

Abstract: Design representations are constructed by industrial designers through the use of design tools, from pencils to interactive graphics tablets and rapid prototyping technologies. These tools are employed to externalise, develop and communicate design intent during professional practice. With an ever expanding inventory of design tools, this research provides a framework for understanding the critical role these tools play during a period of practice, and how that role is influenced by the idiosyncratic characteristics of the design tools. Early research results suggest design tools, used for a similar purpose, Concept, Development or Detail design, share common characteristics and that these character descriptions determine the tool's effectiveness. In particular, Concept design tools may be characterised by an ability to aid self-reflection. In contrast, as design progresses towards manufacture, this ability becomes less important. The research aims to provide a vocabulary for describing the character of design tools and how these character descriptions relate to practice. The research is being used to construct a digital resource to support industrial design practice and to empower the design practitioner in their use of design tools.

Personal Statement: I am an 'x' practitioner with an interest in the role design tools play during design practice, both 'digital' and 'conventional'. Having spent a number of years working in London, Sydney and the Far East, I returned to the UK in 2005 to study for an MA Digital Modelling and Rapid Prototyping. Accepting a place at Kingston University in 2007, I am now working towards a PhD with the Design Research Centre, FADA, Kingston University London, who are also funding my research. A paper was presented at the third annual postgraduate RX Futures Conference 2008 at Reading University. A further paper will be presented at the IADRS09 conference in Seoul, South Korea. At present the research is at a data gathering phase where industrial designers from many geographic locations around the world are being surveyed on their use of design tools during practice. Future work will include the continued construction of a digital resource to develop understanding of the critical relationships between design tool and design practice: www.industrialdesignresearch.com

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