



# Introducing Local Culinary Through Educational Game for Children

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**Abstract.** The purpose of this educational game is that children are trained to remember a form of image with various themes such as knowing animals, plants, learning to count, recognizing letters and so on which then reorder them appropriately. Such a process will help the child to remember and reassemble the shape of the image from the puzzle. This applied research discusses the process of educational games in the form of puzzles and visual values that will be displayed in this design using the 5W1H data analysis method for information collectors or problem solvers to know the extent of needs so that this design needs to be carried out. The behind this design is to introduce traditional Surabaya food Semanggi Suroboyo and Lontong Balap in the form of puzzles as a medium for educational learning from wood to early childhood for ages 2–6 years. While the output of this research is in the form of the design of the puzzle and presented at an international seminar in the form of proceedings.

**Keywords:** Puzzle · Wood · Educational · Surabaya · Culinary

## 1 Introduction

The city of Surabaya is the capital of East Java Province, Indonesia, as well as the largest metropolitan city in the province. Surabaya is the second largest city in Indonesia after Jakarta. The city is located 796 km east of Jakarta, or 415 km northwest of Denpasar, Bali. Surabaya is located on the north coast of eastern Java Island and faces the Madura Strait and the Java Sea. The Surabaya City area to the north and east is bordered by the Madura Strait, while the west is bordered by Gresik Regency and the south is bordered by Sidoarjo Regency. As a metropolitan city, Surabaya is inhabited by multi-ethnic and many ethnic groups, such as Chinese, Javanese, Batak, Madurese, Balinese, Bugis, Sundanese and many more. There are also foreign nationals including Malaysia, China, India, Arabia and Europe. Although Surabaya is heavily influenced by various cultures, the authenticity of its culture is still alive and developing today. The variety of indigenous cultures can be seen from various events such as, *wayang* art, *ludruk*, remo dance and other Javanese cultures. Moreover, culinary tour of Surabaya is also something that can be enjoyed by tourists.

When talking about Surabaya culinary, there will certainly be no end to it. Because the food in this hero city is very diverse. Surabaya culinary such as rujak cingur, lontong balap, satay klopo to pecel semanggi certainly should not be missed for tourists visiting Surabaya.

Previous designs that have been carried out are The Design of Puzzle Games for Learning Using Multimedia Methodology by Dini Destiani Siti Fatimah and the Design of Wooden Puzzle Games as a Learning and Introduction Medium for Early Childhood by Dimas Adiyoga [1, 2]. What will distinguish the researcher's design from the pre-existing design is in terms of the theme that will be used in this applied research. In order to add to the reference to the shape of the existing puzzle image, this applied research will design an image theme about the typical culinary of the city of Surabaya in children. This design to introduce them early on about traditional food will certainly be accompanied by parents as the main target to explain the image to be played. Puzzle is an educational game designed as an educational / educational interest. Educational play in general can stimulate and attract interest in children so that they are able to develop.

### 1.1 Previous Study

Previous applied research that has existed is the Design of Puzzle Games for Learning Using Multimedia Methodology by Dini Destiani Siti Fatimah in the journal Algorithms of the Garut College of Technology in 2017 and the Design of Wooden Puzzle Games as a Learning and Introduction Medium for Early Childhood by Dimas Adiyoga through the FSD journal Of The Main Potential University april 2021 [1].

### 1.2 Benefits of Playing Puzzles

Benefits of playing can provide benefits for early childhood including:

1. Engaging body movements that will make the child's body healthy [3]. The muscles of the body become strong and the limbs get the opportunity to be moved. Children can channel excessive energy so that children do not feel restless bored and depressed.
2. Developing of gross motor and fine motor aspects [4]. The child's body begins to become more flexible; the arms and legs are getting longer and stronger so that they can perform gross motor skills such as running, jumping, climbing, rolling, spinning. As the fingers get slimmer and longer, will get used to activities that require manual dexterity.
3. Improving social skill [5]. By playing puzzle, the child will learn about the value system, habits and moral standards of his society.
4. In the development of emotional or personality aspects, children can release the tension experienced while meeting the needs and impulses from within, can help the formation of positive self-concept, self-confidence and self-esteem because they have certain competencies [6].
5. Improving cognitive skill [7]. Through play children learn basic concepts as a foundation for learning to write, language, mathematics and other sciences.
6. Can hone sensing acuity. The child becomes active, critical, creative and not as an indifferent, passive and insensitive child to his environment.

7. Can develop sports and dance skills. Physical development and gross and fine motor skills are essential as a basis for developing skills in the field of sports and dancing.

### 1.3 Educational Play Tools

Educational play tools have the following characteristics:

1. Can be used with a variety of methods, meaning that they can be utilized with various purposes and forms.
2. Aimed at children who are in the pre-school period so that it serves to educate and develop the child's motor.
3. Pay great attention to the security side starting from the safety of the shape of the toy, the materials used to produce toys, and the influence of these toys on social and cultural.
4. Get the child actively involved.
5. Have a constructive nature.

## 2 Methods

In research with this design process, the author uses qualitative descriptive research methods. It starts with a problem, and continues with data collection. Data collection is carried out by means of observation, interviews, and documentation [8]. Observations were made directly to the location at PT Gunung Mas Sumanco to see first-hand the design and products produced as an idea development. The interview with the CEO of PT Gunung Mas Sumanco was conducted to find information related to design, materials, and so on. After making observations and interviews, documentation studies were also carried out. Documentation studies were carried out to dig up data related to graphs of the number of visitors, visitors consisting of what age, where they came from and others-cloth. This is to determine the target audience of the design to be made. In addition to these three methods as supporting data, literature studies are carried out to obtain data through books and sources on the internet.

The data that has been collected is then identified by reducing and then analysed with the 5W1H analysis method. These include What (what), When (when), Why (why), Who (who), Where (where), How (how). The use of the 5W1H method to determine known answers to a topic, in order to develop the question to be more focused and meaningful [9]. 5W1H analysis is an analysis carried out for information collectors or problem solvers to know the extent of need so that this design needs to be done (Table 1).

After data analysis, the next stage is a creative concept consisting of creative goals and creative strategies. The next stage is visualization. This stage consists of thumbnails, tight tissue, and final design.

**Table 1.** Analisis 5W+1H

No	5W1H	Description
1	<i>What</i>	What are educational games? What's so interesting about puzzle education games? What are the different types of puzzle educational games?
2	<i>Who</i>	Who usually plays a role and makes the decision to get or buy this puzzle education game?
3	<i>When</i>	When is the most frequently used time to play puzzles?
4	<i>Why</i>	Why is it necessary to design educational puzzle games?
5	<i>Where</i>	Where do they usually play puzzles often?
6	<i>How</i>	How to play puzzles? How long does it take in a puzzle educational game?

### 3 Results and Discussion

#### 3.1 Data Identification

Along with the development of the times, the easy exchange of information between countries, and the desire to provide educational and quality toys, wooden toy products began to be noticed by young families in Indonesia. However, foreign brands also enter and sell their products in the local market. In 2005 PT Gunung Mas Sumanco began to think about producing and marketing it itself in the local market, because some of the brands from abroad that entered the local market were the products of PT Gunung Mas Sumanco. In the production of PT Gunung Mas Sumanco applies several safety standards, such as: ASTM (Standart toys for America), EN71 (Standart toys for Europe), ST (Standart toys for Japan), and of course SNI (Standart Nasional Indonesia). Carefree Toys also pays attention to the aesthetic value and appearance of the product, so we collaborate with designers from Indonesia, Japan, and America.

#### 3.2 Data Analysis

The game is designed with ergonomics in mind for children. The material used is light and non-toxic. The size is made according to the anthropometry of the hand, making it easier for the child to hold the component. The product is also made with a blunt end so that it does not injure the child's hands or body parts when playing. The target audience of the primary targeted in this design is parents as decision makers and then the supporting target audience is children aged 2–6 years who are in Surabaya and its surroundings.

#### 3.3 Creative Concept

##### 3.3.1 Creative Goals

The design of this educational game “puzzle” is a game by arranging images that are expected to be a type of game that is useful for children aged 2–6 years. In this game,

children are trained to remember a shape of an image, then reorder it appropriately. This process will also help the child to remember and reconstitute the shape of the puzzle [10].

### 3.3.2 Creative Strategy

This type of puzzle is considered the most appropriate for children aged 2–6 years. Moreover, the material used is wood which has a higher level of safety than plastic material [11]. The creative strategy that will be made is to use the theme of traditional Surabaya food with cute illustrations and bright colours.

#### *Target Audience*

#### a. Demography

The main target is parents of the male or female sex as the decision-maker whether or not this game is bought or owned for their 2–6-year-old child. Have an upper middle social economic stratum with a minimum level of high school education [12].

#### b. Geography

Intended for people living in big cities in Indonesia such as Jakarta, Surabaya, Bandung, Medan, Semarang and others.

#### c. Psycography

Parents who are open to things of a new nature. Dare to try or explore new things and be willing to take risks.

#### d. Behavioral

Those who like challenges, are selective and dare to try.

#### *Format*

The format of the puzzle design, each puzzle is 21 x 21 cm in size.

#### *Illustration and Colours*

Using cartoon-type illustrations that are close to children aged 2–6 years as well as the use of colours that tend to be bright.





Fig. 1. Lontong Balap and Semanggi Surabaya.



Fig. 2. The image of the coloured puzzles.



**Fig. 3.** The Final Design.

### 3.4 Visualization

Before making a design, first look for images that are used as visual references. These visual references are obtained from photos directly to the location, searching the internet, imagination and others. After that, a sketch is made by developing the image obtained, namely visual references (Fig. 1).

In the design there will be a lot of ideas that are poured in the form of sketches. But only one was selected and will be developed into an illustrative work (Fig. 2).

In this stage is carried out the details of the illustrated object. Both in the appearance of outlines, outlines, and compositions. In addition, in this digital processing, the actual size is made (Fig. 3).

The visualization in the illustration above is the final of the puzzle form. This simple style will be described according to the original.

## 4 Conclusion

Conclusions that can be drawn from the Design of educational games for Typical Surabaya Culinary Puzzles for Children Aged 2–6 years include:

1. Producing a puzzle type design product as an introduction to Surabaya's typical culinary.
2. Gives a variety of educational game themes of puzzle types from existing ones.
3. Giving parents a choice for their child about educational games that are safe and comfortable when played.
4. Introducing Surabaya culinary from an early age to children.

**Authors' Contribution.** Hendro Aryanto and Muh Widyan Ardani conceived and planned for the experiments. Hendro Aryanto and Muh Widyan Ardani planed the design of the material development. Hendro Aryanto and Muh Widyan Ardani contributed to the material development, analysis and the interpretation of the results. Hendro Aryanto took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis and manuscript.

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