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Bio Terapi Solat: 3D Integration in Solat Technique for Therapeutic Means

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ABSTRACT

Solat has been known for its health benefits, however not many people are aware of it. Solat involves stretching that is in harmony with the body needs for health care. Therefore, this research focuses on solat guidance in three dimensional (3D) ways. The purpose of this research is to show the complete solat techniques as a therapy to the human body and health using 3D model. This application is developed using 3D Autodesk Maya software that includes the human model, movement (rigging) and other multimedia elements that can create interactivity in this application. The application shows a guideline of learning a perfect Solat Technique and the benefit of solat in the therapeutic means. Usability test is performed to observe the usability and learnability aspects of the application. Respondents were selected among adults to experience this application. It eventually guides the users to focus on solat therapy techniques and its benefits.

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INTRODUCTION

There are two types of solat: solat fardhu and solat sunat, solat fardhu is the second Rukun Islam that is compulsory to all Muslims. Solat is mandatory and it must be performed five times every day. Solat (dhuhr, asr, maghrib, isha', and fajr) is important to each Muslim because through solat, Muslims can get closer to Allah S.W.T and avoid doing bad things. In the Al-Quran it is also stated that solat is mandatory to be performed as follows:

حَٰفِظُواْ عَلَى ٱلصَّلَوَٰتِ وَٱلصَّلَوٰةِ ٱلۡوُسۡطَىٰ وَقُومُواْ لِلَّهِ قَٰنِتِينَ ﴿٢٣٨﴾

Which means: Maintain with care the [obligatory] prayer and [in particular] the middle solat and stand before Allah, devoutly obedient. (Al-Baqarah, 238)

The benefits from solat can make it an option for medical therapies for those who perform it. Unfortunately, many people do not realize that solat can be a good health treatment and they do not know that the solat technique can be a therapy to relax their mind (Doufesh, Faisal *et al*. 2012).

Solat has many techniques and since Islam is simple, it does not burden Muslims in performing the solat. There are many techniques for solat in this world according to different mazhabs and manners of people. However, people do not know which one is a better technique for them to follow. As a Muslim, solat has to be carried out in the manner of solat advocated by the prophet (Nabi Muhammad S.A.W) (Rahman 2008).

Most of the guides for learning the solat technique for solat therapy are available in written form. The materials, such as books, make the readers bored and they are not interested to learn solat. An effective way to make it more interesting and engaging is by illustrating Solat Technique using 3D animation. 3D model of animation is intended to connect users with the application. There are many 3D softwares available in the market. However, 3D Autodesk Maya has been chosen based on the extensive creative features such as 3D computer animation, character modeling, visual effects, rendering, and compositing process.

Therefore, this study intends to develop an application to show the solat technique in 3D animation because the existing application uses limited materials for learning solat such as books, video-based learning, and 2D models. As the 3D is very popular and interesting in the real world environment, this project utilizes the technology to develop 3D animation as an alternative to learn solat and becomes a technique for therapy.

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1. Research Background:

This project provides an alternative way to learn the solat technique for therapeutic means for all Muslims. It focuses on the 3D animation as a way of learning Solat Technique. This project is suitable for all users but the main targets of users are children from 7 years old to teenagers around 18 years old. The Prophet (Nabi Muhammad S.A.W) said: "Order your children to pray at the age of seven. And beat them (lightly) if they do not do so by the age of ten." From the hadith it tells that children should start practicing solat from the age of 7. Hence, the development of this project enables children to interact and understand how to learn solat. Children can learn the correct way or the technique of solat as the correct way of Solat Technique is good for health.

Besides that, this project can also be used by Muslims to introduce the benefit from solat technique to the other Muslims who are not aware of it. The development of this project is also to illustrate the right movement and the technique of breathing during solat.

1.1 Solat:

Solat in the Arabic language is a worshiping act with physical and body movements as well as a silent Quranic recitation though mind and soul. This Muslim way of worshiping also involves some quranic recitations and as well as supplications (du'a). These specific recitations and supplications must be verbalized when the worshipper assumes certain positions and performs movements between positions (Salleh, Lim *et al*. 2009).

The Messenger of Allah S.W.T, Rasulullah S.A.W,says: "There are five solat that Allah obligated the slaves to perform. Whoever performs them properly without belittling their obligation, Allah promised to admit him into Paradise. Whoever leaves them out does not have a promise from Allah to have Paradise without torture before. If He willed, He tortures him, and if He willed, He forgives him". (Narrated by Ahmad in his Musnad.)

It is obligatory to perform each of these five solat in its due time. It is better to perform each solat earlier in its due time. Solat is also physical as well as a spiritual act which involves total obedience and submission to Allah S.W.T.

1.2 Solat Techniques:

Each solat has continuous sequences of body movements consisting of bowing, kneeling, prostrating, and sitting. When performing solat, most of the muscles and joints are in action. All the movements when performing the solat fardhu 17 raka'at per day, is equal to 119 physical postures per day, 3570 per month, and 43,435 per year. The movements increase went performing the other optional solat. Through the solat, unique postures are possible which can give significant reactions to the human body.

1.3 Solat as a Therapy:

Solat helps to remove all sources of tension due to the constant change of movements. It is known that such changes lead to an important physiological relaxation. Therefore, the Prophet commands that the Muslims, when afflicted with a state of anger, should resort to prayers. It is proved that prayer has an immediate effect on the nervous system as it calms agitation and maintains balance. They are as well a successful treatment for insomnia resulting from nervous dysfunction (Aziz and Samsudin 2010).

In order to visualize the implementation of therapeutic benefit in Solat, 3D model with animation should be integrated to increase the learnability and awareness among Muslim.

1.4 3 Dimensional (3D) Model:

Three Dimensional is one of a techniques to create or build interactive multimedia and animation film or cartoon (Baran & Popovi, 2007). Multimedia is more interesting when 3D animation is used rather than 2D animation. According to Yongguang, Mingquan *et al*.(2011), 3D describes an image that provides the view in depth. When 3D images are made interactive, the users will feel involved with the scene. Nowadays, 3D has already developed in the film industry and cartoon production and now is growing in the field of education, game, and also in advertisement.

2. Related Works:

A few observations have been done on the previous available solat applications to find the advantages and disadvantages of each application before developing our own application. Fig. 1 shows solatSim application which is a review of each position in Zuhur obligatory Solat. It also contains male and female respondent's image illustration solat position. When the respondents do the technique of solat, SolatSim also view the blood circulation flow and the muscle condition for each position of solat (Aziz and Samsudin 2010). In SolatSim it include five (5) main topics which are "Male", "Female", "Research", "Credit" and "Solat Info & Demonstration".

"The Right Way to Pray" is another application that is related with this research as shown in Fig. 2. It includes all the techniques of solat that can guide users to learn solat and includes information about Islam. This

application is developed by Islamic finder at http://www.islamicfinder.org/prayer/index.html. This application has provided a user friendly interface to users. It is also interactive and users can control the page. It includes buttons such as "back", "repeat" and "next". It can be repeated by user if they did not understand on certain topics. However, the disadvantage of this application is the model is not clear. The developer used a blur model to describe each of the movements of solat. Users might not see clearly the right position of solat. Moreover, it also does not include the Arabic writing of the positions of solat.

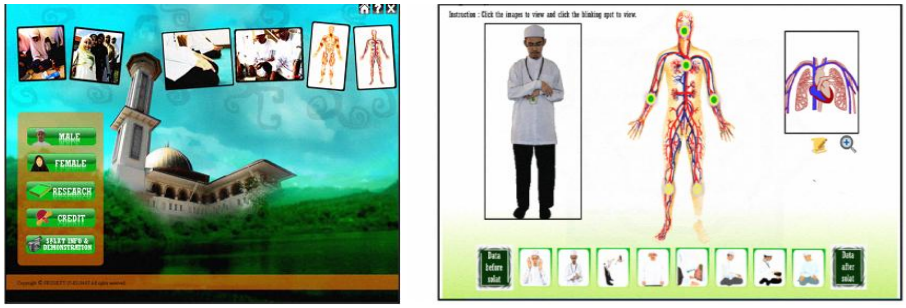

Fig. 1: SolatSim Interface0

Fig. 2: The Right Way to Pray Interface.

3. Methodology:

In this research, three phases were involved which are Designing, Developing, and Testing. The particular activities of all phases are briefly explained as below.

3.1 Dimensional (3D) Model:

A site map provides the flow of content of all processes that are included in the application. Fig. 3 shows the site map of this project. The site map shows the contents of the application. This application has 3 menus which are "Sunnah Rasulullah S.A.W", "Teknik Solat" and "Glosari". "Teknik Solat" is the main menu of this application. In the site map, each page contains a “KELUAR” button to ease users to exit this application. When a user clicks the "KELUAR" button, a message box will be appeared to ask users for confirmation to exit the application. Besides that, this application includes maximizing and minimize button to ease its usage.

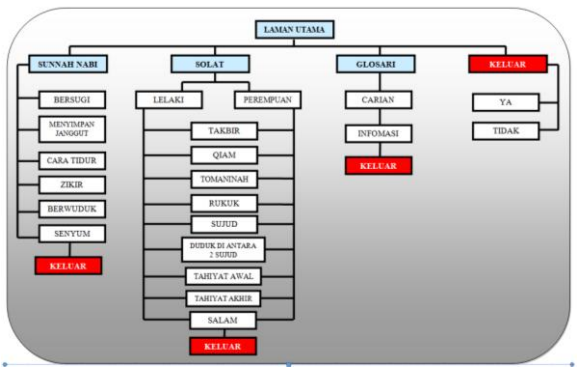

Fig. 3: Site map of "Bio Terapi Solat" Application.

3.2 Design Storyboard:

The storyboard is designed to show the flow of the application. Usually it is sketched on a piece of paper before designing. It is easier to design the interface and get an idea when it is sketched on paper. When the storyboard has been completed, the sketch of the interface will be scanned using a scanner to make it in a digital form.

3.3 Development:

The storyboard made will be used as a guide to draw the button and the interface. The button plays an important role to enable users to navigate in an application. Each element in the application must match the interface. Color and appropriate font is made to attract users to use this application. The home icon is used to identify the "Laman utama" application "Bio Terapi Solat." The book icon is used to identify a button of "Sunnah Rasulullah S.A.W". "Solat Teknik" icon that shows a picture of the bow position is used to show the button for "Solat Teknik". While the icon "Glosari" is used to visualize the search to find a piece of information. Fig. 4 shows the button in the application using icon.

Fig. 4: Button for "Bio Terapi Solat" application.

3.3.1 Main Menu:

The home page is the first interface for this application. On the homepage, there is information about this application. It also has 4 buttons including "Laman Utama" (Main Menu), "Sunnah Rasulullah S.A.W", "Teknik Solat" (Solat Technique) and "Glosari" (Glossary). In addition, there are buttons to exit, minimize and maximize the application. Fig. 5 shows the interface of "Laman Utama".

Fig. 5: Interface of "Laman Utama".

3.3.2 Sunnah Rasulullah Page:

On this page, there are six buttons of "Sunnah Rasulullah S.A.W", users can click on each button to access all the available "Sunnah". This application comes with "Sunnah Rasulullah S.A.W" to provide additional information to the users. When a user clicks the button, the information will be displayed on the "Sunnah". Fig. 6 shows an example interface for "Sunnah" information.

Fig. 6: "Sunnah Rasulullah" Page.

3.3.3 Terapi Solat Page:

Fig. 7 is the interface to see prayer techniques in 3D animation. Users can select the desired prayer technique. There are nine techniques provided as "Takbir", "Qiam", "Tomaninah", "rukuk", "sujud", "duduk di

antara dua sujud", "Tahiyad Awal", "Tahiyad Akhir" and "Salam". For every single movement in “Solat”, there are many beneficial elements that can provide the therapeutic means for Muslims that have been emphasized in the application. For example as shown in Fig. 7, the benefits for solat movements have been included in “Terapi” and “Teknik” buttons where the correct way of performing solat and its benefits are highlighted.

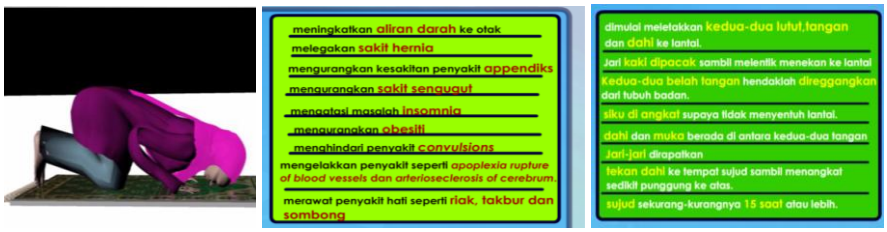

Fig. 7: Terapi Solat Interface.

3.3.4 Glossary Page:

The glossary is a page that allows the user to access information contained in this multimedia application. It contains information such as a dictionary and only contains jargons such as medical terms that may not be understood by the users. Users can enter a word in the textbox and if the requested information is in the database then it will be displayed as shown in Fig. 8.

Fig. 8: Glossary Page.

4. Usability Testing:

After the completion of Development Phase, usability test is carried out to get the feedback on flaws of the application. Generally, usability testing is the method used to test prototypes and find out the ease of use level. The participants in Usability Test are real users. From the testing, the developer reviews the attitude of the users towards the project. Participants are required to complete the designed tasks under simulation scenarios – usually in the laboratory. It can help to find out the problems and modify the design in the early stages of product design (Wang and Yan 2011).

The usability testing was done by the lecturers of UiTM, Perlis. The application has been tested on the lecturers in Center of Islamic Teachings and Understanding (CITU) and Computer Science Department. Besides that, participants of usability testing are the students of UiTM, Perlis. This usability testing had been done by determining the navigation, design, sound, graphic, animation, and interactivity between the user and the application. Participants were asked to perform a questionnaire after exploring the application; they were also required to complete the testing. After exploring applications, developer's has distributed a set of questionnaires to the participants. They were given 5-10 minutes to complete the relevant questionnaire.

4.1 Usability Test Result:

From the observation, it is found that the participants were confused with the Glossary interface. They did not know what terms that are provided in the Glossary and it does not provide any direction or instruction to the participants. The "Terapi" and "Teknik" buttons also made the participant uncomfortable with them. The buttons required the user to hold the mouse click to enable them to read the information. However, these drawbacks have been refined and suitable enhancement has been implemented.

Based on the usability test result as shown in Table 1, the user is satisfied with the application. From the observation, the participants obtained information regarding Solat as a therapy. They are able to use the application as their guidance to perform solat. Additionally, the therapeutic benefits and the integration of 3D model have enhanced their learnability.

Table 1: Usability Result.

Antenna Components	Material	Dimension (mm)
Task 1	Easy to click on the button	Button : Most evaluator satisfied with the use of a button. The icon of a button makes it interesting to the participant.
Task 2	Understand the usage of each button provided	
Task 3	Easily navigates from one screen to another screen	Navigation : The evaluator finds the menu navigation easily.
Task 4	Interface suitable to the application.	Interface : The interface includes interactivity with the user.
Task 4	Text clear and readable	Text : Most participants agree the font suitable to the application. It's easy to read and suitable with the background.
Task 5	Suitable text color	
Task 6	Easy to understand	
Task 7	Sound could assist in the learning process	Sound : Sound is redundant when user clicks the button (sound button in "solat teknik ").
Task 8	Sound is clear	
Task 9	Suitable with application	Color : Satisfied with the color.
Task 10	3D model useful in learning process	3D : The participants agree 3D model could easily to be understood.

5. Conclusion and Future Works:

Bio Terapi Solat can be used as a guideline for Muslim or others for learning and gaining knowledge about the benefits of solat. Many people did not realize solat can be utilized as a therapy and is beneficial for us. Therefore, this application will guide and show users how to perform the correct way of solat. The application also provides information on techniques and highlights the therapeutic benefits that can be achieved from the prayer technique that has been done.

In addition, the 3D model performs solat in 360° view. Each technique of solat, including the therapy is displayed in this application. This application differs with other applications because it includes the additional information such as therapy of solat, Sunnah Rasulullah S.A.W and glossary.

As a conclusion, the objective of this project has been achieved. The suitable multimedia element has been developed as interactive multimedia for guideline and learning of solat as a therapy. The model integrates with a 3D animation human model for making it interesting and more understandable. This application can be used by Muslims as a guide for them on the right technique to perform solat. The therapy is a good treatment to us if performed correctly during solat. This application which provides information about the prayer therapy could guide and educate users while using this application.

Furthermore, the evaluators recommend a 3D model over virtual reality modes. Users can control the 3D model where they can select the different part or angle of the model.

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