

# Visualising and Simulating the Past Life of Weld Quay in the Early Twentieth Century: An Investigation through Narrative Analysis

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## ABSTRACT

From the late eighteenth century, British began their influence over the Malayan Peninsula. The three outposts of Penang, Singapore and Malacca then became the Straits Settlements in 1826. Weld Quay displayed an important role as one of the trading ports that represented hustle and bustle life of Penang during the early twentieth century. Many large and significant European companies, agencies and a few jetties were established and built along the Weld Quay for merchant business, mooring tongkangs or boats and uploading or downloading trading goods. However, those remarkable scenes are long gone, especially those intangible cultural heritages including the social and trading activities as well as intercultural discourse. One can safely presumed that these items are more unlikely to exist nowadays. Cultural heritage especially the intangible one is considered as fragile assets, thus it is imperative to preserve them. Unlike intangible, the tangible cultural heritage such as buildings, monuments and artifacts are considered easier to be preserved. Undoubtedly, the potential strategy to preserve the intangible cultural heritage in Weld Quay lies on the visualisation and simulation using the advanced digital technology. Since the intangible heritage is no longer existing, a method called narrative analysis is preferred to systematically gather as much as possible data in order to accurately visualise and simulate the past life. The digital constructions of the site, both tangible and intangible are significant for future generation in order to cherish the remarkable moment and past achievement enfolded in Weld Quay.

**Keywords:** visualisation; simulation; cultural heritage; intangible; tangible; narrative analysis

## INTRODUCTION

### Culture Heritage

Culture is considered as one of the significant element to provide human development and helps to cultivate character, behaviors, habits and daily practices. The importance of culture in the society has made great progress during the twentieth century [1]. In the meanwhile, heritage is generally defined as precious and unique legacy where people living today inheriting to the next generation from the past [2], [3].

In terms of cultural heritage study, it can be distinguished into two aspects, which are tangible cultural heritage (TCH) and intangible cultural heritage (ICH). As the century progresses, the traditional way of preserving the cultural heritage has gradually become obsolete whereas the

method of digitally preserving of cultural heritage able to cater the latest trend. Moreover, it provides long-term protection, error-free storage of digital information, with the means of search and interpretation [4] for cultural heritage especially to the intangible one. This is due to the elements of ICH are movable, does not consist object, mere product and in consolidation form [5] such as social and cultural discourse as well as intercultural discourse. [6] denoted that preserving these elements are considered challenging due to the transmission of the element of ICH are easily switched according to the environment, evolvement of people lifestyle as well as the subjective thought of the transmitter.

Unlike intangible, TCH are immovable, physically touched and in material form such as building, monument and artifacts that are considered easier to be preserved. Since the element of the cultural heritage can be seen as significant and valuable, it should be well preserved.

However, cultural heritage study is a wide and special field. Therefore, a wide range of preservation methods is demanded to keep the legacy. It can be kept in museum, in digital form, printed document, photography and other visual form. However, by following the latest trend that concentrates on advance technology, digitally preserving cultural heritage can be seen as the potential and long-term solution to preserve the cultural heritage especially to the intangible ones.

### Digital Cultural Heritage

Digital cultural heritage (DCH) is a fairly new field of study, sharing and inheriting the objectives of traditional cultural heritage within the purpose of preserving the past and raising the possibilities of public awareness and understanding. DCH is also known as Virtual Heritage when it comes to three-dimensional (3D) synthetic recreation of real environments. The production of DCH aims to enhance or substitute of a real historical sites or objects as well as significant cultural elements through current digital technologies [7]. In short, the traditional way of preserving the cultural heritage can be substituted or enhanced with the current digital technologies. An example of digitally simulating the historical site has shown in Figure 1.



**Figure 1. Realism of the Scene Using Digital Technology**

In response to above-mentioned situation, broad range of technologies and applications are used to practice DCH. For instance, digital images of historical objects and architectural sites can be captured remotely using a novel system VITRA. The production of images and description of sites and objects can be digitally catalogued for online and offline platform as well as displayed in website and CD-ROMs.

On the other hand, the relatively complex DCH can be delivered through 3D reconstructions or augmented reality (AR) systems by superimposing real images or movies with synthetic data to generate simulation into realistic context. A missing remote or destroyed object can be achieved or visualised via diverse platforms like 3D softwares (Unity 3D software, Autodesk

3ds Max, Autodesk Maya, Autodesk AutoCad), Image creation and manipulation software (Adobe Photoshop), deploying satellite, 3D scanner and 3D imaging to monitor, record and replicate and ancient sites and Motion Capture (MoCAP) technology for preserving the heritage that requires movements. The production of DCH can be presented in different range of applications as well including digital museum, 3D virtual exhibition on the web and visualisation of panoramic images or 360 over the Internet or on mobile platform, and much more.

### **Narrative Analysis**

As [8] stated that narrative analysis is a useful method for human anthropology and social science investigation. The term narrative analysis is referred to various approaches to data collection and analysis, which are considered as the procedure whereby people engage in 'story telling' or create 'narrative account' [9].

Regarding the data collection, verbal and visual data are both generally emphasised in narrative research. In terms of verbal, interview has firmly used as one of the research tools to gather the data. Referring to [10], the objective of narrative analysis process is not only about what is said but also how it is said. It focuses more on the detailed stories, the life experience of the individual, embracing stories of the life and personal reflection of certain events [11].

Apart from interview, narrative data also can be gathered from different sources such as autobiographies, postcards, drawing, newspaper or magazine, Internet, blog and discussion forum. These kinds of data can be considered as visual data and it can be in textual form as well. As [12] mentioned that narrative researchers sometimes must avoid the objectification of the people and embrace the structure of our knowledge to make highly contextualized interpretation. Thus, the visual and textual data from other sources are mainly for providing evidence to prove the authenticity of the interview data.

In addition to collecting data, narrative analysis can also be the tool for analysing the gathered data. Besides, [10] mentioned that the data that are collected through narrative interviews can also be analysed in different ways after the data are collected and transcribed.

## **RELATED WORK**

### **Digitally Preserving Cultural Heritage**

Digitally preserving cultural heritage is to reduce the precious legacy at risk particularly the intangible one as very little documenting and digitising work of the intangible part is shown [2], [13]. In terms of safeguarding TCH and ICH, many works have been done, specifically aiming for capturing intangible heritage by using the digital approach, for instance [14] used 3D multimedia tool to reconstruct and visualise the ancient city of Sagalassos in Turkey. [15] embodied the aesthetic tradition and socio-cultural implication of ancient Hindu Kingdom in Vijayanagara, delivered via animation and visualization, combining with virtual reality technology.

[16] digitally modeled three dimensional (3D) temple of Angkor Wat, whereas [17] digitally restitution of architectural and urban heritage in South of France. [18] proposed to rebuild the culture and preserve the Chinese culture and traditions of China with digital technology. [19] safeguarded the unique heritage of Wayang Kulit (Shadow Play), whereas [13] aimed to digitally preserve the intangible heritage of folk dance in Cypriot. Similar to [20] upheld Al Ardha dance movements in digital form in Gulf Arab culture. From the related work mentioned

at above, current digital technology would be the conceivable approach to sustaining cultural heritage.

### **Narrative Analysis used for Investigating the Past Social Cultural**

Narrative analysis is beneficial in investigating past life cultural heritage, social research as well as eliciting needed data through detailed stories when trying to understand the point of view and personal experience of one's informants. Narrative researchers have done many efforts for different purposes.

[21] conducted interview for cross-cultural research. [22] conducted a funded project of digitising stories by CIPHER. The resources and heritage stories as well as the past life cultural context were obtained through narrative interview/story, which is a useful first person account for this purpose. [23] seek wider socio-political and cultural contexts and stories regarding how forces migrants re-establish identity in ruptured life courses and communities after bear witnessing to violence and repression using narrative analysis. Apart from interview, [24] searched description for digital historical objects through narrative or stories on how certain objects currently engages or might have used in the past at Zuni due to the catalog entries of those objects are notably absent.

Similar to [25], applying narrative analysis to investigate the relationship between multicultural identities and well being. Referring to the related works at above, [10] denoted that narrative analysis is a traditional form of communication that served as transmitting the subjective experiences from informant and it can be seen as an array of richly-detailed interpretation of life as lived, well-exposed the life stories with socio-historical contexts.

## **METHODOLOGY**

### **Procedure for Investigating the Past Life of Weld Quay via Narrative Analysis**

As the century progresses, the cultural heritage however will be gone through a great transformation and these will be resulting in the disappearance of precious legacy or cultural elements. Alas, the similar situation had happened to Weld Quay in Penang region. Although Weld Quay has become the recipient as UNESCO World Cultural Heritage Site, those remarkable moments however are long gone, especially the ICH including social and trading activities, apparel as well as intercultural discourse of different ethnicities.



**Figure 2. Environment setting of Weld Quay in the early of twentieth century.**



**Figure 3. Apparel and activities happened at Weld Quay in the early of twentieth century.**

As shown in figure 2 and 3 are photos and postcards regarding people, activities and environment setting of Weld Quay in the early of twentieth century. One can safely assure that these settings are more unlikely to exist nowadays as they are considered as fragile assets. Therefore, they are more likely to be preserved using visualization and simulation by exploiting advanced digital technology.

In this research, narrative analysis is a proposed method to gather diverse data and in-depth investigation of the elements of the TCH such as environment setting and significant buildings

as well as ICH for instance activities, apparel and intercultural discourse of different ethnicities that had appeared in Weld Quay during the early twentieth century.

Since diverse elements of cultural heritage are long gone, data collection based on disappeared data is necessary in order to carry out real-time simulation and visualisation. Data collection delivered through narrative analysis is mainly from interview. Apart from interview data, narrative analysis also requires large amount of visual data in various form for two objectives. First is to enhance the authenticity of the data that given by informant through interview; second is to seek more relevant data for this research. Figure 4 has shown the required data for past life simulation and visualisation work.

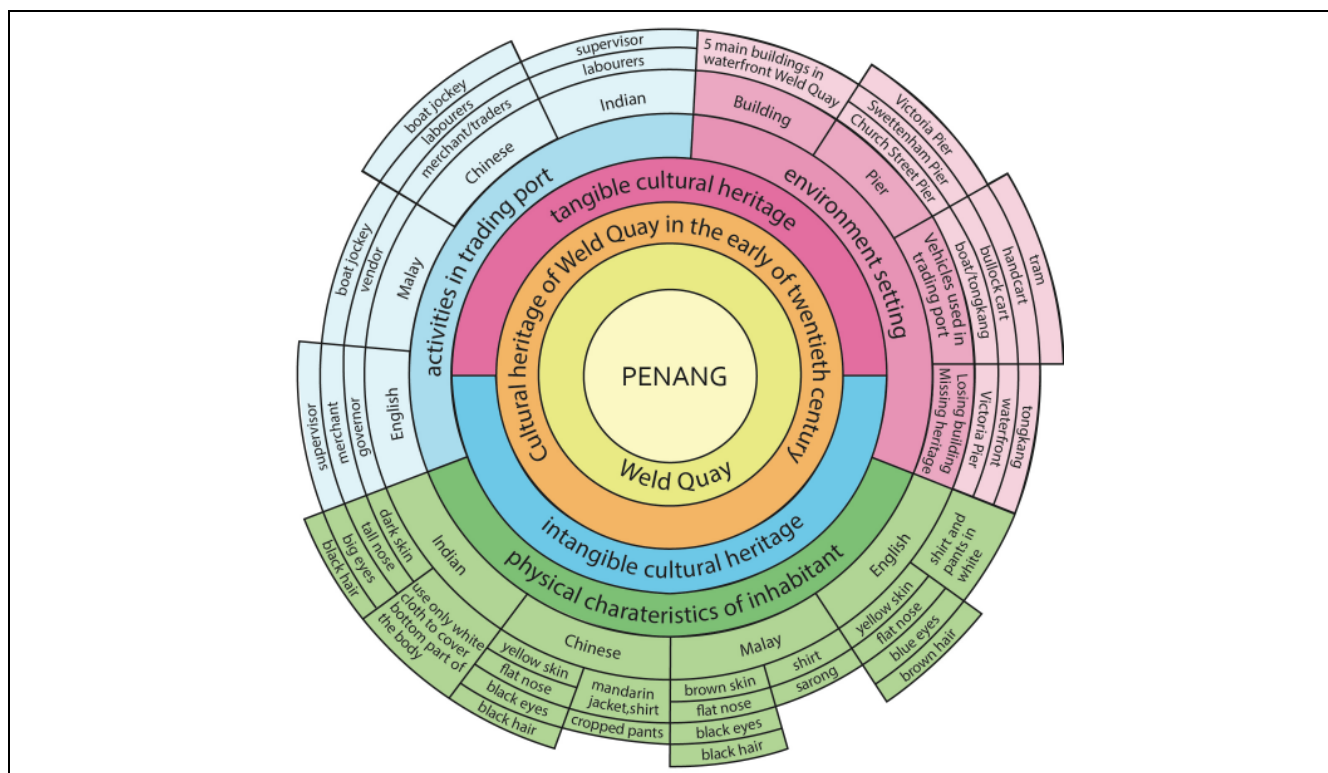


**Figure 4. Required data for past life simulation and visualisation work**

Moreover, a framework as shown in figure 5 is drawn to outline possible ways for collecting data. First of all, appropriate informants will be invited to conduct interview. Past stories and experience that elicited from the informants are considered as the main data.

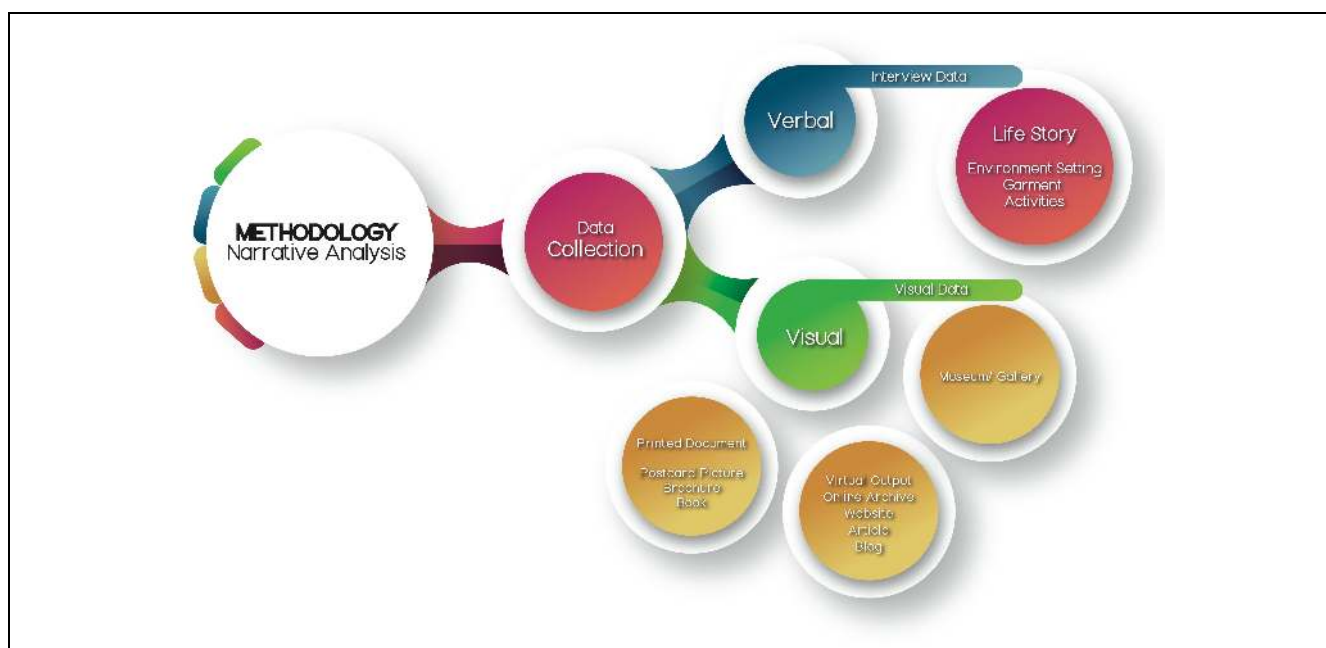


**Figure 5. Conceptual framework of narrative analysis**

Visual data on the other hand will be collected from different source and platform such as visiting to the museum and gallery in Penang, collecting from printed documents like books, brochure and old postcards as well as from virtual output like website, blog, online archive and article.

Whenever the narrative stories work complement with relevant visual data, it is definitely a powerful evidence for the researchers to trace back the past life that appeared in real time. Cross-referencing in between the interview and visual data will be progressed for investigating the past life of the old Weld Quay. Within the visual data, the researchers can gain clearer image regarding the elements of culture heritage that had existed in the Weld Quay's past life.

### **Method of Analysing the Collected Data**

Data analysis will begin once after data collection is generally completed. Data analysis in qualitative research is an extremely time-consuming process where the researcher is repeatedly moving back and forth between the data collection and data analysis, following an iterative process [26].

As for interview data, narrative analysis will definitely be adopted for analysing the narrative data. In the meanwhile, the collected visual data will also need to undergo analysis in order to get most out of the visual data. Since there are large amount of visual data to handle, visual and semiotic analysis is adopted to sort, identify and interpret the element that found in the visual data. The results will then be acted as the evidence for analysing and checking the authenticity of the narrative data.

In summary, the effort of using narrative analysis together with visual data indeed can help researcher to gather accurate data regarding the old Weld Quay. After this, the work of digitally reconstructing the past life of Weld Quay can be done in more precise fashion.

### **CONCLUSION**

Cultural heritage in Weld Quay especially the intangible one is considered as unique legacy. Many significant buildings, activities conducted in trading port, apparel and intercultural

discourse of different ethnicities are no longer in existence nowadays. However, there is a potential way of getting back the missing scene, delivered via visualisation and simulation of the past life in Weld Quay by using the advance digital technology that currently available.

The outcome of preservation work can be displayed in many different platforms, for instance digital museum, website, mobile Apps and social media. The main reason is for public to easily access the past life of Weld Quay in digital form, as most of them are not permitted to visit the real site due to various mobility issues. Even if they can make it to visit the real site, they have no opportunity to witness the glorious moment of Weld Quay.

Thus, in this paper the researchers proposed narrative analysis as a useful method for gathering valid evidences and digging long missing data, which can be used to digitally reconstruct the past life of Weld Quay in the early of twentieth century.

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