REPRESENTATION AND EVALUATION OF PRODUCT DESIGN IN RESEARCH ASSESSMENT: A CASE STUDY OF THE UK REF 2014

Carmel MAHER[1], Mark HADFIELD[2], Maggie HUTCHINGS[3] and Adam DE EYTO[4]
[1]designcore, Institute of Technology, Carlow, Ireland
[2]Faculty of Science and Technology, Engineering & Computing, Bournemouth University, England
[3]School of Health and Social Care, Bournemouth University, England
[4]Product Design and Technology, University of Limerick, Ireland

ABSTRACT
The social practice of design and design research and is continually evolving to meet the needs of society. Its representation and evaluation in research assessment exercises, such as the UK (Research Excellence Framework) REF 2014[1] has a key role to play in its evolution. Higher education curriculum is affected by this type of representation due to the alignment of academic research inquiry. This paper examines through a documentary analysis of the REF 2014, the practice of funding evaluation exercises to discover and describe how they work and to provide a critique of those practices, using critical discourse analysis. By using Fairclough's[2] three dimensional framework for examining discursive events, it is possible to explore the "relationships of causality and determination"[2] between discursive practices (the evaluation and subsequent funding of UK Higher Education research) and texts (REF 2014) and the wider social and cultural structures and processes which are influencing and being influenced by it. The analysis reveals the considerable influence of REF 2014 in the discourses of other stakeholders and the dominance within those discourses of market system structures where accountability, public relations and intense competition are fundamental to their operation. It raises questions about the nature of research assessment exercises, their ability to reward a diverse range of research in a fair and equitable manner and the impact of research assessment exercises on research inquiry, academic freedom and originality in universities.

Keywords: Product Design Representation and Evaluation, Product Design Education, Higher Education Research Funding, UK REF 2014, Critical Discourse Analysis (CDA)

1   INTRODUCTION

The social practices of design and design research and education are continually evolving to meet the needs of society. Product design with roots in craft and experiential learning has become an increasingly complex interdisciplinary activity working with new and emerging technologies, borrowing and adapting research methodologies from a range of disciplines including pure and applied sciences, social and behavioural sciences and the humanities in order to address these social needs. It is important that within this evolution, design research within and outside the university develops in line with social need and that we as academic design researchers and educators are mindful of the forces guiding this evolution, as reflected in the aim of this conference;

> "it is important that design educators explore interrelationships between engineering & technology, and behavioural, societal, cultural & ethical issues."[3]

The representation and evaluation of design and research in the public sphere has a role to play in its evolution. Research assessment exercises, such as the UK REF 2014[1] allocate research funding based on its assessment. They also provide bench marking information for universities and accountability for public investment in research. The UK REF 2014 documents inform and provide evidence for claims made by government, funding bodies, universities and the media regarding the nature and quality of research in the UK hence the significance of examining the explicit and implicit values in the UK REF 2014 through a documentary analysis.

2   METHODOLOGY – CRITICAL DISCOURSE ANALYSIS (CDA)

Critical discourse analysis (CDA) is trans-disciplinary, connecting linguistic and social analysis. It focuses on the part language and discourse play in social maintenance and change. A Critical Discourse Analysis of the UK REF 2014 can help raise awareness of what is going on in that exercise and "whether it maintains the existing social structure or is likely to change or revise it"[4]. The Critical Discourse Analysis adopted here is based on Fairclough's three-dimensional framework for analyzing discursive events [2]. It aims to

"explore often opaque relationships of causality and determination between (a) discursive practices, events and texts, and (b) wider social and cultural structures, relations and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power; and to explore how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony" [2].

Social practices and their definitions are fluid and evolving, none more so than that of design and its alignment with research and education. It is important to understand the mechanisms and processes that influence this evolution, if we are to influence change. "This accords with the critical intent of this approach, the production of knowledge which can lead to emancipatory change."[5] Fairclough [2] outlines how

"each discursive event has three dimensions or facets: it is a spoken or written language or text, it is an instance of discourse practice involving the production and interpretation of text, and it is a piece of social practice".

These are three complementary "ways of reading a complex social event."[2]

 "The connection between text and social practice is seen as being mediated by discourse practice: on the one hand, processes of text production and interpretation are shaped by (and help shape) the nature of social practice, and on the other hand the production process shapes (and leaves 'traces' in) the text, and the interpretative process operates upon 'cues' in the text" [2].

For the purpose of this study, the text is the UK REF 2014; the discursive practice is the evaluation and subsequent funding of UK Higher Education research by the Higher Education Funding Council for England (HEFCE). An outline of the wider social practice would include a neoliberal political background, a public sector and a university system which is increasingly being subjected to the forces of marketization and commodification, a dominant positivist/empirical research discourse and an opposing design research discourse.

"Discourses, frequently based on the norms of a group, exclude and devalue the norms and practices of other groups and, therefore, dominant discourses wield power."[6]

In the case of the UK REF 2014, this has very real implications, in terms of gaining access to funding, public esteem, and also its potential influence on the development of research in particular niche areas such as design, as researchers modify their ideal practice to attain funding. A critical discourse analysis of the UK REF 2014 will illustrate how research is represented and evaluated by the UK higher education funding bodies and whether this representation and evaluation of research is capable of identifying and fostering research excellence in design and other niche areas. Other groups such as the research users, industry, Business, Innovation & Skills (BIS) research councils, UK government local health and hospital authorities and UK charities, also conduct practices which shape the representation and evaluation of research in the public sphere but these will not be considered in this particular study.

3   DOCUMENTS FOR CRITICAL DISCOURSE ANALYSIS

As there are many long documents explaining the REF 2014, it was necessary to select a representative and appropriate sample for analysis. The REF 2014 website home page was selected for CDA as it is the first point of contact for all stakeholders and provides an overview of the assessment framework [1].
A study of two documents;

REF 02.2011 Assessment framework and guidance on submissions (July 2011) [7] and
REF 01.2012 Panel Criteria and working methods (January 2012) [8]

was necessary to understand the evaluation process; the generic assessment criteria and the assessment criteria for the Unit of Assessment 34: Art and Design: History, Practice and Theory. As both are long

documents, (63 and 106 pages respectively), the sections concerning the evaluation of design research were selected for analysis, that is generic criteria and criteria specific to UOA 34. These were dispersed throughout both documents. Page locations will be referred to in the analysis.

4 DISCURSIVE PRACTICE

The network of practices which shape the representation and evaluation of research in the public sphere include;

• Government and party politics, public information documents and public relations documents e.g. political manifestos, speeches, reports, leaflets, posters.

• UK Higher Education funding bodies, public information and public relation documents, e.g. websites, leaflets, reports, press releases, posters.

• Mass media, e.g. television, newspapers, websites, posters.

• UK Universities public information and public relation documents and research and education material, e.g. web sites, prospectus, advertisements, academic papers, lectures.

The REF 2014 documents inform and provide evidence for claims made by these four spheres of influence and associated stakeholders regarding the nature and quality of research in the UK. It is a resource for producing further reports and texts as outlined above. By referring to the UK REF 2014, these stakeholders can demonstrate the benefits of public investment in research, account for their position and the quality of their work and in the case of universities, bench mark their research relative to that of others. This is an indication of the significance of research evaluation exercises for all the stakeholders. It also indicates the importance of securing a positive assessment result for the progressive development of research in emerging niche areas such as design. Poor assessment outcomes in these exercises will impact negatively on research funding, research development, public perceptions and ultimately the nature of education provision.

Accountability and public relations are important in many of the discursive practices listed above which influence how research is represented. The Higher Education Funding Council for England (HEFCE) operates within this realm as indicated by the REF 2014 home page statement [1] that "the funding bodies intend to use the assessment outcomes to… provide accountability for public investment." This is due to the commercial environment education operates in. For example, Bloor and Bloor describe how UK universities have been pressured to operate like commercial companies, competing with each other for business since the 1980s [4]. Within this arena, there is considerable pressure to generate research income. The long established research tradition of science with its claims to truth and its explicit and universally understood demonstration of rigor, reliability and validity help provide predictable accountability for much of the communications in these practices. For example, internationally much of research assessment has an "inbuilt bias in favour of hard sciences and bio sciences" [9]. This bias is partly due to dependence on bibliographic databases of peer reviewed journals, such as Thomson Reuters Web of Science and Elsevier's Scopus, as an empirical basis for research assessment. These are prime vehicles for knowledge dissemination in the natural sciences, medical sciences and life sciences. This is to detriment of disciplines with more disparate publication cultures and varied research outputs, such as the creative arts [9].

There is a presupposition within the documents that the configuration and funding of research should mirror the organization of a market system. For example, research in this document assimilates the characteristics of a commodity in a market or a competitor in a competition. The research that can best prove its worth within the given framework wins. Academic freedom to select and manage research agendas is being restrained by these market values. The home page of the REF 2014[1] outlines how "The REF is a process of expert review… the funding bodies intend to use the assessment outcomes to inform the selective allocation of their research funding." Within the REF 2014, 'quality research' as defined by the REF is awarded greater funding. Competitive language is a significant property of this discourse. There is competition between government parties for votes, funding bodies for validation, UK universities for funding and students, even the media for readership. To compete, it is necessary to compare like with like, to quantify the outputs. There is an element of cost benefit analysis. This process is referred to on the home page "Sub- panels will apply a set of generic assessment criteria and level definitions, to produce an overall quality profile for each submission". [1] The complexity of funding evaluation exercises and the necessity of producing metrics to evaluate research for the purposes of funding can lead to the use of a more quantitative metric (for example citations or research income) which may fail to identify and value more qualitative and contextual research. Traditional

research approaches are easier to quantify and compare than the more interpretative or practice based research approaches. Also new or emerging research disciplines or departments are at an immediate disadvantage when seeking funding based on past successes. Given the breath and diversity of the research submitted, it is questionable whether it is possible to evaluate, compare and subsequently award research in a fair and equitable manner. It is probable also that the evaluation criteria will have an influence on how future research is conducted if the researcher hopes to attain funding from this source. To quote Ken Robinson in a government paper on supporting creativity, culture and education for young people;

> "The understandable tendency …. is to respond to what the assessment system values most: and for education as a whole to fulfil MacNamara's Fallacy: 'the tendency to make the measurable important rather than the important measurable" [10].

This may not be the intention of research assessment exercises but it may well be an effect.

5   ANALYZING THE TEXT

The primary genre is that of public information document. The REF is a complex system for assessing the quality of research in the UK, by the four UK higher education funding bodies, in order to allocate research funding to universities, from 2015 – 16.

The home page of the REF 2014[1] takes the form of a public information leaflet outlining the purpose and form of the REF. While factual in nature it also has promotional elements. The change of title from 'Research Assessment Exercise' (RAE) [11] to 'Research Excellence Framework' REF may be indicative of the commercial and subsequent promotional requirements of these organisations. It clearly indicates that it will be used for "allocation of funding, accountability for public investment in research and to establish reputational yardsticks" [1]. The homepage page also implicitly promotes and provides evidence for the continued existence of these public bodies. The continued use of the words, excellence, quality and expert imply that the document, the assessment framework, the funding bodies and those allocated funding both value and share these characteristics. In terms of vocabulary, the metaphors used on the home page and throughout the document are consistently chosen from the lexical fields of accounting and bookkeeping "accountability" [1], engineering and land surveying "bench marking, reputational yard sticks" [1] and policing "evidence" [1] reinforcing the themes of quantification and policing within the document.

Research funding exercises play a vital role in supporting and enriching research development in higher education. It is important to consider carefully the impact of the funding model adopted on all research areas and also to consider alternatives. There was a consultation process in the development of the REF 2014 in an effort to attend to the criticism of the previous RAE [11], some of which have been addressed. The previous model, RAE was criticised by Frayling in an art and design research context

> "as a threat to a distinctive pedagogical tradition that involves: …studio or workshop based teaching, an emphasis on tacit knowledge, a focus on individual student projects … rather than on a generalised curriculum, and above all an iterative approach to learning; an action based mixture of the conceptual recognition of problems and their resolution in the form of tangible things…". [12]

The impact of the REF 2014 is yet to be seen but perhaps a more vigorous public debate which takes a step back and considers a range of approaches to research funding and support at foundation level would be useful. Analysis of the REF 2014 documentation creates a less nuanced picture and the previous acknowledgement during the consultation process of possible negative impacts is absent. Grammatically, the document is authoritative and unquestionable in its modality demonstrated by the use of declarative statements such as "will replace", "will apply" and "will be assessed".[1] The implicit message in the documentation is that this is the 'common sense' and 'expert' process of publically funding research. Contributing to altering and possibly fixing this common-sense understanding of how research could be funded and evaluated is the process of nominalisation. Fairclough cited in Lim [13] outlines how

> "nominalisations work to obscure important elements of processes. By expressing a process as a noun, as if it were an entity, crucial aspects of the process may be left unspecified, but tacitly assumed as self-evident and straightforwardly commonsensical" [13].

For example, on the home page of the REF 2014, [1] the process of planning and designing the assessment is absent when it is referred to as "the assessment". This is evident again on the home page

where, the people involved in making decisions about research quality are nominalised. "The REF is a process of 'expert review". [1] Here the agent is removed. The process is depersonalized. This has the dual effect of removing both the decision making process, its rationale and the personalities involved from our reading of the document. Ideologically, the implicit message in the document is that a diverse range of academic research should and can be assessed fairly, and that this is the 'common sense' and 'expert' process of publically funding research, References to other mechanisms for funding research which may value more intuitive or empathic forms of research are absent.

The REF 2014 assessment exercise is essentially a reducing process. For the purpose of evaluation, each research submission is reduced to an "assessment outcome" and "a starred quality profile" [7] (pp.43). This is to enable selective allocation of research funding and to provide "benchmarking information and establish reputational yardsticks" [1]. It follows a quantitative procedure of breaking the research down into discrete parts, assessing them individually and calculating the results. These are artificial divisions which decontextualize and fragment the research process and may fail to recognise and value more applied contextual research [7] (pp.43).

The most significant change in the development of the REF 2014 from the RAE 2008[11] has been the introduction of an explicit element to assess the impact of research [7] (pp.44). As outlined in REF 01. 2011, this

"reflects policy aims across the four UK funding bodies to maintain and improve the achievements of the higher education sector, both in undertaking excellent research and in building on this research to achieve demonstrable benefits to the wider economy and society." [14] (pp.3).

This is a valuable research outcome worthy of recognition. However, it is assessed via a 'case study' which imposes a particular research framework. This increases the pressure on academics to address external prerequisites to gaining research funding and subsequently reduces agency freedom in their research methodologies.

5.1 Representation and Evaluation of Product Design Research

The representation of product design research is limited; there is mention of "product design" and "interdisciplinary research" in the UOA 34 discipline listings along with a mention of "designs and exhibitions" but these are only listings and representation is defined by association with the other creative disciplines listed [8] (pp.82). In terms of evaluation, product design research is evaluated by main panel D and its sub panel UOA 34 according to the generic criteria for assessing submissions, as long as it adheres to the generic definition of research as defined in Annex C "as a process of investigation leading to new insights, effectively shared" [7] (pp.48). This is an open and inclusive definition of research. The document does not at any point attempt to define product design research. It does give examples of possible outputs, "designs and exhibitions" [8] (pp.85) being one of them and it provides an overall interpretation of the assessment criteria for the panel D which again seems quite flexible and based on expert review. The document states that panels will "aim to identify excellence wherever they can find it" [8] (pp.79). It is a system of expert review which affords an element of flexibility within the system but also requires a 'leap of faith' to be made by design researchers when submitting their research. On reflection, product design research has a very small voice in the REF 2014 and its assessment is dependent upon the interpretation of the reviewers, within a quantitative assessment framework.

6 SOCIAL PRACTICE

Research assessment exercises such as the REF 2014 are part of a broader neo-liberal project in higher education where, following the argument of Bourdieu in Fairclough, social practice and discourse is being restructured "in accord with the demands of unrestrained global capitalism" [2]. This is changing research and educational practice in universities. Researchers are required to be increasingly strategic, organizing their research and educational practice to align favourably with the assessment criteria of research evaluation exercises. Concerns have been expressed by a number of authors on the impact this has on academic freedom and original research [9], [15]. Marginson's nuanced description outlines how,

"The argument is not that neo-liberalism suppresses academic freedoms, but that it channels and limits academic freedoms. We are not robbed of agency per se, but we are robbed of

certain forms of agency that arguably are vital to creators of academic knowledge in universities" [15].

For product design research, the impact may be particularly significant as CDA reveals that the discourse and research values of product design are poorly represented in the REF 2014. This indicates a conflict exists between the representation and evaluation of research in the discourse of the REF 2014 and in the discourse of product design. This conflict highlights the challenge for product designers to attain research funding in these exercises and the pressure it places on them to modify their research practice in accordance with the values expressed in the REF 2014.

7 CONCLUSION

This CDA of the REF 2014 illustrates the wider social and cultural structures which are influencing the representation, evaluation and continued evolution of product design research. The findings contribute to our understanding of these mechanisms and processes and this is important if we are to influence change. As product design is not part of the dominant discourse within the document, it may impact on its positive recognition and subsequent evaluation. While the REF 2014 provides little definition of design research and excellence in design research output, it may still have a significant impact on product design research and education practice. The findings suggest exercises, such as REF 2014, designed to support research need to be developed with care and to consider intended and unintended impacts they may have on research and education practice.

REFERENCES

[1] Higher Education Funding Council for England, *REF 2014 Research Excellence Framework.* Available: http://www.ref.ac.uk [Accessed on 2014, 24 February], (2012).

[2] Fairclough N., *Critical Discourse Analysis The Critical Study of Languge*. 2010 (Routledge: New York).

[3] Faculty of Engineering Technology of the University of Twente, *The 16th International Conference on Engineering and Product Design Education; Design Education & Human Technology Relations*. Available: http://www.iepde.org/epde14 [Accessed on 2014, 30 April], (2013)

[4] Bloor M.and Bloor T., *The Practice of Critical Discourse Analysis*. 2007 (London: Hodder Education).

[5] Wetherell M., Taylor S., Yates S.J., *Discourse Theory and Practice*. 2001 (London: SAGE Publications Ltd).

[6] Lai Y.and Vadeboncoeur J. The discourse of parent involvment in special education: A critical analysis linking policy documents to the experiences of mothers. *Educational Policy*, 2012, 27(6) pp. 867-897.

[7] REF 02.2011 Assessment framework and guidance on submissions (July 2011). Available: http://www.ref.ac.uk [Accessed on 2014, 24 February], (2012).

[8] REF 01.2012 Panel Criteria and working methods (January 2012). Available: http://www.ref.ac.uk [Accessed on 2014, 24 February], (2012).

[9] Higher Education Authority, *Towards a Performance Evaluative Framework: Profiling Irish Higher Education*. 2013 (Higher Education Authority, Ireland)

[10] National Advisory Committee on Creative and Cultural Education *All Our Futures: Creativity,Culture and Education* 1999 (Department of Education and Employment, Department of Media and Sport, UK)

[11] Higher Education Funding Council for England, *RAE 2008 Research Assessment Exercise.* Available: http://www.rae.ac.uk [Accessed on 2014, 24 February]

[12] Prentice, R. The Place of Practical Knowledge in Research in Art and Design Education. *Teaching in Higher Education*, 2000, 5(4) pp. 521-534.

[13] Lim L. Ideology, rationality and reproduction in education: a critical discourse analysis. *Discourse: Studies in the Cultural Politics of Education,* 2014. 35(1) pp. 61-76.

[14] REF 01.2011 Decisions on assessing research impact (March 2011). Available: http://www.ref.ac.uk [Accessed on 2014, 24 February], (2012).

[15] Marginson S. Are neo-liberal reforms friendly to academic freedom and creativity? In *Ideas and Issues in Higher Education*. 2007, Centre for the Study of Higher Education, The University of Melbourne.