

The Application of Emotional Resonance in Science Popularization: Strategy and Effect Analysis

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Abstract: The application of emotional resonance to science popularization has become an important means to enhance the effectiveness of science popularization. This paper discusses the role and strategies of emotional resonance in science popularization. First, emotional resonance can strengthen audience engagement, improve information absorption rate, stimulate the desire to explore science, and ultimately promote behavior change, thereby effectively improving scientific literacy. Second, this paper proposes a number of strategies, including constructing emotional narratives, designing immersive experiences, creating emotional expressions, cultivating affinity communicators, and creating emotional scenes, with the aim of enhancing the emotional depth and communication effect in popular science communication. The research proves that the emotionally driven communication mode has an increasingly significant impact on the process of science popularization, especially in enhancing the public's understanding and acceptance of scientific knowledge.

Keywords: Emotional Resonance; Popular Science Communication; Audience Engagement

Introduction

With the rapid development of science and technology, the public's awareness and acceptance of science has gradually become one of the most important factors in social development. However, the traditional way of popular science communication is usually rational and abstract, and lacks emotional resonance for the audience. Therefore, how to use emotional resonance to strengthen the effect of popular science communication has become an important issue in popular science work. Emotional resonance can not only deepen the audience's sense of identity with scientific content, but also arouse the audience's interest and desire to explore under the impetus of emotion.

1. The application effect of emotional resonance in popular science communication

1.1 Enhance audience engagement: Emotionally triggered interaction boom

The core of emotional resonance is to break down the barriers between rationality and indifference through emotional elicitation, and stimulate the emotional response of the audience, so as to enhance their engagement. When faced with an emotionally charged piece of popular science content, the audience tends to have a stronger demand for interaction. Especially when the content of popular science communication touches the emotional resonance point of the audience, the audience is not only passively receiving information, but actively engaged in the exchange and interaction of information, which is not limited to responding through words or images, but also may be carried out through sharing, commenting, participating in discussions, etc. Emotional resonance transforms audiences from rational learners to emotional participants, and their emotional engagement prompts them to form a closer connection with communicators, other audiences, and communication platforms, thereby enhancing the breadth and depth of popular science communication. Emotional resonance has created an "interactive boom" in diverse channels such as social media platforms, online forums, and interactive experiences by touching the emotional needs of the audience. This kind of emotional guidance not only enhances the audience's attention to popular science content, but also prompts them to actively share or participate in interactive discussions on the Internet.

1.2 Improve information absorption: Empathy helps internalize knowledge

Emotional resonance plays an important role in improving information absorption. When the audience has emotional resonance with the communication content, they not only stay on the surface of the information, but also make the information deeply processed at the cognitive level through emotional traction. This kind of emotional resonance can transform information from abstract knowledge points into concrete content related to personal experience, emotions and values, thereby accelerating the process of internalizing information. Under

the effect of emotional resonance, it is easier for the audience to combine scientific knowledge with situations in life and personal emotional experience, which not only enhances the absorption effect of information, but also helps the long-term memory and practical application of knowledge. Scientific studies have shown that the effect of memory tends to be more pronounced when people receive information in an emotional state. Emotional content, in particular, activates memory-related areas of the brain, making the information impress in the brain. In the process of popular science communication, if it can be disseminated in combination with the emotional needs of the audience, popular science content can break through the simple knowledge transfer mode and form a deeper cognitive link.

1.3 Inspiring a desire to explore: Emotionally driven scientific curiosity

Emotional resonance not only deepens the audience's absorption of information, but also stimulates their desire to explore on a deeper level. When the content of popular science communication resonates with the emotions of the audience, the audience is not only willing to accept the known knowledge, but also has the desire to further explore the unknown. Emotional resonance stimulates deeper interest and curiosity in the field of science by connecting with the emotional needs of the audience, and this curiosity often prompts the audience to actively seek more knowledge, participate in more scientific activities, and ultimately expand their overall understanding of science. The desire to explore under the effect of emotional resonance is mainly manifested in several aspects. First of all, emotional communication can allow the audience to see the charm and humanity of science. When science is no longer cold formulas and data, but is closely connected to human emotions and life needs, the curiosity of the audience will naturally be stimulated. Second, emotional resonance can prompt audiences to be more actively curious about the unknown. Science is constantly evolving, and many uncharted areas are often full of uncertainties and challenges, and emotionally-driven communication can make audiences want to explore these unknown areas.

1.4 Promoting behavioural change: from emotional resonance to scientific literacy

The role of emotional resonance is not only reflected in the absorption of knowledge and the stimulation of interest, but also one of the ultimate goals in popular science communication is to promote behavior change. The ultimate goal of popular science communication is to promote the public's scientific literacy to make more scientific decisions and behaviors in their daily lives. Emotional resonance, as the core force driving behavior change, can change the audience's perceptions, values and actions by influencing their emotional attitudes. First, emotional empathy can inspire an emotional identification with scientific knowledge, which in turn motivates them to take actions that are consistent with scientific advice. Scientific research has shown that people's behavioral decisions are not only based on rational analysis, but also that emotions often play a more important role.

2. Application strategies of emotional resonance in popular science communication

2.1 Construct an emotional narrative: weave scientific truth with stories

In popular science communication, emotional narrative strategies can effectively improve the accessibility and attractiveness of scientific content. By telling stories that are emotionally relevant to your audience, you can transform complex and abstract scientific concepts into more vivid, interesting, and understandable content, helping your audience build an emotional connection and spark their interest in science. Emotional storytelling is not only about simply telling facts or data, but also embedding scientific truth into the framework of the story through the setting of characters, plots and conflicts, so that the audience can naturally receive scientific knowledge in emotional resonance. Sagan profoundly inspires readers to empathize with science by describing the shocking experience of astronauts in space and what it means for humans to explore the universe.

2.2 Design immersive experience: multi-sensory activation of emotional resonance

By integrating multi-sensory stimuli (visual, auditory, tactile, etc.), immersive experiences can immerse audiences in the middle of the action, deeply engaging in educational activities, and thus stimulate their emotional resonance. By engaging the audience with scientific content, immersive experiences not only increase the audience's attention and engagement, but also promote their understanding and absorption of scientific concepts. In recent years, the application of virtual reality and augmented reality technology in science popularization has

achieved remarkable results. At the Smithsonian Institution's Museum of Natural History in the United States, visitors can enter a simulated "age of dinosaurs" through VR headsets, and experience the living environment of dinosaurs first-hand, feeling their immensity and mystery. This immersive experience not only immerses the audience, but also deepens their understanding and interest in dinosaurs and paleontology. There have also been many successful cases of immersive experiences in China. In 2019, the China Science and Technology Museum launched the immersive exhibition "Source of Life", which uses multimedia projections, sound effects, interactive touch screens and other multi-sensory stimulation to allow the audience to understand all aspects of human life activities in an immersive way.

2.3 Create emotional expression: Give scientific data humanistic warmth

In order to better stimulate the audience's sense of emotional participation, science communicators can give scientific data "humanistic temperature" by creating emotional expression, so as to make it closer to the emotional needs of the audience and enhance their perceptual effect. The key to emotional expression is to combine scientific data with human emotional experience and social value. In the field of medical and health care, scientific data often involves a large number of technical indicators, but through emotional language and expression, the data can no longer appear stiff.

2.4 Cultivating Emotional Communicators: Shaping Affinity Science Popularizers

The effective communication of emotional resonance is inseparable from the right communicator, who must not only have solid scientific knowledge, but also have good emotional expression ability and the ability to resonate with the audience. Cultivating science communicators with emotional communication ability is one of the keys to improving the effectiveness of science popularization. This type of communicator is able to translate complex scientific knowledge into a form that is easy for the audience to understand and accept through affinity and appeal, and stimulate the audience's interest and action through emotional language and interaction.

2.5 Create emotional scenes: Visualize abstract concepts

In popular science communication, many scientific concepts are often abstract and difficult to understand, especially when it comes to physics, astronomy and other disciplines. In order for the audience to better understand these abstract concepts, the creation of emotional scenes has become an important strategy. By concretizing scientific concepts, communicators are able to help audiences intuitively feel the meaning of these concepts in real scenarios, so as to better understand and remember scientific knowledge. An effective way to do this is to present abstract concepts through situational simulations. In this scenario, the audience can not only understand the causes of weather changes, but also feel the power of nature and the mystery of science, which stimulates their interest and desire to explore meteorological science. In museums, science museums, and other places, it is common to see examples of abstract scientific principles being demonstrated through emotional scenes.

Conclusion

Emotional resonance injects new vitality into popular science communication, and it makes scientific knowledge no longer a cold reality, but a legend full of humanity and temperature through emotional communication. This emotionally driven mode of communication is not only conducive to promoting the audience's participation in science and identification with science, but also stimulates their curiosity about the in-depth exploration of the scientific world. Therefore, in the future work of popular science communication, it is necessary to pay more attention to the charm of emotions and seek more innovative strategies and ways to achieve greater results in popular science communication.

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