
The Science Communication Tour with a Sign Language Interpreter

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The Science Communication Tour with a Sign Language Interpreter

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Abstract: In February 2018, 70-people with hearing loss indicated the lack of necessary information or knowledge at museums in Japan. The visitors who are d/Deaf or hard-of-hearing want cooperation with sign language interpreters in museums. The researchers planned a tour with a sign language interpreter in the National Museum of Nature and Science in Tokyo, Japan, on 29th April 2019. The evaluation of the tour with sign language interpreters indicated that the levels of effectiveness, satisfaction, and necessity were high, and that the level of learnability by sign language was acceptable but in writing was low. Simultaneously, this experimental guided tour showed that sign language was necessary to improve information accessibility and science communication in science museums for d/Deaf visitors facilitated by sign language in Japan.

Keywords: Science Museum; Sign Language; Guided Tour

Knowledge Focus: Best Practices

Topic Area: Inclusion

Introduction

There are 466 million people in the world who have hearing loss, according to the World Health Organization (2019), 70 million of whom use sign language as their first language or mother tongue (Iu Krak, 2017). In our previous survey—from June 30th, 2017 to February 21st, 2018, in Japan)—70-people with hearing loss indicated the lack of necessary information or knowledge at museums. In addition, our survey had shown that museum visitors who are d/Deaf or hard-of-hearing want cooperation with sign language interpreters. Currently, museums seek to reflect information in the discussion of museum research, policy, and practices. The National Museum of American History has prepared guidelines for accessible exhibition¹. Many museums around the world have programs for sign language users. For example, the Metropolitan Museum of Art² and the Van Gogh Museum³ provide sign language interpreter services upon request. The New Museum regularly hosts American Sign Language (ASL) interpreting tours⁴. Some museums and associations have developed guidelines based on the principles of universal design (Center for Universal Design, 1997), barrier-free (Hamarmen & Duncan, 1974), and inclusive

design (Museumsbund, 2017). These aspects indicate that advocacy for the disabled has been a priority for most museums since the Americans with Disabilities Act (ADA 1990), the Disability Discrimination Act (DDA 1995) and many countries in the world enacted laws.

Research Question

Can tours with sign language interpreters at the Science Museum facilitate scientific communication?

Evaluation of the Tour with an Interpreter

In April 2019, the researchers planned a sign language interpreted tour at the National Museum of Nature and Science in Tokyo, Japan⁵. The host team consisted of three members: a curator who was a museum staff, a sign language interpreter, and a supporter to present technical terms by text.

Figure 1. Practice tour with sign language interpreter at the National Museum of Nature and Science, Tokyo.



Figure 1 Image Description: from left, a sign language interpreter, a curator, a supporter, and four participants.

After the tour mentioned above concluded, four participants evaluated it via a questionnaire using a six-step Likert scale (1: Strong disagree, 2: Disagree, 3: Weak disagree, 4: Weak agree, 5: Agree, 6: Strong agree). We used the average score as the evaluation point. The results indicated that the effectiveness of the tour, satisfaction of the interface, and necessity of a sign language tour were high (5.0 points), and the learnability from sign language was at an

acceptable level (4.3 points). However, the learnability in writing was low (3.8 points). The researchers found that sign language is necessary to improve information accessibility in science museums in Japan.

Results

The evaluation of the tour with sign language interpreters indicated that the levels of effectiveness, satisfaction, and necessity were high (5 points / Agree), and that the level of learnability by sign language was acceptable but in writing was low (almost 4 points / Weak agree). Therefore, we carried out an interview with the visitors, the curator and the interpreter in order to clear the problem, and traced alterations of their primary purpose. The result was as follows.

Impressions of Visitors (D/deaf or Hard-of-Hearing Students)

- It was hard to read sign language for words such as meteorites or pendulums.
- It was good that there was no interval between the curator's explanation and the speed of sign language.
- I was able to understand the knowledge and content of the sign language.
- It was good to hear what I wanted to know.
- Some places were dark and hard to see.

Opinions of a Curator

- I was a little confused because I could not understand the progress of the explanation of the sign language interpreter.
- I tried to start explaining after the visitors gathered.
- I had a hard time getting attention when visitors went to view other exhibits or when the group had spread.

Suggestions of a Sign Language Interpreter

- Confirming the expressions of technical terms with the participants before the tour leads to the advantage that participants can select sign language they are accustomed to, or associate an unfamiliar technical sign language with a visible sign.
- Meetings from the preparation stage on content, speed of progress, amount of explanation, will improve the quality of the tour.

Changes Before and After the Tour

Participants were asked about their primary purpose to visit the museum before and after the tour. Before the tour, the purpose of visiting the museum was to "see the exhibits" or "obtain new knowledge," but after the tour, it changed to "obtain new knowledge" only.

Conclusion

The evaluation of the tour with sign language interpreters indicated that the levels of effectiveness, satisfaction, and necessity were high and that the level of learnability by sign language was acceptable but in writing was low. The participants' reasons for going to the museum were to "see the exhibits" or "get new knowledge" before the tour, but afterward, the motivation changed to "get new knowledge" only. These results indicated that science communication for d/Deaf visitors at the science museum was promoted by sign language. However, at the same time, it was also clarified that there were specific problems with comprehensibility in the explanations of exhibitions with many technical terms. We, therefore, intend to explore methods of representation in sign language and in writing to facilitate better descriptions of such science museum exhibitions.

Authors



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Author Note

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Endnotes

1. See the National Museum of American History's *Smithsonian Guidelines for Accessible Exhibition Design* at https://www.sifacilities.si.edu/ae_center/pdf/Accessible-Exhibition-Design.pdf.
2. See The Metropolitan Museum of Art. New York, NY. USA: Visitors with Disabilities <https://www.metmuseum.org/events/programs/access/visitors-who-are-deaf>.
3. See website Deaf visitors and the hard of hearing, Van Gogh Museum Amsterdam <https://www.vangoghmuseum.nl/en/plan-your-visit/accessibility/deaf-visitors-and-the-hard-of-hearing>.
4. New Museum. New York, NY. USA: American Sign Language (ASL) Interpreted Tour <https://www.newmuseum.org/calendar/view/1523/asl-tour-1> (last accessed 2020/2/1).
5. National Museum of Nature and Science Tokyo <https://www.kahaku.go.jp/english>.