Design Encouragement Analysis for Prayer Behaviour of Muslim Children in Kuala Nerus, Malaysia

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Abstract: This paper exposes an investigation on the encouragement of prayer behaviour amongst Muslim children aged seven to 10 years old in the city of Kuala Nerus, Terengganu, Malaysia. We have found some evidence that these groups of people have yet to perform prayers as well as the absence of a special indoor product that able to or can make them stimulate to perform their prayers consistently. We compile this study in the applied research category where there are two types of research procedures have been used namely quantitative and qualitative methods. In the context of this study, quantitative method is dominant. Primary data for this study is obtained from a pre-test stage via participant observational technique with time sampling practice and non-random standardised aka a structured interview technique; meanwhile, secondary data of the study is collected from literature review through relevant printed and electronic sources. To make this study a success, we implement six footsteps of the industrial design and its development processes consisting of design ideation for mind map thumbnail, design development for conceptual impression, design refinement for detailing expansion, design software for digital productions, workflow for product making, and completion stage for the outcome of the study that is a full-scale finished model of indoor spatial home prayer encourager aka iShope made of high density polyester fabrics, plastic rods, and prints with the Islamic heritage structure basis of ar-rawdhah al-jannah fil al-masjid al-nabawi developed from semiotics concept of sustainable-and-impressive-design-for-Muslim.

Keywords: Indoor spatial home prayer encouragement product solutions, Semiotics concept of sustainable-and-impressive-Islamic-design, Ar-Rawdah al-Jannah fil al-Masjid al-Nabawi, Muslim children aged seven to 10 years old in Kuala Nerus.

INTRODUCTION

An interior or a spatial product means something that is made to be sold usually be placed at the inner space of a house or an office for the convenience and the comfort of human life [1]. It also defines as a social product that fitted with semantics and pragmatics elements during its development processes. In fact, both elements are contained in the knowledge scope of semiotics whereby semantics deals with a study on the meaning of a word or sign while pragmatics describes a study on who said it or to whom and in what circumstances are. Those are included in a theoretical framework to interpret the meaning of languages, signs, and symbols [2].

An indoor playhouse for children developed from semiotics design concept is claimed as one of the social products especially for the educational purposes [3]. Any semiotics based social products made from the Islamic art ornamentation has divided into four categories: calligraphies, figural of human or animal forms, vegetal motifs, and geometric patterns [4]. A semiotic design concept for indoor Muslim children playhouse is produced from the Islamic heritage of the mosque architecture structures [5] which can be seen at al-masjid al-nabawi that has the most impressive Islamic heritage through its sparkling whitish minarets, the green-and-silver coloured of domes, the pointed curved arches, and the historical of Arabic motifs and calligraphy ornaments [5]. The mosque is also has a very special and auspicious of specific interior location which is ar-rawdah al-jannah means the Garden of Paradise [6] that increased the attendance of congregation due to the authenticity of this place for acceptance of all wishes are never rejected by God [7] alongside five commemorations of the Pillar of Aishyah, the Mihrab, the Pillar of Mukhallaqah, the Pillar of Taubat, and the Minbar [8].

Every Muslim needs to perform prayers five times a day to establish and strengthen a direct-link with God. This command is contained in the Holy Quran where prayers are performed in specific times throughout the year due to changing of the sunrise and

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Islamic education begins at childhood. Islam is not simply a belief but it is a way of life. A Muslim grows up their life from learning and practicing Islam since a young age [19]. It coincides with the hadith of the Holy Prophet SAW who told his people to start the prayers around the age of 10 years [20]. Teaching children to perform prayers and enforcing it, is a delicate and often stressful matter for Muslim families. Prayer is the first act of worship that was made obligatory by God. It is one of the five pillars of Islam and it should be one of the first acts of worship that Muslim parents should teach their children [21].

There is a few special ways to motivate Muslim children to perform their prayers. Based on an interview results, there are four participants involved in a special dialogue to inculcate the love of prayers at the early stages. According to Zaheera said that she encourages her children to perform prayers since a very young age by providing them a smaller prayer place. She tells her children that every time of the prayers, God fills their treasure boxes with all the things that they love and on the Day of Judgment, He will present it to them. That is what we called it a positive reinforcement of the love of prayers that will enter into their hearts easily. Meanwhile, according to Mumtaz said that the best way to perform a prayer easier is creating a prayer log for children. She teaches her children with three prayers of the Dhuhr, Asr, and Maghreb at seven years old whereby the other two prayers of the Iesya and Fajr will be taught at the age of 10. It eventually becomes a routine amongst her children. On the other hand, according to Fatima said that she manages the first strategy of prayer encouragement for her children by providing prayer mats based on their favourable colours. She then motivates her children to read any prayer’s verses everywhere and anytime at home as well as allows them to make wish aloud and then ask whatever they want as God is the only Provider. At the same time, according to Aliyah said that she teaches her children to perform prayers through watching their own parents during performing the prayers because of the child’s first teacher is from the observation on their parent’s action or behaviour including physical activities [22].

In general, an indoor playhouse is an interior playground for children. However, it can be a worship place for Muslim children particularly. In the context of religion purposes, an indoor playhouse for Muslim children can be a special place for them to perform prayers [23]. As an alternative for Muslim children activities, an indoor playhouse might be a place for learning and reciting the Holy Quran, which coincides with the hadith of the Holy Prophet SAW narrated from al-Bukhari stated that “the best amongst Muslims are those who learn the Holy Quran and then teach it to another”; as well as from another hadith narrated by al-Muslim stated that “reciting the Holy Quran for it to come as an intercessor for its reciters on the Day of Judgment” [24]. An indoor playhouse for Muslim children can also be a cubicle workstation for them to finish up their schoolwork, review the school lessons, and a fun-compartment for colouring and doing arts activities [25].

We in line this investigation with the hypothesis of the study says that an indoor spatial home prayer encourager (isHope) made of high density polyester fabrics, plastic rods, and prints with Islamic heritage structure basis of *ar-rawdah al-jannah fil al-masjid al-nabawi* can be offered to the Muslim children aged seven to 10 years old in the city of Kuala Nerus, Terengganu, Malaysia as a solution for them to stimulate to perform their prayers consistently. Simultaneously, the isHope can also be used as a place for learning and reciting the Holy Quran as well as a cubicle workstation to finish up the schoolwork, reviewing the school lessons, and a fun-compartment for colouring and doing arts activities.

We then proceed the aims of this study are to redesign the existing indoor playhouse for children available in the online and offline markets towards the replacement of an indoor spatial home prayer encourager (isHope) by utilising the supplies of high density polyester fabrics, plastic rods, and prints alongside additional sub-materials such as sprays, glues, sponges, and sewing tools. Through this effort will be able to create a prolonged resolution in order to solve the stated problems in total. The outcome of the study is furnished and completed in the School of Industrial Design of the Universiti Sultan Zainal Abidin Malaysia.

Towards this end, the study aims to fulfil the following objectives: (i) to produce a full-scale finished model of an indoor spatial home prayer encourager (isHope) made of high density polyester fabrics, plastic rods, and prints with Islamic heritage structure basis of *ar-rawdah al-jannah fil al-masjid al-nabawi* developed from semiotics concept of sustainable-and-impressive-design-for-Muslim fitted with five commemorations of the Pillar of Aishyah, the Mihrab, the Pillar of Mukhallaqah, the Pillar of Taubat, and the Minbar; (ii) to integrate six design criteria of the aesthetic with creativity and innovativeness, the religion
and cultural acceptability, the functionality and practicality, the portability and movability, the foldability and usability, and the manufacturing acceptability; alongside implementing three design practices of the design transform, design interaction, and design emotion into the outcome of the study in order to meet multi-solutions of a space for prayers, a place for learning and reciting the Holy Quran as well as a cubicle workstation to finish up the schoolwork, reviewing the school lessons, and a fun-compartment for colouring and doing arts activities; and (iii) to conduct both pre-test and post-test around the housing areas in the city of Kuala Nerus.

MATERIAL AND METHODS

We compile this study in the applied research category where there are two types of research procedures have been used: quantitative and qualitative methods in which the quantitative is dominant. Applied research is a study involves into a real-world setting to solve the real life problem. It is not a study used to create new knowledge in a specific field [26] but it acquires knowledge for knowledge’s sake as contained in fundamental research. It produces a creative, innovative, and effective product [28] to enhance community benefits [27]. Apart from that, quantitative method is used to measure the population number [26] or to calculate a number of variables in a study [29] where it begins and concludes either 0 or 1 [30]. Unlike qualitative method requires an observation on a subject or behaviour [29] contained in any data, picture, video, and audio [30].

Pre-Test Stage for Primary and Secondary Data Collection

A pre-test is an initial plan used to test the extent of a study contribution [33] or a prelude way to assess the quality of study journey [34]. It should be carried out before the study began [35] to support and measure any change in the study process [36]. We obtain primary data for this study via participant observational technique with time sampling practice and non-random standardised aka a structured interview technique; meanwhile, secondary data of the study is collected from literature review through relevant printed and electronic sources. In other words, primary data collection covers a knowledge gap contained in the literature [32] and defines as indirect data found from first-hand experience unlike the secondary data obtained from books, journals, newspapers, magazines, bulletins, conference data, and others [31].

Participant Observational Technique with Time Sampling Practice

The participant observation means a survey to collect actual behaviour data to enmesh it into a group or subject under study [26] while time sampling is about observing a subject or behaviour in certain extended period [37] or recording behavioural data systematically through a pre-set interval procedure of 40 minutes within an hour [26]. To meet the qualitative requirements, we conduct participant observational technique with time sampling practice to identify the existence of the early problem for this study. We enmesh into a group and subject under study where we visit to more than 40 units of houses in Kuala Nerus city to record the data according to a pre-set interval procedure of 10 minutes for four times within every hour. At the end of the observations, we confirm the results obtained from this survey say that there is an absence of a special indoor product in the city that able to or can make Muslim children aged seven to 10 years old to stimulate to perform their prayers consistently. It means that social religion complication has happened in the city of Kuala Nerus.

Non-Random standardised aka a Structured Interview Technique

An interview is a process to engage two-way conversation to focus on a specific issue related to a study. It gains the thought, opinion, perspective, or description about a particular set of phenomena based on expertise and knowledge of the participants who are familiar with the topic and can provide comment and constructive feedback on their specific experience [39]. There are three types of interview techniques: standardised aka a structured interview, semi-standardised aka a semi-structured interview, and un-standardised aka an un-structured interview—which can be done in non-randomly or randomly [38]. In the context of this section, non-random participant means a selected group of people based on their characters and availability for the interviews while standardised aka a structured interview is an official dialogue done in a formal meeting unlike to the other two types [26]. To meet the quantitative requirements, we verify the results of the observations stated above by preparing the list of questions as we have had solid idea about a specific issue to be uncovered. We then ask the questions-to more than 80 participants comprising of Muslim parents and their children aged seven to 10 years old, including their nephews and nieces—exactly as written and worded in the list of questions. We focus on the answers since reordering are not allowed. We are also not clarifying to answer the replies of the participants, not altering the level of the languages, and not deviating the flow of sequence of the questions. At the end of the interviews, we verify the results obtained that an indoor spatial home product encourager aka isHope is needed to be developed and produced.

Industrial Design and Its Development Processes

To make the study a success, we implement six footsteps of the industrial design and its development processes consisting of design ideation for mind map thumbnail (see Fig-1), design development for conceptual impression (see Fig-2), design refinement for detailing expansion (see Fig-3), design software for digital production (Stage1 in Fig-4a) (Stage2 in Fig-4b) (Stage3 in Fig-4c) (Stage4 in Fig-4d).
4d), workflow for product making (see Fig-5), and completion for the outcome of the study (see Fig-6), which can be referred to as follows:

**Fig-1 : Design Ideation for Mind Map Thumbnail**
Fig-2: Design Development for Conceptual Impression

Fig-3: Design Refinement for Detailing Expansion
Fig-4a: Design Software for Digital Production (Stage 1)

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Fig-4b: Design Software for Digital Production (Stage 2)

(A) Pillar of Aishyah – Components: square-based rectangles with long rectangles extend to the top of the dome alongside a hexagon shape with Arabic phrase of Aishyah in the Althulth lines. Colours: red, green, grey, and white.

(B) Mihrab – Components: triangles, squares, rectangles, and arches. Colours: yellow, grey, and...

(C) Pillar of Mukhallaqah – Components: triangle, squares, and rectangles as well as a triangle at the centre with Arabic phrase of Allahu Akhbar in the Althulth lines. Colours: yellow, grey and white.

(D) Pillar of Taubat – Components: square-based rectangles that extend to the top of the dome alongside a hexagon shape with Arabic phrase of At-Taubat in the Althulth lines. Colours: yellow, green,

(E) Minbar – Components: triangles and rectangles. Colours: yellow and white.

(F) Blank – Components: none. Colours: white.
Fig-4c: Design Software for Digital Production (Stage 3)

Fig-4d: Design Software for Digital Production (Stage 4)
Fig. 5: Workflow for Product Making

Fig. 6: Completion for the Outcome of the Study
RESULTS AND DISCUSSION

A full-scale finished model of indoor spatial home product encourager aka isHope made of high density polyester fabrics, plastic rods, and prints with Islamic heritage structure basis of ar-rawdah al-jannah fil al-masjid al-nabawi (see Fig-6) developed from semiotics concept of sustainable-and-impressive-design-for-Muslim that produced from the industrial design and development processes is the best solutions to solve the stated social religion complications in total. In the context of this section, the outcome of the study has been completed and fitted with four design post-test analyses, six design criteria, three design practices, five design elements, and six design principles which can be referred to as follows:

Design Post-Test Analyses

Based on the Boston Consulting Group’s BCG Matrix, out of the four product benchmark categories: cash cow, dog, star, and question mark that include in the analysis of growth-share for product benchmarking, we agree to place the outcome of the study into the cash cow category where it is easy-to-sell, ease-to-earn profits, confident to gain annual returns, and able to dominate the local and national markets. Unlike the other benchmarks that are hard to sell, earn less profits, and low sales margin (the dog); or high market share due to the strong brand but sales unlike the cash cow (the star); or big investments for unpredictable sales and profits (the question mark).

We then conduct the analysis of crossed-map for product positioning to find out the price comparison and product resilience between the outcome of the study and the existing products available in the online and offline markets around the country. We use two variables (prices factor vs. design concept) on one crossed map where there are four traioders for indoor children playhouse available in the nation that explain that–both Companies A and D offer inexpensive prices but the semiotics design concept is not use the Islamic basis, the Company B offers a slightly expensive price by using the semiotics design concept that similar to the Company A and D, and the Company C offers costly prices amongst all due to the use of high quality of materials and a non-Islamic semiotics design concept. As a result, for the outcome of the study, we agree to place it at a position between the inexpensive prices and the semiotics Islamic design concept.

The outcome of the study is brought into the analysis of product SWOT in which – the strengths for the outcome of the study are academic based research solutions, ease-to-get raw material supplies, having sales relationships with alliance of Muslim organisations, innovative contribution for Islamic-friendly product industry, low cost production, reasonable retail prices, and high quality and durable products. Meanwhile, the weaknesses for the outcome of the study are a new product in the new market and also there is an absence of specific machineries to produce it in a mass. Then, the opportunities for the outcome of the study are stated as a new transformation product especially for Muslim children aged seven to 10 years old as the government is fully supported to easily penetrate the local, regional, and international markets. Hence, the threats for the outcome of the study are specified as currency is wavering and volatility in the world oil prices that may affect cost of purchasing the raw materials, or increasing overhead costs, or raising the logistics costs.

The outcome of the study is involved into the product questionnaire stages. A random participant questionnaire technique defines a participant has an equal chance of being chosen to participate in a survey. A participant can be picked whether from a simple random participant of any place related to the study or a group random participant of any club membership related to the study [26]. Apart from that, a questionnaire is one of the techniques used in a survey study that has four categories of questions: opened-ended questions, closed-ended questions, dichotomous questions, and multi-response questions [40]. An opened-ended question begins with what, why and how while a closed-ended question initiates with which, who, when, is or are, do or did, will or would, was or were, and has or have [41]. Unlike a dichotomous question requires two possible answers that only need to be answered one whereas a multi-response question provides a variety of answers that can be answered one or more [40].

In the context of this section, we conduct the analysis of random participant questionnaire technique to validate some key points for the outcome of the study which are the design criteria, the design practices, the design elements, and the design principles. We then choose a simple random participant that picks around the state of Terengganu and a group random participant that picks amongst Muslim parents and their children aged seven to 10 years old, including their nephews and nieces in the city of Kuala Nerus. We apply all of four categories of the questions to be set in our survey forms. We distribute hundreds of questionnaires to the participants who have experience and knowledge on the issues and affairs related to the outcome of the study. At the end of the questionnaires, we confirm the results obtained from this test say that the outcome of the study is perfectly completed and fitted with aforementioned key points of the design criteria, the design practices, the design elements, and the design principles, which can be referred to in the next paragraphs.

Design Criteria

We confirm the criterion of aesthetic with creativity and innovativeness for the outcome of the study is a contribution from semiotics concept of
sustainable-and-impressive-design-for-Muslim made of high density polyester fabrics, plastic rods, and prints alongside additional sub-materials such as sprays, glues, sponges, and sewing tools. Apart from that, we affirm the criterion of religion and cultural acceptability for the outcome of the study which has the Islamic heritage structure basis of *ar-rawdah al-jannah fil al-masjid al-nabawi* that includes five commemorations of the Pillar of Aishyah, the Mihrab, the Pillar of Mukhallaqah, the Pillar of Taubat, and the Minbar. We consider the criterion of functionality and practicality for the outcome of the study as a space for prayers, a place for learning and reciting the Holy Quran, and a cubicule workstation to finish up the schoolwork, reviewing the schools lessons, and a fun-compartment for colouring and doing arts activities.

We believe that the criterion of portability and movability for the outcome of the study can easily be consumed by any Muslim parents and another householder member at anywhere and anytime. We also confirm the criterion of fold-ability and usability for the outcome of the study can simply be done by anyone by folding and putting it in a small bag where high skills are not required. Hence, we state that the criterion of manufacturing acceptability for the outcome of the study which can be redeveloped whether by manual hand skill or by applying any design software such as 2D AutoCAD, 3D Studio Max, and Adobe Photoshop to make it looks more attractive, versatile, and is possible to be reproduced by the other indoor children playhouse makers.

**Design Practices**

We describe the meaning of design transform for the outcome of the study is the Islamic heritage structure basis of *ar-rawdah al-jannah fil al-masjid al-nabawi* has been transformed into a space for prayers, a place for learning and reciting the Holy Quran, and a cubicule workstation to finish up the schoolwork, reviewing the schools lessons including a fun-compartment for colouring and doing arts activities. We then say that the prominence of design interaction for the outcome of the study is having five commemorations of the Pillar of Aishyah, the Mihrab, the Pillar of Mukhallaqah, the Pillar of Taubat, and the Minbar that associated with the aforementioned Islamic heritage architecture structures. We also define the importance of design emotion for the outcome of the study is developing and producing a special indoor product that coincides with the Holy Quran as well as the hadiths of the Holy Prophet SAW. It is made based on the architecture structures from one of the Holy Mosques in the world which is *al-masjid al-nabawi* to be used for Muslim children aged seven to 10 years old in the city of Kuala Nerus, Terengganu, Malaysia for them to be able to or can stimulate to perform their prayers consistently.

**Design Elements and Principles**

We confirm that there are five types of lines available on the outcome of the study such as horizontal lines, vertical lines, diagonal lines, curved lines, and zigzag lines. Apart from that, there are three types of shapes available on the outcome of the study that are two-dimensional geometrical rectangle, hexagon, and triangle as well as three types of forms that are three-dimensional geometrical pyramid, box, and cylinder. There are three types of textures that are tactile textures, visual textures, and artificial textures, including three types of colour theory available on the outcome of the study which consist of greyish and whitishe tones; yellow-and-red of the primary colour; and green of the secondary colour whereby there are six types of design principles can be clearly seen on the outcome of the study over balance, emphasis, pattern, harmony, value, and space.

**CONCLUSION**

This study highlights the initiative of knowledge-based transfer through the solution of semiotics concept of sustainable-and-impressive-design-for-Muslim which can be placed everywhere especially at the interior space of a house such as living rooms, bedrooms, or under the stairs. This initiative is embedded into the state-of-the-art of research outcome made of high density polyester fabrics, plastic rods, and prints developed from the Islamic heritage structure basis of *ar-rawdah al-jannah fil al-masjid al-nabawi* to be used for Muslim children aged seven to 10 years old in the city of Kuala Nerus particularly and to those in the other cities in Malaysia generally.

The outcome of the study can also beneficial to kindergartens, including children parks available at the terrace of the mosques, in the paediatric areas, in the shopping mall kid’s zones, or at the airport terminals. This study has successfully resolved the major social religion complications in total. The study also generates human capital for and increasing domestic economy percentage for Kuala Nerus district authorities and the state government of Terengganu through contribution of the local industry boards and players in the sectors of consumer interior product for Muslim such as manufacturers, retailers, suppliers, marketers, and entrepreneurs. It provides the opportunities for the future designers to use the findings of this study as a reference to develop and produce such products based on the major mosque’s design structures in the world such as *al-masjid al-haram, al-masjid al-aqsa*, and others.

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