Title: Exploring website effectiveness and the influence of the Sustainable Design Award website on decision-making concerning sustainability within AS/A2 design and technology

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Keywords: Website effectiveness
          Sustainable design
          Action
          Internet usability
          Sustainability

Issue Date: 2010

Publisher: © Peter Clark Simmons

Abstract: This PhD thesis looks at the meaning of website effectiveness and their influence on design decision-making. The research is focused within the context of designing by 16+ students and concerning sustainability. Design practice is explored within Advanced level General Certificate of Education (commonly referred to as AS/A2) Design and Technology, in order to define its particular characteristics. The study uses a theoretical position developed from the Assessment of Performance Units (APU) discussion document from 1982 as a framework to explore information retrieval within designing. The position of the study within designing and its place within research related to the use of knowledge, skills and values in designing is clarified. A literature review conducted conceived information retrieval as a characteristic of skill in the APU model. This study has established a consensus position on what is good practice in website development and design, and illustrates the structure of selected sustainable design websites, as well as assessing their navigation. The study indicates which types of information AS/A2 level student designers are seeking and how they use websites within their design work. The drivers behind sustainable design decision-making are identified. The understood consensus of sustainable development and sustainable design as an emerging area in designing is defined. The research is situated within the Sustainable Design Award (SDA) scheme that aimed to implement sustainable development into Design and Technology education and also outlines the content embodied in selected sustainable design websites. AS/A2 level Design and Technology education is used as the context for the main study. Action research was used to help develop the SDA website which was created as a primary assessment tool for the research study, concentrating on students aged 16 to 18. The usability of the selected websites was assessed by undergraduate designers from Loughborough University. A framework was developed and the effectiveness of the SDA website was measured before use, during use and after use. Quantitative and qualitative research methods were used to gather data from the students such as questionnaires, folio assessments and interviews. The results indicate a prominence of website use and sustainable design within AS/A2 level design work, however sustainable design is taught as a separate entity and is not fully integrated into design practice. Sustainable design websites were accessed by half of the 72 students questioned, but only 28% had used the SDA website. The information that the student designers sought fell into two categories: specific information and inspiration, supporting Lofthouse (2001a). The use of these decreased dramatically as projects progressed in AS/A2 level and undergraduate level design education, this pattern was consistent in website use, sustainable design and sustainable design website use. Cluster analysis was carried out on the sustainable design websites with the informative cluster identified as representing the appropriate strategy for effective higher level website design. This cluster included characteristics such as comprehensive content information on sustainability, inspirational images and product examples. Appropriate approaches to the detailed design and development of
example. Appropriate approaches to the detailed design and development of the SDA website are reported. Future recommended work includes a focus on before use, to investigate the affects of increasing awareness of the website. Relating wider sustainability issues to A5/A2 Design and Technology education is discussed, investigating further the use of eco-design tools as the discussion highlights conflicting opinions. An expansion to the cluster analysis to help define further the four website cluster groups. The development of a website that correlates the emerging patterns of website, sustainable design and sustainable design website use, with work on value judgements completed by Trimingham (2007).

**Description:** A Doctoral Thesis. Submitted in partial fulfillment of the requirements for the award of Doctor of Philosophy of Loughborough University.

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The principles above are general considerations that designers can depend on in order to build a sustainable design or service.