

The Effect Evaluation of Personal Digital Assistant Guide in History Museum

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Abstract: At present, more and more historical museums begin to use Personal Digital Assistant Guide, which can not only enhance the tour experience, but also meet the public's awareness of historical and cultural events. However, the existing research lacks sufficient analysis on the usage of Personal Digital Assistant. This study, based on Personal Digital Assistant and guidance explanation, puts forward the Evaluation of the Personal Digital Assistant, including attractiveness, endurance and understanding. This is helpful to the construction of evaluation indexes of the Personal Digital Assistant in the near future.

1. Introduction

In 2008, the government promoted wireless broadband network in the national key development plan to strengthen the construction and application development of China's wireless broadband network. As a result, wireless network has developed vigorously in recent years, and many Chinese history museums have begun to apply new digital technology to change their internal functions and external presentation, and to explore the interactive mode with the audience.

In 2002, China began to unify the history museum the design and manufacture of wireless tour system, this system main purpose is to use the combination of science and technology and humanities and the use of wireless technology, let history museum exhibits more practical, let the deep meaning of viewer better understand works, achieved through art science and technology and raise the cultural level [1]. After three years of efforts, the Personal Digital Assistant (PDA) tour interpretation application is gradually taking shape. This handheld device integrates text, voice and image based on wireless network and positioning system, and has diversified and rich integration effects, bringing new life to art and tour interpretation.

Tours available in the new development of science and technology to create significant change, the audience for access to information is no longer limited to text, but is expected to have more information and two-way communication interface data, such as the way the museum will be predominantly static type at present, change into the use of "heavy sensory collections", using the interaction produced by contact with the audience, the audience a profound recreation experience, and deepen the memory of exhibits, further enhance recreational function[2].

In 2002, The Palace Museum pioneered the use of PDA as a digital tour system, and later many local history museums began to use the digital tour system to explain attractions. However, the research on the tour interpretation of PDA is only limited to the qualitative method, and there is little research on the effects of PDA use. Therefore, this study will focus on the effects and evaluation of tour interpretation use of PDA, in order to provide some reference for the promotion of the use of PDA.

2. Personal Digital Assistant

PDA is short for Personal Digital Assistant. PDA is an intelligent personal portable information processor combined with 3C application functions, emphasizing portability and intelligence [2]. It is a product with communication function. PDA is a word began in 1993 Newton published by Apple,

the products provide a simple login date calendar, business cards and other personal information management functions, and fax, data communication and infrared transmission function, increase the function of network connection, 1996 support web browsing and email, but due to the operations department, Apple is good, made in 1998, Newton, instead, the Palm Pilot, the four functions of its propaganda is the address book, calendar, to-do lists, and memos, because light is convenient, More than 80% of the PDA market. However, PDA has to cooperate with the Global System for Mobile Computing or General Packet Radio Service to surf the Internet. It is not only slow but also expensive, which is even ridiculed as an expensive toy, so it does not perform well in the market.

But in recent years, high speed and low-cost Wireless networks (Wireless LAN, WLAN) era, make personal communications and information is no longer restricted by time, space, and the application of PDA also gradually is broad, integrated multimedia, Wireless, Internet, mobile phones, digital cameras, handwritten function, etc., so also known as palmtop computers (Handheld computer) [3]. WLAN industry growth rate is higher than the global at present in China, according to Dell 'Oro Group, according to the latest report global WLAN market scale will amount to \$13.1 billion in 2019, this phenomenon also shows the future within personal hand-held electronic products contain WLAN module, or with external WLAN card input device, through the wireless network after together, PDA power several times to grow more, give people the use of very different experience. As a result, the main appeal of PDA today is to allow users to connect to the Internet anytime, anywhere, and to store, read and manage information and other applications with portable (Mobile) products, which can be flexibly used to handle daily work or personal affairs.

3. Tour guidance and Interpretation

Tour guidance is a guide and interpretation activity held in conjunction with the display of art exhibits. Its basic significance should be the communication between the creator, the work and the audience. Through various ways or channels, the connotation, concepts and techniques of the exhibits should be transmitted to the audience, and the audience should be assisted to experience the environment and resources they visit, so as to realize the significance of the education of historical and historical museums[4]. Mary b. Hartt believes that the tour is an educational activity, the effect of which is so vivid that it can make the dull and deep history museum into a popular place. It can be seen that tour activities should include information, guidance, education and inspirational services, tour can be said to be dissemination and educational activities. In addition, in the tour, the history museum with an important function of professional services and publicity brand image, detailed tour service can lay the educational leadership, to achieve the purpose of education and entertainment[5].

Interpretation is an educational activity, which reveals the meaning and relevance of original things by explaining them and emphasizes personal experience, i.e. the use of explanatory methods and media rather than the dissemination of facts and knowledge[6].

History museum tour commentary show it is an important part of the history museum education function, visitors sometimes don't understand the content of the exhibits, the function of tour commentary is to let the audience, the history museum and creates links between items, good tour commentary can induce the audience interest, tour commentary is not only the historical museum match the bridge between the audience, is also an important factor of the activation function of the history museum[4]. According to McLeod and Mays (2008), good tour commentary has six functions (see figure 1):

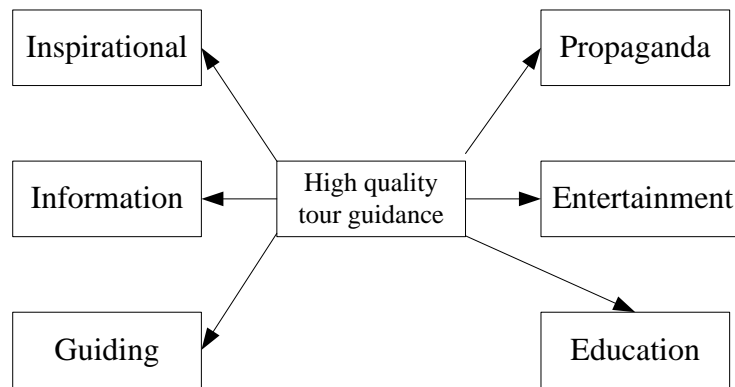


Figure 1. The quality of the tour guidance

Source: McLeod and Mays (2008)

1)Information: commentary can provide the audience with correct and interesting information about the theme, which has a direct contribution to enrich the public experience.

2)Guiding: guide the audience through the interpretation service system, reduce the sense of insecurity, and have a complete understanding of the historical history and environmental facilities of the sites visited.

3) Education: through interpretation services, audiences with different backgrounds can interact with the exhibits, generating a catalytic effect, which not only enables the audience to get the correct information, but also inspires their interest in learning.

4) Entertainment: good tour commentary allows the audience to experience a relaxing and pleasant experience, so as to educate and entertain.

5) Propaganda: a way to improve public image and build public support, so as to enhance mutual understanding between the public and the government.

6) Inspirational: to help an audience find new ways to be happy and aware of things, and to inspire enthusiasm and curiosity in their hearts.

4. Evaluation of tour interpretation effect

4.1. Necessity of evaluation of tour interpretation effect

Tour commentary is a process of conveying information to the audience, however, the amount of information the audience absorbs from it is really as expected by the interpretation purpose planned by the management unit. The benefits gained from tour interpretation service are often intangible, so it is necessary to have the actual evaluation results [7]. The correct evaluation results can let the competent authorities know whether the current interpretation content and interpretation method are appropriate, and judge whether the original interpretation goal is achieved according to the behavior of the audience. In short, the evaluation can serve as a reference for the history museum to make decisions, improve the space for the next improvement, and improve the quality of the audience.

4.2. PDA tour interpretation effect evaluation standards

This study evaluated the effects of PDA tour from the perspective of audience. Commentary on the media to achieve the goal, you must first create attractive and endurance, stop to listen to the audience viewing, commentary content, can enter the audience heart and Johansson et. al (2013) also think that appeal and persistence is the most basic elements, but exactly how tour commentary facilities and contents of the audience, the audience to stay in front of the exhibits viewing time is long it will take to make the audience really acquire knowledge [3].

Campbell et. al. (2017) divided the guidance into front guidance, auxiliary facilities guidance, visitor display guidance and exit guidance, as well as audience behavior evaluation, etc [2]. The guidance to the museum mentioned that the tour system should meet the following evaluation criteria:

- 1) Attractiveness

It refers to the number of people who stay in front of an exhibit to see how much the exhibit attracts, and it is also an indicator of the popularity of the exhibit. This is the basic evaluation method to determine whether the exhibition can acquire the audience [4]. If the audience does not stop, the information displayed cannot be transmitted, the interpretation materials cannot be read, and even the most interesting tour interpretation will fail.

2) Endurance

Visitors will have enough time to use the tour facilities to get the information they need, i.e. the time they stop in front of the exhibits.

3) Understanding

PDA tour interpretation equipment should make it easy for the audience to understand the information presented. If a display cannot attract the audience and continue to watch the content, it will be difficult to improve the audience experience and learning effect.

According to Chiao et. al (2018), the success of the exhibition can be judged from two aspects: visitor measure and critical appraisal, which can be divided into three aspects: behavior, knowledge and emotion[5]. It is shown as follows:

1) Conduct measurement: conduct measurement is to observe and record explicit audience conduct. This measure is most effective when researchers want to get a clear picture of what the audience is doing, but the measurements are not necessarily correlated with other measurements, so an exhibit may be attractive enough to bring the viewer to a halt, but not enough to sustain the viewer's attention [8]. The measurements include:

First, stopping rate: it is to calculate the percentage of the total audience in front of the exhibition.

Second, viewing time: after the audience stops, they need to watch for a period of time to get the information. It is another method to measure the success to show whether the audience can continue to attract their attention and convey the information [9]. The measurement is based on the average amount of time an audience is attracted to a particular exhibit to stare at it

Third, social impact: assess the ability to demonstrate social interaction among group members.

2)Knowledge: although behavioral measurement is the most effective way to determine the actual behavior of the audience during the exhibition, it is impossible to know the audience's thoughts or feelings, so it is necessary to understand what the audience really gets [10].

3) Emotion measurement: after the visit, the attitude and interest of the audience are affected. In addition, the satisfaction of the audience is the concern of the history museum.

First, attitude change: that is, the change of belief or the emotional intensity of belief. The most likely reason for the change in attitude is emotional appeal and intellectual support, which are most commonly displayed in contemporary art, ecological conservation and science. The emotion includes the following:

Second, interest level: it is generally believed that the audience's interest in the content will increase after browsing the exhibition.

Third, satisfaction: audience satisfaction is an important factor that makes the audience praise the history museum and consider visiting it again.

In a word, the function of PDA tour commentary in the history museum includes education, and the content of education can be divided into three areas: cognitive, psychomoto and affective. Among them, affective field includes the performance of all emotions and the display of behaviors. Affective is composed of emotions and will, and its connotation includes interest, attitude, values and appreciation ability. Bielański et.al (2018) believed that the audience's emotional learning in the history museum was more meaningful than the learning in the cognitive field, and the audience did not take away any cognitive gains [6]. Therefore, the history museum should emphasize the learning in the emotional field. In terms of the nature of education, the education in the history museum belongs to informal education. The study of the audience in the history museum is a kind of casual learning. The emotional learning is more suitable for the characteristics of the education in the history museum, which has a large and long-term impact on the audience [11]. However, the study found that informal education was the most successful in emotional learning, which in turn

affected changes in audience interest.

Conclusion

In summary, the use of PDA tour commentary in the history museum has an important impact on the public's understanding of history and the enhancement of their own tour experience. The museum of history should make the audience feel comfortable, increase their attention to the exhibits, and guide the audience to have a pleasant feeling when viewing the exhibits, so as to be interested in the exhibits, so as to enhance the audience's motivation, which is the original intention of the museum of history to use PDA tour interpretation.

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