

## Conference Paper

# QR code Game Development as an Effort to Improve the Quality of Rides in the Bedengan Tourism Industry in Malang City

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**Abstract**

Tourism in Malang district is currently dominated by tourist attractions in the city of Batu and the Bromo area. The low number of tourists is due to the lack of development of tourism facilities in Malang Regency, including in Bedengan, Selorejo Village, Malang Regency. The Ministry of Agriculture assisted in improving the economy, but the tourism sector is still not growing. Support is needed to improve the tourist facilities in Selorejo Village. Efforts are being made, namely the development of a QR code tourism educational game with a visual theme. The methods used to develop the game included condition analysis (to obtain data from direct observations), basic concepts and planning (researchers planned what materials were needed), content design and implementation, and design evaluation. The visuals used in this game are digital painting visualizations. This tool has six digital illustration visualizations used as a background for the sketches prepared at the primary building implementation stage. It is hoped that this QR code tourism educational game could increase the number of visitors to Bedengan, Selorejo Village, Malang Regency.

**Keywords:** QR code, game education, tourism

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Published: 2 June 2021

Publishing services provided by  
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Selection and Peer-review under the responsibility of the ICADECS Conference Committee.

## 1. Introduction

The area of the Citrus Beds in Selorejo Village, Dau Subdistrict, is currently a pilot project for East Java province to develop orange and tangerines 55 based on information from the visit of the Horticulture Director of the Indonesian Ministry of Agriculture on March 23th, 2011. On this occasion, the Director of Horticulture, Ministry of Agriculture RI assists farmers in the form of 2,000 orange seeds. The superior product Sweet baby oranges developed by farmers in four villages, namely Selorejo, Petungsewu, Gadingkulon, and

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Tegalweru villages. Sweet baby oranges have a stable price, so the crop yields hope for farmers to improve their family economies.

Based on BPS Malang City data in 2015 from a total of 3,385,476, both foreign and domestic tourists in 2015, there is information that only a few tourists enjoy tourist attractions in Malang. The tourists prefer tourist attractions in the city of Batu and natural attractions in Mount Bromo. Tourists visit Malang city only as a place to stop and eat. Malang Regency is one of the East Java regencies, which has many tourist attractions and places to develop into tourist attractions. One of them is a natural tourist spot in the pine forest and citrus fruit picking at Bumi Perkemahan Bedengan, located in Selorejo village, Dau District. The town 700 meters above sea level has cold and cool air quality, so it is perfect for traveling. The Bedengan is very crowded with visitors, with many visitors of 6000 people per month (data from Selorejo Village). However, the Tourist's potential is less than optimal due to the lack of tourism at the Bedengan tourism site. It is necessary to develop adequate infrastructure to attract tourists. Therefore, a new form of vehicle needs in the Bedengan tourism area, Selorejo Village, to create a tourism village, developing educational game tourism vehicles in Bedengan tourism.

Educational game tourism development will feel less qualified if quality digital illustrations do not support it. So it is necessary to pack a digital visualization concept to support the development of educational games in Bedengan tourism, Selorejo Village. The nature of an active and impatient child must be balance with two-way communication by a companion with a child. Interactive game media can help deliver learning material optimally [1]. The application of interactive games in early childhood education also raises enthusiasm and enthusiasm for children and helps children learn and shape characters. Active, interactive games are media that have the right visualization for children to deliver target information. Although there is an educational media game, the teacher role cannot be ruled out in the learning process [2]. The teacher must accompany, see, evaluate the results that have been done during the learning process. The Asynchronous model chosen to bridge the learning process, where students are still required to meet the teacher to see the learning outcomes they have been doing through educational games [3]. There are studies related to game use in education, namely articles Learning IS children's Play: Game-Based Learning in Computer Science Education in Journal ACM Transactions on Computing Education (TOCE) [4]. There are studies related to the use of the game in education, namely articles Back to the Gaming Board: Understanding Games and Education through Board Game Reviews in Society for Information Technology & Teacher Education International Conference March 26th,

2018 in Washington, D.C., United States. Research related to games was also carried out by Pramono, who raised children's character-based Asynchronous games [5].

Digital illustration is a method for editing or processing an image into a digital file that can be read and manipulated by a computer and changes the shape of its parts into a dazzling image ([www.bitpipe.com](http://www.bitpipe.com)). Some call it Digital Retouching. Several studies related to digital illustration have been conducted by us who designed digital illustration books to deal with children's emotions [6]. Another survey by Kusumawati created children's illustration books for tourists [7]. Another research conducted by Sila related to illustration images on traditional Balinese art presented in a conventional wayang style similar to the Kamasan and Klungkung puppet styles [8].

## 2. Method

This village development program's implementation carries out through a community empowerment program in tourism, namely by collaborating with implementing the QRCode educational vehicle. The method used in the riverside cafe preparation performance includes condition analysis, basic concepts and planning, content design and implementation, and design evaluation.

### 2.1. Condition analysis stage

At this stage, the researchers obtained data from direct observations at the Wana Wisata Bedengan Dau. Also, they conducted interviews with related officers who developed the human resources of the assisted residents. The data obtained from the results of interviews and observations then used as material for the service's implementation to make the QR code Education Forum design.

### 2.2. Basic Concepts and Planning Stage

At this stage, the researcher plans what materials are needed to design the QR code Education Forum. Among them are planning to buy iron, acrylic, and building materials to add aesthetic impression. The researcher plans the materials used not directly taken from the finished product. For example, banners, pamphlets, etc. They can use existing products and process them as best as possible so that the QR code Education Forum results have high artistic value.

## 2.3. Content Design and Implementation Stage

At this stage, the researchers designed the educational vehicle signage design concept using a sticker design implemented on a spandex board combined with iron as support. For placing the QRCode game, it uses the idea of a U-concept iron board with a height of about 170cm, which given an acrylic material inside, which given a game board background. There are 6 QR code game display boards. Where each has a similar but not the same background design concept. There are six color concepts with two comfortable and complicated patterns in the question category

## 2.4. Design Evaluation Stage

The researcher, together with Wana Wisata Bedengan, analyzed whether any obstacles needed to fix. The researcher also assessed whether making the QR code Education forum achieved the goals and benefits planned previously. As well as taking a picture of the experience that will carry out in the future.

## 3. Results and Discussion

The physical building implementation stage carries out in 2 phases. This stage prepares the vehicle's essential parts by paving and casting some parts of the land not to be prone to landslides. This concept is used as a material for implementing the educational game design in Figure 1.

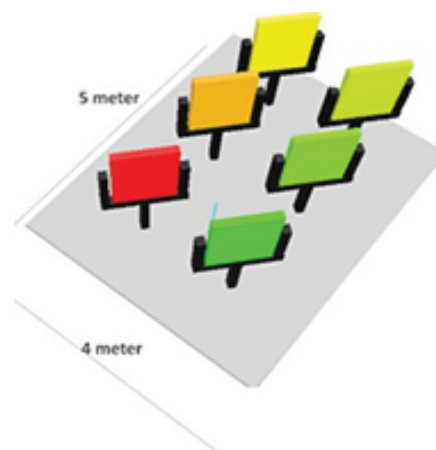


Figure 1: Game Concept

The game concept design in Figure 1 takes about six backgrounds with a mirror design concept. This design can implement on six-game boards. This stage carries out

in 3 steps, namely the sketch and reference ideas, the rough visual design preparation, the final sketch design, and the coloring design stage. We made 12 designs at this stage, which later, the plans would choose the six best design—the design stages of the visualization background areas depicted in Figure 2.



**Figure 2:** Stages of the Level 2 Visualization Process

The results of the evaluation phase are changes and design development. The rides' design was changed to 12 parts of the game rides, using the back of the game board. This result is an effort to increase the number of people who can enjoy this QR code game. The QRCode game implemented at Bedengan Selorejo village can see in Figure 3.



**Figure 3:** Digital Background Visualization Implementation

These internal surveys can analyze that 92% of respondents stated well and very good in terms of asset design. In the background asset control section, 89% of respondents reported well and very good.

## 4. Conclusion and Suggestion

The implementation of the activity shows that with cooperation between partners and the potential team of Bedengan tourism, it can develop a tourist attraction, namely the EduGame QRCode vehicle. The media visualization on the QRCode educational game

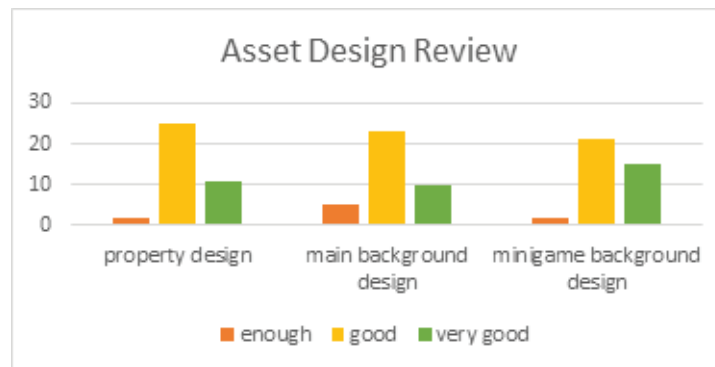


Figure 4: Survey Result

received good appreciation. The survey results, which showed 92% stated that the visualization of media designs was considered acceptable. The survey indicates that the community and the implementing team can further develop the EduGame QRCode to improve the Bedengan Tourism Area quality.

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