

The eye speaks! decoding user experience through eye tracking of syntactical properties analysis for cultural artefact

ABSTRACT

Background:

An artefact usage experience is able to provide a tremendous input on behavioural research. This paper presents about a computational methodology of eye tracking to lead designers and behavioural researchers to construct an effective procedure ensuring the excavation of user knowledge.

Objectives:

Our research highlights the potential for designers and behavioural researchers on using eye tracking test on for capturing user's knowledge of functional aesthetic as cognitive and behavioural ergonomic data for the said artefacts. The eye tracking instrument was introduced to capture the aesthetic experience knowledge of Malay cultural artefact for defining artefact behavioural experience (usage) based on the user's eye movements.

Results:

Results from a qualitative case study was performed demonstrated the use of eye tracking on studying the traditional Malay curvy weapon known as Lawi Ayam through the identification of the syntactic properties. Results from the eye tracking data (fixation data, heat map visualization, gaze plot and RTE feedbacks) on AOI(area of interest)was used to discover the interrelationship between user and artefact(stimuli). A dynamic observation during the identification process by the users in the eye tracking could reveal behavioural responses and eye movement information including the proprioceptive feedback from artefact usage experience.

Conclusion:

This study finds that the eye tracking method can be integrated in cultural artefact research to sustain tacit knowledge for new designing purposes.

Keyword: Behavioural ergonomic; Cognitive ergonomic; Sustainable design informatics; Design integration; Cultural artefacts