Application of ZMET to Develop the Cultural Image of Pottery Industry at the Miaoli County

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Keywords: ZMET (Zaltman Metaphor Elicitation Technique), City image, Pottery industry, Cultural image.

Abstract. The study focused on the extraction of the image of pottery through metaphor extraction technology (ZMET), and applied it as the image of developing the city and strengthens the local industrial culture. The main findings showed as followed: Firstly, pottery culture is a process with temperature. From the mental map, both "temperature" and "process" have the highest proportion. Then, pottery culture is not only the display of finished products, but also the instruments, process steps, operation methods and unique technologies in the manufacturing process are important industrial and cultural images. Lastly, the urban image with pottery image will be even more the ability to create a richer and more diverse cultural experience. It will also allow the local community to have more possibilities and development.

Introduction

At present, the Miaoli area has the necessity of integration in the shaping and narrative of cultural landscapes, and was also able to connect through the overall landscape narrative. Then, the support of industrial culture requires comprehensive support and assistance from the perspective of practical aspects, and it is also the significance of shaping urban imagery. However, the Miaoli area obviously lacks the image of the city image, so this study expected to extract the image of pottery through metaphor extraction technology (ZMET), and applied it as the image of developing the city and strengthens the local industrial culture.

Research Method

Interview Design of ZMET

Based on the methodology of ZMET, it tried to require the interviewee to choose the 8-15 pictures to show the images of the pottery industry by using literature review. The interview outline and steps of this study were mainly based on relevant theories, and relevant design was carried out, and the changes were gradually revised through actual exercises and discussions.

From the different scholars in different fields, this technology was used to explore the problems and presentation methods to be found, to find out the most suitable research questions for this research, and to ask questions from the images selected by the respondents. Then, the facets and metal map were analyzed by using repertory grids methods and climbing ladder technology. Through the 10 steps of ZMET, the keywords and the images were offered for the topic of pottery industry at Miaoli, and they were the main contents for the analysis of the main facets. The topic of the interview discussed the opinions and concepts of pottery culture, and the interviewee offered past direct or indirect experiences. Therefore, it understood the attitudes and values for the interviewee of different backgrounds as well. The ZMET owned 10 steps for the in-depth interview.
After the interview, the researchers analyzed the audio files recorded in the interview and found out the main constructs. The researchers put forward the main important corresponding constructs mentioned by the respondents, and then based on the respondents. Different data were coded, and the constructive structure of the respondents was analyzed under the principle of more than three times, most of the time, majority and most of the same ideas. In addition, Zaltman & Coulter (1995) proposed the inclusion of Dominant Constructs and Relative Constructs in the Consensus Map, which was constructed as a reference to a constructor. One-third of the total number of respondents was; the relevant constructs were 1/4 of the total number of respondents who referred to the relative relationship. According to the above principles, we can find common constructs, and then draw a map of the common map according to the relevant constructs. In the map, there are often more than 80% of the shared constructs will be mentioned in the construct of each individual respondent.

**Interview Objects**

The research subjects are mainly scholars, pottery or public artists and related cultural and historical workers engaged in research related to the Miaoli culture industry, with a total of 10 experts. In terms of sampling, it was a considerable degree of recognition and interest in the Miaoli industry, Miaoli local culture or pottery, and it was able to cooperate with the pre-interview pre-work, such as finding relevant photos and materials, and actually can interview and interview. The process and the time of the two parties, and the interview time was 2 hours, but according to the respondent's answer, the interview time will be slightly adjusted.

**Reliability and Validity Analysis**

In terms of reliability and validity analysis, this study mainly adopts the following methods to enhance the external validity and reliability of the research: (1) objective and multiple test data: three researchers jointly test and construct the structure and code to seek The concepts and ideas of the respondents' statements were transformed into key constructs, mental maps, and maps in a rigorous manner. (2) Describe the research methods and research process: detail the methods of data collection, such as the ten steps in the ZMET interview method, the climbing method and the Kay Cube method in the document analysis, and the process of research implementation. Preparation before the study, the conduct of the interview, etc. (3) detailed information on various materials: This study paid attention to the contextual meaning of the data when collecting data to increase the comparability and interpretability of the data.

In addition, the following methods in this study enhance the internal reliability of the study: (1) Investigation and collation of background data of the research subjects: including editing the basic data (age, gender, education level) of the respondents, and familiarity with the ceramic art or the culture of Miaoli. (2) The original data retains the party's original intention: to retain the discourse of the research object as completely as possible, so as to avoid the gap with the respondent's viewpoint. (3) Using sound instruments, computer software, and tools such as picking up tools to assist in the collection of data, and to conduct overall data analysis and analysis after the interview to avoid omissions.

**Data Organization**

ZMET used semi-structured in-depth interviews in the qualitative research method to simultaneously collect and analyze data. Using metaphors, photo analysis and storytelling as the main axis, it induced deep thoughts from the interviewees. Flexibly analyze the data, interpret the meaning, summarize the results, and finally construct a collective consensus and mental map. Before the formal interview, the researchers in this paper had obtained the consent of 10 interviewees in advance, and recorded the interview contents in detail by recording.
Results and Discussion

In this study, the interviews were conducted in 10 steps of the ZMET research method, and a total of 24 facets were compiled. The analysis of each step is as follows:

**Step 1 Storytelling**

<table>
<thead>
<tr>
<th>Picture</th>
<th>Story</th>
<th>Climbing ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Pottery Scene" /></td>
<td>Pottery culture is a very temperature craft. We get the pottery materials from the land we are walking on, and then shape the sculptures by the hands of the potters. The pottery is burned into pottery by high temperature to complete the finished product. The process is a series of tedious work, the look of the potters, the insistence on the production and the temperature given to the pottery.</td>
<td>Natural materials → process → high temperature firing → cumbersome → temperature → the heart of the craftsman</td>
</tr>
</tbody>
</table>

**Step 2 Missed Images**

<table>
<thead>
<tr>
<th>Respondent description</th>
<th>Climbing ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pottery can be combined with other artifacts in application. It is an explosion idea that blends and learns from each other. It is no longer just a combination of ceramics and other materials.</td>
<td>Decline → Innovation Ideas</td>
</tr>
</tbody>
</table>

**Step 3, 4 Classification and Concept Extraction**

<table>
<thead>
<tr>
<th>Picture</th>
<th>classification</th>
<th>Climbing ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2.png" alt="NO.4" /></td>
<td>NO.4, 5, 8: Production In the production and production process of pottery, pottery experienced cumbersome work and presented beautiful pottery. No.4: Engraving the appearance of the pattern, it will feel different when touched; it looks more three-dimensional, mainly using tools to sculpture clay.</td>
<td>Process → cumbersome work → temperature</td>
</tr>
<tr>
<td><img src="image3.png" alt="NO.5" /></td>
<td>NO.5, 8: On the rotating turntable, the potter's concentrated expression is pulling, and using the curved lines of the hands to shape the curve, I feel that the pottery is a very temperature artifact.</td>
<td>Container → turntable → curve → graceful line</td>
</tr>
</tbody>
</table>

**Step 5 The Most Representative Picture**

<table>
<thead>
<tr>
<th>Picture</th>
<th>Meanings</th>
<th>Climbing ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Old Gentleman" /></td>
<td>The old gentleman pays attention to this profession. He speculates that he has been making pottery for a long time. It takes time to make pottery. It may be that his craft was passed down by his father or grandfather. Pottery may be of great significance to him.</td>
<td>Ancient experience → craft → tedious work → inheritance</td>
</tr>
</tbody>
</table>
### Step6 Opposite Images

<table>
<thead>
<tr>
<th>Meanings</th>
<th>Climbing ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard iron products - pottery is soft. It makes people feel peaceful, and it often gives people a warm feeling, unlike the cold iron.</td>
<td>Living → Warm</td>
</tr>
</tbody>
</table>

### Step7 Sensory Image

<table>
<thead>
<tr>
<th>Vision</th>
<th>Curves, rich colors, aesthetics, attract attention.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing</td>
<td>In the sound memory of the ear, in the process of shaping the embryo body, the frequency is consistent when the roulette is rotated, and the pitch is not high and peaceful.</td>
</tr>
<tr>
<td>Olfactory</td>
<td>At first, it is earthy and then has a more pungent taste when it is fired. Some substances may be released and glazed to make the surface smooth and the taste may be extremely poor.</td>
</tr>
<tr>
<td>Tactile</td>
<td>When the pottery is still not soft, it feels soft and soft. It can be shaped arbitrarily. It feels rough when it is burned out, and the glaze feels slippery.</td>
</tr>
<tr>
<td>Mood</td>
<td>Pottery is an ancient craft. With the progress of the times, the pottery industry has declined, and pottery products have gradually been replaced by machine production. The ancients have experienced the inheritance of the pottery industry experience, and the pottery industry has innovative ideas to continue the pottery industry culture.</td>
</tr>
</tbody>
</table>

### Step8 Mental Map (See Figure 1)

![Figure 1. The metal map for the cultural image of pottery industry at the Miaoli County.](image-url)
Step 9, 10 Summary Image and Short Essay

<table>
<thead>
<tr>
<th>Summary image</th>
<th>Small essay</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image 1]</td>
<td>Formerly the craftsmanship possessed by a small number of talents, slowly to the public can experience the attempt, the ceramic art culture still has its status, that is, irreplaceable, each disappears because of the appearance of the machine and mass production, and the ceramics seem to be more breathable. Close to people and his temperature is warm and can be seen everywhere in life. Nowadays, ceramic art is used to make art and musical instruments, so that ceramic products are no longer confined to containers and give them different values, making pottery culture and cultural products.</td>
</tr>
</tbody>
</table>

Conclusion

Through the ZMET metaphor extraction technology, the rich metaphors are obtained. The main findings are:

1. Pottery culture was a process with temperature
   Pottery culture was a process with temperature. From the mental map, both "temperature" and "process" had the highest proportion. Obviously, for respondents, the temperature process was the expert's Pottery culture. Show important ideas.

2. The process and steps of making pottery were very important images
   Pottery culture was not only the display of finished products, but also the instruments, process steps, operation methods and unique technologies in the manufacturing process were important industrial and cultural images. If the relevant urban imagery was to be developed in the future, this process and steps were important. The direction of development was also an important key to providing a serial experience.

3. The aesthetic characteristics of pottery were also possible future development directions.
   The aesthetic characteristics of pottery had its unique charm from point, line, surface, and even color. Through its natural materials, it made it have the beauty of the earth. In addition, the beautiful curve of Pottery products generally owned the rich and varied colors are also fascinating places. To show the image of pottery, it helped shape the future towns and cities to make good use of these design elements.

4. Cultural salary was an important key
   Pottery culture was an important industrial culture. It needed the image and inheritance of cultural pay. Besides the involvement of software projects such as activities, industry links, and local creation, the cultural meaning of the culture was integrated into the environment; it was even more the ability to create a richer and more diverse cultural experience. It also allowed the local community to have more possibilities and development.

Acknowledgement

The authors thank NSC (National Science Council) 108-2420-H-239-002-, Taiwan, for financially supporting this research.
Reference


