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Rae Earnshaw

# Research and Development in Art, Design and Creativity



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# Research and Development in Art, Design and Creativity

Rae Earnshaw  
Centre for Visual Computing  
Faculty of Engineering and Informatics  
University of Bradford  
Bradford, UK

School of Media, Arts and Design  
Wrexham Glyndŵr University  
Wrexham, UK

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# Foreword

Rae Earnshaw is somewhat of a Renaissance man, with interests ranging from art and creativity through computing to academic and research administration. He has served as professor of electronic imaging, as dean of a school of informatics in a university central administration and as professor of creative industries. This book brings together these experiences in the context of two significant and pervasive trends in higher education.

The first trend is that of interdisciplinarity. More and more research and education is at the boundaries of traditional disciplines, rather than within the silos of traditional academic organisational structures of colleges, schools, departments, etc. Rae's particular interest, as reflected in this book's title, is art, design and creativity – but with an implicit subtitle of “computers in support of art, design and creativity”. Rae is well prepared to discuss this subject: he has a long record of European Union and other interdisciplinary funded research projects, and his remit in his current visiting professor of creative industries position at Glyndwr University is to facilitate interdisciplinary creativity between artists, designers and technologists.

The second trend, not mentioned in the title but an important theme of the book, is the increasing emphasis by national research funding agencies on accountability and metrics. The trend is typically driven by pressures on research funding budgets that leads politicians to want measures of success. As a UK academician, Rae has lived through a series of increasingly intense periodic (typically every 5 years) research audits used to allocate block grants to UK universities. The first and fifth (final) chapters draw heavily on this valuable experience.

Chapter 2 has an informative discussion that will be useful to academics wanting to understand the research style in art, design and similar disciplines.<sup>1</sup> The chapter

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<sup>1</sup>What is meant by “art, design and similar disciplines”? Quoting from a citation in Chap. 1 – “The following is an illustrative list of subject areas within practice, theory and history of art and design that the sub-panel expects to assess: animation; applied and decorative arts; architecture; conservation, the study of materials and techniques; crafts; creative and heritage industries; critical, historical, social and cultural studies; entrepreneurship and enterprise; film and broadcast media; fine arts; landscape and garden design; museology and curatorship; photography; policy,

is informed by the author's experience with UK's every-5-year evaluation of all universities – to determine block grant funding levels. In the USA, we (fortunately) don't have a similar process – we have no equivalent to block grants. I especially enjoyed the discussion of practice-led research – as found in the arts and design – as distinct from the traditional methods of science and technology. It is important to understand the two approaches in order to work across art and technology!

Chapter 5 can be thought of as a continuation of Chap. 2, with a focus on the UK research audit process and how it accommodates the practice-led research of art and design.

Each of the five chapters has an extensive list of references and suggestions for further reading; these are valuable pointers for those wanting to take a deep dive into any of the book's topics.

Read this book (or selected chapters thereof) if you are:

- An academic administrator seeking to understand how to judge research in art and design.
- A faculty member wanting to do research across the boundary between art and design on the one hand and science and technology on the other.
- Involved in making national-level policies about how to assess research productivity, especially but not limited to art and design.

Atlanta, GA, USA  
March 2016

James D. Foley

# Preface

My involvement in computer graphics began in the early 1970s, and I have always been interested in how good ideas are arrived at. Do they come out of the blue? Do they come from careful thinking of how we've got to where we are now? Do they come from conversations with research group members or research peers or from conferences? Do they come from a detailed review of the literature? I can think of a number of instances where a conversation with a visitor to the university – or someone working in another discipline – led to some new ideas in my own research areas. At times, a creative spark of insight can appear to be, to a large extent, serendipitous and dependent on just the right combination of circumstances and the availability of key information. At other times, it comes out as a detailed analysis of a particular piece of research.

Involvement in a number of large interdisciplinary European projects over the years which were involved in research and development in a number of application areas, such as multimedia assets for design, collaborative visualisation over networks and virtual entertainment, led to a number of important results. Three of these are VISINET, VISTA and VPARK, and they are summarised in the book. One key point which arose out of these projects was collaboration and the ways in which technology could support this. Therefore collaboration and communication form one aspect of the book (Chap. 3). The relevance of this to collaborative design is clear, and this is detailed in the book. What is less clear is how this may apply to art and the creation of artistic works. However, many artists now work in collaborations and exhibit in a collaborative way and also utilise technology, and this is summarised in the text.

A second key aspect of the book is creativity (Chap. 4). I have always been interested in how creative ideas and outcomes are arrived at. What kinds of environments produce positive creative results? What stimulates creativity? Can technology play a role in stimulating creativity? What are the factors which generate creativity? What blocks and inhibits creativity?



Thus collaboration and creativity are the two central themes of the book. The other principal aspects are how research and development in art and design may be formulated, and framed (Chap. 2), and then evaluated and measured (Chap. 5).

The situation in the UK with regard to the support and audit of research is used in this book as a case study to illustrate the key issues and principles. It is recognised that the situation in other countries may be different to a greater or lesser extent. However, it is hoped that this case study is useful, irrespective of the reader's immediate context.

A further important aspect is the valuable contribution that art and design makes to the scientific and technological enterprise and vice versa. However, valuing interdisciplinary contributions, and performing research in this area, remains a difficult challenge in most countries and organisations. Hierarchical structures and funding mechanisms are heavily orientated to maintaining the status quo around the existing disciplines. This needs to be changed and transformed if the potential for knowledge advancement is to be fully realised.

The University of Bradford pioneered the area of digital media in the mid-1990s by tripartite collaborations between technology, art and design, and media and broadcasting. It was done by setting up a new academic department because it did not sit easily within existing academic disciplines and structures. It was very successful in attracting students and also meeting the needs and requirements of industry. It also highlighted the benefits and advantages of interdisciplinary collaborations.

I have also had the opportunity as a professor in the School of Media, Arts and Design at Glyndwr University over the recent years to think about these aspects and published a number of papers in collaboration with the faculty.

The book is being published in the Springer Briefs series which are summaries of the state of the art in a particular area. It is being published as a print book and also an e-book. In the latter, each chapter will be downloadable separately. This is why the References and Bibliographies appear at the end of each chapter. Thus a chapter contains the main points in the area and the reasons for their significance. It is not intended to examine each of these points in detail – there is no space to do this. However, the interested reader can follow up in the References or Bibliography if they wish to.

It is hoped that this book makes a useful contribution to an important area of discussion and debate.

Bradford, UK  
March 2016

Rae Earnshaw

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Rae Earnshaw