tight-knit community worldwide, thus expanding its reach far beyond the borders of China and making it extremely popular around the world (Wang, 2024). For players from those regions who are unfamiliar with China and its people, *Genshin Impact* has increased their curiosity about the country, its wonderful cultural heritage, and the beautiful scenery it offers. *Genshin's* wide player base is also a great market for introducing Chinese tourism. The game's visuals have also attracted players to visit real-world locations.

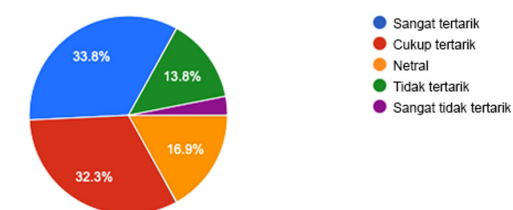


Figure 6. Interest level in visiting *Genshin Impact's* real locations in China
(Source: Personal research documentation)

Genshin Impact has managed to promote Chinese culture in a very effective way through the use of visual artifacts, costumes, customs, and architecture that are thick with Chinese nuances. One way the game incorporates Chinese culture is by introducing artefacts inspired by ancient objects, such as statues and ceramics, and important symbolism in Chinese cultures, such as dragons, which symbolize strength and luck. The costumes of the characters, such as Zhongli wearing traditional Chinese style clothes and Keqing wearing hanfu, highlight the typical Chinese aesthetic elements, while giving players an idea of conventional clothing rich in cultural significance. In addition, the story in *Genshin Impact* is also loaded with values and customs that are strongly tied to Chinese culture, such as the Liyue festival which is reminiscent of major festivals in China, as well as characters who have a strong spiritual background, referring to Taoism and Buddhism, the two main philosophical schools that developed in China. The scenery and architecture of the world in *Genshin Impact*, especially in the city of Liyue, are heavily influenced by traditional Chinese architectural design, with the use of curved roofs, lanterns, and dragon statues, as well as natural elements that reflect the balance between humans and the environment, which is an important value in Chinese philosophy. Through all these elements, *Genshin Impact* not only offers an immersive gaming experience, but also manages to introduce Chinese culture to a global audience, bringing elements of a rich and deep cultural heritage into a captivating gaming world.

Survey of players confirmed these qualitative findings, with most respondents stating that they felt the beauty and cultural richness of the game world influenced by Chinese heritage. Players highlighted their appreciation for the attention to detail in the design, noting that it allowed them to engage more deeply with the game. Many players felt that the in-

tegration of cultural elements enhanced their emotional connection to the game's setting and story, making their play experience more meaningful and enjoyable.

Furthermore, the survey showed a positive correlation between players' understanding of the integrated Chinese Cultural Heritage and their interest in visiting China. This suggests that the game not only entertains but also serves as a medium for cultural diplomacy, encouraging players to learn more about China's rich history and culture. By showcasing Chinese heritage in an interactive and accessible format, *Genshin Impact* successfully fosters cross-cultural appreciation and curiosity, leaving a lasting impression on its global player base.

Genshin Impact success in combining entertainment with cultural promotion highlights the significant potential of culture-based visual games as an innovative medium for tourism attraction. By presenting a meticulously crafted virtual world rich in cultural details, the game offers players an immersive experience that transcends traditional entertainment. Regions like Liyue, inspired by Chinese heritage, showcase architectural wonders, traditional festivals, and scenic landscapes that closely resemble real-world locations. These details not only capture the imagination of players but also ignite curiosity about the cultural and historical roots that influenced the game's design. As a result, *Genshin Impact* has effectively transformed culture into a dynamic and interactive element of gameplay, engaging audiences worldwide.

Such culture-based visual games have proven to be particularly effective in engaging the younger generation, a demographic that is increasingly drawn to digital and interactive content. Through gameplay, players are introduced to cultural heritage in a way that feels organic and enjoyable, as opposed to academic or

formal approaches that can sometimes feel detached. Elements such as festivals, traditional costumes, folklore, and architectural styles are seamlessly integrated into the game environment, turning learning into a fun and immersive experience. By blending entertainment with cultural education, *Genshin Impact* bridges the gap between younger audiences and historical traditions, fostering an appreciation for cultural diversity that might otherwise be overlooked in the modern digital era.

Beyond their educational value, these games serve as powerful tools for promoting tourism. When players explore visually stunning game environments inspired by real-world locations, they often develop a desire to visit these places in person. This virtual-to-real-world connection not only encourages tourism but also drives economic growth for local communities, as culture-based tourism becomes an increasingly viable and attractive option for travelers seeking meaningful and authentic experiences. Furthermore, the development of culture-based visual games creates opportunities for collaboration between game developers, cultural organizations, and tourism authorities. By leveraging the global appeal of gaming platforms, these stakeholders can ensure broader and younger audiences are exposed to cultural heritage in engaging and innovative ways. Such games hold the potential to preserve and promote cultural traditions while simultaneously opening new pathways for tourism, economic development, and cross-cultural exchange. The implications of this research need to be relevant research on the role of *Genshin Impact* in preserving other Cultural Heritage.

Conclusion

Genshin Impact's success in combining entertainment with cultural promotion highlights the significant potential of culture-based visual games as an innova-

tive medium for tourism attraction. By presenting a meticulously crafted virtual world rich in cultural details, the game offers players an immersive experience that transcends traditional entertainment. Regions like Liyue, inspired by Chinese heritage, showcase architectural wonders, traditional festivals, and scenic landscapes that closely resemble real-world locations. These details not only capture the imagination of the players but also ignite curiosity about the cultural and historical roots that influenced the game's design.

Such culture-based visual games have proven to be particularly effective in engaging the younger generation, a demographic often drawn to digital and interactive content. Through gameplay, players are introduced to cultural heritage in a way that feels natural and enjoyable, rather than academic or formal. Elements like festivals, costumes, folklore, and architecture are integrated seamlessly into the game, turning learning into an engaging experience. This gamified approach to cultural education makes heritage more accessible and relatable to global audiences, fostering appreciation and understanding of diverse cultures among players who might otherwise be unfamiliar with them.

Beyond their educational value, these games also hold great potential as promotional tools for tourism. When players explore visually stunning game environments inspired by real-world locations, they are often motivated to visit these places in person. For example, fans of *Genshin Impact* have shown increased interest in destinations like Zhangjiajie National Forest Park and other cultural landmarks in China that influenced the game's design. This connection between virtual exploration and real-world tourism can significantly boost local economies, as culture-based tourism becomes a new avenue for attracting travelers seek-

ing authentic experiences.

Further development in this field could drive the growth of the culture-based tourism industry, providing opportunities for collaboration between game developers, cultural organizations, and tourism boards. By leveraging the popularity of games as a platform, cultural promotion can reach broader and younger audiences, ultimately fostering cross-cultural exchange and economic benefits. Investing in culture-based visual games not only preserves heritage but also reimagines its role in modern society, transforming how cultural education and tourism are experienced in an increasingly digital world.

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VISUAL ICONICITY OF THE MAIN CHARACTERS IN THE WATCHMEN MOVIE

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Abstract: Film has become a powerful medium for introducing complex and deep characters to its audience. This research adopts an approach in the field of visual communication design to explore how the main characters in the film “Watchmen” can be deepened through various visual and narrative elements. Focusing on six main characters: Dr. Manhattan, Ozymandias, Rorschach, Silk Spectre, Nite Owl, and The Comedian, this study analyzes how the visual analysis can help strengthen the characters’ identities and development in creating a cohesive visual narrative by using the visual iconicity approach. Through this approach, the research not only aims to understand the characters in the context of the film but also to explore how visual communication design can depict the psychological and emotional dimensions of characters more deeply. The results of this research are expected to provide new insights into understanding the influence of visual communication design on character narrative in the context of modern cinema.

Keywords: character design; visual analysis; visual iconicity; watchmen

Introduction

Character designers are artists who create new original characters by exploring their imaginations for a purpose such as fulfilling the need of a media with storyline, like film or video game (Wijasa & Almanfaluthi, 2017). Generally, by relying

on their imagination, character designers made concept sketches and draw inspirations from visual data to create a depiction of character necessity for the script.

As simple as it may seem, designing a character is actually the process of creating a character. The designer must know

the desired character and mannerisms or be adapted to the story or historical context that accompanies the character creation. The shape and appearance of the character should ideally represent the character’s personality, in order to engage human emotions.

Kenjiro Sano, a Japanese art director, in the book Character Design Today suggested that character design is a symbol of personality (2007). Thus, character design should be able to visualize the character’s traits. So, when the public sees the character, they can express its traits. One of the media that features many characters is Watchmen.

Watchmen is a 12-issue mini-series published by DC comics. It was written by Alan Moore and Dave Gibbons. Watchmen first appeared for the 50th anniversary special of DC Spotlight in 1985 and continue its running until October 1987 (Despotakis, 2019).

In 2016’s DC Universe Spotlight: Re-birth Special, many symbols and visual references to Watchmen, such as the blood-splattered smiley face, and the dialogue between Doctor Manhattan and Ozymandias were shown in the last issue of Watchmen (Yehl. 2016). The many main characters of the Watchmen movies with their various visual and narrative elements should be explored to understand how design plays a role in creating a cohesive theme central to the narrative.

The character that will be analyzed was taken from the depiction of the movie Watchmen released in 2009. This recent depiction of Watchmen was directed by Zack Snyder under the joint production of Warner Bros, Paramount Pictures, Legendary Entertainment, Lawrence Gordon Production, and DC Comics (IMDb, 2009).

In analyzing the six main characters of the Watchmen movies with their var-

ious visual and narrative elements, this research seeks to answer the following questions:

1. How do the Watchmen movie visualize its six main characters?
2. How does the visualization of these six main characters play a role in creating a cohesive visual narrative?

This research adopts an approach in the field of visual communication design to explore how the main characters in the film “Watchmen” can be deepened through various visual and narrative elements. Focusing on six main characters: Dr. Manhattan, Ozymandias, Rorschach, Silk Spectre, Nite Owl, and The Comedian, this study analyzes how the use of costumes, facial expressions, framing, lighting, and other visual symbolism can help strengthen the characters’ identities and development using the visual iconicity approach.

Previous studies on character design research have been done before. Rizkya and Tarmawan (2023) analyzed the character from Ghibli movie My Neighbor Totoro and find that Totoro has adopted a mixture of various animals into its design to help visualize the character. Wijasa and Almanfaluthi (2017) analyzed character design in three games, namely Sago Mini Babies Dress Up, Subway Surfers, and Crisis Action. They found that the character’s personality was designed to accommodate storyline and challenges within the game. Damayanti and Ardianto (2023) analyzed the character in video game Genshin Impact using Barthes denotative-connotative analysis and found that cultural reference in character building creates a narrative that attract the trust of the audience.

Previous studies have shown that visual analysis can uncover how character design influence the audience perspec-

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tive. However, previous studies mainly used formal analysis and Barthes semiotics in uncovering how the character in movie and games are designed.

Likewise, this study will use visual iconicity approach to analyze the character from Watchmen to see how the character design reflects the narrative and how designer's concept influence the character design. Through this approach, the research not only aims to understand the characters in the context of the film but also to explore how designers and the field of visual communication design can depict the psychological and emotional dimensions of characters more deeply to create a compelling narrative that is reflected by the character's design.

Methodology

This study will analyze six main characters of the Watchmen movie, namely Dr. Manhattan, Ozymandias, Rorschach, Silk Spectre, Nite Owl, and The Comedian. The visual of these characters from the movie promotional posters and the artist sketches will be used as data. These images will be observed and analyzed using visual iconicity approach.

According to Elleström (2016), visual iconicity is a semiotic trait creates meaning through resemblance in visual art. The meaning was made based on similarity between representamen and object. Hence, an image can bear a sensory resemblance to an object established by simple cognition. Visual iconicity happened when the cognitive structure of an image bears a formal resemblance to something outside of an image. If the resemblance required complex cognitive function, then the visual iconicity formed a visual metaphor, an abstract concept expressed using similarity and resemblance to another concept (Qeis and Ihwanny, 2024).

Using visual iconicity approach, this

paper will breakdown the visuals of each of the six main characters of the Watchmen. The results are expected to form understanding of the influence of visual communication design on character narrative in the context of modern cinema.

Result

In designing a character, the designer should explore the nature of each character in the story. Starting from the traits, abilities, preferences, roles in the story. Study shapes and colors to explore all these aspects. Character application with the story and character is adjusted to the atmosphere of the story.

Each character has its own uniqueness, this can make it easier to identify each character. We will discuss each of the six main character below.

Dr. Jonathan "Jon" Osterman (Dr. Manhattan)



Figure 1. Dr. Manhattan in poster
(Source: IMDb, 2009)



Figure 2. The artist' sketch of Dr. Manhattan
(Source: TheBristolBoard, 2015)

Figure 1 and figure 2 show the visuals of Dr. Manhattan both in the movie and in the early stage of an artist sketch. Out of the six main characters in the Watchmen movie, only this character has superpowers.

In creating the character of Dr. Manhattan, Moore was inspired by science, specifically nuclear physics and quantum physics. Moore believed that a quantum being would not be bound by a time perspective. This quality will affect the character's perception of human. However, Moore wanted to avoid creating an emotionless being like the Star Trek character Spock. So, he decided that Dr Manhattan will retain the "human habits" while growing away from humanity in general (Blondvoodoo, 2012).

Moore incorporated color into the story and the artist for Dr. Manhattan, Gibbons, noted the color scheme and used the blue skin motif taken from his previous character design Rogue Trooper. He had taken the blue skin motif due to the light glowing around his body.

Powers possessed by this character include superhuman strength, telekinesis, teleportation, control over matter on a sub-atomic level, and total invincibility. He can sense the past, present and future happening simultaneously, but states that he cannot act on that knowledge because his actions and reactions to events (like reality itself) are predetermined. His abil-

ity to see the future can be hampered by unexpected waves, such as the one released when Ozymandias puts the final step of his plan into action. However, Dr Manhattan is a character who is the only one with superhuman powers.

Despite his costume, his blue skin color and white eyes with a symbol on his forehead still make Dr Manhattan look different from other humans.

Adrian Veidt (Ozymandias)

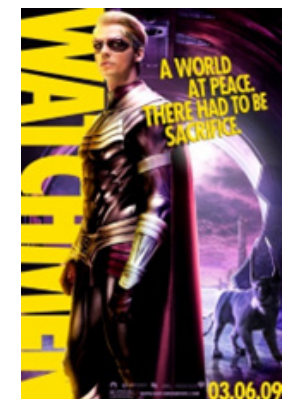


Figure 3. Ozymandias in poster
(Source: IMDb, 2009)



Figure 4. The artist' sketch of Ozymandias
(Source: TheBristolBoard, 2015)

Figure 3 and figure 4 show the visuals of Ozymandias both in the movie and in the early stage of an artist sketch. Ozymandias is a former superhero turned successful businessman and he draws his name from his inspiration in which he

thought as his heroes, Alexander the Great and Egyptian Pharaoh Ramses II. His name, Ozymandias, comes from the Greek word for Ramses II.

Ozymandias is directly based on Peter Cannon's character Thunderbolt, whom Moore admires for using his full brain capacity and also having full physical and mental control. Thus, Ozymandias is believed to be the smartest man on the planet, even outsmarting Dr Manhattan. His combination of intelligence and highly advanced fighting skills backed by unlimited finances makes him the most feared and dangerous of all people. However, Gibbons, the artist for Ozymandias, noted that his worst sin is looking down and scorning the humanity (Blondvoodoo, 2012).

In the film, his costume was designed to parody the rubber suit popularized by Batman & Robin. He is often accompanied by his genetically engineered lynx, Bubastis. This incarnation of Veidt uses a German accent when speaking to friends and an American accent when speaking in public to emphasize the narcissistic, powerful and arrogant character of the antagonist.

Dressed as the idol he admires; Ozymandias's costume uses the baubles of Ramses II with wings like Great Alexander complete with a crown on his head. With a face covering inspired by Peter Canon by the character designer. A shield to protect his body from his torso to his feet to prevent him from injury, as he is basically just a human.

Walter Joseph Kovacs (Rorschach)

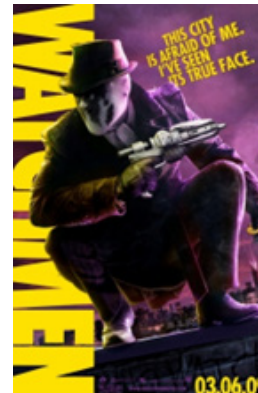


Figure 5. Rorschach in poster
(Source: IMDb, 2009)



Figure 6. The artist's sketch of Rorschach
(Source: TheBristolBoard, 2015)

Figure 5 and figure 6 show the visuals of Rorschach both in the movie and in the early stage of an artist sketch. Rorschach is a private detective wearing a hat and a long leather jacket like those worn by mainstream detectives in media. He is wearing a white mask that contains a symmetrical but constantly shifting ink blot pattern. He continues to fight crime despite his status as an outlaw and he often takes the law into his own hands in solving crimes.

Moore said that he was trying to do this classic Steve Ditko character of someone who has a funny name, whose surname starts with the letter 'K', who has a weirdly designed mask (Blondvoodoo,

2012). Moore based Rorschach on Ditko's character Mr. A, as seen in figure 7.



Figure 7. Steve Ditko's character Mr. A
(Source: Ditkoclub, 2021)

Comics historian Bradford W. Wright describes a character's worldview as a set of black-and-white values that take many forms but never mix with grey, akin to the ink smudge test of its namesake (Wright, 2001).

According to Mondal and Kumar (2021), Rorschach is the name of a popular test that has been widely used to assess and aid in diagnostic evaluation of personality and psychiatric disorders. This is evident in the character Rorschach as he sees existence as random and made him free to act as if he was building his own designs on a morally blank world (Wright, 2001).

Like a detective he relies solely on his ability to investigate and uses violence with both weapons and bare hands to solve his cases. The mask he uses is only to intimidate opponents. The weapon he often uses is an anchor gun linked to a rope to make it easier for him to climb and swing from building to building like Batman.

Laurie Juspechzyk (Silk Spectre)



Figure 8. Silk Spectre in poster
(Source: IMDb, 2009)

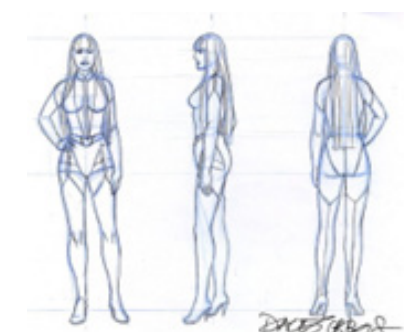


Figure 9. The artist's sketch of Silk Spectre
(Source: TheBristolBoard, 2015)

Figure 8 and figure 9 show the visuals of Silk Spectre both in the movie and in the early stage of an artist sketch. Silk Spectre was designed because Moore felt he needed a heroine in his story cast.

She is the daughter of Sally Jupiter, who was the first Silk Spectre, and The Comedian. Sally, Laurie's mother, wanted her to follow in her footsteps and she became a crime-fighter for 10 years before the Keene Act law banned citizens from becoming heroes.

Unlike the other protagonists, Silk Spectre is not based on a specific Charlton character. While Silk Spectre was based partially on the Charlton character Nightshade, Moore was not impressed by the

character and drew more from heroines such as Black Canary and Phantom Lady (Blondvoodoo, 2012).

Silk Spectre's costume is a combination of tight revealing suit and long black boots. Wearing a bikini-like tight revealing suit will make the movement more agile and can influence the opponent.

Daniel Dreiberg (Nite Owl)



Figure 10. Nite Owl in poster
(Source: IMDb, 2009)



Figure 11. The artist' sketch of Nite Owl
(Source: TheBristolBoard, 2015)

Figure 10 and figure 11 show the visuals of Nite Owl both in the movie and in the early stage of an artist sketch. A superhero who uses owl-themed gadgets. The character was created by Dave Gibbons as what he considers an “obsessive hobbyist of comics.” Nite Owl is partly based on Ted Kord's version of the superhero Charlton

Blue Beetle. Just as Ted Kord had a predecessor, Moore also incorporated a previous adventurer who went by the name “Nite Owl”, as retired war criminal Hollis Mason, into Watchmen (Blondvoodoo, 2012).

Nite Owl's costume was initially experimented to be adorned with capes. However, the author eventually settled on a more streamlined outfit with free arms and legs. He protects his chest and abdomen with a hard leather tunic with leather protector adorning and protecting his head. His trousers were made of lightweight chainmail to protect him from injury from blows or weapons. The domino mask hides his true identity, initially attached to his face with strings, but later attached with adhesive.

Just like Batman, Nite Owl has a secret hideout to store his costumes and vehicles. With his intelligence, he designed costumes that can integrate with all the gadgets he makes. The wing cape used to levitate when he jumps can reduce the force of gravity, with a shield suit around his body from head to toe, leaving only part of the face uncovered by a shield that allows him to speak and breathe.

Edward Blake (The Comedian)

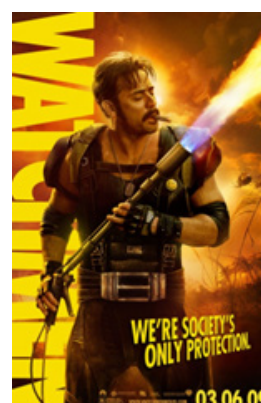


Figure 12. The Comedian in poster
(Source: IMDb, 2009)



Figure 13. The artist' sketch of The Comedian
(Source: TheBristolBoard, 2015)

Figure 12 and figure 13 show the visuals of The Comedian both in the movie and in the early stage of an artist sketch. The comedian is one of two government-sanctioned heroes (along with Doctor Manhattan) who remains active after the Keene Act is passed in 1977 to ban superheroes. His murder, which occurs shortly before the first chapter begins, sets the plot of Watchmen in motion (Blondvoodoo, 2012).

Initially created based on Shield stories, The Comedian was later on created based on the Charlton Comics character Peacemaker, with elements of the Marvel Comics spy character Nick Fury added. Moore and Gibbons saw the Comedian as “a sort of Gordon Liddy character, only a bigger, tougher guy” (Reynolds, 1992).

Gibbons went with a Groucho Marx style look (moustache and cigar, as seen in figure 14) for the Comedian in his draft. Since the mad clown look had been acquired by DC Comics with its highly popular character the Joker. The costume itself was noted by Gibbons as being highly problematic; initially he designed a more militaristic costume which was later dropped in favor of a black leather outfit, relying on trained human strength and a variety of firearms to fight off his enemies.



Figure 14. Groucho Marx
(Source: Latson, 2015)

Blake's murder, which occurs shortly before the story begins in 1985, sets the plot of Watchmen in motion. The character appears throughout the story in flashbacks and aspects of his personality are revealed by other characters.

Discussion

Watchmen is set in an alternate reality that closely mirrors the contemporary world of the 1980s. The main difference is the presence of superheroes. The point of divergence occurs in 1938. Their presence in this American version is shown to have dramatically influenced and changed the outcome of real-world events such as the Vietnam War and Richard Nixon's presidency (Wright 2001).

With Watchmen, Alan Moore's intention was to create four or five “radically contradictory ways” of understanding the world and give the reader of the story the privilege of determining which one was the most morally comprehensible. In line with the realism of the series, although the costumed Watchmen are often called “superheroes”, only one (Doctor Manhattan) has superpowers (Wright 2001: 272).

The six main characters in the Watchmen movie has distinct attributes and colors they use. This was done not only to support their strengths and mask their identification, but also to identify the abilities of the superheroes. This section

will map the iconicity that builds each of the six main characters and how it plays a role in building the narrative and provides background to the characters.

Table 1. Visual Iconicity of Dr. Manhattan
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			Opening of the third eye
2			Deity / divine being's pose
3			Blue skin

Table 1 illustrates the visual iconicity of Dr. Manhattan. We can see three main focuses in his design which is the circle in the forehead, the pose, and the blue skin. The circle in the forehead resembles the third eye, creating a visual iconicity of the opening of the third eye. According to Gallagher and Tsuchiya (2020), opening the third eye can signify spiritual enlightenment process in mystical context. The second element, which is the pose, bear a striking resemblance to the pose used when visualizing deities or higher beings. Meanwhile, blue skin usually used to depict something alien, or beings that is different than human. These three visual iconicity works to create a visual metaphor of a special being which is higher and

better than a normal human. This is in line with the context of the narrative since Dr. Manhattan is the only character in Watchmen who embodies special quality in the form of superpowers, making him different from the rest.

Table 2. Visual Iconicity of Ozymandias
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			Pharaoh's attire
2			Rubber "Batman-like" suit

Table 2 illustrates the visual iconicity of Ozymandias. We can see two main focuses in his design in which both are heavily invested in his costume. The accessories adorning his shoulders and waist resemble those found in Pharaoh's attire. According to Mark (2017), the ornamented collar and kilts of woven materials hung from the waist in intricate folds are a fashion style of the Pharaoh and the royalty of Egypt in the period of The New Kingdom of Egypt (c. 1570-1069 BCE) and is the most depicted ancient Egyptian fashion in the media.

Meanwhile, the second element shown in the poster shows that it draws a resemblance to the rubber "Batman-like" suit. Though Batman is one of the iconic superheroes, he is just a normal human without superpowers. This visual iconicity and the Pharaoh's attire creates a visual metaphor of a normal human who is working to be greater than everyone, fitting to the narrative of Ozymandias' character.

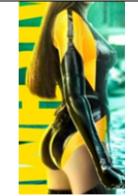
Table 3. Visual Iconicity of Rorschach
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			Detective outfit
2			Full face cover

Table 3 illustrates the visual iconicity of Rorschach. We can immediately see two main focuses in his design which is the outfit and the face cover. The outfit resembles those worn by detective in media, while the face is fully covered, leaving no identification visible. According to Filimowicz (2024), detective outfit conveys a sense of mystery and intelligence while projecting authority and acumen. This sense of mystery is further emphasized by the covering of the face symbolizing hiding one's identity. The visual iconicity creates a visual metaphor of someone intelligence but shrouded in mystery. This is fitting to the Rorschach' character who is created as a vigilante detective.

Table 4 illustrates the visual iconicity of Silk Spectre. We can see three main focuses in her design which is the pose, the hair, and the outfit. The first iconicity is the pose, which resembles putting one hand on the hip. According to van Edwards (2024), putting one hand on the hip communicates the mindset of disagreement and alerting others that they are about to cross the line. The long hair, according to Fabry (2016), is a traditional depiction of

Table 4. Visual Iconicity of Silk Spectre
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			One hand on hip
2			Long-haired woman
3			Rubber high-cut body suit

women as hair embodies immense social significance in which long hair signifies glory to woman.

The third iconicity is the outfit which resembles high-cut body suit. This high-cut body suit made from rubber / latex is a form of fetish fashion which, According to O'Donnel (1999), enables women empowerment by reinforcing their own of masculinity through virility and inducing sexual arousal for others. This body revealing suit along with the pose and long hair create a visual metaphor of a powerful heroine with principle, fitting for the character of Silk Spectre.

Table 5. Visual Iconicity of Nite Owl
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			Two hands on hip
2			Owl head

Table 5 illustrates the visual iconicity of Nite Owl. We can see two main focuses in his design which is the pose and the mask. The pose in the sketch features a resemblance to two hands on hip. According to van Edwards (2024), this is a classic pose of “superman” which gives cue to confidence and ready to act. The mask has an iconic resemblance to owl head, giving the visual iconicity to the character name which is Nite Owl. The two visual iconicity create a visual metaphor of nocturnal superhero who is confident and ready to act, akin to Batman, which is true to the narrative of the character.

Table 6. Visual Iconicity of The Comedian
(source personal research documentation)

No	Image	Resemblance	Visual Iconicity
1			Man smoking
2			Standing mic

Table 6 illustrates the visual iconicity of The Comedian. We can see two main focuses in his design which is the pose and the weapon. The sketch features a pose of a man smoking. According to Kodriati, Pursell, and Hayati (2019), smoking expresses male masculinity and related to risk-taking behavior. Meanwhile, his weapon bears a striking resemblance to standing mic. The two create visual metaphors of a stage performer who is prone to risk-taking behavior. This fits The Comedian’s character since he’s described as a cynical tough guy.

In designing the six main characters in the watchmen film, the naming and physical form and costumes they use adjust the characteristics of the characters in the story. Each character has a uniqueness and strength that is different from the others, this becomes a characteristic that makes it easier to recognize each character. The attributes embedded with visual iconicity not only support their characters, but also identify the narrative behind each character.

Conclusion

The design of the six main characters in the Watchmen resemble themselves, both in shape and nature as well as shapes or animals that they base their name of. The visual iconicity of each character becomes a point that makes it easier to identify characters in a story.

Identification or recognition of characters in the story can be visualized from traits through expressions, facial shapes, and gestures. Recognition can also come from objects that are worn by the characters such as the costume, accessories, and weapons. Moore and Gibbons stuck with the concept, and by using visual iconicity in the artist sketch and the in-movie character, they cemented the concept within the character. Each character is a reflec-

tion of distinct superhero stereotypes that existed individually without repetition. All six characters are drawn by Gibbons with ordinary proportions rather than muscle-bound superhumans.

It’s not just the complexity of the narrative that makes Watchmen so influential, but also how each of the character has visual iconicity that connected the design into the narrative. This implies that there is a need to take inspirations and create visual iconicity in creating characters so that it became memorable and relevant to the narrative as a whole. This paper offers a new perspective on designing characters for entertainment media. Not only based on the storyline and brief, the character can also be influenced by designer’s concept by realizing said concept through relevant visual iconicity without disrupting the narrative and the storyline. Instead, this paper argues that by incorporating visual iconicity, the depth of characterization can be brought up and made the character more relatable and easily memorized by the audience.

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