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THE DESIGN AND DEVELOPMENT OF THE DIGITAL BACKDROP OF THE LIGHT AND SOUND PERFORMANCE ON “CIVILIZATION OF FAITH, MAGIC OF SRIPRUTTHESUAN, PATH OF THE KING, SRICHAYARACHA, JAYAVARMAN VII”

Kittipong Prachachit

Faculty of Humanities and Social Sciences, Sisaket Rajabhat University

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ABSTRACT

The design and development of the digital backdrops of light and sound performances on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII has the objectives of 1) designing the digital backdrops of the light and sound performances and 2) evaluating the perception of the audiences on the digital backdrop. It was found that backdrops are an important component in historical plays or light and sound performances. This is because in historical plays today, the virtual scenes, atmosphere, and historical events cannot be replicated with real materials due to their excessive cost, time, and manpower. Therefore, modern technologies are required to help create and design the show. Especially in stimulating aesthetic sense from the digital backdrops of important places accompanying the performances of the performers that will give the audience pleasure—similar to being in the actual places. The animations of the pictures in the backdrop need to go in line with the content and performers' acting by considering the artistic components, the animations, and the special techniques to stimulate the audiences' interest and emotions. From the survey on the perception of the 400 audiences who were at the actual place and watching the performance online through Google forms, it was found that the digital backdrops were in accordance with the format of the show and the performance and received the highest average. On the contrary, the lowest average was the interaction between performers and the digital backdrops, which has been the limitation of displaying the backdrops on LED screens. The director needs to pay as much attention to the backdrop as the performances of the performers. Designing the backdrops and the stage is another important aspect of the light and sound performance since they affect the perception of the audience. How the rhythm of the performance rhymes with the sound, light, backdrops, and effects on the LED screen, how the space on the stage is used,

and the performance itself must also need to support the storyline and the emotions of the performers effectively.

Rationale and Background

In the past, Srisaket province was a great kingdom in history. Ever since the ancient Khmer Civilization, which was one of the most prosperous kingdoms over one thousand years ago and was called “the kingdom of ancient Khmer prasadas.” Additionally, the area of Srisaket was also abundant with the diversities of the local ethnic groups’ culture, which was the identity of Srisaket province. The different ethnic groups consist of “Khmer, Suay, Lao, and Yeu,” who lived together peacefully, integrating exchanging knowledge and culture in the most appropriate and unified way. Currently, from the surveys, there are still villages that maintain their own culture and languages that are different from other local groups in Srisaket province. There have also been migrations of people who came to live together with the locals, such as the Tai Korat, Tai Bun, Phu Tai, and the Chinese people.

Apart from having the identity of local ethnic groups known as “Four Tribe of Tai Srisaket,” the province was also known as the ancient Khmer Empire. The area still contains traces of faith that reflects the “greatness,” which relates to religion and supernatural power and the gratitude of the Khmer kings towards the ancestors and the former kings, through a ceremony to worship “Kamrateng Chakata” (meaning the god of the universe who has power over all human beings, as well as where the spirits of the Khmer kings reside) at Prasat Wat Sa Kamphaeng Yai, or Sripreutthesuan.

Apart from the historical greatness and culture of the local ethnic groups, Srisaket province is also a large area where a lot of Lamduan Flower trees grow. The trees covered a large area that, according to a chronicle, a city was named after the trees called “Prasad Si Liam Dong Lamduan.”

Currently, there are still over 5,000 Lamduan Flower Trees that grow naturally. Blooming and spread their fragrance all across the area from February until April. This is considered a natural wonder since this is the only place in Thailand that this happens. The area is now called “Somdet Phra Srinagarindra Park,” which is the first park built to commemorate Princess Mother Srinagarindra on her 80th birthday on the 10th of December 1981.

The history mentioned above is why the saying “Srisaket, land of Lamduan Flower, one hundred Prangs, and one hundred Prasadas.” Another name that people call this province is “Srisaket, city of four tribes; Khmer, Suay, Lao, and Yeu.” The prasada is also used in the provincial emblem. Lamduan flower is the official provincial flower, and the culture of the four tribes is the cultural identity of the province. This shows the historical roots and beauty of the four tribes, Khmer, Suay, Lao, and Yeu, for thousands of years. More importantly, the wonder of the 50,000 Lamduan Flower Trees that bloom and spread their fragrance throughout the area, the greatness of the culture, and this natural wonder, is the reason behind the Lam Duan Flower Festival, Continuing the Tradition of the Four Tribes, Tai Srisaket”, which is held every year. In 2020,

the festival was held between the 11th – 15th of March. There was also a light and sound performance called “Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII” to tell the history of the Srisaket province. The performance highlights more than a thousand years of greatness and valuable history, as well as the bravery of the men and women of Srisaket, who had built up this city along with the Khmer Kings, especially during the time of Jayavarman II, Suryavarman I, and Jayavarman VII, which was written down in history and tied Srisaket to a great civilization from the past to the present.

In 2016, the Tambon Administrative Organization of Srisaket first became the host of the festival. In 2018, the performance and its format were changed. In 2018 and 2019, the performance was named “Civilization of Faith, Magic of Sriprutthesuan” The original performances were done with the backdrop of the Prasada, while new ones were done with a digital backdrop. The digital backdrop was displayed through a 7 x 20 meters screen. In 2020, the performance was, once again, renovated to make it more interesting and can also provide historical knowledge to people in the area, as well as the tourists. Currently, for the performance on “Path of the King, Srichayaracha, Jayavarman VII,” the researcher recognizes that solving the problems which have been re-occurring every year is significant. This is especially true for the real materials that were reproduced on a large scale each year—taking up a lot of space on the stage but were unable to simulate the scene according to the content told in the performance. It also affects many parts of the performance in terms of management, such as managing the light within the work area, space management for the actors, and damages of the pre-show sets due to rainstorms. Such problems have always caused damages to the event. Therefore, the researcher is inspired to solve the problems relating to the backdrop of the performance as well as to develop the new form of backdrop in making it more interesting and more effective in communicating with the audience—based on the audience’s behavior in the present era. It would also help Srisaket province to reduce the risk in organizing this annual event, including help saving costs on the budget, time, and manpower. The researcher used the 3D simulation from an important history of Srisaket province, projecting it on the LCD. This form of the backdrop responds well to the development of the performance styles in the present era since the designer can create a new 3D scene that is beautiful and realistic. Various effects can also be added in the 3D scene that will also help the audience to get through to the emotions of the performers.

RESEARCH OBJECTIVES

To design the digital backdrop accompanying the light and sound performance called Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII

To evaluate the perception of the audiences towards the digital backdrop of the light and sound performance called Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII

RESEARCH METHODOLOGY

The design and the development of the digital backdrop of the light and sound performance called Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII uses a research and development study method. It uses systematic study and research processes that focus on developing new options or methods to enhance the quality of theatrical performances with light and sound effects. The study experimented on the actual performance and empirically check the quality by using interviews, quality assessment, questionnaires on various performance qualifications. The data was analyzed by using percentage, mean, and qualitative analysis. The study process of this research includes data from the document, field survey, and interviews with different specialists. The collected data was then analyzed and verified before being employed in the design, development, and evaluation of the digital backdrops to be accompanied by light and sound effects. The designed backdrop was used in an experiment first before being employed in the actual performance for the audience to watch in person or online. Once the audience saw the show, they were asked to do online questionnaires and submit them to the researcher. The details of the research conduction were done through the following 6 stages as in following.

Step 1 Studying the theory and principle from the documents and field research (R1)

- Theory study from documents, research, textbooks, and digital information related to backdrop design (Wirunrak, 2003, 190-197); creative thinking and backdrop composition in the performance (Rattarin, 2012, 160-161); and creative design of the backdrop according to the functions and roles of the backdrops (Rattarin, 2012, 49-50).
- Field survey data collection on essential places for the designs to be realistic and go in line with the performances, such as Kamphaeng Yai Prasada, Kamphaeng Noi prasada, Tham Cham prasada, Angkor Wat, Angkor Thom, and Phnom Kulen in Cambodia.
- Interviews with the history experts, provincial-level administrators, and people related to the light and sound performances
- Data analyzed and concluded as a result



Figure 1: sacred River on the top of Phnom Kulen, one of the important mountains of Cambodia

Photo: Kittipong Prachachi

Step 2: Design and Development (D1)

The results from R1 are used as primary data in the design of the digital backdrop in the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII

- Sketch design of the digital backdrop using computer graphics.
- Evaluation of the sketch design by five historical, cultural, and designing experts
- Development of the digital backdrop using 3D computer graphics
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Figure 2: Sketch design of the digital backdrop with the positions and size of the performers

Photo: Kittipong Prachachi, 2020

Step 3: Evaluation of the quality of the digital backdrop (R2)

- Creating the quality evaluation form for the digital backdrop
- Finding the IOC of the tools from five experts
- Improve and develop the evaluation form
- Evaluate the digital backdrop by five historical, cultural, and design experts

Step 4: Develop and display the backdrop (D2)

- Improve and develop the digital backdrop according to the suggestions of the experts
- Displaying the digital backdrop on the 8 x 20 meters LCD screen, which is the biggest digital backdrop accompanying the light and sound performances in Thailand. The stage and the frontcourt is a performing space for the Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII performance which was performed for five days, with an average audience of 13,000 people

- Live broadcasting of the performance through Facebook and Youtube in the Lamduan Flower, Continuing the Four Tribes Tradition, Tai Srisaket Facebook page with an average audience of 1,250,000 people reached.

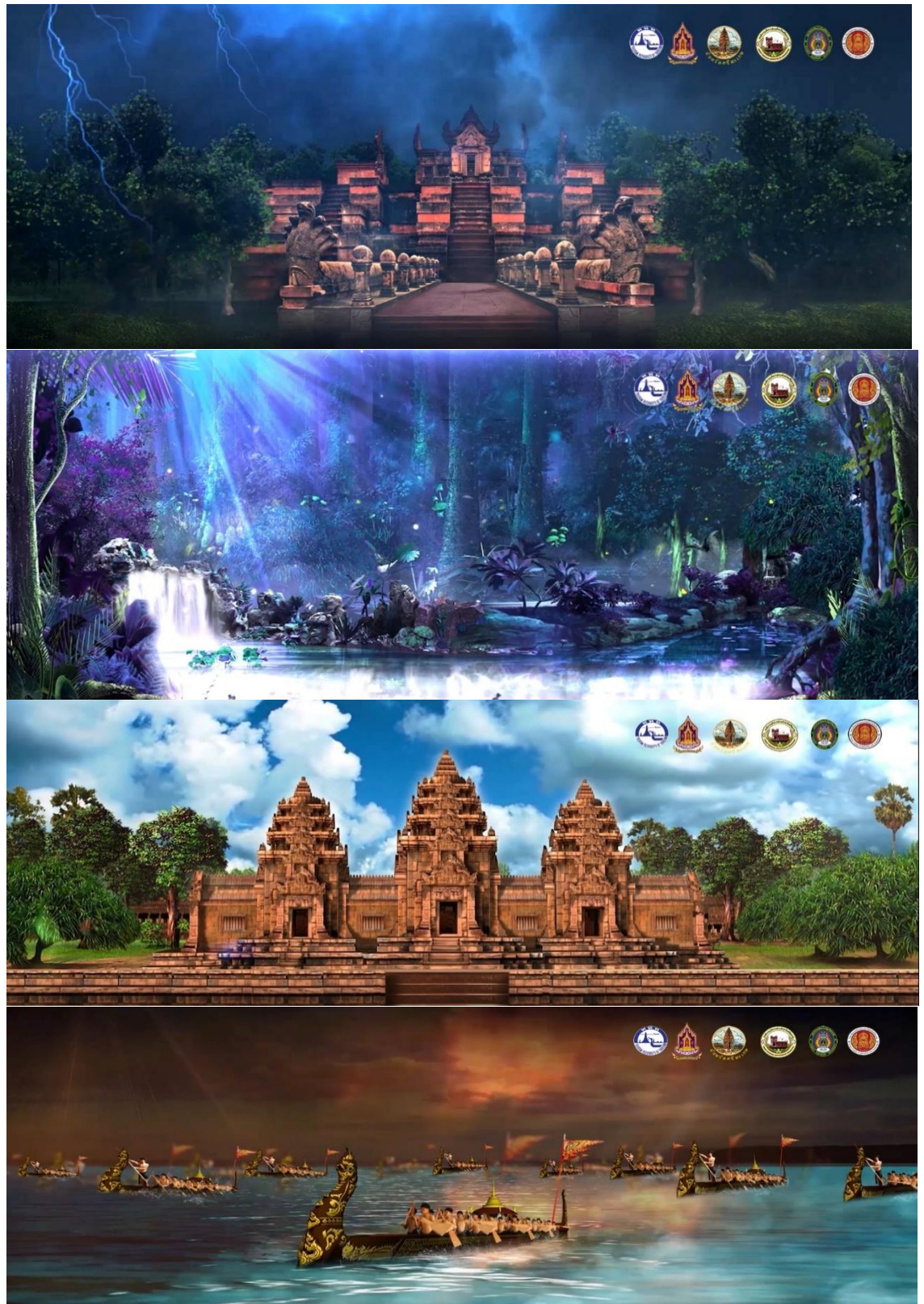


Figure 3: Completed 3D digital backdrop before evaluated by the experts
Photo: Kittipong Prachachi, 2020



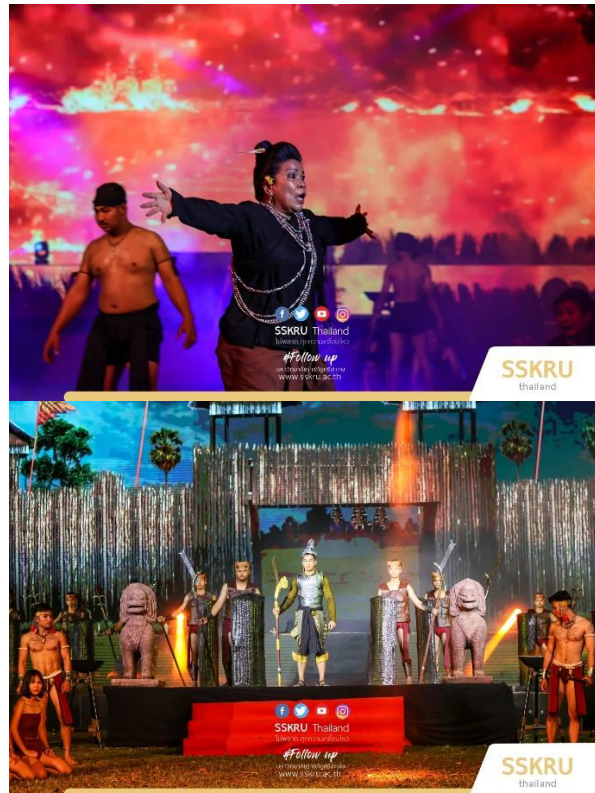


Figure 4: The displaying of the digital backdrop on a light and sound performance of *เมืองCivilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII*
Photo: Kittipong Prachachi, 2020

Step 5: Evaluation of the perception of the audiences at the light and sound performance of Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII on the digital backdrop (R3)

- Creating the evaluation form on the perception at the audience at the light and sound performance on the Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII
- Finding the IOC of the tools from five experts
- Improve and develop the evaluation form
- Evaluation of the perception of the audiences at the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII from sample groups of 400 people who are for people both at the performance or watching online using Google form. The survey was done based on the five satisfactory levels: most satisfied, satisfied, somewhat satisfied, not satisfied, least satisfied. The data were analyzed using descriptive analysis based on the average and the standard deviation.

Step 6: Distribution of the research result to interested communities

- Compile the data
- Analyze the data

- Conclusion and discussion
- Distribution of the research result

Research framework

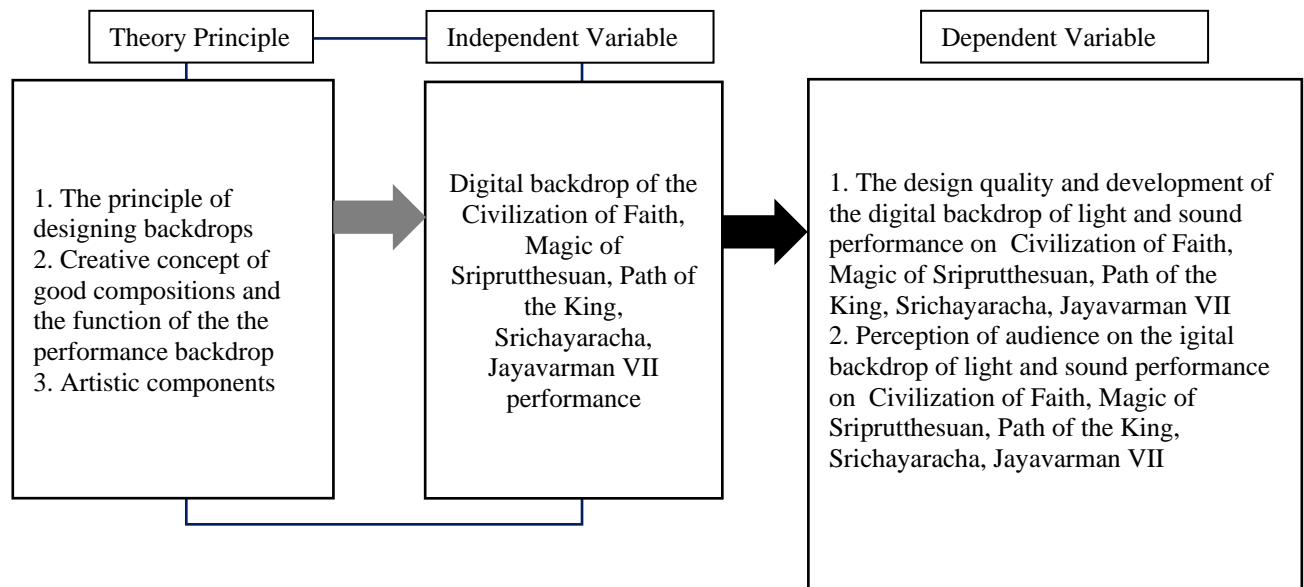


Figure 5: Research Conceptual Framework

Photo: Kittipong Prachachi, 2020

Scope of the Study

Population and Sample Group

The scope of the population in this research that the researcher designated are:

The audience who watches the light and sound performance of Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII in the Lamduan Flower Festival, Continuing the Four Tribes Traditions, Tai Srisaket of 2020, and the 1,263,000 of the online audience.

The sample group in the research are the audience who watch the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII based on the sample group formula by Krejcic and Morgan (cited in Soodsang, 2003, 48-49). The amount of people in the sample group is based on the principle of 15-30 percent. Therefore, the number of the sample group in this research is 400 audiences watching the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII using the Accidental sampling method.

Research Instruments

The tools used in collecting the data on the study of the culture and history of the light and sound performance on Civilization of Faith, Magic of

Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII are informal interviews using non-structured interviews, as well as structured interviews with interest points with the interviewees who provided the answer for the data collection. The topics of the interviews are on the culture and history during the reign of Jayavarman II, Suryavarman I, and Jayavarman VII. The steps in creating the interview forms (cited in Petchroj & Chamniprasart, 2003, 128-130) are as follows:

Considering the components of the non-structured interviews
Consider the types of questions to ask

- General questions of the interviewees
- Questions on the information of the Khmer culture and history during the reign of Jayavarman VII
- Questions in the ancient sites and important places that are mentioned in the performance
- Questions on the objectives of the construction of the ancient sites and important places that are mentioned in the performance

The tools used for collecting the evaluation of the digital backdrop design on the light and sound performance of Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII

The tools used for collecting the evaluation of the audiences on the communication, the aesthetics, and the emotions of the digital backdrop of the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII

Data Collection

The data collection from the documents, textbooks, and the collected data on the context of the important places that exist in the performance, such as Kamphaeng Yai Prasada, Kamphaeng Noi prasada, Tham Cham prasada, Angkor Wat, Angkor Thom, and Phnom Kulen in Cambodia.

Compiling of the information from the interview with the experts and local Wisemen concerning the beliefs and the rituals related to the different sited such as Kamphaeng Yai Prasada, Kamphaeng Noi prasada, Tham Cham prasada, Angkor Wat, Angkor Thom, and Phnom Kulen in Cambodia.

The design of the digital backdrop of the light and sound performance on “Civilization of Faith, Magic of Sriprutthesuan” through the sketch designing of the concepts and the conclusion of the final concepts.

The development of the designing concepts, the good composition concepts of the backdrop, the backdrop design’s artistic components that go in line with the

Khmer arts, and the development according to the experts’ suggestions to be academically correct.

Experimenting and taking the result from the 400 people in the sample group to be analyzed and concluded.

Study Results

The research result according to objective 1:

In the digital backdrop design of the light and sound performance on Civilization of Faith, Magic of Sripruthesuan, Path of the King, Srichayaracha, Jayavarman VII, the researcher had divided the design of the backdrop into two parts.

Part 1: Designing the digital backdrop using 3D computer graphics

Part 2: Designing the backdrop and the stage

The detail is as follows:

Part 1: Designing the digital backdrop using 3D computer graphics

Designing a digital backdrop with 3D computer graphics is a kind of work that is dependent on the correct content. The researcher needs to understand the content or the script thoroughly to convey the correct and appropriate content and communicate with the audiences based on the performers’ performances. All the content needs to be approved by the experts before the characteristics and forms of the backdrop that will appear during the performance can be analyzed and turn into sketch designs. This ensured the understanding, the aesthetics, the imagination, and the correctness of the researcher who created sketch designs. The experts will evaluate the sketch designs. If they are not approved, they have to be redeveloped and redesigned until the sketch designs are correct and will achieve their most efficacy. The sketch designs will lead to the 3D modeling process, or simulation, using computer graphics or digital paint. The computer graphic will simulate the reality and aesthetics in the content, in conjunction with the researcher’s imagination, and turned into simulations with shapes, forms, colors, and textures that match the reality and balance. Experts will then do a final evaluation before completing simulated backdrops.

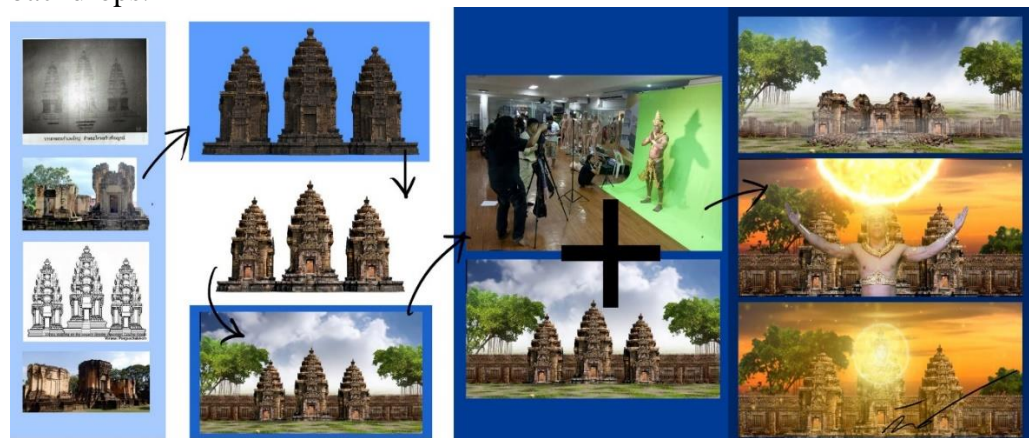


Figure 6: The process of designing digital backdrop using computer graphics
Photo: Kittipong Prachachi, 2020

Whether the performance seems authentic or not, backdrops are another important component, especially the animations of backdrops that need to go along with the performance’s content and emotions. For instance, in war scenes where there are intense fightings, there need to be animations of the sky, fire, dust, smoke, lightning, wind, and rain (special effects) to stimulate angry, severe, heated, and violent emotions from the performance according to the script and the emotions that the director had designated.

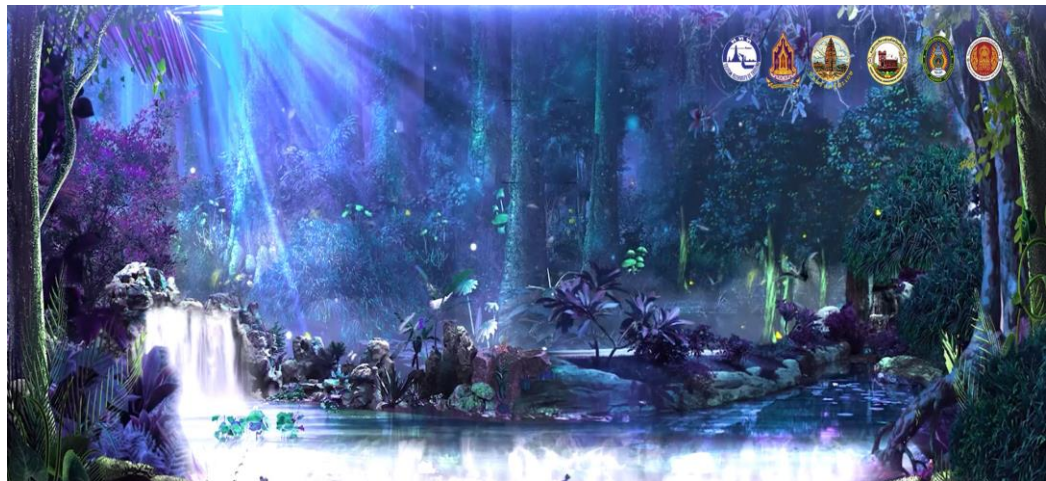


Figure 7: Inputting special techniques to the digital backdrop to convey the emotions that go along with the script and the performers’ performances

Photo: Kittipong Prachachi, 2020

If the 3D digital backdrop has no animations, conveying the emotions to the performers and the audiences will yield less impact. The director’s responsibility is to understand the performance, the content, the emotions, and the rhythm that occur in every second during the performance to control the transition of backdrops to be in line with the rhythm of the performers. The animations are necessary to be done during the rehearsals to pinpoint the rhythm and the positions of the performers. After setting transitions, artistic components need to be set using computer graphics to adjust the light, colors, and special effects to create the aesthetic and the emotion towards the performance and all its content.

The design of the digital backdrops using 3D computer graphics is crucial in creating realistic and beautiful backdrops according to the director’s imagination. If the 3D digital backdrops are not realistic, either in terms of the shape, size, position, color, textures, light and shows, animations, or special techniques, it will affect the interest and the emotions of the audiences. This will cause the communication through the light and sound performance to not be as effective. Therefore, the director needs to pay as much attention to the backdrop components as the performer’s performance, as can be seen from figure 8.

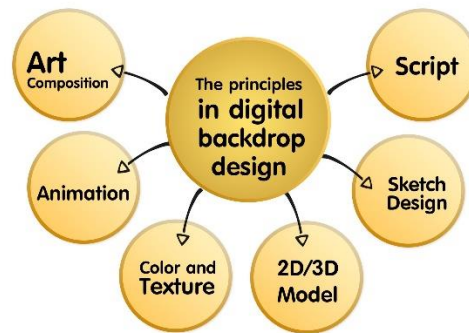


Figure 8: The principles in digital backdrop design

Photo: Kittipong Prachachi, 2020

Part 2: the design of the backdrop and stage.

In designing the backdrop of the light and sound performances, the backdrop and stage's aesthetics and practicality need to be considered. Part of the aesthetics will be displayed on the 8 x 20 meters LCD screen and other stage elements included to add the reality and aesthetics in the shapes, sizes, colors, and other detail. Stage elements need to be lightweight, strong and can be quickly and conveniently moved. Moving stage components need to be done within 30 seconds while moving each object should require as few people as possible for speed and safety in changing the components during the scenes. The entering and exiting of the actors and the animals involved in the performances, such as elephants, horses, cows, and buffalos, had to be planned out for the smooth transition of the performance and both performers' and audiences' safety. The format of the stage is another component that needs to be designed along the line of the presentation and the huge backdrop. For this research, the research designed the stage in three levels. The back of the stage was a huge LED screen, and the middle part is the stage that was designed as a two-level 7.2 x 20 meters rectangle which has the same length as the back screen with a 1.50-meter gap for fast and convenient moving of the settings and equipment. The stage can hold around 80 people with stairs for entering and exiting. The front part, the lowest part, is a courtyard for the performers to be closer to the audience and can be safely used for scenes with animals. The performers mainly enter the scenes from the left side and exit on the right side to minimize the performers running into one another and for the safety of the performers, audiences, and animals. The construction of the stage was focused on using strong structures that were convenient for assembling. The main structure was metal scaffolds that can easily be found. Some could even be rented to save the budget. The stage floor was made from 18 mm thick plywood that can withstand the weight and can easily be assembled and disassembled. The opening and closing of the scenes rely on turning the light and the screen on and off. During this time, the crew will change the settings on the stage. Once it was done, the light on the stage and the LED will be turned on at the same time, allowing the audience to see the great and exciting new scene.

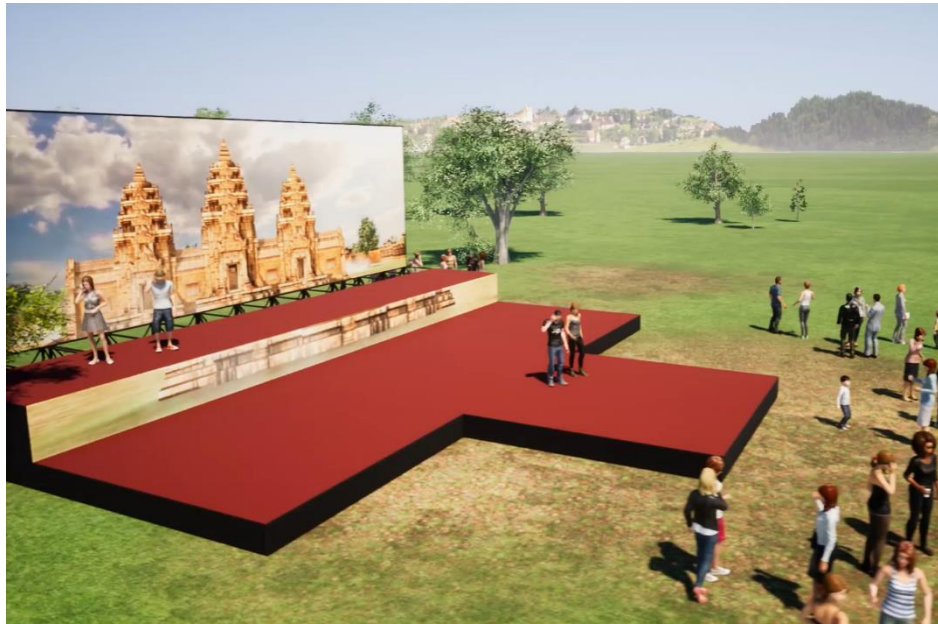


Figure 9: The placement of the backdrop, stage, and area where performers perform.

Photo: Kittipong Prachachi, 2020





Figure 10: Light and Sound performance with the performers in front of the backdrop and stage
Photo: Kittipong Prachachi, 2020

The design of the digital backdrop and the stage was the heart of the light and sound performance on “Civilization of Faith, Magic of Sriprutthesuan” since it affected the perspective of the audiences and the use of the stage during the performance. For the performance itself, the backdrop, which is digital and displayed on the LEC, needs to effectively support the storyline and the emotions of the performers. If any of the components is in conflict with the other, the performance can face some issues. Therefore, the design of the digital backdrop and the setting components need to consider the beauty, the perspectives of the audiences towards the stage and the backdrop, the appropriacy of the stage and the setting components, the usage of each level of the stage, the strength and safety of the stage, the design of the backdrop, and the budget of the overall performance. This is a temporary performance that lasts only five days. Therefore, the cost-benefit of the investment needs to be considered. The design needs to be cost-saving and within the budget. These are the components of the design of the backdrop and stage that the director and organizers need to consider before each performance.

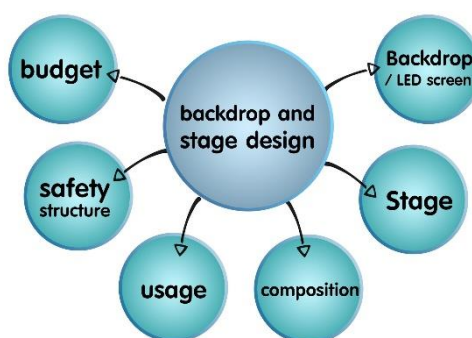


Figure 11: The principle of backdrop and stage design
Photo: Kittipong Prachachi, 2020

The research result according to objective 2:

From the evaluation of the perception of the audiences on the digital backdrop of the light and sound performance on Civilization of Faith, Magic of Sriprutthesuan, Path of the King, Srichayaracha, Jayavarman VII, it was found that out of the 400 people who watched the performance live and online, the result from Google form shows that the most effective component that affects the perception of the audiences on the light and sound performance was that the digital backdrop on each scene goes in line with the script and the performance, with the average of 4.96 and SD of 0.54. The second highest was the overall digital design quality, with an average of 4.70 and an SD of 0.511. The lowest score was realistic backdrops, with an average of 4.47 and an SD of 0.63, and the relationship between the digital backdrop and the performers, with an average of 4.47 and an SD of 0.63.

CONCLUSION

The design of the digital backdrop uses a 3D computer graphic technique. Before the design, the researcher must thoroughly understand the content and the script. This is to ensure that the data from the literature review, field survey,

and each interview with experts are used in analyzing and designing the draft of the backdrops to be displayed in the performance. The draft was then analyzed by specialists before being developed into high-quality, beautiful, and accurate backdrop scenes. The backdrop scene was simulated as an exquisite 3D graphic. It is realistic in its forms, features, and color. The texture is also realistic, while the size of each element of the scene is proportionate with the size of the actors. The movement of each element in the scene or backdrop resonates well with the script and the movement as well as the expression of emotion by the actors. After the movement was added to the backdrop, artistic compositions were set to add more beauty to the backdrop. Aside from the digital backdrop, the director also recognizes the importance of space management in front of the actors' performance. The front stage and the backdrop on the LED screen must be unified. It should also be able to promote the content and effectively affect the emotional expression of the actors. Factors that should be taken into consideration when design both digital backdrop and stage are aesthetics sense, the perception of the audience has towards the stage and the backdrop, proper layout of the stage and settings, the usability of the stage area on each level, and strength and safety of the stage. In addition, the design and the performance also have to be budget-friendly. For a good scene or backdrop, it will result in a very good response from the audience. If the responses are placed from the most positive to the least positive, it was found that the most positive response is related to how each scene or backdrop responds well to the forms of the play and performance. The second positive response is the quality of the digital backdrop design. And the least positive response is how natural the backdrops are perceived. Therefore, in the following year, the 3D designing technique should be developed to make it more exquisite and more natural.

DISCUSSION

Backdrops are important components, especially the digital backdrops' realistic beauty, the animation of the scenes that go in line with the script. And the performance of the performers. If the 3D digital backdrops lack realistic design, whether they are the shapes and forms, the sizes, the positions, the colors, the textures, the shadows, the animation, and the special techniques, it will impact the interest and the emotions of the performers. This can reduce the effectiveness of light and sound performances. Therefore, the use of technology that aims to promote the perception of the audience is vital. Since this would help the audience to feel like they are in the actual places as well as helping them better perceive the content and aesthetic quality of the performance. This is consistent with Montoya et al (2017) who conducted a study on the use of technology to simulate virtual scenes to create a new classroom learning experiences. This enables the author to manage the data while creating excitement in the lessons through virtual scenes. This results in a better understanding which the users have towards the lessons. It is also found that using technology to create virtual scenes has several benefits, such as increasing the learning engagement between the users and the content, increasing knowledge, and understanding of the content, especially the skills which were stimulated by the use of virtual scenes. From the audiences' perception, it was found that the digital backdrop in each scene was in line with the script and the performance and received the highest average. The lowest average was on the relationship between the performers and the digital backdrop, which has always

been the LED's limitation. Therefore, the director needs to pay as much attention to the backdrop as the performers. The design of the backdrop and stage is another important component of the light and sound performance since it affects the audiences' perspectives and the use of the stage area. In addition, the performance needs to support the story and the emotions of the performers efficiently. This goes in line with Maneewattana (2016), who had studied the basics of performing and directing, who stated that the design and creation of the image on stage are as important for the directors as other kinds of knowledge. Without this knowledge, the director will create work without beauty and taste. Creating images on stage and the design for the performances along with the images, the design of the performance, the presentation of the characters and the stage, the components of the stage, good composition, artistic components in the design, and the composition of artistic components for the performances, these are the direction to help directors in expanding the aspect of the visual arts of the performances. If any of the components in the backdrop and stage design are in conflict, this can cause problems. The backdrop and stage design need to consider the beauty, the perspective of the audiences, the appropriateness of the stage and the backdrops, the usage of each level of the stage, the strength and safety of the stage, and the design of the backdrop and stage that needed to be within the budget. This goes in line with Srisapyothai (2020) study on the relationship between the area and the performances that stated that each site has its own limitation of how the area can be used. Each site has a different environment. Some sites were not designed for visual arts performance. The same goes for theatres for plays that were built for the sole purpose of visual performances. Theatres are ideal for performances since they were designed for performing arts. The whole area on the stage can be used. There are areas to move the equipment, dressing areas for the performers. There are toilets within the building, clear entrances, and exits, spots for performers to get ready without being seen by audiences, and arranged seating areas for the audiences to appreciate the performance, space for music, and sound instruments. Lights should also be put up in areas that do not block the audiences' line of sight. There should also be tight security measures. The reason why theaters are perfect sites is that there are continuous improvements and fixes. This is different from other kinds of places that were not purposely built for visual arts performances, which greatly reduced the actual area usage. The artist and the creators need to adjust and fix the area to appropriately use it. Some sites are opened areas without clear boundaries, which limits how the area can be used. The artist and the creators need to study the relationship between appropriate area use of different sites and formats of the performances by considering factors such as the performing space, entrances and exits, preparation area, space for musical instruments, backdrops, dressing areas, audiences' sitting arrangement, as well as the surrounding the area.

RESEARCH SUGGESTIONS

Suggestions in using the research

Digital backdrop is a new kind of technology that simulates reality to modern and future light and sound performances. It can help display the details in the script, especially important historical places which are now either ruined and

destroyed. The recreation of those places is a difficult task that requires space, budget, and a time-consuming process, which is not cost-effective. Creating digital backdrops for the light and sound performance is a clear answer for the artists and the directors. Additionally, the audiences can fully enjoy the performances with the feeling of being in those actual places.

Suggestions for future research

The performance in each area has different creative factors. In order for the performance to be perfect in terms of the script, the artistic performance, the beauty of the backdrops, and entertainment, a study on every component should be conducted to make sure the performances are of good quality that is ready to be used to correctly and appropriately convey important content to the local people and the target group.

REFERENCES

- Autthapak, C. (2007). Art Component. Wittayapat.
- Haynie, W., J. (1995). The Technology of Communication. International Thomson.
- Maneewattana, C. (2016) Basic of Acting and Directing. Faculty of Fine and Applied Arts. Suan Sunandha Rajabhat University.
- Montoya, M. H., Díaz, C. A., Moreno, G. A. Evaluating the Effect on User Perception and Performance of Static and Dynamic Contents Deployed in Augmented Reality Based Learning Application. *13*(2), 301-317. <https://doi.org/10.12973/eurasia.2017.00617a>
- Petchroj, L. & Chamniprasart, A. (2003). Research Methodology. Pimdee Printing House.
- Rattanin, M. (2012). Acting: Basic Principles and Rehearsal. Thammasart University.
- Soodsang, N. (2003). Designing Industrial Products. Odeon Store.
- Srisapyothai, T. (2020). Relationship Between the Use of Area and Performance. Suan Sunandha Rajabhat University.
- Warissarapuricha, K. (2008). Play Scenes 1. (5th ed.). Bangkok:Chulalongkorn University
- Warissarapuricha, K. (2017). Basic Scene Setting. (2nd ed.). Chulalongkorn University
- Wirunrak, S. (2003). Theatre Concept and Design. (2nd ed.). Chulalongkorn University.