



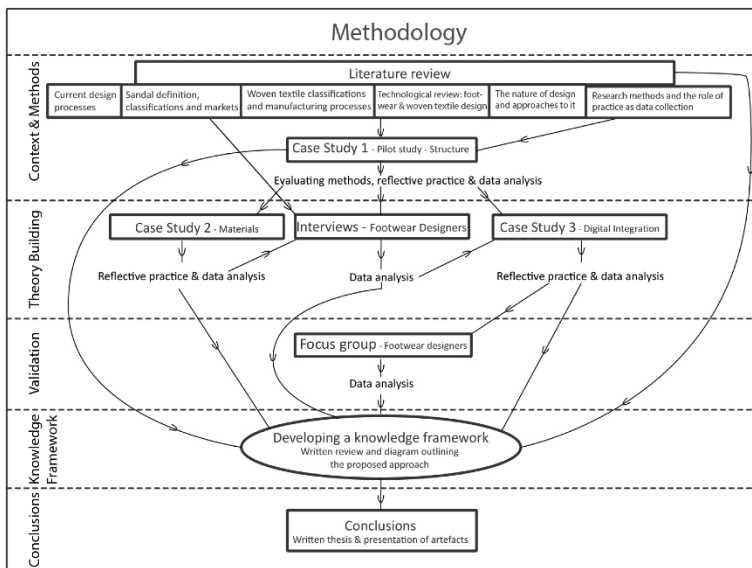
Weave as a method of sandal design: Innovation through a hands-on approach

Research Through Design Case Study

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Abstract



This research investigated the application of a hands-on woven textile approach to sandal design. It identified and assessed the creative design potential, the practical considerations, and the relevance of positioning it within the ready-to-wear footwear market. A design process model was produced in relation to the findings to develop an industry relevant framework. The aim of this was to provide an approach

to enhancing competitive advantage through design innovation. Through a critical discussion and analysis of design approaches the research also aimed to contribute to knowledge within the academic field of design process theory.

A critical literature review was carried out which focused on current and state-of-the-art practices and products in footwear and woven textiles; the commercial contexts in which they sit; and academic theory of design approaches and hands-on making to support innovation. This contextualised and provided a reference point for

the empirical research. Data was collected via a series of practice-based case studies in the form of design projects, in-depth semi-structured interviews and a focus group with design professionals. The design process model was developed in response to the findings and it depicts a collaborative approach between woven textile and footwear designers that is relevant within a commercial design context.

The hands-on woven textile approach under investigation consisted of the integration of hand weaving and other associated processes into the sandal design. Materials and constructions were considered at the early, explorative stages of the design process in parallel with form giving. The research findings indicated that the in-depth knowledge of materials and constructions gained through hands-on making could enhance creativity by informing design concepts. Weaving by hand was found



to provide heightened levels of control for design development, allowing for technical and subjective decision making to take place in parallel. In these respects, the hand weaving process was most applicable to carrying out in-depth research into materials and constructions and in supporting design development through a process of sampling and review. Quick methods of 3D modelling supported idea generation and digital processes aided visualisation and the presentation of design proposals.

Additionally, the research provides an example of a practice-based methodology for design process research. Methods of data collection, analysis and dissemination are presented and discussed throughout.

Summary of research through design activity

Having a degree in textile design and professional experience as footwear designer for a global manufacturer, data collection through practice-based designing was employed in Study 1 to gain insights into the creative potential and practical considerations of a hands-on woven approach to sandal design. This included the identification of potential advantages and disadvantages and trial and development



of appropriate methods of practice-based research. This was conducted in the form of a design project and its outcomes consisted of sandal designs that incorporated fully fashioned woven uppers presented on a hand drawn sole in a 2D digital format. Designing took place over a period of 34.5 weeks with data collection and analysis through the use of diaries, sketchbook pages, physical artefacts, design sheets and digital files.

Informed by Stud 1, Study 2 focused on the potential for hands-on interaction with materials in exploiting properties to generate novel design outcomes. It was discovered that there was potential for hands-on making to enhance material and physical understanding during a period of in-depth research. Initially, reactive materials were explored and used with the rationale that the potential to exploit material properties could be amplified when using those which can adapt to their environment or transform through finishing processes. However, the resulting design outcomes eventually focused on exploiting the properties of a more conventional material - a nylon cord that had shape holding properties when woven. This addressed concerns highlighted in Case Study 1 where the outcomes did not have a substantial enough structure to hold their shape.

Following Case Studies 1 and 2 a series of semi-structured interviews with practitioners to gain feedback on the new approach to hands-on designing for footwear.

Underpinning research, context and summary of methodology

The Context and Methods stage of the research was predominantly conducted via a literature review. This was essential in positioning and theoretically justifying the research. It also supported/challenged the empirical findings. In conjunction with a pilot study, it informed the research methods, aiding the development of a systematic practice-based approach.

Theory Building formed the majority of the main empirical study. Here case studies and interviews were used in order to generate theory surrounding the creative potential and practical considerations of a hands-on woven textile approach to sandal design. Case studies were chosen, mainly due to the associated benefits in generating theory that is “empirically valid” (Eisenhardt, 2002, p.29) and thereby increasing potential for impact within the associated industries. Interviews with experts were introduced in between the hands-on case studies in order to maintain a level of industrial involvement and validation throughout the research. Action research was employed at this stage with a view to facilitating change and improvements in practice (Birley and Moreland, 1998, p.34) via cycles of planning, action and review (Dick, 1993).



The Validation stage tested the empirical findings and a focus group was conducted in order to gain opinions from experts, allowing the findings to be evaluated in the context of ready-to-wear footwear design. A focus group was selected due to the ability to generate a rich understanding of participants' views and experiences via a process of sharing and comparison (Morgan, 1998, p.11-12). This helped to ascertain the industrial relevance for the approaches developed. In terms of the thesis structure, the validation stage also contributed to the Main Study

A Knowledge Framework was developed in order to communicate the findings and bring together the knowledge gained from all prior stages. This generated a re-usable model that was an amalgamation of the findings from all aspects and stages of the research.

Conclusions were drawn and presented in the form of a written thesis and in the collation and presentation of the physical design outcomes that were generated during the hands-on case studies.

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