THAI CHILDREN’S PARTICIPATION IN DEVELOPMENT OF 3D VIRTUAL VILLAGE

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Abstract. This paper presents the process of virtual world’s adaptation to the vision of the real environment designed by the children of two primary Thai schools – a state school and a private school. The main point of the present paper is presentation of empirical research that is an analysis of four exercises – inquiries in which I asked children to draw the elements of their city and social life. The first task was to represent a route from home to school. Next, children were asked to draw the plan of their school, on which they had to differentiate the places dedicated to them, the common spaces and the spaces for another people. The last exercise done at school was related to the description of their family and their closest friends. At the end, the children were asked to draw an inside of their houses with the maximum of details. The results of representations of the daily life environments analysed and synthesised were rebuilt with the graphic computer tools. They will serve as the base of the conception of a 3D virtual village dedicated to the Thai children.

Keywords. Virtual / real; children; inquiry; drawing; pedagogic platform

1. Introduction

In this paper, I discuss what I call the “potentialities” of children’s participation in development of a virtual village. This study represents one step in a complex project of 3D virtual platform’s creation; which will be dedicated to children living in countries at risk of various disasters. The idea of this platform is to assist in apprenticeship of behaviors which will be essential for children in the case of natural disaster. One intention of this project is to adapt the pedagogic platform’s virtual world to the children’s idealistic vision of environments. Therefore, it is crucial to question the children of concerned
countries about the aspects of their city life. In this paper, I first present the empirical research on Thai children environment’s views and how this differs at private and public schools, justifying it with children’s cognitive maps.

I interviewed the children aged from 5 to 9 years old and enrolled in primary school. E.g., Philip Walton (1996), the child draws that, what it knows and its drawing changes during the learning in school. At the age of adolescence, it begins representing that, what he sees. As for my research, the idealistic environment’s vision (that not the real vision) is important. Therefore, I decided to work with the students of three first primary school’s classes.

Through partnership with the Faculty of Architecture of Rangsit University (Thailand), it was possible to make a series of inquiries in two primary schools of the northern suburb of Bangkok: Wat Na Wong School (public school) and Satit Bilingual School of Rangsit University (private school). In the first school, I interviewed 83 students from 7 to 9 years old and in the second school – 73 students from 5 to 7 years old. In brief, I investigated a group of 156 children from 5 to 9 years old, coming from all social circles. The experimental works lasted one month, during which we asked the children in Thailand to make a series of four exercises-inquiries:

• The 1st inquiry: “My journey from my home at my school”;
• The 2nd inquiry: “My entourage”;
• The 3rd inquiry: “My school’s plan”;
• The 4th inquiry: “The section of my house (a homework)”.

2. Thai children’s daily journey

As has been noted, first, I asked the children to draw how they move, which areas they cross, next to which buildings they pass, etc. Indeed, the objective of this inquiry was to study the questioned children’s urban environment. As an illustration, the drawing’s elements was classified in 7 categories:

• Means of transportation
• Fauna / flora
• Constructions
• Landscape elements
• Natural elements
• Things
• Characters

The analysis demonstrates that the most popular means of transportation are: a car (63% of students from Wat Na Wong School and 97% of Satit Bilingual School), a motorbike (19% and 3%) and a bike (8% of students from Wat Na Wong School). The pie charts (figure 1 and figure 2) shows, that in the
category of fauna and flora, the most represented were trees, flowers, cats and dogs. As the urban environment’s elements, two types of constructions were the most often represented by the students of Wat Na Wong School: home (36%) and school (31%). The diversity of buildings drawn by the students of Satit Bilingual School is very remarkable. 23 % of them drew their houses, 22 % – their school, 10 % – a skyscraper (it shows that they come by far).

Afterwards, in the category of landscape elements, a lot of drawings present the traffic signs and the advertising’s panels (34% in the School Wat Na Wong and 48% in Satit Bilingual School of Rangsit University). Nevertheless, exterior lighting (25%) and bridges on the road (17%) attracted the attention of Wat Na Wong School’s children. Instead, in the drawings of Satit Bilingual School’s students we can see: the swimming pools (14%), the green areas (12%) and the bridges (10%).

Figure 3 and figure 4 represent the natural elements, which are well-nigh the same in both of schools. Also, here we see the most often: lakes, mountains, sun and clouds.

However, the majority of children from both schools have designed the flag as the object of their urban environment as shown in the following figures. This phenomenon is related to the fact that in the Thai schools, the children sing, in front of their country’s flag, the national hymn every day. Next, 12% of Wat Na Wong School’s students have noticed the presence of a fan and
10% Satit Bilingual School’s students have drawn a doghouse. According to answers, the children meet the most often every day other children (68 % at Wat Na Wong School and 57 % in Satit Bilingual School).

3. Thai children’s entourage

In the basic of 2nd inquiry’s data, we can study a child’s entourage – its relatives classified by intimacy’s degree and relational level. We classified the student’s responses in 4 categories:

- Family sphere;
- Relative’s sphere;
- Acquaintance’s sphere;
- Everyday unknown men’s sphere.

I represented the most frequent answers on two diagrams corresponding to the both schools. In figure 7, we can see that the majority of the Wat Na Wong School’s students marked their friends in the “family sphere”. By comparison, the same children are situated members of their families in the less important positions than their friends. In the “relatives sphere”, “acquaintance’s sphere” and “everyday unknown men’s sphere”, they’re also the friends, who appear the most often. So, we remark that for this school’s students, the friends are most important that their family.

![Figure 7. Child’s entourage – Wat Na Wong School.](image-url)
Simultaneously, let’s compare the same data of Satit Bilingual School’s students. In the analogous drawings (figure 8), we can find the truth family’s member in “family sphere”, like a mother (30%) or fathers (28%). In the “relative’s sphere” and the “acquaintance’s sphere”, the majority of children have marked their friends. In “everyday unknown men’s sphere”, the unknowns are especially found. So, we analysed the persons of which the children would think at the time of a natural disaster and who, in the same situation, would be likely to accompany them. There is some truth to the argument that these inquiries differ from another three. However, these data are really important for the project of natural disaster’s prevention. So, we analysed the persons of which the children would think at the time of a natural disaster and who, in the same situation, would be likely to accompany them.

4. The school’s plan

The data of 3rd inquiry are the school’s plan, drawn with three distinct colors differentiating the areas where the children feel «as at home», areas “dedicated to everybody” and the areas which their are “forbidden”. We classified the student’s responses in 3 categories:
Figure 9. School’s plan – Wat Na Wong School.

Figure 10. School’s plan – SATIT Bilingual School.
• Reassuring place;
• Common place;
• Another’s place.

On the diagrams (figure 9 and figure 10), we can observe how the children classified the areas of the school. This allows understanding where, at the school, the children spend the most of time and with which areas they are the most familiarising. Is also interesting to note what different was the answers in the two schools. This proves so those at the private school (Satit Bilingual School of Rangsit University) are many more areas, functions and activities.

5. The representations of house’s or flat’s interiors

Finally, we asked the children to draw the section of their houses and to represent its interior with the maximum of details. The drawing of the house’s interior was the purpose of this investigation. We asked the children to representing the maximum detail. According to pictures (usually, a child has drawn many pieces), we classified the student’s responses in 5 categories:

• Bedroom;
• Living room;
• Kitchen;
• Dining room
• Bathroom.

While it’s true that just some questioned children deposited to us their drawings (61 students of Wat Na Wong School’s and only 15 students of Satit Bilingual School), but it was possible to analyse the sections of all major rooms of the Thai house or apartment. With the details drawn by children it’s possible to model the residential buildings and this not only from outside but also from inside. We can than virtually equip them with all things, which the children use in their daily life.

6. Utility of inquiry’s results for the development of 3D virtual platform’s

The educational application’s principles concern the 3D virtual village’s creation – a platform in which the children will be able to project themselves in order to integrate different environments, to show there, to move there and to interact there. Great importance will be attributed to the presence of familiar landmarks, which will allow children to feel on known earth and to identify immediately these virtual areas, as if they were in their usual environments. Well, it provide for children, by interactive games, the understanding’s bases of different natural risks with which they could be confronted, and the means, which they have to protect themselves from it. Following this first educa-
tional phase, the children will be virtually confronted with real simulation of disasters and of alerts, which they will have to face by proving their aptitude to recognise, to understand and to “know how to react”, individually and collectively. The concept of 3D virtual village is based on the rapport with reality.

Therefore, the inquiries made with the Thai children allow modeling a virtual village corresponding to the environment’s vision of children. However, this is not by our eyes, then the look of an adult on urban area, which is interesting, but that of future users of the application. So, it is very important that the virtual world reflects the habits of children’s living in different countries and that it’s related on the best of their real environments.

Well, you could ask in what the results of inquiries led with the Thai children are useful in the development of 3D virtual platform? It is especially necessary to understand the spaces where the children spend the most of time, so the places where, the most probably, they could be surprised by the major events. We could also study their entourage, so the people of which they would think at the time of a natural disaster and who, in the same situation, would be capable of accompany them. Consequently, this study let do take care of children after catastrophe in places where their feel good. With the data’s bases collected during these four inquiries, we can develop our research in the field of major risk’s prevention and then insert it, as content, in the project of the 3D virtual pedagogic platform.

The virtual village adapted with the method of analysis of environment’s childish vision drawings, will allow its young online users to quickly familiarise with the virtual platform’s interface and to find their the image of their idealistic world. Without need of adaptation to the strange environments, they can easily enter in the learning interfaces.

7. Conclusion

In brief, I would like to give pause to utility of future user’s participation in creation of 3D educational platform. Similarly, this principle is already practiced in architectural or landscape projects. In New York (Flaherty, 2006), the local inhabitants used virtual reality software to participate in the Queen’s park conception. This project was updated in virtual space, on the Second Life’s site, where a citizen interacted, as an avatar, in adapting of park to their needs. There is some truth to the argument that it will be possible to place the virtual village on one of the popular sites already existing. One of them, Second Life, is a virtual world entirely built and owned by its residents (Webpage without author info, 2009). Its users live there and interact via the 2D or 3D graphic representations of humanoids called “avatars”. They promise to respect a series of rules, behaviors and community norms. Blue
Mars (Webpage without author info, 2009) is another popular virtual world already existing. It includes the advanced “futuristic” graphics, the realistic characters and multiple social activities. Its virtual world consists of a network of independent cities in expansion. A reward’s system encourages the users to explore, play and make new friends. A city is a theme place, where the users can play, socialise and learn. Each city is represented by a set of independent data and rules. Each city’s owner defines its “look” and sets the rules of what is there acceptable. The cities are linked together by a central cities browser that allows to the users to move. The overall reward’s system lets the players to earn the points by exploring and playing in different cities. The Second Life and the Blue Mars offer also the education’s worlds, which allow the avatars to explore the unlimited choice of distance learning.

Our idea, contrary to the concept of the Second Life or the Blue Mars, isn’t based on the desire to create a parallel world imitating a real life. That, we want to develop a 3D virtual village, representing the child’s environments, to which we give our purpose – the major risk’s prevention. As I have shown, the children’s environment studies let do project of virtual platform’s world with which the students will identify better.

References
