

Abstract

Why are some exhibits interesting for a particular visitor? Is it possible to support this elicited interest during the museum visit with mobile devices that offer additional information or with the information that is available in the museum on the spot? Is it possible to support interest after the museum visit when visitors are able to bookmark the information that they personally found interesting during their visit and to view this information on a personal webpage after the visit? These three questions are addressed in the two studies of the present dissertation thesis in the context of science and technology museums. The first study was conducted in a laboratory exhibition about nanotechnology with 62 student participants and the two factors “availability of additional information” and “availability of bookmarking” on a mobile device. Availability of additional information had a strong effect on visit duration as a behavioral indicator of interest, but no effect on self-reported interest or knowledge measures. However, visitors with additional information reported more post-visit involvement with the topic, possibly indicating a “foot-in-the-door” effect of additional information. Bookmarking did not show an effect, as the exhibition webpage was rarely used. To alleviate constraints with paid student participants, a second study with higher ecological validity was conducted in an actual museum. The sample comprised 188 regular visitors, with the experimental group ($n = 75$) having immediate access to all exhibition information on the mobile device and being able to bookmark information, while the control group ($n = 113$) visited the museum unassisted. An exploratory factor analysis (PAF, varimax) led to the identification of four factors in the visitor-exhibit relationship that determine whether a particular exhibit is interesting for a particular visitor: Attraction Power, Instant Enjoyment, Familiarity, and Information Value. These four factors can explain why interactive and the by far largest exhibit is mentioned more frequently as the most interesting exhibit than their occurrence in the museum would suggest. The four factors can also explain subjective theories of museum curators and the theories of museum professionals regarding interesting exhibits. A strong effect of the device was found for visit duration, but not for self-reported interest and knowledge. Bookmarking was rarely used by the experimental group. The influence of the device can be explained by Rounds’ (2004) application of information foraging to the museum context if this theory is augmented by the effects of using a mobile device in the museum. Adding a virtual information space on a mobile device on top of the information space of the physical museum can enlarge the interest landscape for the museum visitor (Study 1) and support the visitor in exploring it (Study 2). This has beneficial consequences for visitor behavior — information is accessed, and visitors spend more time in the exhibition using the device before museum fatigue sets in, while self-reports show no difference as they were assessed after the visit (where interest has reached the same level for all conditions). Consequently, mobile devices can be used to support visitors’ interest. While bookmarking is used by some visitors, no effects could be found, as museum visit wrap-ups by visitors were rare. Visitor motivation for museum visit wrap-ups must be supported first before bookmarking can have any effect.

SUPPORTING INTEREST AND KNOWLEDGE EXCHANGE THROUGH MOBILE DEVICES AND BOOKMARKING IN SCIENCE AND TECHNOLOGY MUSEUMS

Doctoral Thesis in Psychology

Fakultät für Informations- und Kognitionswissenschaften

University of Tübingen



Daniel Wessel