Setting of Goals in Museum Websites: General and Specific Influence of Previous Knowledge

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Introduction

Both general and domain-specific knowledge influence human performance in tasks as different as scientific discovery (Shunn,1999), social science reasoning (Voss, Tyler & Yengo, 1983) and web-based search (Hsieh-Yee, 1993). These types of knowledge are also crucial for learning in open-ended, ill-structured situations to the extent that domain-specific knowledge and general metacognitive skills are critical to the acquisition of complex knowledge (Lawless & Kulikowich,1996). It is also the case that learners who have either general or domain-specific skills seem to be able to learn in new, open online situations but the absence of either knowledge resource requires that the environment be well-structured (Steinberg, 1989).

Museum websites are open tasks designed to fit the expectations and backgrounds of multiples audiences. Goal-setting for either a web or physical visit is a critical process for the success of both visits and learning in museums because goals determine visitors' paths and learning. Clear goals can make the difference between a superficial drifting visit and a meaningful learning experience. Previous research in real museums shows that visitors develop specific sets of goals to drive their interaction with the exhibitions. Visitors attend to three elements: the content knowledge provided by the exhibitions, the navigational clues provided by the museum environment and the goals they have (Leinhardt, Tittle, & Knutson 2002). Here we explore how visitors to museum websites, with different backgrounds, set goals, make navigational decisions, and attend to the exhibition content in the service of learning.

Method

Eight graduate students were asked to think aloud while they surfed freely through two museum websites of different domains for 20 minutes (anthropology and natural sciences). Half (4) of the participants had robust domain-specific backgrounds in anthropology and half were social science graduate students in other domains. Within each half, two had more than four years of graduate study, while the remainder had less than a year. They were instructed to explore each of two web sites freely and to think aloud while doing so. No specific goals or tasks were given to the visitors. The data were the pages that they visited, the order of the visits, and the comments made while visiting. The online pages were classified as: content pages that presented domain-specific information (e.g. exhibits, articles), and navigational pages that presented information about what could be found in the museum (e.g. link pages). Comments made by participants were coded as to whether or not the visitor was attending or searching for navigational support, were setting goals, or if they were elaborating on content.

Results

For this ill-structured task of visiting a web-based museum, it appears that having high levels of general knowledge (high experience) has the greatest impact on surfing and reasoning behavior. The evidence for this is that high experience visitors *elaborated* more deeply on *conten*t pages than did non-experienced visitors. However, visitors with high content knowledge combined with high experience produced more immediate *clear-cut goals* and used fewer moves to meet them than all other groups. Low-experience higher knowledge visitors seemed to support the establishment of goals but not the actions of elaboration, thus they did not benefit as much from meeting goals; while low knowledge-low experience visitors showed a more random, rapid "click" behavior. We take this to mean that high experience positions individuals learn more through elaborating while high content and experience combined positions individuals learn more about the content domain offered by the museum because they are more effective goal setters in that context.

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