

ELICIT: Experimentation on Learning In Context and Information Technology

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1 Introduction

Museums are one of the primary locations of informal learning. Groups and individuals arrive at the museum with the purpose of being mentally engaged in what they see or do, and of being able to personally connect with the objects, ideas and experiences provided. In order for the experience to be meaningful, most visitors expect a learning experience that would not only “be fun”, but would also be effective regarding learning about the items and exhibits at the museum [1]. While these may constitute important main targets for visitors and curators alike, many people question whether any real learning occurs in museums [1]. Do visitors to museums learn in it, and if so, how do they learn and what do they learn? For children arriving at museums, this is even more challenging. How should we create an environment that not only provides an enjoyable experience, but also supports the child’s meaningful learning at the museum?

An important precursor for children’s learning is having them being engaged with the museum’s interpretations. One way to engage children at the museum, is by using technology. This may be especially important in humanity-oriented museums such as history museums, which as opposed to science museums, are non-interactive in nature and are mostly limited in presenting small exhibit items from far away or behind glass. A mobile learning technology [2] may enable children a more enjoyable and interactive experience as well as their higher engagement.

Looking at possible learning methods at the museum, two main approaches can be taken: constructivism and informative learning styles. In a constructivist style, the learner constructs knowledge and meaning by themselves, while in informative (or traditional) learning, information is directly conveyed to learner [3]. Figure 1 shows the possible learning options at the museum with and without technology. While using technology for museum learning seem promising, it remains unclear which learning approach best works with technology, and to what extent do such technologies support learning in general, and specifically, compared to other, more traditional (non-technological) methods.

2 Methodology

We propose examining how technology can support children’s meaningful learning at a history museum by looking at how children learn at the museum when using three interpretive options: (1) using a classical information-centered mobile learning application that provides audio-visual information on various exhibits, (2) using an constructivist mobile app that uses constructivist learning with the same information and exhibits, and (3) using a pen-and-pencil assignment sheet that would use the same constructivist learning activities, but without the technological mediation (Figure 1). Comparisons planned are circled in red

	Technological	Non-technological
Constructivist (Piaget)	Constructivist-based mobile guide	Constructivist-based worksheets
Informative (Tylerian)	Information-based multimedia mobile guide	Labels, panels, worksheets

Fig. 1. Information delivery methods at a history museum

We will explore how children behave and learn at the museum using thorough observations that will include both video and conversation recording and analyses. In addition, we will measure learning by administering knowledge questionnaires as well as personal interviews to better understand children’s motivations, preferences, ideas and understanding. Collecting data via these different tools will allow us to triangulate our sources in order to construct a comprehensive picture of the various learning processes transpiring at the museum in the different conditions.

3 Challenges

The above goals present the following research challenges: 1) Designing an experiment that isolates the variables of learning styles from the technological aspect. 3) How can we design a guide that would elicit constructivist self-creation of meaning? 4) How can we make this playful and engaging? 5) Making sure that the educational activities involve learning in context, that is, are related and shown in the context of the museum artifacts.

References

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3. Wadsworth, B. J. (1996). *Piaget's theory of cognitive and affective development: Foundations of constructivism*. Longman Publishing.