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AN INTERACTIVE PHILOSOPHICAL VISION FOR TEXTBOOK DESIGN TO INCREASE INFORMATION VALUE

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Introduction



Interactive design is a design method that allows children to participate in it personally with the use of different forms of book design, the design of a children's book may have many different ways of presentation. Interactivity is like games, It is a way that children prefer. Children are easily distracted during the learning process, and the interactive design is more suitable for children, they are more active in the process of reading and learning, and are more able to learn actively through the process of interacting with books. Currently, digital displays are used in education, but with elementary school kids, the function of the textbook must be enhanced and an attempt made to improve it to suit the students. Therefore, it is necessary to update the design of the ordinary textbook, particularly with the increasing of smart phones in reading educational content, is a major challenge that has led to shed light on the revival of textbook use. To accomplish this, the graphic design and structural design of the textbook must be updated, taking into account the selection of a standard book size that is appropriate for children of the target age, the use of appropriate colors, whether for text or backgrounds, the use of appropriate font sizes with an interest in clarifying information in the form of 3d images, and the search for solutions for students' interaction with the textbook.

Problem Description



- The difficulty for primary school students to understand some curricula through ordinary textbooks is a research problem.
- The traditional structural design of the inside pages of the textbook makes the student bored.

Methods



Preliminary research revealed that the textbook's design requires development in terms of graphic and structural design, and the researcher focused on practical application of structural design through the use of paper engineering in displaying images in a pop-up style. A book was chosen in the crater of death, To learn more about the mass extinction that introduces children to the asteroid impact 66 million years ago that caused the extinction of dinosaurs and many other species. This book was chosen because it requires imagination and understanding through the use of three-dimensional images. With the same graphic design, the structural design of the internal book pages was changed. First, a prototype of 250g Canson paper was created, and the pop-up images shown in Figure 1 were created using paper engineering. The background, text, and images were then printed while keeping the same cover to create the pop-up book.



Figure 1
The suggested pop-up book

Results



According to the researcher's observations of the focused discussion with the fourth primary stage students after presenting the proposed book design with the pop-up images, it was discovered that most of the students interacted with the book and understood what the book contained through the three dimensional images that were designed through the paper engineering, they see that it is a successful way to understand the topics and that this The method is interesting and fun. One of the students commented that the size of the textbook and its dimensions are very large and inconvenient to use, and that there are some Subjects in which the font size very large and others are small, so the size of the font in all Subjects should be fixed to be suitable for reading, Show the following:

- Most teachers believe that the majority of students refuse to use the schoolbook.
- Most teachers believe it is uninteresting for students.
- Some books are quite large and heavy.
- Some books are lack imagination & lack interactivity.
- There is no idea in the design of the book.
- Students are dissatisfied with book design.
- Everyone strongly agreed that using Pop up images in textbooks and using pop-up books as an aid in some textbooks was a good idea.

By scanning the QR code shown figure 2, you can watch a video of students' opinions about the pop-up book

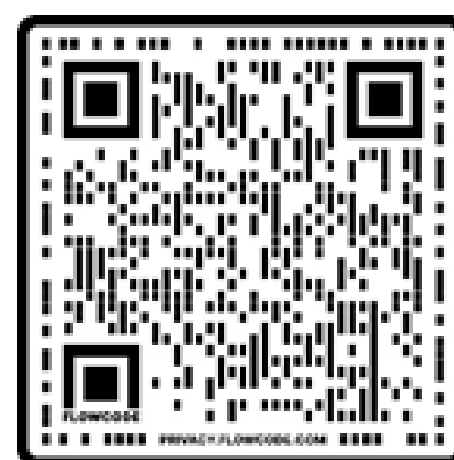


Figure 2

Students' opinions about the proposal Pop Up book

Following the great responses to the printed interactive book the researcher presented the project idea to second-year students at Higher Institute of Applied Arts, Department of Printing, Publishing and Packaging, in book design course to create graphic designs and apply interactive methods and pop-up images in the design of the science and social studies book to solve the problem of curriculum difficulty on the students, as shown in Figure 3, then presenting it to those responsible and interested.



Figure 3
Samples of the covers book and pop-up inside pages for social studies and science.

Discussion / Conclusion



Based on the result of the interview, the design of the children's textbook must conform to the characteristics of children at this age and children's nature. Children's books should not only maintain the readability of ordinary books, but also have innovative forms, so as to highlight the distinctive characteristics. For example, in order to meet the characteristics of children's love of play, books can be designed into various folding methods, which will greatly enhance children's interest in reading and learning, and make children love learning more. In line with the characteristics of less literacy and easy reading, it is necessary to use pictures to convey language, put more pictures and fewer words as much as possible, and use bright colors and Pop up picture forms to stimulate children's brain, and enhance memory, which is also helpful for children's learning. By changing the forms of books, children can participate in the interaction. This interactivity is a process that allows children to use their brains, eyes, hands and other aspects to experience comprehensively. In the whole reading process, this method can make children more focused. This approach was successful in creating positive reactions from the focused group discussion of students and teachers by using interactive methods in suggested book design to overcome the boredom of using the ordinary book, among the beneficial outcomes of the usage of interactivity in the design of a children's book

As a final result, the researcher can conclude the importance of Interactive Design in Children's Books, especially in school-books. Book content and interactive form become more colorful, powerful and interesting. It allows children to participate and interact with books, which not only improves children's practical ability and learning efficiency, but also improves children's autonomous learning ability.

As a result, the role of academic institutions in solving societal problems is represented in this research through innovative ideas for designing the textbook to be more interactive with students and to simplify difficult-to-understand information through pop-up images and interactive methods in the book. To activate the role of academic institutions in solving societal problems, the researcher focused on designing a textbook for the primary stage after conducting preliminary studies to learn about the problems that students faced in the primary stage, the majority of which were in science and social studies for the fourth primary stage.

REFERENCES

- [1] Abubaker, A. & Joun, L.: "The Optimum Font Size and Type for Students Aged 9-12 Reading Arabic Characters on Screen: A Case Study", Article in Journal of Physics Conference Series, (2012), DOI: 10.1088/1742-6596/364/1/012115.
- [2] Ahmadi, F. & Khasanah, K.: "the development of pop-up book media to improve 4th grade students' learning outcomes of civic education", 3rd International Conference on Theory & Practice, Adelaide, Australia, Page33, (2017). [28nd August 2022].

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