The problem of projects: reconceptualising the use of Project-based Learning in Media Practice Education

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ABSTRACT

The study set out to investigate the use of project-based learning as a pedagogy in creative and media practice education courses In UK Higher Education. It aims to evaluate the role project-based learning plays in stimulating the development of capabilities for critical thinking, problem solving, creativity, innovation and job-ready-ness. The study begins with an interdisciplinary evaluation of the *situatedness of media practice* that draws on notions of *expertise* and the use of *service learning* as a means of drawing *real world learning* into the curriculum. It then develops a philosophical reflection on the *stance taken* by students when undertaking project work, focusing on the recontextualisation that occurs when moving from the domain of professional project working to that of the education. There then follows a genealogical account of the concept of a project that argues for a shift away from *models of management* to *models of practice* and which posits a range of *ontological modalities* for project working; *doing, being and becoming*. The study argues that a becoming mode, in which the transformation of the subject is the primary goal, offers an experientially led account of project-based learning. Recognising that *problems are the motor of projects* the study concludes by drawing on participatory cartography as a visual research methodology in order to represent problem solving as a *topological metaphor*. In doing so the study was able to identify an important barrier to innovation among students engaged in creative project work, that of *functional fixedness*. The study concludes that a recognition of the unique ontological characteristics of project-based learning as social practice provides educators with a theoretical underpinning and an *optimum* or *sufficient methodology* for the use of project-based learning within a higher education.

Word Count: 282

CONTENTS

1. DECLARATION

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award'.

Commentary Word Count: 55,817

2. LIST OF TABLES

3. LIST OF FIGURES

4. ABREVIATIONS

UK, United Kingdom, ch11, p14.

VRM, visual research methods, ch14, p36.

CETL, Centre for Excellence in Teaching and Learning, ch11, p48.

DVD, Digital Versatile Disc, ch11, p53.

PID, project initiation document, ch11, p59.

WBS, work breakdown structures, ch11, p59.

SWOT, strengths, weaknesses, opportunities, threats, ch11, p60.

B2B, business to business, ch11, p61.

B2C, business to consumer, ch11, p63.

PjBL, project-based learning, ch12, p71.

NSS, national student survey, ch12, p77.

NOS, national occupational standards, ch12, p81.

CPM, critical path method, ch13, p111.

PERT, Program Evaluation Review Technique, ch13, p112.

PMI, Project Management Institute, ch13, p112.

PMBOK, Project Management Body of Knowledge, ch13, p112.

PRINCE, Projects In Controlled Environments, ch13, p112.

PRINCE2, Projects In Controlled Environments 2, ch13, p112.

APM, Agile Project Management, ch13, p117.

OS, Ordinance Survey, ch14, p127.

L6, Level Six, ch14, p136.

BA, Bachelor of Arts, ch14, p136.

L4, Level Four, ch10, p38.

RIT, Research Informed Teaching, ch16, p193.

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6. DISSEMINATION

Journal Publications

Hanney, R. & Skirkaviciute, G. (2019). 'Reflection, identity, community - affordances of blogging for social interaction and reflective dialogue', *Education and Information Technologies*, (), 1-17.

Hanney, R. (2018), 'Doing, being, becoming: a historical appraisal of the modalities of project-based learning', *Teaching in Higher Education*, 23: 6, pp. 769-783.

Hanney, R. (2018), 'Problem topology: using cartography to explore problem solving in student-led group projects', *International Journal of Research and Method in Education*, pp. 1-22.

Hanney, R. (2016), 'Taking a stance: resistance, faking and Muddling Through', *Journal of Media Practice* 17: 1, pp.4-20.

Hanney, R. (2013), 'Towards a situated media practice: Reflections on the implementation of project-led problem-based learning', *Journal of Media Practice* 14: 1, pp.43-59.

Conference Papers

Hanney, R. (2018), "Reflection, identity, community - affordances of blogging for social interaction and reflective dialogue", *Solent Learning & Teaching Institute Community Conference*, Solent University, Southampton.

Hanney, R. (2017), "Blogging for early engagement", *Solent Learning & Teaching Institute Community Conference*, Solent University, Southampton.

Hanney, R. (2016), 'Doing, Being, Becoming: a critical and historical appraisal of the modalities of project-based learning', *Media Education Summit*, John Cabot University, Boston.

Hanney, R. (2015), 'Taking a Stance: Resistance, Faking & Muddling Through', *Media Education Summit*, Emerson College, Boston.

Hanney, R. (2015), 'Taking a Stance: Resistance, Faking & Muddling Through', *Journal of Media Practice Symposium*, University of Aberystwyth.

Poster Presentations

Hanney, R. (2015), 'Taking a Stance: Resistance, Faking & Muddling Through', *Learning & Teaching Symposium*, Southampton Solent University.

7. GENERAL INTRODUCTION

Introduction

This particular journey started when I translocated from working as a freelancer in the film and television industry and took what was initially a temporary position at London College of Communication in the Media School, which was at that time located in Back Hill, Central London. It seemed clear to me, having come from a fast-paced high pressure working environment to an educational one, that there was a disconnect between how the industry and its practices were conceived and the ways in which this perception was embodied within teaching practices that aimed to mirror professional practice in the curriculum. In particular, I observed the ways in which the curriculum was organised around projects; a means of organising work which had some familiarity for me, as the film and TV industry is a conglomeration of project orientated enterprises (Finney 2008, Peterson 2014) and work is largely structured around projects (though in the industry they are referred to as productions).

What I observed though, was that students don't do projects the way they are done in industry. In fact, it seemed to me that students were wholly unprepared for project working and that their projects regularly failed, often catastrophically. I started to ask questions about why this might be and to ruminate upon the nature of projects and the ways in which media practice educators utilise projects as a means for teaching professional and vocational media production skills. I began by asking what is a project, why are projects used and how best might students be supported when doing projects.

Rationale

Project-based enterprises are the dominating model for business working in the field of creative and media practice (Peterson 2014; Finney 2008). The use of projects, sometimes referred to as productions in some sectors of the industry, is almost synonymous with the making of media artefacts (Whyte et al. 2008, 77), though companies, sub sectors and specialist areas of production might employ their own unique approach to managing the delivery of projects. Consequently, it is possible to think about media production as an industrial practice that is uniquely differentiated from other methods of production as found in other creative sectors, such as the newspaper industry in which the daily production schedule 'stresses continuity more than discontinuity' (Lundin 2009, 3). For those media workers who engage in project work the particular nature of the organisational structure within which they are engaged may be so 'taken-for-granted' (Lundin 2009, 2) as to be invisible to those participating. That is not to say these workers are not aware they are doing projects; it is more that they are not necessary consciously engaged in evaluating their own practices. Instead, these practices form part of the tacit cultural landscape that materialises around media making. Lundin (2009, 2) suggests that projects are a manifestation of the 'industrial wisdom' of media practice— that for practitioner's projects are invisible extensions of their own presence within the world of work and cannot be separated from their own self-identity as a professional practitioner. In other words, media workers conceptually model what they do as project work, almost like a badge of honour.

In media practice education, educators take great pains to mirror the kinds of models of professional practice they observe in the industrial context. These models are then mapped onto the curriculum, aided by the modularisation (or projectification) of the

university curriculum. This results in the adoption of projects as a means of conceptualising the doing of practice within a curriculum. It appears, on the face of it, to work; the industry does projects, projects sit easily within a modular curriculum framework, and media educators do projects with students. As such, it is difficult to conceive of media education as anything other than thoroughly projectified. This is in antithesis to, for arguments sake, a subject like History, where for the sake of an example, you may well find projects employed in a professional and industrial context but businesses working in this area unlikely to be project-based enterprises. It is also possible to conceive of a history curriculum that doesn't include any project working at all. Educators working within such a subject discipline may choose to select to do projects from a broad range of pedagogical approaches in order to address specific educational needs. Conversely, in media practice education, educators don't get to choose to do projects. It is in the very nature of media practice to do projects. It cannot be avoided. Usefully for educators, projects fit easily into the time-delineated structures of academic life. They produce the kinds of outputs that can be easily measured or assessed e.g. a media artefact. It is assumed that doing projects mirrors the real-world practices of media production and contributes to the development of 'job-ready' graduates. Consequently, it is thought that doing projects constitutes an authentic media practice curriculum (Barab & Duffy 2012).

There are two aspects to this use of projects which emerges as a kind of double hermeneutic, to misuse a concept proposed by Giddens (1987). It appears that projects are being used in education to teach the doing of projects in the professional realm. The difficulty here centres around the fact that these two practices, doing projects in education and doing projects in industry, are entirely different discourses in entirely different cultural contexts. Trying to tease the two sides of this dichotomy apart is complex but necessary.

The tension between the practice of projects in the professional realm and the doing of projects within an academic setting. Sets up a series of challenges for anyone who wishes to theorise a pedagogic basis for the use of projects as a learning and teaching methodology. Yet the literature is scarce on the subject and outside of the fields of engineering (cf. de Graaff & Kolmos 2007) there has been very little research undertaken on the use of projects in Higher Education and almost none in the field of media practice education, bar one significant study into the pedagogy of screenwriting (Colwell 2014). Even within the subject discipline of project management there is wide and disparate debate about the nature of projects, and even the definition of the term *project* is much disputed (cf. Hodgson & Cicmil 2006). A general search on the topic of the use of projects and project-based learning in education will quickly reveal that the subject area is under-theorised. A number of meta studies undertaken by researchers would seem to support this claim. For example; an evaluation of the pedagogical benefits of project-based learning by Helle, Tynjälä, and Olkinuora (2006), suggests that the literature tends towards advice on how to deliver project-based learning activities rather than offering a critical and theoretical perspective. What is presented could be thought of as a conception of project-based learning as an *administrative container* for learning rather than an explanation of the ways in which learning occurs. In another example; a recent review of enterprise initiatives within UK universities (Goode, Jackson & Molesworth 2014) looked at the range of provision of Live Projects[1] within the sector and makes useful comparisons between approaches taken by

[1] A Live Project has a real client, with a real business need, who sets a brief which students undertake to deliver. This is thought to provide a degree of authenticity or 'real-world-ness' for student projects.

differing universities. Usefully, the study identifies a deficiency of research in support of the use of Live Projects as a pedagogy and it questions the lack of evaluation of pedagogic issues as well as the ways in which learning on Live Projects connects between the world of work and the university experience. In yet another study, investigating disappointing responses in the National Student Survey for the subject area of Art and Design, the researchers identified a general belief among educators within the field that there has been an 'inadequate level of subject-specific pedagogic research' (Vaughan & Yorke 2009, 19). The study concludes that there is a need to develop a pedagogic understanding of the learning and teaching philosophy underpinning the subject and calls for more research into the field of Arts, Design and related disciplines.

Clearly then, if educators are to use projects as a purposeful teaching methodology then they should be able to do more than define the tools that are used to deliver a project or describe the process of delivering project-based learning. It should be possible to integrate theories of learning into the practice of doing projects in a way that opens up the student experience to pedagogic inquiry. It is argued in this study that there is then a very real need to analyse the experience of students participating in projects; re-theorise the use of projects as a pedagogy of project-based learning; and develop a theoretical model for the use of project-based learning in media practice education. Otherwise, project-based learning is surely no more than an *administrative container* for structuring learning activities that has little pedagogic value in its own right. Furthermore, this lack of pedagogic theorising calls into question the very authenticity that is claimed by educators for the doing of projects in media practice education. So, it would seem that there is still much work to be done if educators wish to properly understand 'what it is we do when we do this thing called a project' (Hodgson & Cicmil 2006, 32).

8. FRAMEWORKS

Rethinking Project Management

Many of the classical texts on project management begin with the assumption that projects are a historical phenomenon, citing examples such as the pyramids (cf. Nicholas 2004, Shenhar & Dvir 2007), the Great Wall of China, the Tower of Babel, or even the act of Creation itself (cf. Morris 1994) as evidence of the historicity of this concept. There is though, no historical evidence to support such claims and it is unlikely that these ancient peoples' employed the kinds of models of organisational control that would today be recognised as project management. In fact, the term is believed to have first originated in an article in the Harvard Business Review in 1959 (Winter et al. 2006, 3) reflecting a then emerging sub discipline of organisational studies which concerned itself with the adoption of newly formulated tools for the optimisation of organisational process (Bredillet 2010, 4). The classical view of a *project as a temporary endeavour undertaken to create a unique product, service or result* (Project Management Institute) is further codified through the development of professional bodies and institutionalised frameworks during the 1960s. During this period, we also see the arrival of large-scale project methodologies such as the *Project Management Body of Knowledge*[2]*,* which was developed by the Association of Project Managers. Along with *Projects in a Controlled Environment 2*[3]*,* which was developed by the UK government. The main focus of these approaches was to provide a normative

[2] https://www.pmi.org/pmbok-guide-standards

[3] https://www.axelos.com/best-practice-solutions/prince2

framework for managing task orientated activities within a directed command and control hierarchy (Winter et al. 2006). With the particular goal of delivering organisational benefit. A project is formulated by these systems approaches as an instrumental tool for managing project process and the metaphor for this methodology is that of a 'machine that requires optimisation' (Svejvig & Andersen 2015, 280); the main focus for which is the execution of a task.

Around the turn of the millennium, a number of researchers in the field of project studies began to re-evaluate the way in which projects were conceptualised in order to 'better account for project phenomena' (Floricel et al. 2014, 1091). By redirecting their accounts away from the instrumental towards the social, they aimed to develop a deeper understanding of the nature of projects and project organisations. This became known as the Scandinavian School within the literature on the subject (cf. Lundin & Söderholm 1995, Packendorff 1995, Sahlin-Anderson & Soderholm 2002). Instead of orientating themselves towards a positivist or functionalist conception of projects aimed at the optimization of performance, they begin to present projects as a 'lived experience' (Floricel et al. 2014, 1094). Thus, scholars in the field begin to reflect on the lived reality of what it is to do projects leading to a recognition of a project as *a temporary organisation established by its base organisation to carry out an assignment on its behalf* (Packendorff 1995). The main focus for which is value creation i.e. to create a desirable development in another organisation (Winter et al. 2006). Figure (1) sets out some key contrasts between the two views of a project. Of interest here, given the context of the study, is the shift away from *executability* towards *learnability* as a philosophical framework. This is a key distinction that informed the theoretical perspective of the research undertaken into project-based learning. This is important because it begins to offer a way of thinking about how the siting

or location of a project (i.e. in industry or in education), might impact on the way those applying the use of projects. Particularly in a pedagogic context, it might beneficial to think about the nature of projects as a concept. However, while the rethinking projects view 'reflects a broader and more holistic perspective in which projects might be conceptualised as temporary organisations' (Svejvig & Andersen 2015, 280) it is important to recognise that this new concept builds in a pluralistic way on what has gone before and sees the classical tradition as embedded within the rethinking approach. That is to say, while there are of course benefits to those doing projects in the adoption of the instruments, tools and concepts drawn from the classical approach, to do so uncritically renders only a partial theorising of what it is to do a project (Hodgson & Cicmil 2006, 32).

Classical Project Management	- vs -	**Rethinking Project Management**
Executability, simplicity, temporarity, linearity, controllability and instrumentality.		Learnability, multiplicity, temporarity, non-linearity, complexity, uncertainty and sociability.

Table 1: contrasting views of a project adapted from Svejvig & Andersen (2015, 280)

The Critical Projects Movement

The launch of an ongoing series of symposiums entitled *Making Projects Critical* in 2003 heralds the arrival of a platform for divergent critical perspectives that offer alternative viewpoints on projects. The symposium led to the publication of a key text in the literature and, in 2009, to the publication of a special issue of *Ephemera* (Cicmil et al. 2009), further developing this school of socio-political critique and the re-imagining of projects.

Thus, the *Critical Projects Movement* emerged as a response to the need to draw upon ever more interdisciplinary resources in order to counter what is conceived as the techno-rationalism of the positivist view of projects (Cicmil et al. 2009, 6). The movement critiques traditional assumptions made about project methods including the idea that they are 'compelling and essentially sound' (Hodgeson & Cicmil 2008, 145), suggesting instead that there is an increasing body of evidence to suggest that these are anything but sound. They argue that the focus on tools and techniques doesn't allow for a critique of politics, power and the historically embedded nature of projects (Cicmil et al. 2009).

Instead the *Critical Projects Movement* sets a new agenda that draws upon a 'wider and more critical intellectual resources than the instrumental rationality, quantitative and positivist methodologies and technicist solutions which have been traditionally brought to bear in attempts to understand and control the project form of organising' (Cicmil et al. 2009, 86). For example, Winter (et al. 2006) questions a dominant assumption in project management studies that the model of project life cycle should be the primary object of study. Such an assumption results in an emphasis on the creation of a *product* rather than creation of *value* (Winter et al. 2006, 699-700) and the benefit of a project to the different groups of project stakeholders (including the participants). This shifting of attention away from product to value is of key interest for this study since, as it will be argued in the results of the study, in project-based learning, the final output (i.e. product) is a consequence of the doing (i.e. value) of a project. In other words: it is the experience of doing a project not the final artefact that drives learning. Winter (et al. 2006) goes on to argue that our theories are only ever partial and that the complexity of a project is such that often our models and theories fail to acknowledge this. It is the acknowledgement of this complexity and the need

to theorise it adequately that has led to the study presented here and the results that follow.

Projects as Practice

This reimagining of projects as a *lived experience* gives primacy to an *interpretivist* or *relativist* ontological account (Lewis 2013, 14) of projects over those with a concern for codified, normative models of management. The rejection of what might be thought of as an *empirical realist ontology* (Lewis 2013, 14) allows for the investigation to recognise the situated nature of projects as a form of social practice that is subject to continual change. Following Linehan and Kavanagh (2006, 55) it might be possible to begin to think of a project as an emergent or 'becoming ontology'. A *becoming ontology* embraces the *Heraclitean* notion of the world as chaotic and ever unfolding and stands in contrast to a *Parmenidean*, *being ontology,* which embodies instrumental, regulatory principles for structuring experience (cf. Hanney 2018a, 11). Again, a differentiation is posited between the metaphorisation of a project as a *machine* to a project as a *practice* (Gauthier & Ika 2012, 15), in other words a shift between models of organisation and models of practice. What is seen here is that the *Critical Projects Movement* challenges our understanding of projects and project management by highlighting alternative perspectives. Linehan and Kavanagh argue that rather than take a singular point of view about projects it is 'better to think of a project first as a language and second as a practice' (Linehan & Kavanagh 2006, 55). Thus, the shift from a *realist* to a *relativist* ontological account of projects mirrors the 'practice turn' in sociology (Blomquist et al. 2010, 9) and offers a view of projects as a socially constructed enterprise that places human agency at the heart of any meaningful enquiry into the subject.

It is argued that the relationship between structure and agency is a dialectical one and both Giddens (1984) and Bourdieu (1988) identify the mutually constitutive relationship between structure and agency (Seo & Creed 2002, 223). Suggesting that tensions between structural elements within social relations (contradictions), have the effect of empowering social actors to become 'change agents' (Seo & Creed 2002, 223). In fact, Bloomquist goes further (et al. 2010, 7) and, following Bourdieu (1990), argues the relationship between structure and agency is a causal one. For these scholars, agency is understood as a form of praxis or in other words: as any 'action embedded in a historical system' (Seo & Creed 2002, 223), that comes about as a result of the 'ruptures and inconsistencies within social relations' (Seo & Creed 2002, 225). Enabling social actors to engage in a restructuring of social relations within which they are embedded. For Bourdieu (1984) an investigation of praxis includes a study of what is done, as well as the situatedness of action within a social milieu. For the study presented here, a *becoming* ontology is one in which the social actor is engaged in an unfolding act of transformation. It is this act of transformation, as the results within the articles will argue, that should be at the heart of any theoretical underpinning of project-based learning.

From the position of a *becoming* or relativist ontology, it should be possible to formulate a series of key principles for researching *projects-as-practice*. Blomquist (et al. 2010, 13) presents just such a set of principles suggesting that the research should focus on:

- what is done and from there develop an understanding of wider contexts i.e. research is practitioner focused and moves from interior to exterior.
- the practice rather than on models of management such that the reasons for taking actions are made central e.g. how do people actually solve problems.

- the dynamics of communities of practitioners within organisations and the ways these overlap with other organisational communities.
- the interaction between local/global and exterior/interior factors in order to understand how these factors influence practice.
- the entanglement and intertwining of communities and practices in order to understand the situatedness of practice.

Taking these principles as a starting point, the results of the study take the form of a series of scholarly articles that have already been published in peer reviewed academic journals. As well as presenting these published articles in their entirety, the purpose of this thesis document is to show how the different findings fit together in order to advance an understanding of project-based learning. The study echoes Bredillet's (2010, 6) contribution to the debate on project management arguing 'that to develop a sound theoretical basis for project management, the very nature of projects needs to be examined' through a transposition of the reimagining of projects within organisational studies described above, to the realm of media practice education. The articles that emerge from the study present an argument for reconceptualising *project-based learning* as a pedagogy for practice-based learning not as a model for management of learning.

9. STUDY DESIGN AND METHODS

Research question, aims and objectives

Inspired by the work of the *Critical Projects Movement* the study seeks to ask questions about the nature of projects and explores the value of project-based learning as a

pedagogic practice within higher education. The study questions the way in which pre-existing understanding of this concept provides a foundation for thinking about project-based learning. In particular, the study asks: '*how might reconceptualising project-based learning inform the pedagogy of media practice education*'.

In order to address this question, the study aimed to evaluate the use of project-based learning in media practice education within one higher education institution based in the United Kingdom and:

1. evaluate the *theoretical underpinnings* for the use of project-based learning as a pedagogy in the context of higher education;
2. undertake an in-depth, student-focused appraisal of the experience of participating in project-based learning on *creative and media practice education courses*;
3. evaluate the role project-based learning plays in *stimulating the development* of capabilities for critical thinking, problem solving, creativity, innovation and job-readiness;
4. develop an *optimum or sufficient methodology* for the use of project-based learning in media practice education that is driven by a *real use value* for students, media practice educators, business clients and higher education institutions.

The objectives for the study included:

a. produce four journal articles of a publishable quality that address the study's key aims;

b. undertake an in-depth analysis of the student experience of participation in projects employing an innovative research methodology;
c. widely disseminate the results of study through journal publications and conference presentations;
d. reflect on the findings of the study and feed this new understanding into future course and curriculum development.

Scope of the study

It should be noted that there are necessary limits to the scope of this study and in particular I would like to address the issue of group/team working and its relationship to project-based learning. It is recognised that group/team working and collaboration is an essential part of the process of creative project working (Pitt 2000). Not only is group/team working a fundamental component of project work it is a key employability skill that is highly prized by employers. However, group/team working within the context of higher education is a complex topic riven by dissenting views, competing tensions and also, especially in the field of media practice education, under-theorised.

Pitt (2000) notes that despite the widespread adoption of group/team working within higher education there are fundamental problems associated with this approach. For example, he cites the case of students who 'may be unwilling or unable to act as teams' (Pitt 2000, 233). Furthermore, for students' group membership is often perceived to have been forced upon them, while there may also be an unevenness in relation to complexity and effort between teams. Other factors such as: social loafing, free riding, dominating, scapegoating, bullying or other problematic behaviours have been observed to occur within student groups/teams —all of which present a set of complex, challenging and often

intractable problems for educators and students alike (cf. Bussmann & Schweighofer 2014, Colbeck, Campbell & Bjorklund 2000, Davies 2009, Ford & Morice 2003, Forsyth 2018, Frykedal & Chiriac 2011). Despite this, the adoption of group/team working is seen as crucial to the development of valuable employability skills and a fundamental aspect of professional workplace culture. However, in many instances models of industry practice are 'un-critically reproduced' (Sabal 2009, 7) within HE contexts as a means of reflecting work place practices. Such an adoption of industry patterns of working ignores the inherent interplay of relations of power that comes with professional roles within industrial settings. Giving rise to a range of issues that are particular to the use of groups/teams within the curriculum.

Sabal (2009) argues that the use of group/team working as a means of developing employability skills also ignores the tacit understanding of role and responsibility that experts carry with them as a result of years of experiential practice. It also overlooks the differential situatedness of practice within the professional domain as compared to that of higher education. The motivations, goals, aims, objectives of group/team members are fundamentally different in each domain, each of which has its own inherent gatekeeping mechanisms that may punish or reward group/team working. Within the HE context there is a sense that students want to take on professional roles that they recognise. Though they may not fully understand the responsibilities that go with it, or the domain-specific knowledge and expertise that is required of the role (Sabal 2009, 8). It is also worth noting that contrary to popular opinion student groups/teams are not a *community of practice* (Lave & Wenger 1991) and consequently the kinds of professional etiquette and courtesy commonly found within professional domains of practice are not modelled for the students.

Consequently, students as novice practitioners are likely to struggle when faced with the requirement to practice as experts (Fletcher-Wood, 2018).

There are also fundamental problems around how to assess an individual's contribution to a group/team. For example, how can tutors assess individual contribution to group/team work when a good deal of the process of undertaking practice is unseen, 'hard to define and essentially impossible to assess fairly' (Sabal 2009, 7). In addition, the grading of work as a group/team effort can often be perceived by students as being unfair (Pitt 2000, 233). If, as argued by Pitt (2000) grading group working 'corrupts' group working and that the process is 'fundamentally unfair' (Pitt 2000, 240), how might it be possible to assess group/team working? Peer assessment and self-evaluation of performance is often presented as one of a range of solutions, but *game theory* suggests that students may benefit unfairly by 'gaming' (Pitt 2000, 237) the presentation of their own or other's performance, often in an extremely unethical manner. The point being made here is that whatever form of assessment is used, students are likely to strategise for the best result and 'the best strategy for students may not be that which promotes teamwork and cooperation' (Pitt 2000, 240). Of course, everybody understands that life *isn't fair* but assessment in HE is expected to be, though when it comes to group working it is difficult to argue that it is (cf. Davies, 2009).

Then there are the seemingly simple, but actually overwhelmingly complex, issues around group/team formation (Hassaskhah & Mozaffari, 2015). For example, if I as a tutor, make the decision to form a group/team then I am perceived by students as responsible for how that group/team performs. The responsibility for experience, and consequently the grade of the individual members of a group/team, is assigned by students to the tutor who put them in that team. This can be a cause of conflict among students and can often result

in negative feedback for tutors. The alternative, self-selection, leads to self-streaming and encourages students to form groups/teams around friendship bonds— which is not necessarily an effective way of forming a group/team— can lead to dishonest presentation of performance and is not always a reflection of professional ways of working. There are also ways of selecting based on capabilities, personal attributes and other factors employing psychometric testing such as offered by *Belbin Self-Perception Inventory* (Belbin 2010). This may have some benefits but is time consuming to manage and requires specialist expertise to administer the selection process. Whichever way groups/teams are formed it is the students that suffer from the failure of the tutor to form an effective team (Pitt 2000, 239). Furthermore, whichever process is used; random, self-selection, ability selection, it will likely produce a spread of outcomes including groups/teams that perform highly effectively, underperform and/or fail completely based on the psychology of its members, thereby disadvantaging students and leading to further conflict (Hassaskhah & Mozaffari, 2015).

Media practice educators may be familiar with the experience of student production groups riven with discord, petty squabbles, bullying, scapegoating, social loafing, free loading, collusion and the formation of cliques. At times the collapse of a group/team is so utterly fraught with emotional stress that it has the potential to impact significantly on the mental health of group/team members. In all of the circumstances above, rightly or wrongly, it is the tutor that shoulders the burden of responsibility as the mentor, coach and effectively project champion —all of which renders the issue of group/team working as a thorny and difficult problem —especially in the field of creative media practice where collaboration and team working are thought of as fundamental by professionals in the field (Sabal 2009). As a consequence, I have ruled group/team working outside of the scope of the current study. This is not to diminish its importance, or to ignore the integral

contribution it makes to project working. Instead, the aim of avoiding a focus on group/team working is purely in order to allow for a focused exploration of the nature of projects from a philosophical and theoretical perspective. Thus, reducing the number of *confounding variables* that would impact on the study. The aim being to return to group working with a renewed and reinvigorated perspective that might lead towards some solutions to the many complexities of group working in media practice education.

Rizhomes, assemblages and lines of flight

As can be seen in the mind map presented below [see figure 1], the initial attempt to find a starting point for the inquiry into the problem of projects encompassed a set of competing tensions, values, beliefs and knowledge sets, many of which are overlapping at times while divergent at others. The mind map is overly complex, it is difficult to know what to do with it and in fact it really doesn't add much clarity or offer much of a starting point. Actually, the mind map isn't even complete, there is much more that could be added; categories, domains, modes, all of which would further subdivide in an endless cascade of overlapping and competing tensions.

Following Deleuze and Guattari (1987), it is possible to think of such an assemblage as an interwoven complex of terrains of thought as an *assemblage* of; things, concepts, ideas, and thoughts, bought together as a signifying totality. An *assemblage* is connected through affinities rather than through any organising principle. In the thinking of Deleuze and Guattari (1987) it is a *body without organs* in that while there is a *plane of consistency* that links the elements of the *assemblage*, the organising principle is effaced, invisible or hidden from view. Instead the elements of an assemblage are constituted *rhizomatically* as a multiplicity of mutually connected relations.

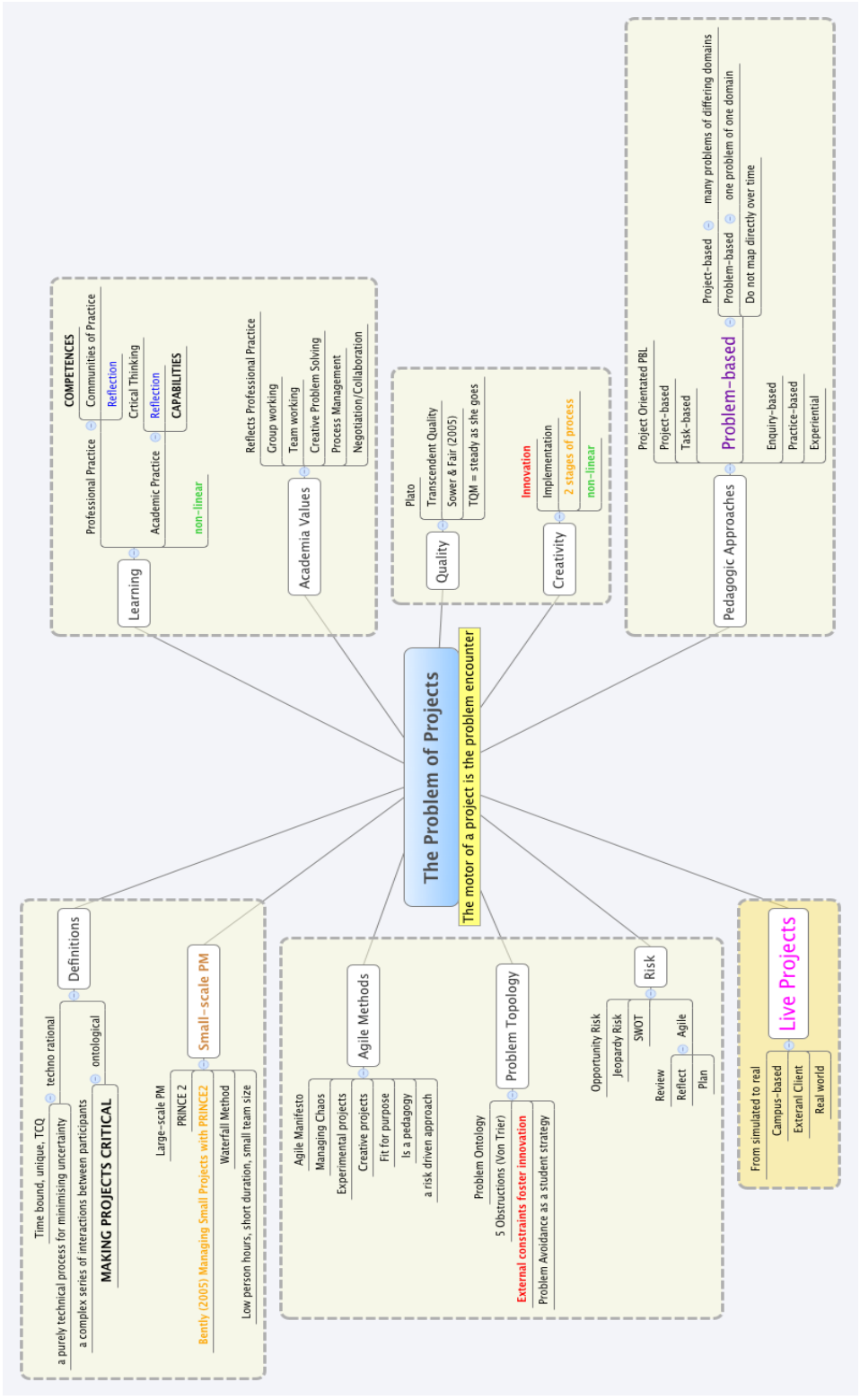


Figure 1: Initial Mind Map

This contrasts with the idea of a field of study as a unified, unique set of causally related ideas that tend towards a conclusion of some sort. It differentiates between an arboreal root-tree structure of knowledge, which is constituted through an authorial,

central guiding principle. As opposed to the rhizomatic structure of knowledge in which *lines of flight* take hold, connecting disparate points and offering the potential for multiple points of view. This positions knowledge as *in* the world rather than *of* the world enabling as it does a consideration of practice, in this case the doing of projects, as an emanation of the embodiment of knowledge.

To examine the field from the exterior is to enter into a structure of relations where there is no beginning, no end, no centre. It is not reducible to one idea, to one domain, mode or conceptual framework. There is, according to Deleuze and Guattari (1987), only movement, directions in motion and changes of state. What Deleuze and Guattari (1987) refer to as *lines of flight* offer the possibility for change, for a reconfiguration or reconceptualisation— to flow through the root like structure of dominating discourses and open them up to re-examination. A *line of flight* is a bridge to a becoming that emerges from this process, one that allows for the connecting of ideas from different domains (cf. Thornton, 2018). At every point of entry into an *assemblage* multiple *lines of flight* emerge and to close them down risks isolating concepts from the signifying totality in which they reside. To lift ideas out of their constitutive milieu is to do them harm and results in a process of de-signification that renders them without meaning. While following those *lines of flight* opens up the interiority of an assemblage to view and offers a vantage point from which the totality can be glimpsed, for a moment, from one point of view. The results of this study are manifest as individual published papers, each representing a different point along a *line of flight*, an eruption of ideas that emerge from an encounter with each point.

10. OUTLINE OF THE FINDINGS OF THE STUDY

Findings 1: Towards a Situated Media Practice: reflections on the implementation of project-led problem-based learning

Hanney, R. (2013), 'Towards a situated media practice: Reflections on the implementation of project-led problem-based learning', *Journal of Media Practice* 14: 1, pp.43-59.

Table 2: Findings 1

Research Questions: What is the relationship between problem-based and project-based learning and how might problem encounters be understood as driving project processes.

Methods: A systematic literature review was undertaken in order to identify and appraise relevant scholarly studies using keyword and subject searches online and via academic library catalogues. The selection, evaluation and discussion of other studies related to the topic under review allowed for a theoretical analysis of the topic area and the synthesis of a range of theoretical positions. The research undertaken in this way allowed for a re-examination of the field and the development of a number of new theoretical positions.

Thematic Links: A range of pedagogic practices were identified including task-based learning, problem-based learning and project-based learning in order to differentiate these approaches as unique, though overlapping, pedagogic practices. The use of Live Projects was introduced as a means of constructing a real-world learning experience and make an argument that problems are the motor for projects. A simple model was formulated for

thinking about the differing problem domains that occur within the project life-cycle and how these might impact on creativity and innovation as a process of discovery.

Summary: The results presented here build on the *Constellation 3* model for *project-orientated problem-based learning* previously developed in conjunction with Professor Savin-Baden (Hanney & Savin-Baden 2013) and set out the notion that it is the drive towards the development of 'capabilities for action' (Hanney 2013, 44) that is key to formulating a project-based pedagogy. An exploration of the use of the *Live Brief* provides a useful context for understanding the intersection between *action-for-professional-practice* and *action-for-learning*. The discussion also develops a two-phase model for conceptualising small-scale-projects dividing a project life-cycle into: an *innovation phase* and an *implementation phase* (adapted from Bentley 2006). The adoption of an Agile Projects approach within this framework reflects the differing nature of the problem encounters within the two stages of a project life-cycle, and the requirement for the application of different pedagogic approaches during the two phases.

Findings 2: Taking a Stance: resistance, faking and 'muddling through'

Hanney, R. (2016), 'Taking a stance: resistance, faking and muddling through', *Journal of Media Practice* 17: 1, pp.4-20.

Table 3: Findings 2

Research Questions: How does the recontextualisation of practice from the professional to a pedagogic environment impact on educators' understanding of how students 'do' projects and whether attempts to mirror professional practice within the

curriculum contribute to a decoupling of educational aims and student approaches to practice-based learning experiences.

Methods: A critical reflection that aims to articulate the researcher's experiences and an unpicking of assumptions that leads to the production of new meaning. The use of critical reflection as a research methodology is widely established (Fook 2011) and aims to evidence a dynamic interaction (Fook 2011, 60) between the subject and researcher that illuminates a shared experience in which the researcher is participant. In this way, critical reflection is symptomatic of a dialogic (Fook 2011, 60) exploration, one that is integrative (61), processing the complexity of experience through the contextualising framework of theory. In doing so, the research is able to produce new linguistic descriptions that articulate their observations in such a way that they can be communicated. Fook (2011, 61) describes the ways in which critical reflection as a research method is transformative (61), linking personal experience, professional practice and social context with research in ways that can provide a feeling of agency and lead to action.

Thematic Links: The results presented here draw on Bernstein (2000) to critique the widespread adoption of professional practice as a model for project-based learning. Drawing on the concept of 'muddling through' (Hanney 2016, 13) it is argued that student's adoption of iterative and incremental approaches to managing projects is both intuitive and effective. The recontextualisation of professional practice to an educational context leads to a decoupling of the educator's aims from those of the students.

Summary: The discussion argues that there is a distorting effect at work that comes about through the recontextualisation of one situated semiotic system, into a different situated set of practices and sign systems. Thus, the mirroring of professional models and methodologies of work, as commonly found in the service-learning model (i.e. Live

Projects), is problematic and that there is a need to identify strategies for project working that are rooted in a pedagogical imperative rather than a professional imperative. It is argued that the role of the expert in professional project working sits in contradistinction with that of the novice project worker in higher education and needs to be recognised as such. The discussion goes on to advocate for a lean approach to project working within the HE context—one that is incremental, iterative, and based around review and critical reflection. The paper concludes with an exploration of the ways in which students adopt identities of resistance in opposition to the teleological aims of educators. It argues that decoupling results in students perceiving tasks which, from the point of view of educators are seen as productive and the result of an educational imperative, as academic labour that has no productive value to them.

Findings 3: Doing, being, becoming: a historical appraisal of the modalities of project-based learning

Hanney, R. (2018), 'Doing, being, becoming: a historical appraisal of the modalities of project-based learning', *Teaching in Higher Education* 23: 6, pp. 769-783.

Table 4: Findings 3

Research Questions: What conceptual frameworks can be employed in order to reconceptualise project-based learning as more than merely an instrumental framework for organising activity, but as a pedagogy of/for practice.

Methods: A genealogical investigation into the historical, social and cultural roots of the object of study in order to analyse the 'historicity' of claims to truth made by experts in the field. Combined with a systematic literature review, the research takes as its starting

point reified concepts within the field of study to enable a de-reification of these taken-for-granted concepts. The approach focuses on moments of historical discontinuity and the etymological analysis of the way in which meaning is produced through language. It functions as a process of de-familiarisation through the problematising of received accounts of historical, cultural and social development.

Thematic Links: The results presented here attempt to answer the research question through a synthesis of the literature from organisational studies and experiential learning, so as to shift the debate around project-based learning away from an instrumentalist agenda, to one that considers the social context and lived experience of projects and re-conceptualises projects as ontological modalities of doing, being and becoming.

Summary: The results offer a genealogical exploration of the nature of projects in order to engage in a process of de-reification of the concepts that circulate around the idea of a project and to explore the particular social and cultural manifestations of projects— the aim being to provide a framework for the synthesis of the work in *organisational studies* that emerges from the *Critical Projects Movement* with that of the pedagogical imperative that emerges from the teaching of creative media practice within HEIs. The discussion sets out to provide a basis for seeing projects as an ontological manifestation of *action-for-learning* and to provide a set of conceptual tools as a basis for further discussion. It takes the idea of an agile learning methodology and starts to make manifest the principles that would enable such an idea to find application within a real-world setting. Further differentiating between projects as a model and projects as a practice, the paper derives three ontological modes for project working: that of doing, being and becoming. The argument concludes with a celebration of the *becoming* mode as a pedagogic ideal.

Findings 4: Problem topology: using cartography to explore problem solving in student-led group projects

Hanney, R. (2018). 'Problem topology: using cartography to explore problem solving in student-led group projects', *International Journal of Research and Method in Education*.

Table 5: Findings 4

Research Questions: What strategies do students employ to conceptualise problem encounters when participating in project work and how might this be made visible through innovative research methodologies.

Methods: Adopting a visual research methodology (VRM), the research experimented with participatory cartography as a means of capturing the unseen experience of problem-solving in small groups. The use of mapmaking as a means of representing problem encounters enabled the research to frame focus groups as an active, creative and group-orientated activity that produced a range of data sets including; maps, ethnographic observations, and semi-structured interviews.

Thematic Links: If problems are the motor for projects then the strategies employed by students for managing problem encounters offer a possible window into their approach to practice. The study developed an innovative research methodology to address the need to observe activity beyond the partial encounters with the students' work processes that are commonly accessible to observation. An enhanced understanding of how students strategise problem encounters provides a basis for the optimising of the initiation phase of a project and the training of students in skills of ideation and creativity.

Summary: The need for projects often arises from a need to solve an identifiable problem. In addition, even after an initial problem solution has been posited there are likely to be other problem encounters along the way as the project team attempts to implement the proposed solution. Accordingly, understanding the way in which students conceptualise problems and the ways in which they strategise problem solving in order to achieve project goals. Offers the possibility for further insights that might enable educators to devise ways of enhancing or facilitating more effective strategies for supporting this kind of learning activity. The ability to get inside a project, to really see it through the eyes of the project actor is challenging though and requires an innovative approach to researching the hidden processes at play. Employing a visual research methods approach, the study led to the development of a map-making workshop which identified a common cognitive bias when addressing problems, that of *functional fixedness,*[4] an unconscious bias towards reproducing the familiar during creative ideation processes. While there are methods for tackling the issue within the business and design sectors, many of these approaches are not directly applicable to a media practice context. The discussion concludes by arguing that further research needs to be undertaken to address the need for *de-fixiating* strategies in the field of creative and media practice.

[4] Functional Fixedness is a concept drawn from gestalt psychology that describes a cognitive bias that results in those undertaking problem-solving to present solutions that are based on the familiar rather than engage with creative and/or innovative solutions.

Findings 5: Reflection, identity, community: affordances of blogging for social interaction and reflective dialogue

Hanney, R. & Skirkaviciute, G. (2019). 'Reflection, identity, community - affordances of blogging for social interaction and reflective dialogue', *Education and Information Technologies*, (), 1-17.

Table 6: Findings 5

Research Questions: What are the ways in which the formation of learner identity might emerge through the adoption of course blogging and how might this impact upon the enhancement of student achievement.

Methods: The study evaluates the effectiveness of an implementation of course blogging through the framework of educational affordances (cf. Gaver 1991, Gibson 1979). The aim being to identify the social dimensions of the pedagogic environment and consider how action within this milieu might foster or inhibit engagement with course blogging. The research employs a qualitative approach drawing on the concept of 'dwelling' as a focus group methodology. The resulting data includes post-it notes, posters, ethnographic notes and transcriptions of recordings including data from a group of L4 students as well as a group of tutors tasked with implementing the use of course blogs. The production of two data sets, one from staff and one from the students, allows for a comparison that aims to identify disjunctions between the staff conception of blogging and that of the students.

Thematic Links: A key issue for educators employing a project-based learning approach turns around the need to focus assessment on the process rather than the outcome of the project. This shift in focus emerges from the reconceptualisation of project-

based learning as a social practice that aims to promote a transformation in the learner. This stands in contrast to the use of projects in a professional context where the primary aim of the project is to deliver an output to time, cost and quality (PRINCE2). A common solution to the issue of how to evaluate and assess the process of a project within an educational context is to include the requirement for a critical reflection/evaluation (Johnson-Smith 2004) at the conclusion of the project. However, the use of an end point assessment of this sort brings a number of challenges. The first issue concerns the need to integrate theory and practice into course activities so that the students' practice would be informed by theory, thereby deepening the critical dimension of problem solving for creative practice. Secondly, there is a need to promote an early engagement with critical concerns that circulate around ideas of practice so that the students' critical evaluations/reflections are located within an appropriate theoretical framework. Finally, there is the need to promote the early production of draft reflections/evaluations so that there could be a formative component to the act of looking back upon practice. Thus, the introduction of course blogging as a component of a project-based learning approach aimed to promote the integration of theory and practice, early engagement with contextual material and the opportunity for formative assessment on work produced by students for written assessment.

Summary: The study presents the use of course blogging within the context of a project-based learning approach as a form of 'purposeful action' (cf. Arendt 1998)— action that offers the potential for a transformative pedagogy that manifests as the students' performance of a professional self in a public sphere. The study evaluates the effectiveness of the use of course blogging through the framework of educational affordances (cf. Gaver 1991, Gibson 1979). Aiming to identify the social dimensions of the pedagogic environment and to consider how action within this milieu might foster or inhibit engagement with

course blogging. The study presents this ambitious pedagogic framework through the lens of Hannah Arendt's conception of *praxis* (1998, 177) as an example of identity formation that comes about through active engagement with the public realm. For Arendt, the public utterance is a transformative and transcendental form of agency that places the subject within a multiplicity of social relations. Through the positioning of the self in relation to others, it is hoped that the subject enacts a performance of self that offers an opportunity to engage with self-construction (Ross 2014, 220). However, the findings of this study indicate that while there may be clear evidential value to the introduction to course blogging as outlined in the literature (cf. Sim & Hew 2010, Robertson 2011), challenges faced by a course team seeking to adopt course blogging are significant. In this instance, the obstacles to an effective implementation are less to do with pedagogy and more to do with the challenges of academic leadership and change management. The study offers some consideration of where these challenges lie in relation to the findings of the study. It also describes a number of key initiatives that were taken as a consequence of the study. Aiming to directly address issues of change management and academic leadership. Activities such running monthly blogging workshops for the course team. The aim being to further support the ongoing implementation of course blogging on the course programme investigated through this study.

11. ARTICLE 1 – Towards a Situated Media Practice: reflections on the implementation of a project-led problem-based learning

TOWARDS A SITUATED MEDIA PRACTICE: REFLECTIONS ON THE IMPLEMENTATION OF PROJECT-LED PROBLEM-BASED LEARNING

Abstract

In the field of media practice education, project-based learning is utilized as a major pedagogic paradigm with the aim of mirroring professional practice within the curriculum. However, if the use of project-based learning is to be considered as more than just a way of administrating student activity, then educators need a critical understanding of how problem encounters order practice within the life cycle of a project. The drawing together of practice-based, project-based and problem-based approaches allows us to see the overlapping nature of these approaches and also differentiate them as unique pedagogies in their own right. It is argued here that this tension between similarity and difference requires a new way of thinking about mirroring professional practice within higher education, one which offers a theory of project-based learning as a productive pedagogy which places problem encounters at its heart.

Introduction

Using problem-based learning as a framework for re-conceptualizing what it is 'to do a project', this article aims to provide a way of thinking about the philosophical underpinnings of media practice learning and teaching. The topic will be explored in the context of a level 3, work-related learning module on a media production degree at a UK university. The module required students to undertake the production of a short viral video for an external client utilizing the framework of a *live project* to deliver the outcome. Such modules aim to develop a range of abilities in students that will enhance their future employability within the media and often frame these under the rubric of *professional practice*. In this instance, the module sat alongside other, less industry facing modules within an overall programme of study, which included creative practical work as well as theory and industry context modules.

The range of discussion on the nature of *professional practice*, as found in the literature, utilizes a diverse set of terminologies that often seem, on first glance, to be synonymous. Terms such as work, practice, project or problem-based learning are sometimes used interchangeably. Invariably, this presents a number of difficulties for those who wish to critically analyse what it is that we are doing as educators. This article will attempt to clarify some of these definitions as they relate to the notion of *professional practice* within the media industries and how this relates to media practice education.

In this field, capabilities for *professional practice* are so much a part of the repertoire of media educators that, in the words of Heidegger, they are *ready at hand*, and thus seemingly invisible to those designing and delivering such courses. Instead, the focus (not unreasonably so) tends to be on creativity, aesthetics and the production of meaning, while

professional capabilities are often side-lined. It is argued here that these capabilities cannot be separated out from the kind of qualities that enable the practitioner to actualize their personal creativity. In order to properly investigate the relationship between these two sides of the same coin, it is first necessary to make these hidden qualities *present at hand*, so the idea of practice can be clearly understood as an unfolding of the creative aspect within a context of professional capability. Not unexpectedly, such a move often leads to cries of vocationalism from other educators within the sector, who fear the agenda being set by government, employers and other institutional bodies such as Skillset. This is not an unrealistic fear and indeed the pressure from outside the academy has been almost entirely focused on the employers' agenda. It is clear that this agenda seeks to determine the curriculum content of media practice education within a narrow set of instrumental criteria, largely based around the notion of competencies. As has been argued elsewhere (Hanney 2005), such an agenda fails to recognize that it is the capabilities for action within a professional context that are the lifeblood of creative performance.

The desire to address this tension has led to the development of a variety of differing pedagogic formulations, one being the use of *live projects*. Here, a project is utilized as a means for setting up learning activities that will deliver some form of product or service to an end user at the project's conclusion, often to an external business client. However, if the use of a project is to be considered as more than just a way of administrating student activity, then educators need a critical understanding of the way in which learning occurs within a project. To focus merely on the end result of a project ignores much of what takes place during the process of the project. It appears to side-line the experiential aspect of undertaking a project and thus ignores many of the important capabilities that are developed during practice. It is argued here that it is the problem encounters situated at the

heart of a project life cycle that generate the learning for students engaged in practice.

Getting all the Ducks in a Row: The value of *Professional Practice*

There is real value to thinking about media practice education within a general model of learning for *professional practice*, not just because it offers a way of thinking about how media graduates can be construed as *job-ready*. Many of the creative and critical qualities we hope to inculcate into our students are also qualities professional practitioners aspire to. However, the development of creative and critical qualities is synonymous in every sense with the development of capabilities for *professional practice*. The two cannot be separated. They emerge from, and are concomitant with, each other. Indeed, it is not just the drive towards vocationalism that generates the need for a place for the teaching of capabilities of *professional practice* within the curriculum. They have always been there, hidden and unacknowledged – labelled, as they so often are, as key, transferable or employability skills and thus of no real importance. The inclusion or shaping of learning experiences that would develop these capabilities is a necessity precisely because they are already deeply embedded in media practice as *professional practice*.

For example, the successful production of a short documentary video would include a requirement for the recording of sound at acceptable levels, the correct exposure of the camera, and so on – competencies of a technical nature in this case, though there are a range of others that could be drawn on to support the example. There would also be a need to deploy knowledge of aesthetics (e.g., authorship and style) and production of meaning (e.g., short choice and sequence ordering), along with, perhaps, a deep consideration of ethics and the nature of representation. Buried within these commonly acknowledged domains of practice are a range of other skills such as negotiating access,

managing relationships and, among others, the ability to improvise given a sudden change in circumstances: skills that are just as necessary to the completion of a documentary video production as those of a more practical or theoretical nature. In fact, these capabilities only overtly emerge through 'practice' and can properly be seen as the fruit of this synthesis between practical and the theoretical in action. These hidden skills are not only important because they are transferable and therefore add value to the curriculum, but they are also synonymous with notions of *professional practice* as they are understood by media professionals.

Historically, the term *professional practice* refers to the trinity of divinity, law and medicine as fields which require extended training, a high standard of ethics, specialized knowledge and expertise. As a result, these professions have been viewed as high status fields of practice. Over the decades, this triumvirate has broadened to include engineering, architecture and accounting among others, thus reflecting the ascendancy of these particular fields of *professional practice* within contemporary society. More recently, the term professional is now utilized to describe any undertaking or employment activity that requires specialized knowledge and expertise, including those in the field of creative arts and media. Musicians, artists, filmmakers and designers all now refer to themselves as professional practitioners.

Professional practice in the field of media, as in any field that thinks of itself in these terms, is usually thought of as requiring extended periods of training at work, or *on the job*. Learning by *doing* is a firmly rooted rubric within the media sector and is widely accepted as the best way to learn within the industry. In common with other professions, media practitioners are expected to have high ethical standards in relation to the challenges faced within their own field of practice. This might, for example, include attitudes towards

truthfulness, accountability, accuracy and objectivity. A high level of specialist theoretical knowledge across a broad range of subjects is also a necessity, as many occupational roles are inherently interdisciplinary in nature. The media practitioner needs to be able to apply this knowledge, often in changing and difficult circumstances, whilst requiring a complex set of personal capabilities. There is also a requirement for high level craft skills, that is, the ability to manipulate technology, tools and equipment in synthesis with the application of theoretical knowledge. Whatever the field, it is generally accepted that it is through practice that these qualities are acquired and with experience of practice comes an intuitive capability for creative problem solving.

Here then is a contextualizing discourse through which educators have constructed a mode of learning that is often labelled as practice-based: a mode that, while primarily found in areas of education that see themselves as highly vocational, is also commonly utilized in creative, design and media courses. Within faculties delivering such courses, the term practice-based is widely understood by staff and students as construing a particular style of learning, the value of which is roundly celebrated by university managers and industry employers (Shreeve and Sims 2006). To give one example, the use of practice-based teaching in media is, in part, a response to the need to develop the learners' ability to plan and direct their own practice. Being able to plan for practice is not just about being able to initiate an activity and deliver an output in an instrumental sense. There is an inherent need for the learner to evaluate, analyse and synthesize as part of the creative process, a process that is time bound and involves complex interactions with the world. This folding in of the instrumental and creative within an activity resonates strongly with the kind of capabilities that identify someone as a professional practitioner.

The Practice-Based Professional Learning Centre for Excellence in Teaching and

Learning, a government funded Centre for Excellence in Teaching and Learning (CETL) at the Open University, offers the following definition:

> *By practice-based learning we mean learning which arises out of, or is focused on, working practice in a chosen job, voluntary work, career, or profession. This encompasses courses and learning activities which are linked to formal work placements, those which require the application of course ideas in a work setting and those which build on experience gained in a work setting. Practice-based learning raises student employability and promotes learning outcomes that are hard to develop through conventional courses.*
>
> (Fenton O'Creevy 2005)

While this definition is in some ways transferable to the context of media practice education, there is here an assumption that practice-based learning occurs only in the workplace. There is also an assumption that this kind of learning is ideally situated within a real world complex and would focus on 'learning for the workplace' where 'practice drives the use of theory' (Boud and Costley 2007), as opposed to self-directed student learning, which would typically be focused on the acquisition of 'disciplinary knowledge' and the 'privileging of theory over practice' (Boud and Costley 2007). It would seem that if we accept this definition and the subsequent conclusion that practice-based equals work-based learning, the assumption is that capabilities for *professional practice* can only be acquired through programmes of study that occur in the workplace.

This problem has led to the development of a plethora of alternative models for practice-based learning within higher education, such as work-related learning and its siblings, where simulated work experiences are modelled within the curriculum and undertaken entirely on campus. Here, work situations are constructed and role played with

the hope that the experience will transfer to real practice at a later stage. These kinds of learning are useful, but lack the dynamic context of real world practice. Consequently, they are unlikely to generate truly transferable learning experiences as students are unlikely to see the connectedness of skills, knowledge and process that they would be exposed to in a real working environment. Furthermore, if practice- based learning is to be situated, context dependent and applied (PBPL 2009), then the learner needs to take on a role that would normally be undertaken by a professional practitioner.

The difficulty here is that learners may not have the necessary experience to be able to operate effectively in a professional working environment. For example, an expert practitioner would be able to utilize what Dreyfus and Dreyfus (2005) have described as intuitive 'situational discriminations' involving a degree of critical thinking that emerges from an accumulated experiential knowledge base. This intuitive knowledge accumulates experientially through successive iterations of work activities and is the foundation for what it is to be a professional. Students are unlikely to be able to develop these kinds of high level capabilities working in simulated situations. For undergraduates to move beyond the category of novice practitioner, there is a need to construct 'situated learning opportunities' (Kane 2007) that expose them to the challenges of the *real world*, mirroring the iterative learning experiences of professional practitioners.

Getting all the Ducks in a Row: The Real-world-ness of Live Briefs

Practice-based learning has a long history in the tradition of art and design education. Historically, the transmission of knowledge in these fields evolved out of the master/apprentice model, in which the expert provides training for a novice, usually on a one-to-one basis. The training under a master was more often than not vocational in nature,

the master's main concern being their trade rather than teaching, and the apprentice would be put to work serving this goal. The novice would learn by mastering the work of the expert, not just copying technique but also by learning the creative process of idea generation, problem-solving and work processes. In this model, the power of learning rests in the hands of the master and thus severely limits the freedom of the novice to experiment and explore creatively outside of the narrow realm of the master's practice. In addition, the number of apprentices one master could support at any one time limited the number of students who could complete what was often a long and arduous period of study. Within the art and design traditions, this model continued until the beginning of the 1900s when schools of art and design were founded. Though they still employed a master/apprentice model, the master's relationship was now to a class of novices. They passed on their expertise by setting tasks and exercises which the master would oversee by *looking over the shoulder* and directing the appropriate action until the work was considered satisfactory according to their standards (Barlowe, Pearson and Price 1999).

During the 1960s, a social-cultural model (Shreeve and Sims 2006) of art practice began to be adopted, reflecting a changing cultural landscape and the re-conceptualization of the nature of art. During this period, the role of master shifted towards that of 'facilitator, enabler and co-learner' (Shreeve and Sims 2006). This transformation became popularized as the *studio-arts* model, a student-centred approach where investigation, research, experimentation, reflection and personal exploration was encouraged. During this period, the idea of learning for *professional practice* took a hold in the field of design education, a field that has always been firmly tied to the production of an aesthetic, cultural or communicative output of some kind. In contrast to the arts, design education recognizes that there are constraints surrounding *professional practice* and that creativity in this

context is a response to those constraints. Consequently, the use of briefs as a means for initiating student enquiry easily differentiates the two fields. For example, it would be common to give a design student a detailed brief, tied to clearly identified learning outcomes. Whereas in the field of arts education, it would be more likely that the student would develop their own brief through a process of reflection, experimentation and tutor-led critique.

In both of these approaches, students would work on tasks that were either open ended, as in the case of arts-based subjects, or might have a specifically determined output, as in the case of design-based subjects. The emphasis in both, however, was on the student as learner exploring the subject 'through creative investigation, research and experimentation, engaged in cognitive, physical, and affective interactions involving aesthetic concepts, self-knowledge, memory, imagination, and feedback from tools and materials' (James 1996: 146). Over time, agencies outside of academia began to collaborate with educators on the writing of briefs in order to further frame the learning experience within the context of *professional practice*. This interaction with external clients seemingly added a *real-world-ness* to the learning experience and consequently the term *live brief* was adopted in order to contextualize it as a real, rather than simulated, learning experience.

For example, in the case study that follows below, students were provided with a real brief by a company engaged in the business-to-business marketing of electronic components. The company made an argument to the students for a real business need and even brought one of their own clients into the partnership. Thus, the company was able to provide a real product that would form the basis of the students' video production activities. While the project was for the client an experiment in viral video marketing, it none the less satisfied a real business need for them. The students meanwhile gained an

opportunity to work on a real project for a real business. Though the project was constrained by a set of business needs, the creative decisions about content, form and style were left to the students, who were supported on campus by the academic staff and off campus by the managing director of the client company.

A *live brief*, then, is a form of practice-based learning that moves between work-based and campus-centred learning, providing a situated experience within which novice practitioners can operate. As a tool for shaping the learning experience, it is essentially a constructivist pedagogy which aims to develop self-directive, creative and innovative learners, who, through an encounter with problems that challenge their existing knowledge, ideas and beliefs, are able to create new knowledge (Richardson 2003). The use of *live briefs* mirrors the way in which professionals learn through their own practice and rise from the position of novice to expert. Within this framework there is ample room for students to employ personal strategies of creativity, innovation and self-expression. In fact, this is perhaps one of the more important outcomes and will be roundly valued by students, staff, clients and employers.

Getting all the Ducks in a Row: The Problem of Projects

Media practice education has historically emerged from the tradition of the studio-arts model. Indeed, the tradition is still largely celebrated today in media schools where creativity, aesthetics and the production of meaning are highly valued. The opportunity for students to experiment with forms of narrative and style is also still widely encouraged within higher education. What has changed is the growing recognition of media practice as a *professional practice*, reflecting the evolution of the industry over the last 30 years. In the past, educators have largely conceptualized media practice as a monolithic mode of

production orientated towards independent production by auteurs. Now the concept of media practice includes an increasingly divergent range of activities, including broadcast television, cable television, DVD production and online and mobile media. Consequently, the increased demand for media artefacts by businesses, communities and institutions now offers a diverse range of opportunities for educators seeking to collaborate with outside agencies. These changes, along with the increased pressure on media educators from the government and employers to demonstrate a vocational element within the curriculum, has encouraged the rapid adoption of pedagogic forms typically found in other subjects, such as *live briefs*. A simple search of the Internet using the keywords *media education live brief* will demonstrate the wide scale adoption of this approach within the sector. This is not to say that the curriculum has been given over wholesale to the use of *live briefs*, but clearly, they have become integral to media practice education and are seen as an important marketing tool. This would suggest that students, parents and employers all see a real value to this kind of learning.

The use of projects in media practice education is deeply embedded in the curriculum, and consequently the term *live brief* is commonly rendered as *live project*, that is to say, within the field the two terms are synonymous and are often used interchangeably, as are the terms practice-based and project-based. This use of projects as a scaffolding for practice-based learning has a long tradition though there has been little critical enquiry as to the nature of this tool. Even so, it has become an organizing principle for media practice education and constitutes a specific form of practice-based learning, that of project-based learning. As used here, the term project-based learning refers to

> *[…] an instructional approach built upon authentic learning activities that engage student interest and motivation. These activities are designed to answer a question*

or solve a problem and generally reflect the types of learning and work people do in the everyday world outside the classroom.

(PBLO 2012)

Thus project-based learning is more than just a convenient method of organizing students around curriculum delivery. It can also be a productive pedagogy in its own right, assuming of course that it is recognized that it is the problem encounters at the heart of any project-based activity that are the motor for this pedagogy.

It would seem simple then for educators to draw on the discipline of project management for a range of tools and techniques that would aid them in the design and delivery of project-based learning activities. However, while the subject discipline of project management might be useful framework for those who may wish to further their theoretical understanding of project processes, the terminology is too opaque for students who are perhaps meeting this jargon for the first time. Students also struggle with some of the conceptual ideas inherent in project management methodologies, even after the process has been scaled down and complex jargon smoothed over. Ideas such as *project risk*, for example, bring with them layered complexities of a deeply conceptual nature which are difficult to communicate to students in a simple and timely manner. In addition, many of the standard techniques for managing projects bring with them a significant administrative overhead, adding to the amount of work students need to do. Work that they feel has little value to them.

Similar difficulties arise when trying to adopt the kinds of methods commonly utilized in the media industry, as the particular forms and models of project management found in this sector are too numerous to try to capture in one simple model. Furthermore, many of the larger institutions, such as the BBC, ITV and the feature film production sector

have developed their own individual terminology, roles and process tools that are specific to their own internal practices. The increased fragmentation of this sector and the continued emergence of new technologies also muddy the waters, introducing as it does new workflows in response to new business models. In addition, small and medium sized enterprises (SMEs), sole traders and micro businesses (possibly the mainstay of the industry now) are all likely to have developed their own personalized methods for managing projects, rendering any attempt to adopt a common framework based around an industry standard as nonsensical.

For most purposes, the familiar paradigm of 'script to screen' is perhaps enough to capture the workflow common to most media production activities, with its familiar stages of pre-production, production and post-production. The need to be able to fit these activities within an educational context, which prioritizes the learning experience over *professional practice*, is also a determiner when evaluating project management methodologies. As educators, there is a requirement to adopt that which is most appropriate to the educational context, and this choice should be informed by our understanding of the relationship between problems, creativity and process. Otherwise, there is a tendency to utilize tools and techniques purely because that is the way it has always been done or to satisfy a supposed educational need.

Following West (2002) and Von Stamm (2003), the creative process can be conceptualized in two parts: that of innovation, followed by implementation. For them, innovation emerges in response to a problem encounter for which a solution is required. The act of solving the problem includes a process of analysis, evaluation and synthesis in order to determine how the solution could best be implemented. This two-step process resonates strongly with the literature on small-scale project management (Bentley 2005,

2006), which suggests that a project can also be broken down into two distinct stages: that of initiating and then delivering a project. What is valuable here is that having moved to a position where we can examine a project life cycle in two parts, it then becomes possible to look at the differing types of problem encountered at the heart of each stage. This is useful because projects are dynamic, non-linear and essentially chaotic in nature. The types of problem encountered on a project vary over its life cycle and may change rapidly from moment to moment. This uncertainty is important pedagogically since it mirrors real-world experience and generates new learning.

Rethinking a project as a two-stage process also opens the doorway to a critical view of project-based learning that draws on the extensive literature in the field of problem-based learning (Barrows 1994, 1996; Barrows and Tamblyn 1980; Boud and Feletti 1991; Savin-Baden 2000). This is a mode of learning which organizes itself around an encounter with an *ill-structured* or *messy* problem (Uden and Beaumont 2006), as a way of promoting independent learning and recognizing the need for learners to acquire practical problem-solving skills in relation to areas of disciplinary or interdisciplinary knowledge. Having emerged from within the field of medical education in the 1970s, problem-based learning is well suited to the requirements of learning for *professional practice*. Its adoption outside of the medical field started in the 1990s when other subjects delivering learning for professional programs such as architecture, engineering and law started to utilize problem-based approaches. Since the 1990s the use of problem-based learning has matured as a pedagogic theory and is now firmly embedded in a wide range of subjects.

However, there is considerable difficulty with applying problem-based learning approaches to practical work in media education, since, in this kind of practice, there is never one singular, linear problem at play. The activities undertaken by students are

complex and non-linear, while the nature and kinds of interactions involved, that is, those between the project team members as well as with those outside of the project, are unpredictable. In fact, there are a multiplicity of problems at play during the life cycle of a project, each requiring a different approach to facilitation. Furthermore, while the problem-based approach is eminently suited to interdisciplinary learning, on a student-led project the exact nature of the knowledge that is to be learned may not be fully realized until a solution to a problem has been proposed, posing difficulties in relation to planning support for a project. When undertaking a *live project*, it may also be necessary to specify the form of a solution, for example, a 5-minute video, whereas generally problem-based learning specifically avoids determining the outcome of an activity, preferring that the activity be open- ended. Consequently, it is not possible to take just one problem-based learning model and map it onto a project life cycle. Instead, it is necessary to adopt a more flexible solution that draws on many different approaches.

Savin-Baden (2007) has proposed the notion of a 'constellation' as a way of describing the way in which differing problem-based learning activities overlap and intersect in particular configurations or patterns. The notion of a constellation helps us to see that there are patterns not just within the types of problem-based learning but across the different fields of practice. The use of constellations allows us to categorize problem-based learning approaches according to problem type, form of interaction, form of facilitation, focus of assessment and learning emphasis. In this way, the mode of knowledge that is to be designated as disciplinary knowledge becomes the framing characteristic. For example, is the knowledge students are expected to acquire propositional, performance orientated, interdisciplinary or transdisciplinary or does it require students to work within knowledge spaces that are diverse or ill-defined (Savin-Baden 2000)?

Thus, the notion of a constellation gives us a lens that we can now turn towards the relationship between project-based and problem-based learning, one that offers the possibility for mapping differing types of problem encounters against the two stages of a project. Following West (2002) and Von Stamm (2003), the terms innovation stage and implementation stage have been adopted in order to show how, over time, the kinds of problems encountered on a project are of differing domains:

- *Innovation stage*: problem-based learning for critical contestability (Savin-Baden 2000) generates critical, creative questioning, promotes innovation, encourages brainstorming, idea generation, creative problem-solving and group working and is essentially non-hierarchical.
- *Implementation stage*: problem-based learning for interdisciplinary understanding (Savin-Baden 2000) is process led; its goal is that of implementation, doing practice; it is goal orientated, is organized through actions, involves team working and is essentially hierarchical.

With this in mind, it becomes possible to revisit our project management processes and select tools appropriate to the two different stages: tools that help us to structure the learning experience in a way that reflects the particular problem domain at play. Thus, we can strip back our project management methodology to bare bones and only use what is pedagogically necessary.

For example, as a minimum during the innovation stage, there is a need to define the problem as students see it, set the context for a solution and describe exactly what the output might look like in technical terms (this last item is a practical necessity). There is also

a need to undertake creative problem-solving that leads to the proposal of an effective solution which can then be presented to the client. This can be accomplished utilizing fairly common idea generating activities such as brainstorming, mind-mapping and an extensive array of other techniques well documented elsewhere. There is also a need for the students to agree with all the stakeholders as to what exactly it is they will do and how they will do it, ideally, but not necessarily in written form. In the professional world, this agreement forms the basis of a legal contract, though of course in the educational realm this is not necessarily binding. It does, however, act as a point of departure; 'this is our idea, now let's do it' functions as a *boundary object* setting out the scope of the project, as well as defining the relationships between those *inside* and those *outside* the project. Importantly, as a bare bones requirement, all of this is possible on two pages of paper, as what is known by project managers as a *project initiation document* (PID).

The second stage requires a different set of tools since it is goal orientated and often includes complex logistical planning as well as the teaching of specialist media production skills. However, deployment of a traditional approach would require a detailed project plan, with its *work breakdown structures* (WBS), its complex timelines, role descriptions, budgets, resource allocations, risk assessments along with numerous other items: a document that would likely to be out of date before the students finish writing it and which would largely be ignored by students once it is submitted. Instead, it is suggested here that the adoption of a more flexible approach such as that found in agile project management (Cohen 2005; DeCarlo 2004; Fischman 2008; Griffiths 2006; Highsmith 2004) would better serve the pedagogic needs of the project team. A relative newcomer to the field, agile project management has emerged from the software development industry. Here it has earned a reputation for enabling software developers to manage dynamic, chaotic, non-linear

projects that require high levels of innovation and creativity. It is a learning orientated approach and utilizes analysis, evaluation and synthesis as critical process tools. Adopting an agile project management approach, orientated around risk as an organizing principle (Hanney 2011), removes the need for students to produce redundant *gatekeeping* documents such as a traditional project plan. Instead, simple, easy-to-understand *risk tools* can be employed during project review meetings that will structure the students' thinking, focus their decision making and prioritize forthcoming actions. For example, a simple and effective tool for this sort of activity is the *strengths-weaknesses-opportunities-threats* (SWOT) technique, which challenges the students to think critically about their project at any moment in time.

Thus, the idea of a constellation of learning elements reveals project-based and problem-based learning as one formulation, that of *project-led problem-based learning*, which Savin-Baden has designated elsewhere as 'Constellation 3' (Savin-Baden 2007). This model involves students in encounters with *real-world*, non-linear problems where the focus of interaction is the project team. Rather than act as de facto project manager, the project is facilitated and not led by the course tutor. The learning emphasis is on project completion and the delivery of a creative product of some sort, and the *focus of assessment* is on the students' critical reflection on their own learning. This is most usefully accomplished by asking the students to use the *project initiation document* (PID) as a starting point for the writing of their reflection. The aims and objectives in this document set a benchmark for success even if, during the project, the team undertakes wild excursions or radically alters their planned solution. Usefully, the model also embeds the experience of delivering a project as a set of transferable capabilities that will facilitate effective group working and enhance graduate employability. It also offers up a theoretical

underpinning for thinking about project-based learning as a pedagogy: one in which the encounter with problems becomes the defining characteristic, mirroring the iterative experiential learning of *professional practice*.

Case Study: ACAL Technology – B2B viral videos

The author had already been working closely over a number of years with a local business-to-business (B2B) technology marketing company, Napier, and its Managing Director Mike Maynard. The relationship started through a shared need. For the university, this was a need for work placements for level 2 media studies students interested in careers in marketing, while for Napier they wanted to employ graduates who were work-ready, and they saw work placements as a way of identifying and training potential employees. This was a successful relationship that saw a number of placements turn into part-time and finally into a fulltime employment on graduation. There was, however, a limit to the number of students Napier could place annually. In order to broaden the number of students involved, the partnership collaborated on a series of *live projects* that would enable students to get real-world experience working as consultants for Napier. These were delivered as part of a level 2 media studies work-related learning module that offered students a choice between work experience or undertaking a *live project*. Importantly, the projects undertaken by students all had a real business value to Napier and this was a crucial criterion when designing the project briefs. For example, Napier wanted to be able to incorporate the outputs of these projects into pitching documents used to secure new business, or use the material for the production of industry briefing papers.

In 2009, the author and Mike Maynard discussed the idea of developing a new strand of *live projects* that would be undertaken by media production students. Napier

wanted to explore the business case for the use of viral videos as an online marketing tool. Specifically, Napier wanted to know if viral videos would work in the electronics B2B marketing sector and what form they might take. The brief was eventually presented to level 3 media production students engaged on a work-related learning module that aimed to develop workplace capabilities, while reflecting the kind of employment many of the students might find themselves doing after graduation. This module sat alongside other creative project work such as the final year dissertation practical as well as other theory modules. It also linked directly with a final semester module that supported students as they started to seek work opportunities.

The project was initiated with a presentation on marketing by Mike Maynard, setting out his vision for what a viral video in the B2B electronics marketing sector might involve. Previous experience of *live projects* of this kind indicated that the idea of B2B was a threshold concept for many students who were genuinely unfamiliar with the idea, so the module tutor followed up the marketing presentation with one contextualizing the project in relation to a B2B business model. Students were also provided with a copy of a Napier industry briefing paper, 'The use of social media by electronic design engineers' (Napier 2009). The content of this paper was based on research undertaken by media studies students on a previous *live project* investigating the use of online social networks in electronics marketing, and it provided a material context for the project brief. The research in the paper revealed that whilst engineers are making use of online tools to communicate and collaborate, particularly on Internet forums and the LinkedIn online social network, there appeared to be a significant resistance to social media and viral marketing amongst a large section of the engineering audience. This was the basis of the ill-structured and messy problem with which the students were presented. Thus, the project brief tasked students to

create fun viral videos incorporating electronic components that would indirectly promote the services of ACAL Technology, which Napier had brought into the partnership as project sponsors.

The innovation stage required students to first of all produce a one page *project definition* document based on the briefings from Napier and their tutor. This document stated the students' aims and objectives, setting the project in a business context as well as setting out what they thought they would deliver at the end of the allotted time span. The business case for the project was often the element of the document students found most difficult. The idea of B2B was new to students who, in general, had only ever been employed in the business-to-consumer (B2C) sector, requiring them to reconfigure their own personal understanding of the nature of business. Clearly, for a *live project*, the business case is extremely important, and the author found that pushing the students to write a business case was worthwhile. In addition, this document set out in detail what would be delivered, by whom and by when, along with any technical information that needed to be agreed in advance.

Once the *project definition* had been signed off by the tutor, there followed an idea generating session, with students working in groups facilitated by their tutor. Here, standard brainstorming techniques were utilized, with students generating as many ideas as possible. These would then be reviewed, modified or combined. The groups would then generate criteria for evaluating their ideas, which could be used to edit the list down to ten ideas. These were then presented to their peers for feedback before each group prioritized a final list of three ideas. This process was group focused and the tutor encouraged non-hierarchical relationships within the student groups. The students then undertook as self-directed study the selection of a final idea and the writing of a second one page document,

a project proposal. This took the form of a pitching document that identified the problem as it was seen in a clear written statement, along with a solution that addressed the aims and objectives outlined in the project definition. The document included a descriptive element that pitched or in some way described what the final video would look and sound like. Together, these two pages formed the *project initiation document* (PID). This document serves to fix students' ideas, provides a basis for further planning and offers a reference point for discussion and reflection at a later stage. This completed the first stage of the project life cycle.

The implementation stage then required the students to organize them- selves into teams by assigning specific roles to individual members. The process of delivering the project saw their tutor step further back and they were encouraged to become self-organizing based around a typical media production hierarchy. The aim was for them to take control of the project and allow the tutor to merely facilitate rather than for the tutor to be the de facto project manager, a situation that often occurs when students are dependent on their tutor due to overly didactic project gatekeeping or staging. Weekly tutorials with students were configured as project review meetings utilizing the well-known *strengths-weaknesses-opportunities-threats* (SWOT) tool as a means for critically evaluating the project. The tutorial would centre around a discussion of these categories and subsequently students would produce an action plan for the follow weeks' activities. In this way, students were encouraged to identify problems as they encountered them and prioritize actions accordingly.

Each project generated its own set of unique problems and required the students to generate solutions, having identified the resources available to them. These resources included additional technical workshops where particular skill gaps had been identified by

the student team. Generally, problems during this stage were typically focused on creativity and how ideas which were often very ambitious could be achieved. For example, having undertaken a test shoot, a group of students realized how difficult it would be to deliver their idea. Rather than abandon their initial idea, the students were encouraged to stick to their plan and in this way work creatively to solve the problem, consequently reworking their idea into a more practical solution and thereby further developing critical skills and experience. Other problems faced during this phase were of a logistical nature and required students to develop capabilities in relation to communication, negotiation, planning and decision making. Of course, the usual issue of group working often dominated discussions with students whose projects were falling behind schedule and this often fuelled another learning curve for the project participants.

Students were in regular contact with Napier, having agreed to a protocol for contacting Mike Maynard, who was very accommodating and offered a great deal of support to those students who took the opportunity to utilize this resource. The tutor also acted as interlocutor between the university, external organizations and student teams, though it was the students' responsibility to negotiate terms and conditions for their activities with these bodies. As the project deadline approached, the tutor spent time with each team reviewing camera rushes and rough edits, offering feedback and advice as appropriate.

The final videos were judged against a range of criteria, including production quality, audience engagement and the likelihood that it would spread virally, by a panel of judges from ACAL and Napier. The winning team was awarded £100 worth of iTunes vouchers. At the end of a fun exercise, the students had gained experience of working with real businesses on a project that had a real business value to all of those involved. The problem

encounters they faced mirrored that of real-world video production activities and included a mix of creative, logistical and people management issues. The assessment asked the students to write a critical reflection using their *project initiation document* (PID) as a starting point for reflecting on the project's process and their own role as a team member. A mark for each video was also awarded, taking into account feedback from Napier and ACAL representatives. In addition, a student-led peer assessment of their own group working was factored into the result. All the videos were used by ACAL Technology in their online marketing campaigns, and Napier have since produced other viral videos for their clients, often working with graduates from the media production course at the university.

- The videos can be seen here: youtube.com/ACALTech
- *Templates for the PID documents can be found here*: wikipedia.org/wiki/Small-scale_project_management

Conclusion

The *project-led problem-based learning* model presented here offers a way forward in the design and delivery of media practice-based curricula that has a real-world value to students and a real business benefit to potential clients or project sponsors. By moving in this direction and by adapting existing programmes through the addition of *project-led problem-based learning* approaches, it will be possible to draw on the range of tools offered by contemporary approaches to the management of projects and to engage with the question of 'what it is we do when we do this thing called a project' (Hodgson and Cicmil 2006), in a way that recognizes the particularities of this concept within an educational setting. Agile project management is a relatively new and exciting addition to the growing

collection of methods available for adoption by educators utilizing *live projects*. The manifesto for agile project management puts an emphasis on:

> *Individuals and interactions over processes and tools; creative solutions over comprehensive documentation; team working and collaboration over didactic formal organisation; responding to change over following a plan.*
>
> (The Agile Alliance 2001)

In many ways, this manifesto is aligned so closely with the principles underpinning project-led problem-based learning that it almost begs for the model to be called *agile learning*: a form of learning that is student centred, values creativity and problem-solving as fundamental learning outcomes, yet at the same time celebrates the kinds of capabilities for *professional practice* that have for so long been relegated to second place in a taxonomy of educational outcomes. What is important to note here is that a *live brief* need not always be a corporate or commercial-style video production. Other topics such as local history, pop promos, social action, mental health care and environmental subjects have all been explored in practice by the author. Each of these topics not only developed the core skills required of a media practice curriculum but also engaged the students with interdisciplinary concerns that emerge from their problem-solving activities. This drawing together of practice-based, project-based and problem-based approaches under the umbrella of the project-led problem-based learning model prefaces an ontological shift in the conceptualization of media practice education which places problem encounters at its heart.

12. ARTICLE 2 – Taking a Stance: resistance, faking and ‘Muddling Through’

TAKING A STANCE: RESISTANCE, FAKING AND MUDDLING THROUGH

Abstract

This article focuses on project-based learning in media practice education, identifying three themes of interest. The first questions the recontextualisation of practice from the professional to a pedagogic environment. The second theme questions how much we know about what goes on inside a project and contrasts the ways in which students 'do' projects with the ways in which educators idealise project work as a mirror of professional practice. The final theme questions whether processes and procedures external to a project environment may result in a decoupling between professional practice and the everyday formulations of practice enacted by students. While educators may seek to encourage students to simultaneously adopt academic, professional and creative identities, as part of an active and purposeful approach to doing projects, this article questions whether tensions between these identities may actually encourage students to engage in decoupling behaviour. The article aims to encourage media practice educators to reflect on their own use of projects and question the ways in which the identities students claim as learners align with educator's beliefs and values.

Rationale

The research for this article emerges from the experience of the author as a media practice educator working in UK-based universities for close to 15 years. Reflecting on this experience, the author notes the manner in which students respond to the media practice curriculum in surprising ways. By way of example, a few quotes noted during tutorials with students are offered. Student A, when offered advice about how to better integrate within their production group, responded to the suggestion that they research some sound design options and present these to the team with the phrase '…that is not how I work… '. When Student B was asked a question about how they might evidence their creative process in an assessment portfolio at the end of a semester, they replied '…can I backdate the Gantt Chart and put that in my portfolio?' Another, Student C, in a tutorial in which the author had suggested they look at the work of particular filmmakers in order to be able to contextualise their own work, commented '…I adopted Louis Theroux's style for my documentary… '. Even though the student's film bore no relation to the work of this filmmaker, a practitioner who had been introduced to the student only the week before, after the student's film had already been shot and edited. And finally Student D, when faced with the prospect of having to produce a portfolio of evidence of their creative process for the end of semester assessment, commented '…I will just make it up… '. In each of these quotes, there is an implicit suggestion that students are taking a stance of resistance and faking in response to a curriculum that educators have construed as authentically mirroring professional practice. In particular, the use of projects as a means of reflecting professional practice is thought to encourage student engagement and develop employability (de Graaff and Kolmos 2007). However, rather than motivate student engagement with learning, the quotes above

suggest students appear to be taking a stance towards this curriculum that seems to undermine the very reasons for participating in the first place.

The article will begin by reviewing the reasons for undertaking research into media practice education and the use of project-based learning (PjBL) as a pedagogic tool. It will briefly explore the relationship between the media practice curriculum and professional practice in order to clarify some terminological distinctions and set out a field of enquiry. Following on, the article will show that there is an urgent need for research into the pedagogy of media practice education and in particular the pedagogy of PjBL. The article will then explore three key themes that have emerged from research into the problems of projects that may be of concern to media practice educators. The first area of concern, that of *recontextualisation*, sets up a range of issues from which emerge a number of subsidiary themes. '*Recontextualisation*' refers to the process of translocating professional practice from the world of work into an academic setting and asks questions about what it means to do this (Bernstein 2000). There is a possibility that the process of translocation has a distorting effect on professional practice that may have consequences for educators and students. In particular, the claim for authenticity that is made for the media practice curriculum is called into question. The article will then focus on an aspect of the recontextualising process that questions the expectations of educators and the nature of expertise as it is applied to the doing of media practice projects in higher education. It sets out the beginnings of some ideas for rethinking the ways in which the doing of projects might be reconceptualised as PjBL. Following on from this discussion, the article will then explore the ways in which the kinds of identities adopted by students may exacerbate the problems already identified by the article and asks questions about how educators can make sense of the confusing multiplicity of identities in play and the ways they impact on

the learning experience. The article will conclude with a brief summary and a call to action that identifies a number of topics worthy of further investigation.

Why study PjBL?

Creative media businesses, whose sole aim is to produce media artefacts of one kind or another, are commonly acknowledged as project-based enterprises in the literature on organisational studies (Finney 2008; Peterson 2014). These kinds of businesses organise their operations entirely through projects (Whyte et al. 2008, 77), though the forms and techniques for managing those projects may be unique to a particular firm, product output or medium of delivery. This differentiates the business of creative media production from say, a news article in which the repetitive, daily production schedule 'stresses continuity more than discontinuity' (Lundin 2009, 3). So, there is a clear difference seen here between project-based enterprises and other types of businesses whose organisational structure is not built around the delivery of projects as a core principle. Even though, for those employed in the media who experience projects on a day-to-day basis, it may be that 'working procedures are so taken-for-granted and embedded' (Lundin 2009, 2) that they are hidden from view. Almost like the air that everyone breathes, they are crucial but invisible. Lundin (2009, 2) suggests that projects are part and parcel of the 'industrial wisdom' of media practice. As such they are not considered problematic and therefore not worthy of research. It is possible that projects are so deeply embedded into the culture of professional media practice that they constitute themselves as tools in the Heideggerian sense of the word (Dreyfus 1991). In that they are *ready-at-hand*, that is, practitioners do not think about them when they use them, they are invisible extensions of their own presence within the world of work and cannot be separated from their own self-identity and practice.

In media practice education, educators take great pains to replicate the particular models of production that they see in industrial contexts and map them onto the curriculum. Consequently, the adoption of projects as a means of structuring the doing of practice is commonplace. In fact, the notion of a media practice curriculum that is not orientated around the doing of projects is impossible to conceive. This would appear to be a very different case from, say hypothetically, a course in geography in which a decision has been made by a course team to adopt PjBL in order to fulfil a particular pedagogic need. It may well be the case that geographers do projects but to argue that all businesses operating in this field are project-based enterprises would seem untenable. Conversely, in media practice education, educators do not get to choose to do projects. It is in the very nature of media practice to do projects. It cannot be avoided. Thus, when educators try and replicate the practices they see in industry, in order to teach these practices, they automatically adopt 'projects' as the means of doing this. Usefully for educators, projects fit easily into the time-delineated structures of academic life. They produce the kinds of outputs that can be easily measured or assessed, for example, a media artefact. It is assumed that doing projects mirrors the real-world practices of media production and contributes to the development of 'job-ready' graduates. Consequently, it is thought that doing projects constitutes an authentic media practice curriculum (Barab and Duffy 2012).

There is a two-sidedness to projects here that induces a kind of double hermeneutic, to misuse a concept proposed by Giddens (1987). In that, PjBL is deployed in order to teach the doing of projects. Or, to put it another way, while projects are the very essence of media practice in the context of the academic setting they are also a pedagogical discourse, that is, PjBL. Trying to tease the two sides of this dichotomy apart is complex but necessary, since the tension between the practice of projects in the professional realm and, as is argued

here, the doing of projects within an academic setting sets up a series of problems for educators. However, outside the fields of engineering (see e.g. de Graaff and Kolmos 2007), there has been very little research undertaken on the use of PjBL in higher education and almost none in the field of media practice education, bar one significant study into the pedagogy of screenwriting (Colwell 2014). Even within the subject discipline of project management, there is wide and disparate debate about the nature of projects, and even the definition of the term 'project' is much disputed (see Hodgson and Cicmil 2006). So, it would seem that there is still work to be done if educators wish to properly understand 'what it is we do when we do this thing called a project' (Hodgson and Cicmil 2006, 32).

This article takes as its principal methodology the possibility for critical reflection as an effective research tool. It is argued here that it offers an opportunity for articulating experiences in a way that enables educators to produce constructive meanings from their experiences. It encourages an unpicking of assumptions (Fook 2011, 59) that might lead to the reformulation of thoughts, a redirecting of action and the production of new meaning. There is a dialogic exploration of experience in critical reflection that, for example, takes advantage of the researchers' repeated conversations with students individually and in groups over some 15 years of experience as a media practice educator. There is a special interest in those unguarded moments when students reveal some aspect of their practice which may offer an insight into the backstage performances that are often enacted unseen and unavailable to the educator. Moments pass fleetingly yet hold the researcher's attention for months or years after. Such valuable insights evidence a *dynamic interaction* (Fook 2011, 60) between the subject and researcher that illuminates a shared experience in which the researcher is participant. In this way, critical reflection is symptomatic of a *dialogic* (Fook 2011, 60) exploration, one that is *integrative* (61), processing the complexity

of experience through the contextualising framework of theory. In doing so, the research is able to produce new linguistic descriptions that articulate their observations in such a way that they can be communicated. Fook (2011, 61) describes the ways in which critical reflection as a research method is *transformative* (61), linking personal experience, professional practice and social context with research in ways that can provide a feeling of agency and lead to action.

Seen through the lens of critical reflection as a research methodology, this body of experiential knowledge, held tacitly by the researcher, would seem to be a useful resource and an excellent starting point for a deeper questioning about what it is students do when they do projects. The particular choices of theoretical framework offered below are intended to offer a scaffolding for understanding and making sense of the researchers' ongoing critical reflection and for framing the questions the researcher has been asking about the nature of projects.

The pedagogy of PjBL

It is simple enough to establish that the topic of PjBL in media practice education has been under theorised, since a search of the literature on the topic will result in a very limited return. The material that does exist usually suggests that more needs to be done and often outlines an agenda for further research. For example, Helle, Tynjälä, and Olkinuora (2006) set out to undertake a thorough literature review of the research on PjBL, asking questions about the nature of PjBL and its pedagogical value in post-secondary education. While their study offers an informative review of the literature, their evaluation of the pedagogical benefits of PjBL suggests that the existing material tends towards course descriptions rather than empirically grounded research (Helle, Tynjälä, and Olkinuora 2006,

306). Typically, this would include advice on how to organise PjBL activities with advice on which tools to use and the possible ways in which assessment might be deployed. What is offered here is a conception of PjBL as an *administrative container* for learning rather than an explanation of the ways in which learning occurs. This would appear to mirror the literature in the subject discipline of project management, which, until the advent of the *Critical Projects Movement* (see Hodgson and Cicmil 2006), largely focused on the procedural and analysis of the *how* of doing projects.

In another example, a recent review of enterprise initiatives within UK universities (Goode, Jackson, and Molesworth 2014) looked at the range of provision of live projects within the sector and makes useful comparisons between approaches taken by differing universities. Live projects have a real client with a real business need who set a brief, which students undertake to deliver. Live projects are seen as valuable because they are thought to bring a degree of situated practice into the academic setting and are thought to provide a degree of authenticity for student projects. From this report, it is possible to gauge quite how embedded the use of live projects has become within the contemporary university curriculum. The reported use of live projects in the study extends to a broad range of subject disciplines, having emerged originally in the field of design education in the mid-1960s (Hanney 2013, 48). This just goes to show how much the use of live projects has since colonised the wider curriculum. What is significant here though is the identification by the study of the deficiency of research in support of the use of live projects as a productive pedagogy. It questions the lack of evaluation of pedagogic issues such as expectations from students, staff and stakeholders, ethical dilemmas posed by students undertaking unpaid freelance work, issues around motivation and barriers to success, as well as the ways in

which learning on live projects connects between the world of work and the university experience.

Another study, investigating disappointing responses in the National Student Survey (NSS) for the subject area of Art and Design, found a general acceptance among educators within the field that there has been an 'inadequate level of subject specific pedagogic research' (Vaughan and Yorke 2009, 19). The study identified a feeling within this community that there is a need to develop a pedagogic understanding of the learning and teaching philosophy underpinning the subject and calls for more research into the field of Arts, Design and related disciplines. According to Vaughan and Yorke (2009), the kinds of self- identities adopted by students within these fields may conflict with the representations of academic life embedded within the configuration of the NSS. It seems that students of creative practice often feel that they are at odds with the particular kinds of academic organisational structures they encounter. The study implies that students may see these structures as opposing their own self-determined approach to organising their learning, an approach encouraged by educators who take a view of creative practice, which values self-determination and self-negotiated forms of study (Vaughan and Yorke 2009, 14). The NSS results aside, it is possible that there are serious issues at play here if students are adopting identities that run counter to those that academic institutions see as productive of learning. Such issues could question the very relationship between creativity and learning in practice-based subjects within universities.

Clearly then, if educators are to use PjBL as a purposeful teaching methodology then they should be able to do more than define the tools that are used to deliver a project or describe the process of delivering PjBL. A brief review of media practice course websites reveals the overwhelming adoption of live projects as a method of pedagogic delivery. The

approach is often a key selling point for undergraduate programmes, yet a review of the literature concludes that PjBL, at least as it is formulated within media practice education, is under theorised. If educators wish to engage with the institutional and governmental challenges facing them, it should be possible to integrate theories of learning into the practice of doing projects, in a way that opens up the student experience to pedagogic enquiry. There is then, a very real need to analyse the experience of students participating in PjBL; re-theorise PjBL as a pedagogy and develop a new model for the use of PjBL in media practice education. Otherwise PjBL is surely no more than an *administrative container* for structuring learning activities that has little pedagogic value in its own right. Furthermore, this lack of pedagogic theorising calls into question the very authenticity that is claimed by educators for the doing of projects in media practice education.

Recontextualising professional practice as a pedagogic discourse

For Bernstein (2000) the *pedagogic discourse* is a principle by which other discourses are appropriated and brought into a special relationship with each other for the purpose of selective acquisition and transmission (32). The *pedagogic discourse* delocates, relocates and refocuses according to its own needs. To give an example, the *pedagogic discourse* takes professional media practice and transfers it from the workplace into an educational setting in order to produce a media practice education curriculum. But the world of the work is not a discrete object that can be moved from one location to another. The world of work and the practices found there are part of a closed sociological system built around interactions between people within a symbolic domain (Engestrom and Middleton 1998). The workplace is a habitat, 'a given space, a set of relationships, a range of values, an overall atmosphere, which penetrates it and whoever experiences it' (Dowling 2009, 18).

Furthermore, it has been argued that it is a 'sociological space that is produced through negotiated meanings in which knowledge is inextricably embedded within the activity system that generates these meanings' (Porac and Glynn 1999, 583). The suggestion here is that knowledge cannot be separated from the sociological habitat that produces that knowledge. Thus, attempts at relocating knowledge or the habitat within which it is embedded distorts and transforms it, perhaps even in unpredictable ways. For Bernstein, the transformation is from an actual unmediated discourse to an imaginary discourse, for example, an unmediated discourse might be carpentry (professional practice), whereas the equivalent imaginary discourse would be woodwork (academic practice) (2000, 32). It is perhaps akin to the idea of doing professional cinematography on set in the workplace as opposed to playing at cinematography, on campus, in an educational setting. That is not to decry, of course, the value of play in education. The point is that when educators take the practice of projects from the world of work and translocate it into an educational context, they are creating an imagined activity, which is somehow thought of as authentically mirroring the original practice.

Those coming from industry into academia as practice educators bring with them a set of values, beliefs, practices and expertise valued by universities and students alike. However, there is often a sense that they are attempting to replicate their experience of professional with no consideration for what that might mean or for how translocation of practices from one domain to another might transform that practice. Garraway (2005) illustrates the way in which this distortion occurs in his study of the development of a vocational qualification for sanitation workers in South Africa. He breaks down the process of *recontextualisation* into a number of levels of knowledge translation (Garraway 2005, 7). First, he describes a selective process of sampling, which focuses attention on that which is

most relevant to the problem at hand – in this case, the development of a qualification for sanitation workers that meets certain aims and objectives as set by the policies of governing institutions (government, educational frameworks and needs assessments). In this particular instance, Garraway found that it was not possible to visit all possible workplace sites; so a small number that had been recommended for best practice were sampled instead. Thus, the logistical practicalities of sampling had already begun to determine the quality of data being gathered, further narrowing the field of study to the exclusion of alternative, and possibly innovative or otherwise valuable, practices.

The second level of knowledge translation occurs when the things people do in their day-to-day lives are transformed into functional descriptors (Garraway 2005, 7). Often these descriptors are a generalisable contraction for a range of activities that would take place. He gives the example of a sanitation worker who is required to contact local households to investigate existing sanitation arrangements and, in negotiating with them, identify their needs. This was reduced to 'registering households' (Garraway 2005, 7), thereby reducing a complex and socially embedded set of activities to a form that is abstracted from the context of its practice. He then goes on to explain the ways in which these functional skills descriptors were then further delinked from the contexts within which they were originally situated, by administrators who wished to organise them into skills related categories. Having grouped these functional descriptors relating to differing activities from varying contexts into similar skills categories, Garraway explains that only the skills category headings were then transferred to the qualification under development, as learning outcomes. Thus, the process of codifying workplace knowledge transforms it into something else through a recontextualising discourse, producing what Barthes might refer to as 'work-

as-text', that is, a system of categories and relations that are bought together by the observer (Dowling 2009, 22).

It is possible to imagine a similar process at work in the production of the Creative Skillset, National Occupational Standards (NOS), which is often adopted as a benchmark for developing media practice learning outcomes. To take one random NOS statement by way of example, in this instance a descriptor that is taken from the 'Creative Media/Film & TV/Camera' standard. Under the heading of 'Collect information and develop shooting ideas', the descriptor states that a professional camera operator should be able to:

> *Encourage and enable effective liaison between relevant personnel in the camera department and all other relevant personnel to successfully achieve production needs.*
>
> (Creative Skillset 2012)

It is possible to see from the abstract language used that there are layers of meaning obscured within the descriptor: the nature of 'effective liaison', the requirement that there is pre-existing knowledge of what might constitute 'relevant personnel' and the related 'other relevant personnel' or the allusion to 'production needs'. These are open statements that allude to a wider sociological world. There is reference to relational knowledge that would be situated within a symbolic and sociological context – knowledge that may have different meanings, for different observers, in different contexts and that would require a capability for a high level of situational discrimination in order to be able to perform effectively in this role. Such a role would differ wildly depending on the situational context of the production (e.g. drama, documentary, corporate, commercial, news and so on to mention but a few typical scenarios). For example, in any given situation an experienced film production professional may have one understanding of the meaning, having tacit

knowledge of the kinds of people who may constitute as relevant personnel – while a student may have a more restricted understanding of the meaning based on information provided purely through coursework material, modelling and tutor explanations. The two domains of activity are different and are mediated by different situated practices.

In a similar manner, if it is possible to conceive of a project as a professional domain of activity, then PjBL is surely a pedagogic domain of activity. The two things are not identical, and Bernstein (2000) argues that the recontextualising process silences the role of culture and context producing a form of 'jejeune trainability' (67). Is it possible that this recontextualising discourse renders what initially appears as creative labour, that is, the work undertaken by professionals, into academic labour, that is, the work undertaken by students? If so, it would be possible to argue that the two kinds of work hold different meanings for students and might be approached with differing levels of motivation and engagement. Indeed, Colwell (2014), in his study of screenwriting as pedagogy, suggests that the process of *recontextualisation* establishes an 'internal contradiction between the activity and its assessment, which may result in students misrecognising their own learning' (108). Thus, by encouraging students to construct identities around notions of professional practice within an academic setting we are instigating a disjunction between the identity adopted by learners and their own learning experience.

Recontextualising project processes as pedagogic discourse

There are further issues of concern that emerge from this unwrapping of the recontextualising process. In particular, there are concerns about the nature of professional expertise and the expectations placed upon students who may be required to perform as project participants against a set of imagined norms. Project management occurs within a

framework of professional practice. It requires a high level of expertise that emerges from the experience of problem-solving through repeated iterations of project life cycles (Jarvis 2015). It draws upon a range of tools and techniques that have grown out of historical practices that are embedded in media production, which would be familiar to those working within this community. To draw in an example from drama production, the process of breaking down of a script into its component parts is a simple enough task if you know what to do with the resulting information. On the one hand, this information may appear to exist purely within a logistical domain, yet each piece of information is inextricably linked into a web of critical and creative decisions that impact directly not only on the scheduling and logistics of a production, but also impact on the production of meaning in the final film.

An effective project manager is someone who 'embodies both explicit knowledge of principles of practice as well as tacit knowledge of how these principles are integrated and applied to practice' (Colwell 2014, 109). This may be an aspiration for students and educators alike but it does not paint a realistic picture of what students actually do when they are required to undertake projects, especially in relation to the processes of developing, initiating and delivering a project. The issue of concern is that students might not have the necessary experience to conceptualise the ideas behind project processes and would certainly not be in a position to deliver a project at the same level of expertise as an experienced project manager.

Dreyfus (2004) offers a simplistic but influential taxonomy for characterising expertise that runs from: *novice*, through *advanced beginner*, to *competence*, then *proficiency* and finally to *expert*. At the highest level, he sets out the following as a definition of expertise: the expert transcends reliance on rules, guidelines and maxims, has an 'intuitive grasp of situations based on deep, tacit understanding', has 'vision of what is

possible' and uses 'analytical approaches' in new situations or in case of problems (Dreyfus 2004, 180). Clearly this level of know how is aspirational for an undergraduate, even for the stronger students, since, in order to achieve this level of expertise there is a requirement for the practioner to have been through many iterations of a project life cycle and to have shared with others the experiences of problem-solving, which has led to the development of an intuitive grasp of project processes. Such expertise emerges from an 'accumulated knowledge base that is acquired experientially through successive iterations of work activities' (Hanney 2013, 47). This kind of situated, workplace learning would have naturally occurred as practitioners moved through various grades/roles in the workplace.

In the researchers' own experience, the concept of Communities of Practice as outlined by Wenger (1998) is commonly adopted as a justification for modes of study built around PjBL in course validation documents. Though there often seems to be little consideration as to what this might mean pedagogically. Communities of Practice (1998) commonly involve mentorship by more experienced practitioners at an informal or formal level. A mode of knowledge transmission akin to that experienced on an apprenticeship and not a mode often found within undergraduate courses in media practice. In fact, it is difficult to see how a live project could be formulated as a Community of Practice when there is rarely evidence of expert mentors participating in any way as part of the project team. Yet, with no previous experience, students are still expected to undertake project work that is essentially highly complex and riddled with unpredictable problems. They are required to deploy common project management tools that would normally require high levels of situational discrimination for their effective use – tools which the students have little or no experience of using and the meaning and value of which may be entirely misunderstood.

Being able to participate as part of an effective project team is certainly an essential and valuable employability skill. It is just as important to the creative process as being able to operate a camera or any other piece of technical equipment. If a camera operator cannot competently expose, focus or white balance the camera, then it becomes an obstacle to creativity. It is *present-at-hand* to employ Heidegger's phrase (Dreyfus 1991), which is to say the object is in the way, it exists but it is not useful and it may even obstruct the creative process. This is just as true for the capability for project working, it is an important and essential part of the creative process that can become as much of an obstacle to creative expression as a conduit for creativity and innovation. It needs to be recognised as such and the ways in which students engage with project processes needs to be explored in depth. Professional project managers operate within a professional framework embedded within a community of practice (Wenger 1998) that has evolved over time into a sophisticated sociological and cultural domain of practice. Students cannot be expected to operate at this level and it would be surprising if they made much sense of the tools and techniques expert practitioners employ. Why would they? After all, it can take many years of practice for those working in the industry to achieve a level of expertise that places them in a position to be trusted with millions of pounds worth of budget. So how can educators make sense of the ways in which students engage with project work and how might they conceptualise an appropriate methodology for novice practitioners?

Muddling Through as a novice project methodology

Lindblom's (2010) work has been extremely influential in the field of organisational studies and decision making. He explores the ways in which policymakers make decisions and this has been usefully adapted as a means of conceptualising the ways in which projects

are organised (Wilson 2006). Lindblom contrasts an ideal decision-making method, that of the *Rational Comprehensive Approach*, with the way in which he suggests things are actually done; with *Successive Incremental Comparison*, a method that has come to be known as Muddling Through. With the *Rational Comprehensive Approach*, decision makers evaluate values and set objectives; they then comprehensively analyse all possible solutions available to them, taking account of all potential factors that may influence an outcome. Finally, a choice is made on the basis of the solution that delivers the highest value while meeting the objectives identified at the start of the process. Referred to as a 'root' approach (it builds from the base up), it is reliant on theoretical models and accounts, it builds up from the roots 'starting from fundamentals anew each time, building on the past only as experience is embodied in a theory, and always prepared to start completely from the ground up' (Lindblom 2010, 81). Importantly, the means and the ends are always considered separately after careful and comprehensive consideration of all the possible options. Such an approach might be familiar to anyone who has undertaken research or worked in academia. For the purposes of this discussion, it could be termed an empirical or academic approach.

It is contrasted with the method of *Successive Incremental Comparison* in which decision makers evaluate a limited number of available options, often based on previous experience, and make comparisons based on projected outcomes from each option. This leads to the implementation of a short-term solution which is then tested and re-evaluated leading to incremental steps towards an ideal outcome. Referred to as a 'branch' approach (i.e. it looks at nearby branches), it accepts that not all possibilities are available, that it is not possible to evaluate all possible factors that might impact on a solution and accepts that solutions may be imperfect. The means and ends are intertwined and delivery of a testable working solution is seen as more useful than producing a perfect solution. It is an everyday,

common-sense method akin to *reflection-in-action* (Schön 1991) and has become known as *Muddling Through*. For those engaged in a process of *Muddling Through*, experts and academics are often seen as unhelpful outsiders because they espouse the value of problem-solving that is built on empirical analysis and theoretical precepts (Lindblom 2010, 87), whereas, following Lindblom, for those engaged in the delivery of a project, intuition, guessing and negotiation around shared goals have more value. A quick reference back to the definition of expert shows that these are skills that align well with those that are cherished as expert capabilities.

There is a systematic method at play in *Muddling Through*; it is not a 'failure of method' (Lindblom 2010, 87) but is in fact a well tried and tested approach that is a 'highly sophisticated form of problem solving' (88). However, in order to constitute an effective project methodology, *Muddling Through* needs to be overtly or consciously practised. Student projects often appear to lack this characteristic and their projects appear to be shaped more by their encounters with unsolved problems or by problem avoidance rather than by any purposeful decision-making undertaken by them. Most educators working within the field of media practice education will be familiar with the ways in which the complexities of project working can impact on the outcome of the group's efforts. Problematic issues around the dynamics of group working and effective project management are numerous (see e.g. Davies 2009 or Sabal 2009) and can often lead to 'sliding' (Rehn and Lindahl 2012), which describes the process of muddling but 'not getting through' (808). Sliding should not be thought of as an indicator of failure but more of a *faltering-on-the-way* to completion of a project. A project's process is a 'complex interaction between structural and action elements' (Rehn and Lindahl 2012, 808), and breakdowns, failures or mistakes can often lead to innovation once a project has recovered its

equilibrium. The muddling of students, who often appear to slide through projects unconsciously, is problematic only because of the missed opportunity to actively engage in critical reflection, review and analysis.

There are then two forms of *Muddling Through* to consider here, that of conscious and unconscious muddling. Conscious muddling (i.e. muddling and getting through) is a rational problem-solving methodology based around critical review and reflection as an approach. To go back to Dreyfus's taxonomy of expertise, this might correlate to the level of advanced beginner who is able to apply rules and has the beginnings of a capability to make situational discriminations, that is, their creative problem-solving skills are developing. A useful metaphor might be that of a mountain climber who is skilful and engages with careful decision-making. The climber evaluates a number of possible routes ahead from their present position. The number of options is limited and the most obvious choices are compared and acted on. The climber may test possible roots before making a final decision and moving to the next position. The climber then analyses the new position and begins the process of stepping forward again. The decision-making process is analytical, evaluative and risk orientated. This contrasts with that of sliding or unconscious muddling (i.e. muddling and not getting through), which could be compared, using Dreyfus's taxonomy of expertise, with that of a *novice* who is able to follow rules but may not have the capability to engage in situational discriminations, that is, their creative problem-solving skills may be limited. Sliding calls forth the metaphor of a toboggan careering down a hill following the easiest path. Though there is some limited steerage it generally finds its own way; its trajectory determined by the topology of the ground rather than by purposeful control. Decision-making is clouded by limited judgement, differing agendas, poor communication, lack of analysis or evaluation, and poor risk management.

For students, the consequence of an educator's recontextualising of professional project processes may be twofold. Firstly, the expectations of educators may be mismatched against the actual capability of students, which could be frustrating for all parties involved. Rather than set out to develop the students' project-working capabilities from *novice* to expert, wouldn't it make more sense to aim for moving between *novice* and *advanced beginner*? In some cases, it might even be possible to move them towards a level of competence. If educators were willing to work with the actual capabilities of students rather than to some imagined ideal, there might be a possibility for linking the learning of the doing of projects and the practice of creativity within the curriculum. Secondly, the tools and techniques of professional project processes lack use value for students who have no situated experience of using them. Consequently, though students will produce process documents, they may bear little relation to what they actually do and in reality, may have contributed little to the process of managing their project. So, the question here is: Why produce process documents that are not used to inform process, decision-making and creativity? This disjunction between expectations and capabilities may institute a faked performance, which may mask the realities of their actual practices. Students may present as undertaking a project to the expectations of their tutors but actually they are *Muddling Through*, often unconsciously. If, rather than setting overly high expectations, educators were to engage with the actual practices of *novice* project workers, there may be more opportunity for support, engagement and learning.

Decoupling of interior and exterior project identities

A further consequence of the recontextualising process may be the impact it has on the kinds of identities adopted by students undertaking media practice project work. As

suggested above, it seems possible that students adopt duel identities, one that is presented outwardly towards tutors and another, which is reserved for private interactions among project participants. In fact, the situation may be even more complex than this and the presentation of duel identities may involve a decoupling of expectations external to the project group from the actual practice of doing projects within the group. In other words, there may be a disjunction between the learning aims configured by the proposed activity and the recognition of this learning by the students engaged in the activity. In organisational studies, 'decoupling' (Crilly, Zollo, and Hansen 2012) is the separation of the behaviour of those acting inside the organisation from that which is expected of them by external factors, such as legal or policy requirements. The decoupling of external policy requirements from practice occurs as a consequence of environmental stress that acts upon the interiority of organisational space. In the case of project management, the project team constitutes a small-scale organisation typically bounded by a variety of objects such as a 'Project Initiation Document' (Hanney 2013, 52), which establish membership of 'distinct spatial ecology' (Hanney and Savin-Baden 2013, 18). Decoupling within projects is likely to occur in situations where the perceived aims of external policies do not align with the shared goals of the project participants. It is a form of deception that seeks to mitigate against criticism that members of the project team might anticipate. It may also occur if the project participants are not closely integrated or if the team is fractured or dysfunctional. Decoupling may equally be an act of resistance to a perceived regulatory system that seeks to impose identities, behaviours and values upon those within a project space – whose existing personal identities may already be in conflict with the idea of *doing-things-a certain-way*. For example, students may have their own ideas about how media is made, which may be in conflict with that of their tutors. The student who insists on a particular

post production workflow, the production group who put off making key decisions or those who insist on interacting in crowded social spaces all have good reason to behave in this way even if the reasons for the behaviour are not immediately apparent to tutors.

Drawing on theories of *cognitive dissonance*, Warin et al. (2006, 237) develop the idea of *identity dissonance* in order to conceptualise the ways in which individuals might manage multiple conflicting identities. Taking this idea a step further, Lund Dean and Jolly (2012, 229) link *identity dissonance* with *situational salience* as a means of understanding student disengagement with learning. For example, students might perceive the request to document their project as emanating from an academic need to assess project work rather than as something that might be of value to them creatively. An obvious example would be that of a production budget which, in reality, is a valuable representation of an important and tangible element of the production process, that is, the flow of money. Students, though do not have any money, were consequently required to produce budgets is a request to fictionalise a representation of an imaginary practice. Such a request is likely to be seen as a tedious labour without identifiable benefit and one that lacks meaning for those producing it. In another example, the requirement for students to interact with texts that are perceived as overly academic may be resisted, whereas celebrity media practitioners may be weighted as having more value by students. So, while educators may value the theoretical writings of Sergei Eisenstein over interviews in celebrity magazines with Quentin Tarantino, students are more willing to engage with the latter. Or, a student with an overriding passion for camera work may disengage from activities relating to screenwriting, even though being able to interpret a script maybe a useful skill for a Director of Photography. In this way, it possible to see how the world view of a student might predispose them to place greater significance on certain kinds of knowledge depending on

the kinds of identity they may adopt. Thus, the self-perceived needs and aspirations of the student may result in attitudes towards learning, which differ from those that are considered desirable by educators. Lund Dean and Jolly (2012, 230) identify a number of behaviours that might be associated with *identity dissonance* and suggest these may come about when the norms of academic life are inconsistent with a self-identity that is embedded in social and cultural milieu that maybe in opposition to an academic identity. Peer pressure, family influences, class, cultural, sub-cultural and ethnic norms might all contribute to this fracture. Students might adopt a 'too-cool-for-school' demeanour, or may avoid participating in class-based activities. Those who identify as creatives may feel that tutor-led activities curtail their creativity and constrain their self-expression, whereas the tutor may in fact be posing problem-solving exercises.

Engaging with learning means students will not stay the same, that their 'self' will change and it is the learning activity that hopefully triggers that change. However, it is equally possible that the learning activity may trigger *identity dissonance* (Lund Dean and Jolly 2012, 236). Learners make decisions as to what changes they will accept. If they perceive the change to self-identity as positive they may comply, on the other hand there may be a dissonance between value of the learning as it is presented to them and their idea of how things should be done, for example, by creatives in a creative field. Thus, the concept of 'what I might be' (Lund Dean and Jolly 2012, 236) may not align with the possibilities for *what I could be* since aspirations which may motivate learning are often distorted conceptualisations of the world of work and the being of creatives in the field. Though educators may attempt to correct these erroneous worldviews, their efforts to do so may actually serve to reinforce this distorted sense of the world. While feigned conformity, participation and faked compliance may appear to the observer as apathy, they

might just as easily be symptomatic of strategies of resistance (Hope 2013, 46). Such performances challenge the normalising discourses of academia and mask reality, manifesting as a form of playful and creative resistance, at once affirming and weakening that discourse (Allan 2013, 30). Resistance to this normalising discourse allows for the possibility for individuals and groups to shape their own identity through subversion. As they transgress against the norms that compel a repeated performance as a subject with whom they do not identify (31).

That students act out their conception of what it is 'creatives' do as forms of play and that they resist attempts at transformation by educators should be no surprise. It is after all one of the primary activities of media practice education to encourage students to adopt creative roles and undertake creative work. It should also be no surprise in a subject discipline which celebrates *Guerrilla Filmmaking* that students adopt identities that run counter to those considered desirable by educators. There are *Guerrilla Filmmaking* books, websites, magazines and competitions dedicated to promoting this identity. *Guerrilla Filmmaking* is risky, no-budget filmmaking that is shot quickly in real locations is often without permission. Guerrilla Filmmakers are passionate, maverick and identify as outsiders. This is very much the ethos of low budget filmmaking and even professionals working in the media industries take time out to participate in what they deem to be the real creativity of *Guerrilla Filmmaking*. Director of Photography John Mathison, who was nominated for an *Academy* award in 2001 for his work on Ridley Scott's *Gladiator* (2000) talks about how he cut his teeth as a Guerrilla Filmmaker. He explains that running around South London in the 1980s shooting in disused buildings with no money was a way of getting films made, getting experience and making contacts (Mathison 2003). Media practice educators encourage students to adopt this identity; it is at the very heart of student productions to go guerrilla

since they have no money or other resources to draw upon. At the same time, universities expect students to adopt an academic identity that requires conformity and studiousness. Meanwhile, their tutors also direct them towards an aspirational goal of becoming professional creatives, an idealised personality.

Alongside this confusing milieu rests their own personal psychology exacerbated in some instances by the influence of their peers and the particular psychological dynamics of group working. The work of Marsh and Craven (2006) is informative here, suggesting that self-concept is multifaceted and may interact with *collective-self-concept* in antithesis to the kind of idealised learner behaviours favoured by educators. Decoupling then can be thought of as a tension within the subjectivity of learners that comes about through *identity dissonance* as a result of the *situational salience* that is generated by confusions around the kinds of identity that educators see as an ideal as opposed to those the students choose to adopt.

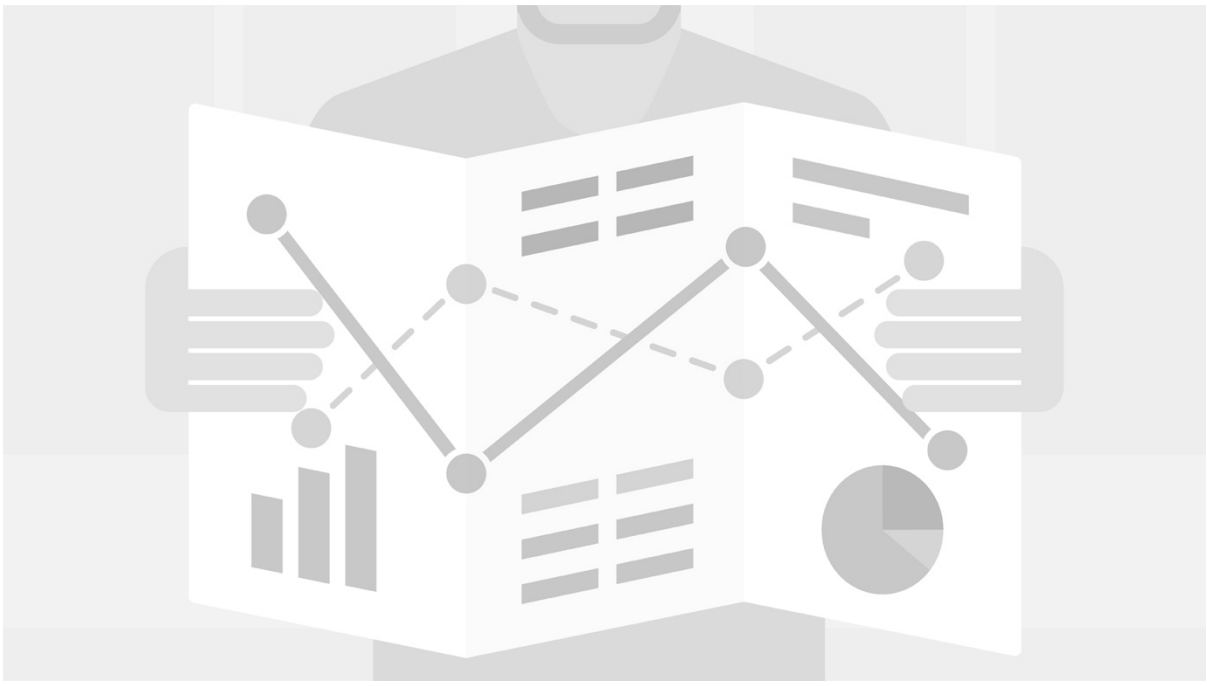
Future stratagems

This article aims to draw attention to a range of problematic issues for media practice education and positions itself as a call to action. In the context of the forthcoming white article from the UK government that seeks to impose a 'Teaching Excellence Framework' upon higher education, there would seem to be an important opportunity for media practice educators. However, if educators wish to be able to articulate the qualities of their pedagogic practices, then perhaps now is the time to begin a full and thorough investigation into the nature of media practice education. This will bring forth challenges and may well require a 'letting-go' of cherished beliefs in favour of sound pedagogic research rooted in robust theoretical frameworks. The researchers own experience of

entering higher education from industry was one of confused bafflement at the way in which students were supported through project work. It led to the research asking fundamental questions about the nature of projects, a journey that is still only partially completed. At each stage of this journey, further layers of complexity have emerged as concepts that initially seemed to offer solutions failed to whether analytical investigation. The testing out of alternative approaches in the researchers' own teaching practice has led to further investigation and the broadening out of the field of enquiry to encompass organisational studies and project management theory. Yet there are still fundamental questions that need to be asked and a debate to be had.

What is certain is that is a need to investigate what media practice educators believe they are doing, when they construct what appears to be an imagined practice and yet make claims for it, pedagogically, as an authentic practice. Recognising this process as one of *recontextualisation* would appear to question the very foundations of media practice educator's beliefs about their curriculum. It is argued here that there is a need to address this issue if educators wish to understand the particular characteristics of PjBL within a media practice curriculum. There are also concerns about the way in which projects are managed within the curriculum and educator's expectations of student capabilities as project participants. The discussion asks if educators are doing projects or are they doing PjBL and questions the pedagogic value of current approaches. Finally, there are issues around the kinds of identities adopted by students and the ways in which this might create confusion over attitudes towards their learning. Each of these topics is wrapped up within, and emerges from, the overarching issue of *recontextualisation* and questions the claim for an authentic media practice curriculum derived from the use of projects as a means of reflecting professional practice. The discussion proposes that educators ask questions about

what it is students do, how they conceptualise project work, and the particular ways in which they engage in problem-solving and project management. It asks that educators question the kinds of identities adopted by students and contrast these with the idealised identities formulated by educators through the academic discourse. Answering these questions may help educators come to a better understanding of what students do when they do this thing called a project (Hodgson and Cicmil 2006, 32).



13. ARTICLE 3 – Doing, being, becoming: a historical appraisal of the modalities of project-based learning

DOING, BEING, BECOMING: A HISTORICAL APPRAISAL OF THE MODALITIES OF PROJECT-BASED LEARNING

Abstract

Any pedagogy of media practice sits at the intersection between training for employment and education for critical thinking. As such, the use of projects is a primary means of structuring learning experiences as a means of mirroring professional practice. Yet, our understanding of the nature of projects and of project-based learning is arguably under-theorised and largely taken for granted. This paper attempts to address this issue through a synthesis of the literature from organisational studies and experiential learning. The article aims to shift the debate around project-based learning away from an instrumentalist agenda, to one that considers the social context and lived experience of projects and re-conceptualises projects as ontological modalities of doing, being and becoming. In this way, the article aims to provide a means for thinking about the use of project-based learning within the media practice curriculum that draws on metaphors of discovery, rather than of construction.

A rationale for the study of project-based learning

Organising, planning, strategizing; these kinds of activities are not new, they have been a part of the human cycle of life since we began arranging ourselves into complex societies. Indeed, some have argued that even before the advent of complex social systems humans have organised themselves in ways which would nowadays be considered as projects. It is a word that is in common use. It has professional, business and common-sense contexts for its adoption into common speech. How often do we hear this word in conversation? People ask each other 'what is your latest project'? A project can be something you do as a hobby, it can be something you do as a professional. It can refer to activities undertaken in the creative industries just as much as in finance, engineering and science, to name but a few. In contemporary society the idea of a project has become so increasingly co-opted as a form of organisation to the extent that some have started to refer to the *projectification of society* (Lundin and Söderholm 1998; Maylor et al. 2006; Packendorff and Lindgren 2014).

In higher education, especially in creative and practice-based subjects, it is common to adopt an approach to learning and teaching called *project-based learning*. Students work on projects and we even consider projects as units of assessment. We value the fact that projects have a professional context. We attempt to mirror this for the benefit of the students, who are expected to adopt ways of working and interacting that reflect the *real world of work*. A world it seems, that is filled with projects. We see the use of projects in education across a wide range of subject areas, where *project-based learning* is often selected from a range of pedagogic options in order to deliver particular kinds of learning experience, knowledge or skills. Project working in media practice is, however, not selected

through choice. It comes with the territory. Indeed, *project working* is the very essence of practice in the professional realm, where you cannot separate out the project working from the practice of media.

Though, as has been argued elsewhere (Hanney 2016), carrying out media practice projects in the professional field is very different to undertaking them in an educational setting. It has been suggested that the recontextualisation of practice from the professional to the educational transforms that practice (Bernstein 2000; Garraway 2005). Such that, while in the professional setting we may do projects, in the educational setting we do *project-based learning* and, it is argued, these are two very different manifestations of practice. In order to understand the difference between these two categories of practice it is necessary to understand the nature of a project as phenomena. We need to unpick all we know about projects and ask some very basic questions about the assumptions we make about them (Linehan and Kavanagh 2006, 51). Only then might it be possible to theorise a sufficient, or optimal, methodology for the use of projects in an educational setting. With this in mind this article draws on the work of Giddens (1990, 1991) in order to undertake a genealogical investigation into the historical, social and cultural roots of the concept of a project. The aim here is not to verify the *origins* of the concept but to engage in a process of de-reification that offers a critical view of the complexity around the idea of a project. The article argues for a conception of a project as more than a collection of tools, techniques and procedures but as a practice born of a particular set of historical, social and cultural factors. In this way, the article aims to position the differing manifestations of *project-based learning* as *ontological modes of doing, being and becoming*.

The article begins by first defining the difficulty of theorising the object of study, before going on to explore the concept of ontological modalities, offering along the way

some terminological definitions. This is followed by a brief analysis for each of the proposed ontological modes along with a description of the social and cultural manifestations that are typical of each. The final section of the paper draws conclusions from this analysis and reflects on the ways in which the proposed project modalities of doing, being and becoming might impact on educators' thinking about projects. In doing so, it hopes to provide a foundation for understanding *project-based learning* as more than an instrumental framework for organising activity, but as a pedagogy of/for practice.

The difficulty of theorising the object of study

As a starting point this article positions *project-based learning* as a subset of experiential learning, following a claim often attributed to Aristotle (2001) that 'the things we have to learn before doing them, we learn by doing them'. More recent literature (see Moon 2004) suggests that experiential learning occurs through a process of reflection on the actions and interactions that come about through experience, leading towards a refinement of judgements of choice and future action. For Moon and others, experiential learning is analytical, immersive and requires learners to be participant both cognitively and affectively. It develops not only skills and knowledge but attitudes, values and behaviours (Hoover and Whitehead 1975, 25). Champions of *project-based learning* might well recognise these characteristics as ones that align with their own values as educators. Yet it is unclear quite how *project-based learning* achieves these aims beyond the construction of a framework for *busy-working* or in other words, work that keeps us busy but serves little value. In fact, a review of the literature on the subject reveals that currently *project-based learning* is under-theorised and (see Helle, Tynjälä, and Olkinuora 2006) largely confined to

'how-to manuals' which largely present *project-based learning* as an administrative framework rather than as an approach that fosters a personal transformation in the learner.

Gauthier and Ika (2012) argue that if educators want to truly understand the nature of projects and the ways in which learners do projects, there is an implicit need to identify and theorise an object of study. They go onto to suggest that for the purposes of analytical investigation there is a need to make some pre-suppositions, or in their words 'ontological commitments' (Gauthier and Ika 2012, 7), about the nature of this object of study. There is a need to make a commitment to a concept of a project as an ontological experience so that it is possible to move forward and begin to ask, 'what it is we do when we do this thing called a project' (Hodgson and Cicmil 2006a, 32). To answer such a question, it is necessary to be able to draw on a working definition of the object of study. Nevertheless, a review of the literature from the field of *organisational studies* would suggest there is no unified approach to the study of projects and the related concept of doing projects (Engwall 2003; Gauthier and Ika 2012; Hodgson and Cicmil 2006a). The general view of projects is an instrumentalist one that has developed from a practitioner evolved normative theory based around universal standards and exemplars of management practice. In other words, the focus is on the understanding of a project as an administrative framework rather than of a project as a practice.

In their exhaustive meta-analysis of published research on the topic, Helle, Tynjälä, and Olkinuora (2006) set out to ask fundamental questions about the nature of *project-based learning*, the pedagogical or psychological motives supporting it, and to evaluate the evidence of its impact on learning (Helle, Tynjälä, and Olkinuora 2006, 288). The results of their analysis suggest that psychological and socio-constructivist elaborations on these questions are largely missing from the available literature which is focused loosely around

course descriptions (Helle, Tynjälä, and Olkinuora 2006, 288). Again, they find the literature is typified by a practitioner-evolved normative theory in which project methods are adopted from an imagined professional practice, or from common sense understandings of the nature of a project. It appears then, that custom and practice forms the basis of a folkloric body of knowledge that attaches itself to a notion of professional authenticity for legitimisation.

This would seemingly leave educators open to critique since arguably, if they are unable to theorise the practice of projects, they may well undervalue the benefit of this pedagogic approach and may misrecognise the learning that occurs though participation in projects. Thus, there is still a need to ask questions about the *what* of projects before the *how* of project working can be explored.

Framing the ontological modalities of project-based learning

Given the difficulty with theorising *project-based learning*, it is argued here that there is a need to return to core principles in order to understand the nature of the object of study. In order to pursue such an enquiry, it is first necessary to establish a set of ontological commitments. It can be said that there needs to be an agreement to address the subject domain from a particular point of view; a commitment to the use of a common terminology and a set of core concepts with which to think about project working as an experiential practice. Since, beyond this there are no pre-requisites, it is possible to start at the beginning and build from there and ask fundamental questions about the principles and concepts that underpin the notion of a project. The argument presented here takes the point of view that while project management might be a model, project working is a practice. Though its forms and manifestations may be shaped by models of management, as

a practice it is a lived experience that emerges from a complex of social relations. As such it has an ontological quality and it is this aspect which should be the focus of any pedagogical enquiry into the nature of project working.

It is the particularities of the ontological qualities of project working that is explored here through an evaluation of the historical and sociological contexts that give rise to observable formations, or ontological modes of project working. The different ontological states that are identified through this investigation refer to the qualities of experience and the relations between entities and things within that experience. The investigation questions what can be said about the object of study, asks what assumptions can be made about it and considers the way in which experience is determined by the particular social relations within which practice occurs. The derivation of three specific ontological modes for project working follows a progression from traditions to models to practices. The different modes are formulated as: *doing* (tradition, static, unchanging), *being* (changing but the self is acted upon), *becoming* (self-transformation). The modes are arrived at through a genealogical methodology inspired in part by the writing of Giddens (1990, 1991), who along with others (Dewey 1960; Garel 2013; Saugstad 2013) offers a critical account of the changing manifestations of the social following a commonly accepted periodisation which is given as: pre-modernity, modernity, post-modernity, and high-modernity. It is argued that it is only through the analysis of the forms of organisation and management that arise in these periods that the contemporary meaning of a project can be understood.

It is the 'abruptness and extent' (Giddens 1990, 100) of the discontinuities between these periods that are of particular interest here. In particular, Giddens identifies discontinuities as a means of contrasting modern forms of social institution and organisation with what he refers to as 'traditional forms'. Modern forms, he argues, are

unique in that they are not seen prior to their emergence in the twentieth century. Beyond this, he is not particularly interested in the forms of early discontinuities other than to contrast them with modern forms of social institution. He merely asserts that modernity is post-traditional: and the traditional is pre-modern and goes on to claim that what really separates the modern and pre-modern is the rate of change and the scope of change (Giddens 1990, 6–7) that comes about during the modern period. For Giddens, modernity emerges from the seventeenth century onwards as a model of social organisation and cultural identity. Its emergence is a response to new forms of technological and social reality such as the nation state, industrialisation, and the commodification of products. In particular, he focuses on the disembeddedness of social relations as they are lifted out of local contexts and restructured infinitely across other global contexts, as though they are universals. Out of this milieu emerge new standards and institutional *models of organisational* control such as project management.

According to Garel (2013), the emergence of managerial thinking at the start of the twentieth century is linked to the rise of mass production and forms of managerial process that 'produce sufficiently general and recurring discourses that move beyond the context and the case that gave rise to them in the first place' (Garel 2013, 664). An example of this kind of managerial discourse might be the concept of Fordism as a model for industrial production that can be reproduced and disseminated across different locations through the use of standardised blueprints. Garel (2013) adopts Navarre's (1993) periodisation of a *year zero* for the advent of a modern concept of a project. He postulates that it is only in the early twentieth century that organisational principles, which we now commonly associate with projects, begin to attain autonomy. He argues for the latter half of the twentieth century as *year one*, i.e. when a standardised model begins to coalesce and we start to see

the emergence of what we now call project management as a subject discipline. The period of time that precedes *year zero*, Garel refers to as year *minus one* (2013, 665) and this is for him typified by the undertaking of organised activities that might look like projects but where no management model corresponding to that of project management existed. Garel (2013) argues that what is distinct between the two periods is a differentiation between practices of management and models of management. Thus, it would seem possible to align the emergence of the concept of a project as a particular practice with Gidden's (1990, 1991) periodisation of pre-modernity, modernity, post-modernity, and high-modernity.

Table 6. Ontological manifestations of a project.

Modality	*Ontological Characteristics*	*Example*	*Pedagogy*
Doing	Tradition, local contexts, social relations are dominated by kinship and vassalage, divine law and the providence of fate.	The architect as project director and the project as directed activity.	Transmission, apprentice (architect, master builder, master craftsman), assessment of competencies.
Being	Construction, nouns, reason replaces tradition, an instrumental focus on objects and states, projects as a discrete organisational entity.	Projects in a Controlled Environment (PRINCE2) as an organisational model.	Problem-orientated, controlling chaos, linear, instrumental, abstraction is mistaken for concrete reality, assessment of artefact/output.
Becoming	Discovery, verbs, processes, hyper-reflexivity, responding to change not managing change, projects as practice.	Agile Project Management as a model of practice.	Rhizomatic, risk driven, embraces ambiguity and uncertainty, non-linear, assessment of capability through personal reflection on process over artefact/output.

Table 7: ontological manifestations of a project

Through such a marriage of ideas it is possible to pair the ontological characteristics of each period to those of the correspondingly manifest forms of projects. In this way, it is possible to arrive at three ontologically unique manifestations of the idea of a project which are presented in *Table 6* as the modalities of doing, being and becoming. It is this differentiation between ontological manifestations of a project that is of interest for educators seeking an optimum or sufficient methodology for the use of *project-based*

learning. What follows is a summary of the derivation of the three modalities presented in *Table 6* which aims to further investigate their particular social and historical discontinuities and the ways in which these can be used as a means of rethinking *project-based learning*.

Doing: pre-modernity as a doing ontology

In the pre-modern period we are told, the bulk of the people were embedded in a local context or a situatedness of place (Giddens 1991, 16). The daily needs of these people are rooted in local contexts of production and distribution, their social relations dominated by kinship and social obligations through vassalage. Their forms of exchange are largely structured through this local context and their value systems are rooted in a belief of divine law, fate and providence. Modes of production are sequential. So, for example, the production of books required that one copy be made at a time and then passed from hand to hand on order for others to experience it. Monumental architecture constructed during the pre-modern period is often built to the glory of gods both living (deified rulers) and dead. These monuments obscure the everyday activities of the large mass of people and serve to narrativise the rule of the elite. During the pre-modern period, knowledge of practice is transmitted through a master-apprentice system that required study under an expert for many years before the range of tools and techniques required of a master builder could be skilfully employed. Thus, the transmission of knowledge at this time can be classified as serial and contextualised by a locality of time and place.

It is in the field of architectural construction that the role of *project actor* (Garel 2013, 666) is most clearly differentiated as a specialised practice, as architects take on the role of designer and contractor replacing the role of master-builder which had traditionally been part entrepreneur, part builder and part architect. As techniques of construction

become more specialised, especially on grand scales of work such as that undertaken in the construction of gothic cathedrals, there is increasingly a division of labour and the role of architect crystallises into one which not only interprets the needs and desires of the patron, but also undertakes to design the building, oversee construction and manage the finances. During the eighteenth century, this separation out of roles continues as engineers also begin to adopt specialised codes and organise into institutions. Mirroring this crystallisation of the role of architect as project actor, Knoll (1997) tells us that in education during the eighteenth century, the project method begins to emerge in the architectural and engineering schools of Europe initially in the form of competitions held in Italian schools of architecture, in which students were required to produce hypothetical designs that would be judged by panels of experts. Garel (2013, 666) informs us that by the end of nineteenth century, there existed schools in engineering which were adopting a state approved approach to teaching construction and engineering based around a rationalised and scientific methodology. Even so, Garel (2013) argues that these changes, while they certainly constituted a set of practices, had not formed into an institutionalised model that would be recognised as one specifically pertaining to the generalisable management of projects or of *project-based learning*.

By the end of the 1800s the *project method* had begun to be incorporated into the new technical and industrial colleges founded in the USA following a set of principles detailed in a training manual published by Woodward (1887). The manual required students to complete a final independent project as a requirement for graduation. Its author thought of the project as a 'synthetic' activity which built on practical instruction delivered earlier during the course. His conceptualisation of this process as one of moving from *instruction* to *construction* became widely adopted across schools and colleges in the

USA (Knoll 1997). Critiqued for its focus on work and technical skills by educationalists such as John Dewey, Knoll (1997) tells us that later iterations of this method began to recognise that creativity and problem solving were equally important. In addition, the breaking down of the process of *instruction* proceeding to *construction* was challenged, such that any instructive component became integrated into the project activity. Though it is possible to see the genesis of *project-based learning* in these early iterations of the *project method*, it is argued here that there are significant differences. For example, though there may be some experiential component to the learning activity it would typically be teacher-led and there is a requirement that the activity be completed in accordance with detailed guidelines set in advance. Such an approach might best be characterised as *task-based learning* (de Graaff and Kolmos 2007, 5) and may be more commonly associated with approaches to the teaching of vocational subjects.

Doing ontology and project-based learning

It is clear then that by the end of pre-modernity the concept of the project in its modern sense is not fully formed. Though, by the end of this period, there had already emerged some standards and codes of practice that form the basis for the future development of the concept. Thus, for the purposes of the argument presented here, a doing ontology is understood as one that specifies the condition of a subject in relation to *what they do* and *what can be done to them*. The subject derives its self-identity and sense of place in the world through the doing of work which, for the subject 'provides the mechanism for social interaction, and societal development and growth, forming the foundation stone of community, local and national identity' (Wilcock 1999, 4). In an educational context, a doing ontology can be understood as one in which the position of the

subject is defined in relation to the source of knowledge and transmission is the primary form of communication. A pedagogy that exhibits a doing ontology would be one that constructs an activity around a prescribed set of learning outcomes and frames the activity in a highly structured manner. The focus of the learning activity is on the acquisition of skills and pre-specified knowledge, whereas the experiential aspects of learning through construction or discovery are not so highly valued. This kind of pedagogy would be typically focused on the transmission of a tradition or subject discipline competencies and could be characterised as task-based rather than *project-based learning* (de Graaff and Kolmos 2007, 5).

Being: modernity as a being ontology

Modernity sees history as a progressive appropriation of rational foundations of knowledge which Giddens has described as the application of 'unfettered reason' (Giddens 1990, 48). Such a view relies on the conceptual framework provided by *provident reason*, the idea that greater knowledge means a safer and more rewarding existence (Giddens 1991, 28). That, as new understanding emerges this is used to build upon this foundation, an idea that has its roots in the Enlightenment (Giddens 1990, 47). The modern is, for Giddens, characterised by the domination of abstract systems that structure discourses of practice across time and space. Just as those very practices are lifted from local contexts and globalised through a separation of time and place. The increasing dominance of expert systems which 'bracket time and space by deploying modes of technical knowledge which have validity independent of the practitioners or clients who make use of them' (Giddens 1991, 18) leads to new specialisations and the emergent of new subject disciplines such as that of project management.

A further characteristic of modernity for Giddens is the idea of *reflexivity*, a process of 'chronic revision in the light of new information' (Giddens 1991, 20) which he tells us pervades the modern world. Giddens argues that reason replaces tradition with uncertainty since all knowledge in the modern age is subjected to reflexive examination. By this, he means that knowledge can change at any time should some new knowledge come along to undermine it. To 'know' in the modern world is to be uncertain, whereas being certain is the old, or pre-modern, way of knowing (Giddens 1990, 39). For Giddens, *reflexivity* is defined by 'the chronic entry of knowledge into circumstances of action it analyses or describes creating a set of uncertainties to add to the circular and fallible character of post-traditional claims to knowledge' (Giddens 1991, 28). Thus, we find ourselves living in a world of continuous change that is beyond our control and spend our time in consideration of counterfactual possibilities i.e. the consideration of alternate possibilities that may have arisen in different circumstances if different decisions had been taken. The 'consideration of counterfactual possibilities is intrinsic to *reflexivity* in the context of risk assessment and evaluation' (Giddens 1991, 29). In fact, the use of counterfactual evaluation as a tool for managing risk becomes one of the driving mechanisms for these new models for project management.

The timeline for the development of contemporary forms of project management could be said to have begun with the development of the Gantt Chart by Henry Gantt (1861– 1919) in 1917. The Gantt Chart is a scheduling tool that was famously used on the Hoover Dam project that began in 1931. When combined with the Critical Path Method (CPM) which was developed in 1957 by the Dupoint Corporation, the Gantt Chart becomes a powerful tool for analysing the process of organising, sequencing and scheduling project activities and is recognisably the basis for all project management software applications,

such as MS Project among others. In 1958 the United States Department of Defence's US Navy Special Projects Office undertook the development of the Polaris ballistic missile and introduced the Program Evaluation Review Technique (PERT), a variation on CPM used as a means of analysing tasks in relation to time and resources required to complete them. Then, in 1962, the United States Department of Defence introduced the Work Breakdown Structure (WBS), a hierarchical structure for determining the tasks and deliverables that need to be undertaken in order to implement a project. Taken together, this set of abstract systems forms the basis for a conceptual framework that, coupled with the concept of *risk management*, form the basis of all contemporary project management methodologies. Importantly though, it is worth noting here that risk is most commonly formulated negatively, as something that has jeopardy and needs to be controlled.

The subsequent emergence of the role of project manager led to the foundation of the Project Management Institute (PMI) in 1969 which set out to promote the profession through standardisation and accreditation. Founded originally by volunteers, the organisation went on to be one of the most important and globally influential project management associations. In 1987 the PMI published what is now recognised as a world standard the *Project Management Body of Knowledge* (PMBOK). While in the UK, *PRojects IN Controlled Environments* (PRINCE2) serves a similar purpose – establishing a common set of standards and processes in accordance with the so called 'iron triangle' of project management: time, cost and quality. Developed from pre-existing methods, the original version of PRINCE as published in 1989, was aimed primarily at projects in information systems, whereas PRINCE2 is aimed to be more generically applicable to a wider range of project contexts. Often associated with large-scale construction projects, PRINCE2 is intended to be scalable and can be applied to projects of differing sizes and complexity.

What we have here then, are organisational models that emerged in response to the uncertainty and ambiguity of the modern world – models that seek to control chaos through the deployment of abstract systems in the form of standards that systemise organisational practice. These are combined with the development of expert systems through forms of professional accreditation.

Being ontology and project-based learning

We learn from Knoll (1997) that in the educational field the *project method* is first formally defined by Kilpatrick (1918) who was heavily influenced by the progressive educational reformers of the time, specifically Dewy and theories of experiential learning. He placed the student at the heart of the *project method* and insisted that projects be interdisciplinary, unplanned and proceed according to the motivation and direction of those participating – in his own words 'a wholehearted purposeful activity in a social environment' (Kilpatrick 1918, 2). Knoll (1997) explains that it was Dewy's criticism of Kilpatrick that returned the role of the teacher to the heart of the classroom as a central tenant of the *project method*, claiming that by themselves students were incapable of planning projects from which learning would occur. The *project method* for Dewey (1960) was to be teacher-directed and required students to go through a process of 'encountering a difficulty, via drafting a plan, to solving the problem' (Knoll (1997) – a common formulation for *project-based learning* that would be recognisable today. Consequently, we can see, as Knoll (1997) usefully concludes, that what emerged in the early part of the twentieth century were two conflicting models for *project-based learning*. The first, inspired by the progressive ideas of Kilpatrick, is a broad definition that is open, student centred and could be framed as *proximal*. The second, championed by Dewy, adopted a scientific and empirical formulation

of what might constitute a project. While it is still essentially experiential there is a focus on results or outputs, standards and regulatory structures pre-dominate, adopting a scientific approach which could be framed as *distal*.

Chia (1995, 581) suggests that while *proximal* and *distal* are complementary terms they reflect differing ways of thinking. *Distal* thinking characteristically conceives of a project in terms of its epiphenomena i.e. chaotic social states that need to be managed, thus privileging the orchestration of relationships between individuals and organisations. *Proximal* thinking, however, is concerned with movement, emergence, transformation, the transient and ephemeral. It is the latter, which for Chia, forms the 'primary stuff of reality […] the emergent relational interactions and patternings that are recursively intimated in the fluxing and transforming of our life-worlds' (Chia 1995, 582). Consequently, we might think of PRINCE2 as typifying a *being ontology* that recognises the inner-life of project space (for a more detailed exposition on the conceptualisation of 'project space' see Hanney and Savin-Baden 2013) but subjects this to scientific scrutiny and classification in order to construct it as an object. It is essentially static and, though it employs reflection, it is in the form of description in service of counterfactual *reflexivity*. In this context, we can perhaps think of Dewy's *project method* as a *being ontology*, one that embodies instrumental principles for structuring experience that work from the exterior to the interior. It adopts abstract systems in order to establish norms and its primary concern is with *controlling chaos*. It employs systems of control in order to peer into the interior of project space and introject previously specified learning and values.

Post-modernity: the mirror of modernity

According to Giddens (1990, 45) post-modernity is less of a periodisation with its own defining characteristics and more of a style of aesthetic reflection upon modernity. He suggests the discontinuity between institutional modernity and this new social formation is characterised by an unravelling of grand narratives, along with an acceptance that the foundation of knowledge is unreliable, that history is devoid of teleology, and that progress is an implausible idea (Giddens 1990, 46). Post-modernity is for Giddens, nothing more than modernity coming to understand itself (1990, 48) and what emerges with the more extreme-reflexivity of post-modernity is a widespread scepticism of the idea of providential reason (Giddens 1991, 27). *Project method*ologies such as PRINCE2, which can be thought of as embodying principles that replicate the discourses of modernity, are replaced by new accounts in which the idea of a project is deconstructed as just another grand narrative that serves to legitimate modes of hegemonical domination.

In response, the *Critical Projects Movement* (Hodgson and Cicmil 2006b) reconceptualises a project as a metaphor for something that is discovered, rather than something which is constructed. The theorists of this school have been influential in reorienting the study of projects towards a conception of a project as 'an aggregate of individuals temporarily enacting a common cause' (Gauthier and Ika 2012, 14). This stands opposed to the techno-rationalist definition offered by the PMBOK (Project Management Institute 2013) which sees a project as 'a temporary endeavour undertaken to create a unique product or service', or PRINCE2 which takes the position that a project is 'a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case' (Government UK 2009). The latter

definitions are both results orientated and take an exterior or *distal* position that sees a project as a phenomenon with objective and concrete characteristics, rather than taking a *proximal* position that sees the phenomena as the result of complex, changing, social process (Chia 1995, 581). A project that has a *being ontology* is a tool, an instrument or means, which serves the organisation in achieving its objectives (Gauthier and Ika 2012, 13). In the case of *project-based learning* these objectives might be manifest as learning outcomes but, importantly, the emphasis is on the outcomes serving the exterior need, be that in terms of the organisation's teleology, or other stimuli (such as government policy, the need to get a job, to fit in, feed aspirations etc …).

Linguistically, there is an important distinction to be made here between the *noun* and *verb* form of the word 'project'. The notion of enacting a project, folds in the static, noun: project, into an enacted, verb form which implies a doing-ness in its etymological route. We can think of the modernist conception of a project as a *being ontology* which gives primacy to 'objects, things, states, events, and nouns and casts projects as discrete and concrete entities' (Linehan and Kavanagh 2006, 54). Project space is conceptualised as an object, something that is acted upon from the exterior through mechanisms of control. Whereas a *becoming ontology* 'emphasises processes, verbs, activity, and the construction of entities, and the role of language, meaning, and interpretation' (Linehan and Kavanagh 2006, 54). A project is conceptualised as a practice that emerges from the interior of project space – that is enacted on the external world. Thus, the differentiation between a *being ontology* and a *becoming ontology* heralds a shift from conceptualising a project as a machine to a project as a practice (Gauthier and Ika 2012, 15), a shift between *models of organisation* and *models of practice*. There is an important distinction being made here, between a dominant Parmenidean, diachronic, *being ontology* that is regulatory and seeks

to control the world; and a Heraclitean, synchronic *becoming ontology* which recognises the uncertain nature of the world and embraces change (Gauthier and Ika 2012, 13). Thus, in a similar manner to the break between the modern and pre-modern; post-modernity signals an ontological break between modernity and high-modernity.

Becoming: high-modernity as a becoming ontology and the providence of extreme reflexivity

While post-modernity might be viewed from some positions as almost a passing reaction to modernity – a fashion or fad even – it does enable us to critically reconsider the characteristics of what Giddens (1990, 1991) refers to as 'high-modernity' and provides us with the means for a reanalysis of the 'doing of projects'. The *Critical Projects Movement* has taken significant steps towards this aim, having already established a body of work that positions a project as a social space, with both interior and exterior characteristics. For the *Critical Projects Movement*, projects are conceived of as complex and reflexive interactions between people, in which intuition and experience are valued over and above standardised bodies of knowledge. The project is perceived as a network of actors that lends itself to transformations, as the actors engage in reflection and transform themselves (Alderman and Ivory 2011; Sydow 2006). Those involved in the doing of projects are seen as reflexive agents of change, who are embedded in a social context in constant transformation (Gauthier and Ika 2012, 12) – one in which knowledge is shared, held collectively and accessed through social interactions. We might now think of a project as: *a space in which a vision or goal is enacted through a complex set of social interactions between actors who share goals*.

This tendency towards extreme-reflexivity is perhaps nowhere better exemplified than through the emergence of a recent addition to the cannon of project management methodologies. Agile Project Management (APM) emerged in response to a need within the software development sector for a flexible process-led approach, that allows for rapid delivery of high-quality software, in chaotic and often experimental contexts in which the final goal may not be fully specified at the outset (Cohn 2006; DeCarlo 2004; Fischman 2008; Highsmith 2004). An APM process suits small teams, thrives in chaos and offers a reflexive response to change in the face of uncertainty. The APM philosophy resonates deeply with the ideas of a project as a social space in which it is enacted as a collective, goal-orientated activity. APM models a project as a practice in which we see the fostering of interactions within the team over processes and tools, a focus on delivery rather than on documentation, the utilisation of a project vision and collaborative relationships as organising principles, and prioritising a response to change over following a plan (Fitchner 2011).

The principles of APM require an engagement with the process of delivering a project that celebrates learning through continued and regular critical reflection on the nature of the project. With methodologies such as PRINCE2 this is typically undertaken at the end of the project, whereas with APM it becomes an organising principle and the key factor for measuring progress. Teams are self-organising, coalescing around shared goals. Solutions to problem encounters are managed by the team who also select the most appropriate tools to use on the basis 'of maximising the work not done' (Fitchner 2011). Essentially non-linear (synchronic), APM exists in antithesis to the more linear, sequential principles of a modernist project management methodology as typified by PRINCE2 (diachronic). In a sense, APM as a project management methodology typifies high-

modernity in that it draws upon an extreme-reflexivity and actively engages with the notion of risk to the point where this becomes a fundamental organising principle. Importantly, APM distinguishes between opportunity risk and jeopardy risk (Hanney 2012) and embraces the positive possibilities present in ambiguity and uncertainty. APM is seemingly a *becoming ontology* manifest as a *project method*; it offers a means of structuring a project as a *pedagogy of becoming* that returns to Kilpatrick's notion of *project-based learning* as 'a whole-hearted purposeful activity in a social environment' (Kilpatrick 1918, 2). Consequently, it would seem as though the underpinning philosophy behind APM might offer inspiration to educators seeking to theorise an approach to *project-based learning* which is rooted in a *becoming ontology*.

Implications for a project-based pedagogy

Applying a genealogical method is useful because it allows us to see that the concept of a project is not innate, natural or concrete – that it is an idea that has emerged in response to modern social, historical and economic conditions. It also allows us to see the concept of a project as multifaceted in that it can be ontologically constructed as a doing, being or *becoming ontology*. It is argued here that in the context of education it is the transformative conditions of a *becoming ontology* that is the pedagogic ideal – enabling a rethinking of *project-based learning* as an experiential pedagogy that places reflection on actions and interactions at the heart of an optimum or sufficient methodology and positioning the use of project-based approaches as a tool for learning rather than just for administration. A *becoming ontology* constructs a project as a network of actors engaged in relationships (Alderman and Ivory 2011; Sydow 2006) within a collective space that has interior and exterior aspects, within which a collaborative vision is enacted. Those involved

in this enacting of projects are seen as reflexive agents of change who are embedded in a social context and in constant transformation (Gauthier and Ika 2012, 12) i.e. in permanent crisis!

Critical reflection is the key tool utilised by APM for managing a project, around which its organising principles are constructed and out of which a methodology emerges. As such, the Agile Method constitutes a pedagogy in its own right and offers a model which not only mirrors the world of professional practice but may also offer an optimum or sufficient methodology for theorising *project-based learning* as a model for practice. The Agile philosophy resonates deeply with the conceptualisation of a project as a *becoming ontology*. Thus, it may be possible to take Dall'Alba's (2009, 38–42) criteria for structuring a *becoming ontology* and merge them with the more organisationally orientated concepts underpinning APM. Such that: continuity with change, possibilities with constraints, openness with resistance, individuals with others, might provide the basis for a manifesto for *Agile Learning.* At its simplest, a turn toward Agile Methods requires only the adoption of simple risk tools which are, by their very nature, reflexive and evaluative as a pedagogic strategy.

However, we need to think carefully about what the consequences of adopting a *becoming ontology* might be for those participating in projects. We shouldn't forget that project communities are constructed (Linehan and Kavanagh 2006, 60) and the concept of a project is a constructed idea. We should remember that there is still a danger of the reification of our new 'cleverer and better representations' (Linehan and Kavanagh 2006, 60). Adopting a *becoming ontology* for *project-based learning* is a risky business; it is not straight-forward and requires a certain amount of testing and trialling of ideas. For example, educators will need to become familiar with the tools and techniques available; there is a

process of translation and recontextualisation required along with the need for the flattening out of specialist jargon and terminology (Hanney 2012). The focus on risk requires students to engage with what might be an important, but difficult, threshold concept. Furthermore, there needs to be a recognition that risk is not always negative, hat opportunity is risky as well. But, importantly, if we are to value risk taking among learners there needs to be a means for valuing and assessing failure as a positive aspect of learning. Meanwhile, educators will also need to embrace uncertainty and risk, let go of the cherished notion of industry methods and look elsewhere for the authenticity of practice.

14. ARTICLE 4 – Problem topology: using cartography to explore problem solving in student-led group projects

PROBLEM TOPOLOGY: USING CARTOGRAPHY TO EXPLORE PROBLEM SOLVING IN STUDENT-LED GROUP PROJECTS

Abstract

This article originated from personal reflection on the nature of projects and the use of project-based learning in media practice education. Accepting that problems are the motor for projects, it asks questions about how students conceptualize problems and seeks to understand the strategies they employ to manage problem encounters. Problem solving is integral to media practice, is a key employability skill, and has a direct relationship with creativity in its myriad forms. The difficulty for educators is that student problem-solving is largely hidden from view. Students are not necessarily observed throughout all of their project work, while tutorials are only partial encounters with their work processes. With this in mind, the author set out to design a research methodology which would uncover the hidden process of problem solving; one that would 'make the invisible, visible' and explore students' problem-solving strategies at a conceptual level. Adopting a visual research methodology (VRM), the researcher experimented with map-making as a means of representing problems students had encountered through the employment of cartographic metaphors. The article takes the opportunity to present interim findings that have emerged from the adoption of this cartographic VRM and aims to evaluate the effectiveness of the research design.

Introduction

This article originated from personal reflection on the use of project-based learning in media practice education. As an educator turned researcher, I have tried to explore questions that have arisen from my own personal observations of the ways in which students engage with the practice of projects. In particular, this article aims to investigate an issue I often feel that students have difficulty with, that of problem solving when undertaking projects for coursework. I wanted to better understand the way in which students conceptualize problems and how they approach problem solving. Problem solving is integral to project work. It is a key employability skill and has a direct relationship with the practice of creativity in its myriad forms.

The difficulty for anyone wishing to understand the practice of problem solving, as it occurs in student group-based projects, is two-fold. Firstly, students' problem solving is largely hidden from view as they are not necessarily observed throughout all of their project work, while tutorials are only partial encounters with the student's work processes. The second difficulty is related to the nature of observation itself and the way in which it can impact on the observed subject. To be observed may cause a shift in behaviour, but to be observed by a tutor is even more likely to result in a 'front stage' performance presented for the benefit of the observer (Goffman 1990), whereas what is sought is access to the 'back stage' (Goffman 1990) performance. When unobserved and unseen, the participants might relax, step out of character, move off script and engage in a more instinctive performance.

With these difficulties in mind, I set out to design a research methodology that would reveal the hidden processes at play when students undertake group-based project work – one that would make visible the forms of collaboration, approaches and strategies

employed by students that are, in the most part, largely unseen by the ever-watchful eye of their tutors. In order to articulate this invisible domain of the lived experience of doing projects, I set out to investigate the possibilities offered by *visual research methods* (VRM). It seemed as though such an approach might function as a means for 'making the invisible visible' (Rose 2014, 27). Eventually, this led to plans for a series of map-making workshops that aimed to explore the ways in which student groups engage with problem solving at a conceptual level.

Adopting cartography as a visual research methodology

The inspiration for the use of cartography as a tool for gathering data was triggered though watching the documentary *The Five Obstructions* (2003), in which director Lars Von Trier sets a challenge for his friend and mentor Jørgen Leth, also a filmmaker. He challenges Leth with the task of remaking his own film *The Perfect Human* (1967), five times. On each occasion, Von Trier sets out to stop Leth from making the film by setting obstructions that aim to frustrate Leth and force a degree of introspection and self-awareness on the filmmaker. This use of obstructions (or problems) to stimulate creativity contrasts with the observed behaviour of students whose first instinct is often to avoid, rather than solve, emergent problems (obstacles). It was the frequency of this problem-avoidance strategy among undergraduates, coupled with the inspiration that came from watching *The Five Obstructions* (2003) that led to the metaphorisation of an obstruction/problem as a topological encounter which might in some way be mapped. Problems are imagined as physical obstructions which require creative solutions (a hill might need a tunnel, a river a bridge) or which might cause undesirable deviations from the original project plan. For example, when embarking on a project, students might encounter a problem (or

obstruction) such as access to a location and, rather than see that as a problem that needed to be solved, would change the direction of their project (even at times starting a completely new project). In this way, the problem encounter can be formulated as an obstruction which causes them to deviate from their initial goals – rather than drill down into the problem and seek a solution, thereby adapting their initial plan. In some cases, this results in a final project output whose shape, form and content has been determined largely by the deviations structured by unsolved problems rather than through any creative problem-solving.

The possibility then arises for a research methodology that employs cartography in order to embrace creativity and collaboration, while at the same time exposing to examination the practices and process of problem solving. Map-making offers the opportunity for a simple, playful task-based activity that can be accomplished with pens and paper in any suitable space. There are also few barriers to participation, since there is likely to be commonly shared cultural capital among those taking part in the study and there is a low skills requirement in regard to drawing ability. Yet, map-making offers the possibility for a high degree of conceptual representation even at the most basic skill level. Maps have been used to represent knowledge since the third century (Ahlberg and Wheeldon 2012, 22). They constitute a representational system with which most people have some familiarity. A map operates 'like [a] lens through which we see the world' (Ahlberg and Wheeldon 2012, 27) and enables us to not only organize thinking but also makes possible the gathering of new information about the world. It has also been suggested that map-making enables researchers to 'break out of conventional representations of experience' (Ahlberg and Wheeldon 2012, 27) giving access to the kinds of partially formed ideas about the world that might not be easily verbalized, or may be on the threshold of verbal

possibility. It is said that the making of maps is a kind of thematic portrait 'beyond the constraints of language' and, in the making, participants are 'granted' time to reflect and engage with a different type of thinking (Gauntlett and Fatimah 2012, 600–601). There is also a familiarity with the idea of a map and it is highly likely that most participants would be conversant with the 'communicative competencies' required to engage in map-making (Rose 2014, 31).

Nonetheless, there is a need to understand how we conceptualize maps since the particular representational system deployed by the participants may be crucial to the interpretation of their creative expression (Rose 2014, 31). Map-making involves a complex layering of representational codes including; icons, indexes, symbols, pictograms, colours, lines, texts and so on (Pauwels 2010, 556). Drawing upon the subject discipline of carto-semiotics, it is possible to generalize a classificatory system of signs as found in a map and thus to formulate a strategy for understanding how maps operate as carriers of information (Schlichtmann 2009, 2014). The key classificatory relationship is that between the signified and the signifier which may be:

- *arbitrariness (symbols)* – whereby meaning is accrued through cultural convention
- *similarity (iconic)* – a relationship is implied through an abstract representation but nonetheless there is a relationship of physical resemblance
- *factual (indexical)* – the relationship between the signifier and signified is indicative of a thing by way of the fact of its existence (Goria and Papadopoulou 2012, 2).

So, for example, in a conventional Ordinance Survey (OS) map, a cross hatched line would be indicative of a railway (indexical); a lake is a likeness in plan of a body of water

(iconic); whereas a cross might denote the location of a place of worship (symbol). Signs are further subdivided by cartographers into *marks* and *traits* where marks indicate a point in space and may carry a denotative meaning of some kind, and traits connote a set of perceptual characteristics (Schlichtmann 2009, 7). For example, a reservoir denotes a body of water but connotes a water supply and thereby implies a network of other relations that may be taken to indicate the existence of a civilization (Schlichtmann 2014, 7). In other words, following Peirce (1994) there is a metaphorical relationship between the idea and its representation. For example, in a conventional OS map there is a direct relationship between a real hill and the sign as referent of a hill which can be thought of as indexical. In fact, there is no such thing as a pure sign especially in a map and the referent of a hill can be construed as part symbol and part index. Nonetheless, as a *trait*, a hill may be understood metaphorically as connoting difficulty, an obstacle or a challenge. Following this through, it is easy enough to see how a map-making activity could usefully be deployed to represent a thematic or conceptual realm. However, a map cannot be reduced to the sum of its individual parts since it is the organization and interrelation of these parts which constitutes the phenomenal field of the perception of a map as a complete image. Each element sits in a complex of polysemic relations with other elements, any of which may fall into more than more of the classifications i.e. a representation of a lake is at the same time indexical, icon and symbolic. Celentano and Pittarello (2012) offer a more holistic means for incorporating the individual elements within a complex whole. They propose a classificatory system that contrasts different kinds of maps along a continuum running along an X-axis of direct/ metaphoric and along a Y-axis of *real/imaginary* as shown in *Figure 2* (adapted from Celentano and Pittarello 2012, 67). Their classificatory system describes the varying forms

that maps might take, ranging from representations of real geographical space to that of abstract knowledge. For example, along the Y-axis is shown a traditional *road map*

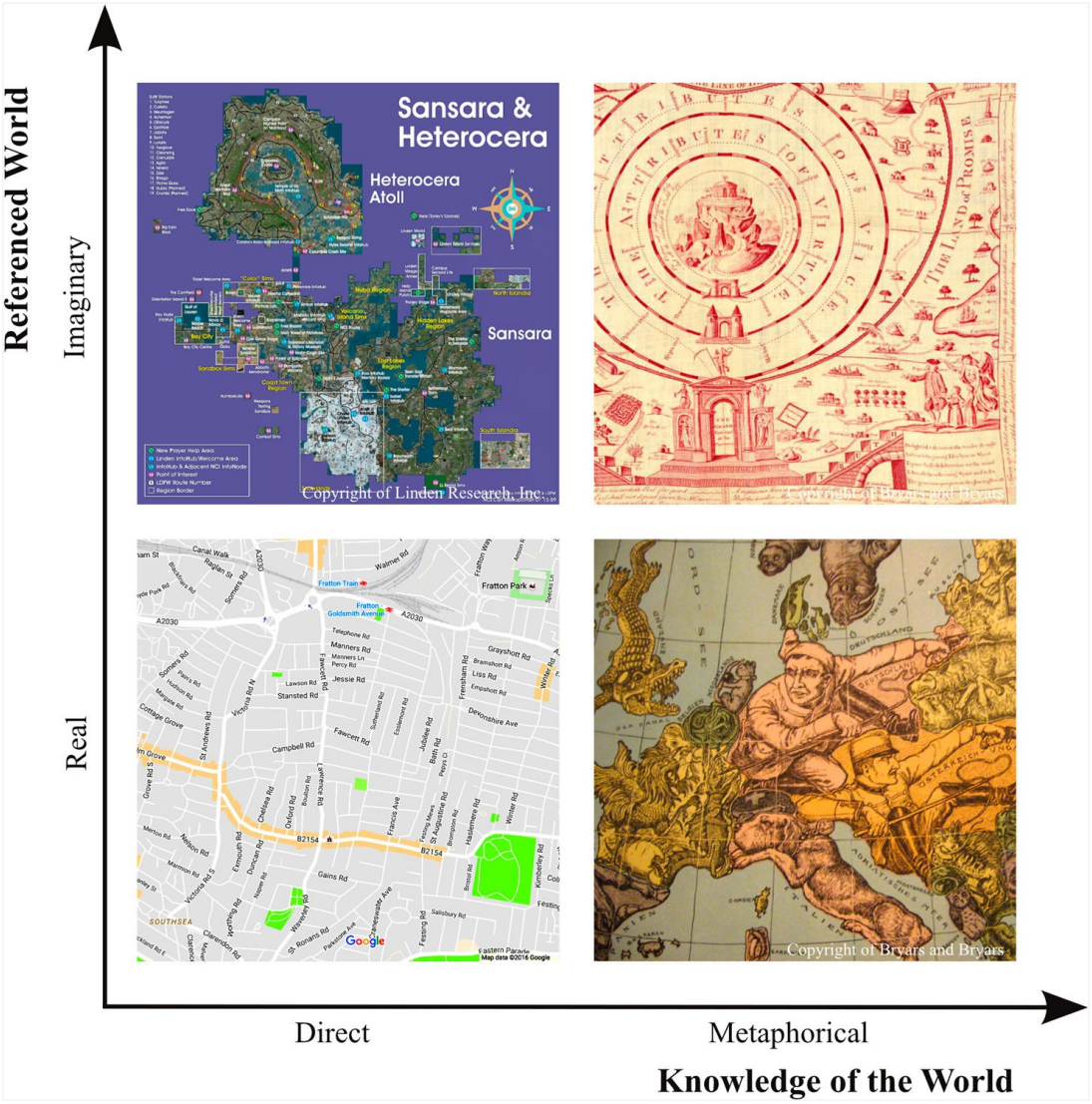


Figure 2: classificatory system adapted from Celentano and Pittarello (2012, 67)

(real/direct) in which there is direct or indexical relationship between referent and object.

This is juxtaposed with a map of a landform in Second Life (real/imaginary) which references conventions used for mapping real worlds but nevertheless constructs an unreal or imagined world. Along the X-axis a *road map* is contrasted with Karl Lehmann-Dumont's *zoomorphic map of 1914* (real/metaphorical), which depicts the countries of Europe as animals in a circus. In this case, the real is used to construct a metaphorical allusion. The

image in the upper right quadrant is of Henry Gardiners *Map of Man* (imaginary/metaphorical) which depicts an imaginary landscape that allegorically illustrates the journey of life. Here the relationship between the referent and the object is purely symbolic i.e. one of metaphorical or allegorical description.

Thus, Celentano and Pittarello (2012) offer the possibility for an analytical approach that reveals the way maps function as carriers of information, one that acknowledges that the individual visual elements of a map form a 'base vocabulary' (Celentano and Pittarello 2012, 69) which contributes to an overall reading of meaning in a map. In this way, it is possible to offer an analysis of a map produced by participants in a research activity that incorporates a micro and macro level of classification. There is though, a problem with such a purely semiotic approach to the analysis since it excludes the possibility that the social relations that lead to production may also be embedded within the image (Banks 2008, 11). Thus, there is a need to see a map as the product of a discourse that is positioned within a set of social conditions that act upon the social actors engaged in production. There is a need for a way into the analysis of visual materials 'which brings into the research not only the content of an image, but also the circumstances of its production, circulation and consumption' (Mitchell 2006, 63). Having reviewed the breadth and variety of approaches to VRM and engaged in an exploration of the difficulties raised by each, Rose (2016) synthesizes her own *critical visual methodology* – a methodology that places the image at the centre of the research process and takes into account the social context and means of audiencing (Rose 2016, 23). There is an inbuilt reflexivity to *critical visual methodology* that recognizes there are a variety of positions from which images are seen, each of which constructs its own forms of value, meaning and perspective.

Rose (2016) categorizes the process of visual analysis into four key sites of enquiry: production, the image, its circulation, and its audiences (as can be seen in *Figure 3* – adapted from Rose 2016, 25). She then specifies three modalities at each of these sites that enable further interrogation. These are given as the:

- *technological* – technologies of production, distribution and display;
- *compositional* – material qualities and formal strategies evident within an image;
- *social* – the economic, political, cultural and historical context.

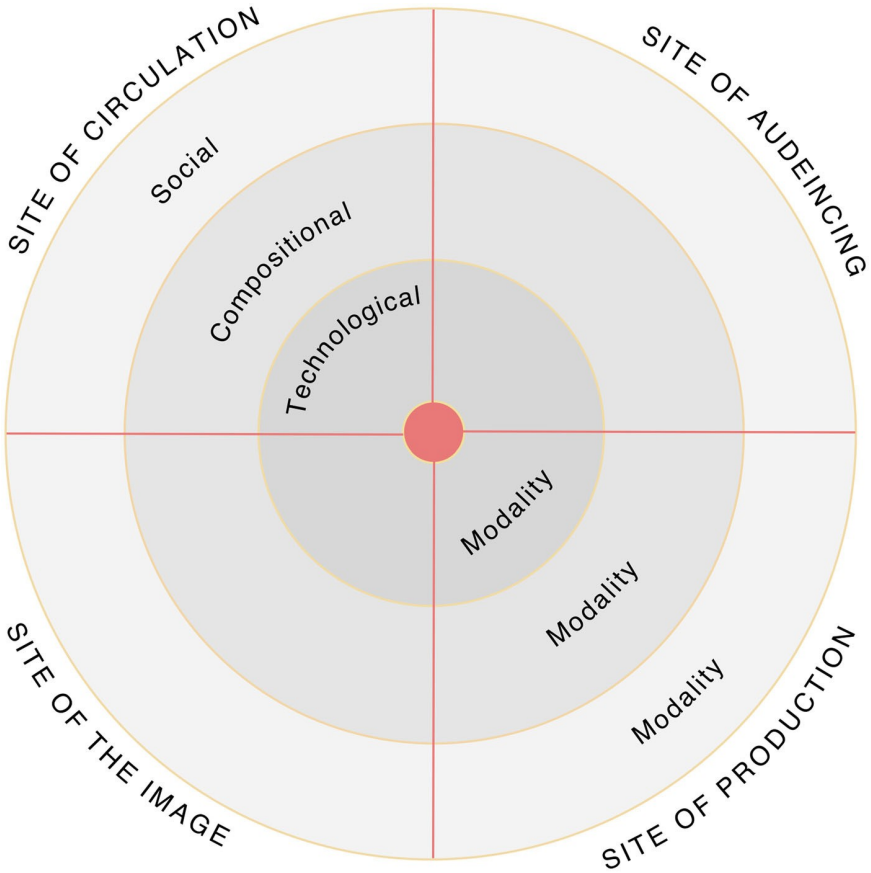


Figure 3: critical visual methodology adapted from Rose (2016, 23)

Such a reading recognizes the particular ways in which the social plays a part (Rose 2016, 30) and accounts for the action of production in a place, at a time and within a complexity of social relations. It accepts that while *technologies* may determine form, meaning and effect (Rose 2016, 27), aspects of *compositionality* such as genre may

additionally structure the encoding/decoding of the image through the particular conventions deployed by the maker/viewer (Rose 2016, 28).

Thus, following Rose (2016) there exists a framework for situating a cartographic approach to VRM in a broader sociological setting, one that acknowledges the researcher as a social actor and participant in the process of generating data. In this way, it is possible to see how the role of the researcher as insider mediates not only the interpretation of the data but the way in which it is produced. Rose (2016) also provides a means for drilling deeper into the particular materials produced by a cartographic approach through the adoption of the carto-semiotics of Celentano and Pittarello (2012), acting as an analytical lens which enables the interpretation of the data at the 'site of the image' (Rose 2016, 25). The aim here is not to generate new knowledge but to test the application of Rose's *critical visual methodology* in the design of an innovative VRM approach. In doing so, it is hoped to not just provide a rigorous set of methodological tools but also to offer insights into the value and robustness of VRM – a method which seeks to employ cartography as a means for rendering the 'invisible, visible' (Rose 2014, 27), by revealing the hidden strategies employed by students when project groups engage with problem encounters.

Methods

The role of the researcher as insider

In the case of research undertaken by an 'insider' there may be ethical concerns that need to be addressed that go beyond the deontological prescriptions of a standard ethics review. The policies and procedures that are put in place as part of an ethical review exist to protect the subject of the research though anonymising of data, safekeeping of personal information and the seeking of informed consent. However, as an employee of the

university where the site of research is located, the researcher has a particular relationship with that institution. Beyond ethical requirements of duty and care the university may have concerns around reputation which could impact on the researcher. For example, a situation might arise in which the researcher felt the need to censure their analysis in order to protect the universities reputation should particularly negative or critical responses be recorded by participants. Such a result might place the researcher in an uncomfortable position and might impact on the reporting of findings. There is also the possibility that the 'insider' becomes an 'outsider' by adopting a position of researcher since colleagues might feel under scrutiny, an issue which is touched on further in the discussion below.

The researcher is also employed as a teacher and, in the case of at least one of the research activities, was a course unit tutor for some of the student participants. This raises issues around power, consent and the validity of the data gathered by the researcher. Students are likely to perceive the researcher as in a position of power even if this is purely in a symbolic form. For example, as a tutor I do not have any direct responsibility for the delivery of courses for some of the participants, but nonetheless I am part of the organization and I am perceived as such. With others, as their course unit tutor, I had a direct relationship which at the time of the research had already matured over the course of a semester of study. This relationship of power may have impacted on the participants in a number of ways. The first concerns the recruitment of students who may have felt that there was either an advantage to being involved or that they might be disadvantaged if they were not. Additionally, students may not have fully understood what was being asked of them or the distinction between the role of tutor and researcher. Participants might also present material in order to gain favour, impress or please, all of which might then bring the validity of the data into question. Trowler (2016) suggests that, while these are significant

concerns, the researcher will find legitimacy through the situating of the research within a lived context that assumes a robust design – one that is reflexive and acknowledges a multiplicity of positions taken by the researcher and the researched. Trowler (2016) advises that research methods should focus on two complementary points of view; the first seeking to explore the situation itself and the social context in which data is produced, the second focussing specifically on the data itself. In the method presented here, the framing of the research design through Rose (2016) addresses the social while the adoption of Celentano and Pittarello (2012) provides for a focus on the data itself. Thus, the role of the researcher as insider is captured in such a way as to avoid claims to the production of knowledge. Instead, what is offered is a contestable form of knowing which is mediated through the social (Trowler 2016, 12). Accordingly, the dual role of insider and researcher is acknowledged and reflexively incorporated into the research design in order to flag up ethical concerns and allow for them to be addressed.

Research site

The research site for this study is a university on the south coast of the UK situated in a large urban centre. The institution gained university status in 2005, having its origins in a private School of Art founded in 1856. The building itself is relatively new, having been constructed around 1964 and includes modern classrooms with video projectors, IT facilities, white boards and flexible chairs and tables. The university has a large media arts provision, with a reputation for industry engagement and the integration of project working with real clients into the curriculum.

Recruitment

The recruitment process began with an application to the university's ethics committee for permission to undertake research with students as subjects. This was a fairly straightforward process, involving the submission of a 'research ethics self-release checklist' which was undertaken according to the university's research ethics policy. As the study was part of a broader doctoral study into project-based learning at another university, a rigorous ethical review process had already been undertaken. Consequently, there were already ethical procedures in place which acknowledged my research role as an 'insider', or semi-participant observer.

Sample

The site of the research study would seem like a rich ground for gathering data and I hoped to recruit students from a range of media practice pathways across levels four to six. However, I initially struggled to access students at the university as attempts to identify student groups to work with were thwarted. It may be that the gate-keepers felt that the proposed research activities would encourage students to criticize their course. Given the context of the National Student Survey (NSS) and the nervousness academic staff have about receiving poor NSS ratings, this is perhaps understandable. It appears I had made an assumption (Humphrey 2013, 574) that colleagues might celebrate the potential for an informed pedagogy that comes about through collaborating with a research-active colleague. The reality is that this point of view is unlikely to be shared. The key to unlocking this difficulty came with a funding award in support of the project, from the university's learning and teaching institute, which also took on the role of project champion. This not only provided access to students, but crucially it paid for the purchase of iTunes vouchers

which could be given to the participants. Sadly, even the enticement of iTunes vouchers was not enough and out of six sessions that had been arranged, only four ran. In the end, the sample size was reduced from the hoped for sixty, to a total of thirty-four students. The gender balance was fairly even (approximately 50/50) and the sample was taken from mostly first-year students, with a pilot group of third-year students. The maps produced by both the pilot and subsequent groups have been appended with a P for the former and an S for the latter so that they are clearly differentiated in the results and discussion below.

The pilot group (maps appended with a P) were drawn from a L6 documentary production unit on a BA (Hons) Media Production for which I was the unit tutor. The research activity was staged at the conclusion of this unit of study, after their final assessment submission, to ensure the students understood that participation would not impact on their grades. In addition, the staging of the activity at this time also encouraged students to make links directly with problem encounters experienced during the course unit and to reflect upon these. The groups for the main part of the study (maps appended with an S) were drawn from a L4 BA (Hons) Film & Television and the research activity was conducted outside of timetabled sessions. The students on this programme of study were not familiar with the researcher and had not met with me prior to the research activity. Given the separation of the activity from any specific scheduled unit of study and the unfamiliarity of the students with the researcher, it is assumed that students may not have directly related their exploration of problem encounters to any one unit of study. As a consequence, the results may describe a more general view of problem solving. Though, in retrospect, it is clear that the activity did in some ways simulate a problem-solving experience this was not anticipated in advance and was not an intended outcome. The goal

of the research design aimed specifically to explore the ways in which students manage real problem encounters that emerge from their participation in taught programmes of study.

Research design

Sessions began with a general introduction to the context for the research, followed by students signing participant release forms. I would then undertake a framing exercise aimed at focussing the attention of the participants on the forthcoming activity. This involved presenting them with the question 'what is a problem' in order to initiate a discussion in groups, which then fed back to the wider class. At the conclusion of the discussion, the classic definition of a problem as *a gap between where you are and where you want to be* was revealed on the PowerPoint slide, in an attempt to further frame the students' thinking in terms of a journey. There then followed a brief brainstorming activity in which students were encouraged to use flip chart paper to outline a list of problems they faced in their own project work. At the conclusion of the discussion, students were asked to rank the differing problems on their list in terms of importance or severity. These were added to flip chart paper as part of the brainstorming process. Students were then asked to mind-map the ways in which they would have solved the problem at the top of their list. This was recorded on sheets of flip chart paper which were later collected by the researcher.

Having undertaken the 'framing' phase of the activity, the students were posed a second question that asked how they could turn their chosen problem into a feature on a map. A discussion followed, exploring the reasons for maps, their purposes and uses, before the students were shown two examples of differing approaches to map making. The first was a traditional OS style map, the second, a more metaphorically expressive map produced

by native Australians [see *Figure 4*]. The aim of this discussion was to encourage the students to shift into a metaphorical frame of thinking and to identify a strategy for visually representing their chosen problem and their approaches to solving that problem. The students were then invited to discuss the differences in groups and identify an approach to making their own map. Having discussed how they might employ metaphor in order to transpose the problem they had selected into a feature on a map, the students were then given new sheets of flip chart paper along with bundles of coloured pens and pencils. Working in groups, observed by the researcher, the students then undertook to produce

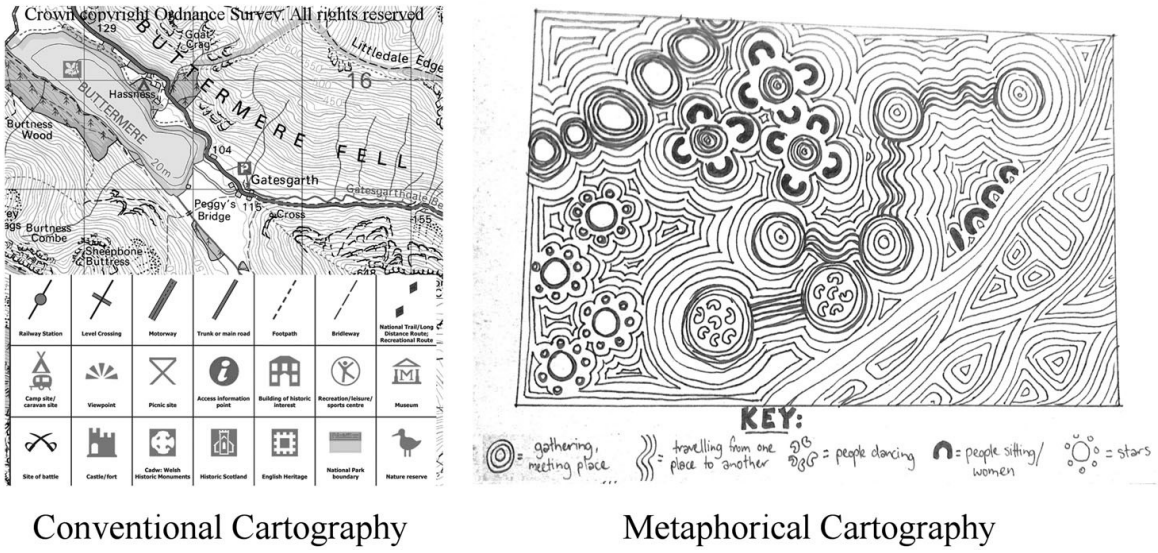


Figure 4: two examples of differing approaches to representation in maps

maps. At the conclusion of the activity, each group took turns to pin their map to the wall and answer questions, which the researcher recorded as video clips on an iPad.

Results

The research activities generated a total of eleven maps that were produced by participants working in group sizes from two to four. On completion of each map, the participants were invited to display the map and answer questions from myself about the

meanings of the various components of the maps. This elicitation was recorded on video and subsequently the verbal account given by the participants was transcribed by a professional transcription service. The maps were initially photographed and later professionally scanned. The maps were hand drawn using felt tip pens and coloured pencils on A0 size white paper. Each map includes a range of individual elements constructed from lines, shapes, texts, colours and other marks. Some include keys to the various elements while others do not. Some are clearly recognizable in form while others are of a more abstract nature and require the key and/or the participants' verbal elicitation in order for interpretation to take place. The maps were coded according to Celentano and Pittarello's (2012) carto-semiotic classificatory system and the initial results are tabled below.

Imaginary/direct coding

This group are coded as *imaginary/direct* (see *figure 5*: MAPS 3p, 4p, 5p, 7s & 10s) as they are primarily imaginary worlds that deploy indexical sign systems based around direct/real cartographic conventions. The maps in this classification largely follow a similar pattern adopting the style of a pirate treasure map, fantasy adventure or, in one case, what appears to be a reference to a level map for a computer game. Not all of the signs deployed in the maps have a clear meaning.

For example, in MAP 4p the mountains have large colourful flowers spouting from them. The reasoning behind this is not explained well by the participants in the elicitation, other than to say they set out to make their documentary film appealing. This is perhaps a weak metaphor, whereas the image in MAP 4p of the stick figure chasing what appears to be a book with a net might be thought of as a strong metaphor. There is a sense of catching

something in the wild, which also connotes the possibility that ideas are elusive and difficult to get hold of.

In another example, MAP 5p includes a whirlpool surrounded by islands which represents the students' initial attempts to develop a creative idea for their project. Each island represents a problem they faced and the respondents commented that they felt lost and unable to proceed until they finally found a topic (which is represented by the Hollywood island). This island also has a large female figure in a red dress standing upon it. The associated comment in the elicitation refers to someone dying, which might suggest that while the group made progress with their idea, this was at the cost of a group member's life. This is then followed by a period of conflict symbolized by the skull and cross bones.

In a further example, the producers of MAP 7s have tried to communicate the idea that the most direct route to a solution is not always the best route. The map includes a route marked in red which goes through a minefield, then requires the crossing of a ravine filled with rivers and finally the navigation of a lake full of crocodiles. In the elicitation, the respondents explained that the minefield is representative of trying to take short cuts with technical issues which often end up 'blowing up in your face'.

Interestingly, not only do all of these maps adopt an indexical sign system to convey information, each map is also an index in itself of common forms of imaginary maps i.e. the maps take the form of pirate or fantasy adventures that bear resemblance to the kinds of maps to which students may already have been exposed. As such, the solution to the problem of how to represent their experiences metaphorically might also be thought of as being largely indexical.

Real/metaphorical coding

Two maps are coded as *real/metaphorical* (see *figure 5*: MAPS 2p & 6p) since they deploy a symbolic sign system that reference a series of real geographic relationships.

MAP 6p is very detailed and includes a range of complex image elements. Through the use of landforms, flags, costumes, icons and text, the map directly references the real world in order to address the particular problems the group faced. The group of three female students were all of differing nationality and the map connotes the multi-cultural nature of the group dynamic through juxtaposition of these image elements.

It would seem that in addressing the problem of how to represent their experiences metaphorically, the respondents have delivered a complex solution that is unique and doesn't fall back on a need to index other cartographic forms.

Imaginary/metaphorical coding

The final group of maps are coded as *imaginary/metaphorical* (see *figure 5*: MAPS 1p, 8s, 9s & 11s) and include a range of differing approaches, all of which operate symbolically to reference ideas, concepts and experiences.

For example, MAP 11s deploys a neurological metaphor depicting nerves and neurons. The cloud represents thought from which ideas emerge. The strong blue straight lines are direct routes to problem solutions, which might be obtainable if given unlimited resources. The respondents commented that this route might be the most direct but will not always get you the 'best' most creative solution. The blue lines end in 'purple neural nodes' or solutions. Green stars are beautiful ideas, creative influences, inspirations and distractions that you wouldn't see on the direct route to the solution, while the wriggly lines represent the 'fractal nature of problems' that spiral off each other and interact with each

other. The different colours represent other factors that take you through different routes to the same destination. The respondents explained that the most logical direct route is not always the best and repeatedly referred to the blue lines as simplistic and bureaucratic solutions.

In another example, MAP 8s depicts what appears to be a common mnemonic for teaching group working: 'forming, storming, norming, performing' (Abudi 2016) which is often used to describe the stages that a group goes through in its genesis. You can see the map starts with individuals, then there is conflict and this leads into a shared experience through which bonding occurs. Communication leads to growth and a group of happy people. When asked if they had heard of this mnemonic during the elicitation, one of the group remembered being taught this during their A-levels, but claimed they hadn't based the map on it. It was only when the similarity was pointed out that it was recalled.

Again, MAP 9s, which on the surface seems very simplistic, actually evokes a complex decision-making process relating to deadlines and prioritization. To the left are a range of mixed signs, including icons connoting the need to earn money, to eat and the availability of others. There are also signs for weather conditions which symbolically represent differing kinds of assessment. The affective dimension of each assessment method is also indicated in the key, with practical represented as rain, presentations as sun and essays as storms. The weather conditions are checked, then the appropriate clothing to be worn that day is determined. There is a sense that different identities are required to deal with each situation, since choice of clothing can communicate more than just taste. So, regarding the wardrobe of clothes, the umbrella and the sunglasses might be stylistic choices that may represent the adoption of an identity that arises as an effective response to the need to manage assessment tasks.

What is of most interest with these last three examples, is that the respondents have solved the problem of how to represent their experiences metaphorically without recourse to other typical cartographic forms. It appears that the groups have worked entirely in the symbolic realm to devise their own creative solution to the problem, without the need to index the kinds of maps to which they might typically be familiar. It is this factor that will form the basis for further discussion and evaluation of the study.

Discussion

Through the lens of a critical visual methodology

As established above, there is a need to situate any research design within a social milieu in order to provide validity and robustness. This is even more crucial when the researcher is also an insider, as this will provide an understanding of the ways in which the mediating role of the researcher may have impacted on the study. Following Rose (2016), it is perhaps the *social modality* at the *site of production* that is most problematic for this study, since the difficulties with accessing respondents may have set up a particular kind of social dynamic between researcher and respondent. Mitchell (2006, 68) notes the need to attend to the 'complex field of relations' at play when using visual methods and, in particular, the power relations embedded within the site of production. In the instance of the pilot workshop, the researcher undertook the activity within a timetabled session for one of their own classes. The students who participated in the workshop were given a choice to leave if they did not want to take part (two did) and all the students were given information sheets and the opportunity to sign participant release forms. Nonetheless, they had not chosen to participate, nor were they necessarily interested in the activity as something that would produce useful knowledge about the learning process.

For some of these students, the creative challenge that was set for them was clearly fun, engaging and reflective and led to a productive dialogue within the group (see *figure 5*: MAP 6p). However, one or two other groups may have viewed the activity as a labour that had to be undertaken in order to finish the session and be allowed to leave. That is not to say that the task of map-making was not taken seriously, but the adoption of what I have come to call a *hobbitified* approach to the map-making activity (see appendix: MAP 3p), by which I mean the map took the form of a fantasy adventure game, may have been symptomatic of a disengagement with the task and an easy solution to a complex problem (thus avoiding the actual problem). One of the advantages might be that drawing on a fantasy map that already included certain codes and symbolic references simplified the process of negotiation. As a group task, negotiating and visualizing abstract ideas is likely to be a complex activity. So, it may be that the adoption of familiar genres is a tactic for managing conflict and building group cohesion.

While the groups subsequent to the pilot workshop were invited to voluntarily participate and were not the researcher's own students, the sessions were also held during scheduled class time. In addition, these students were offered a £25 iTunes voucher. This did not actually prove that attractive and less than half of the group attended on two occasions and zero on another occasion. The point here is that the students may have attended because they saw a benefit to themselves (see *figure 5*: MAPS 7s-11s) or may have formulated the activity as a form of labour that had to be undertaken in order to reap the reward. The production of the maps, and subsequent verbal elicitation, also serve as performances which are undertaken in response to the perceived disciplinary gaze of the researcher. The panoptic gaze of the researcher is perhaps represented most strongly (see *figure 5*: MAP 3p) through the image of the 'Eye of Sauron' which towers over one of the

maps – a bold red eye atop a giant phallic tower that dwarfs all other visual elements. This was added, as it happens, by a student who reluctantly sat through the workshop experience and whose only contribution was to add this image element to the group's map towards the end of the session.

On the other hand, this interpretation is one intuited by myself in the moment (as soon as the student added it I had a feeling I understood its meaning) and not born of any scientific rationale. This perhaps usefully illustrates the ways in which the polysemic nature of visual imagery may result in interpretations that are informed primarily by the researcher's own ideological position. As a researcher, I may be unconsciously seeking certain outcomes that relate to the initial research questions, or support my own theories about how students manage problem encounters. As an insider, I also carry with me a range of pre-conceived ideas about students, about how they do projects and about how a research activity should be undertaken. Judgements are also imposed upon the maps and the respondents' elicitations. Judgements of meaning emerge as the maps are viewed in relation to each other and then compared to other similar texts: real maps, pirate maps, computer game maps, metro maps. Values are ascribed according to my own preconceived expectations about what would constitute a good quality research output. The interpretation of images requires data to be extruded from the maps in relation to content, composition, textuality or discourse, which requires not only attention to detail but an ability to make connections and see the interrelationships and complex of meanings present in the maps. In this sense, the researcher's skill or experience in analysis of visual media might further skew the results of analysis in one direction or another.

In order to objectively determine the qualities of visual meaning in the maps, the researcher must reflect on their own personal sensory and affective experience of the maps.

In this way, it is possible to come to an understanding of the ways in which the meaning imbued within the maps is experienced as an embodied, subjective self-awareness. Reflection of this nature is an investigation into all that exists outside of representation (Rose 2012, 34). That which exists outside of the image itself is a subjective seeing that is intuitive, full of feeling and cannot be ignored in the interpretation of the images. Thus, the sensory and affective domain of the maps is difficult to divorce from the act of reading. For example, I cannot but help to feel a sense of excitement when looking at more abstract map images even though it could be argued that complexity of image elements is perhaps reduced (see *figure 5*: MAP 8s in comparison with MAP 3p). The complexity of image elements can also pose a puzzle for those examining an image which can produce a feeling of inquisitiveness and affective pleasure (see appendix: MAP 9s) that may not be present when undertaking analysis of a more generic pirate map (see appendix: MAP 5p). Yet, the pirate map is resplendent with complex symbolism and iconography that is certainly worthy of detailed exploration. It is through repeatedly returning to the process of coding and analysis that the researcher denudes the experience of the affective and sensory in order to apply a cold analytical eye. With this in mind, it is to the analysis of the compositional modality at the site of the image I wish to now turn.

Through the lens of Carto-semiotics

When I first started to analyse the data, I thought that perhaps the research design really did not reveal that much about how students manage problem encounters. Much of what was represented in the maps was largely already known. When working closely with students undertaking project work, one gets a sense of the kinds of challenges and struggles they face. Looking at the image elements within the maps, the common thread is that of

group working which is always complex and fraught with difficulties. Other issues faced by students include timekeeping and working to deadlines, technology, ideation, project processes and so on. Initially, I felt the research design had not really answered the research questions in any meaningful way. However, taking a step back during the coding process, it was interesting to see how the maps fell into two broad categories of carto-semiotic classification. The maps tended to fall into either an *indexical* or metaphorical classification. As I delved into this further, it became apparent to me that in fact this bifurcation was a response to the problem set as part of the research activity i.e. to metaphorise the experience of problem-solving into the form of a map.

This is, in fact, a classic messy, ill-defined and uncertain problem central to forms of problem-based learning (Hanney and Savin-Baden 2013, 11). It seems that, without realizing it, I had devised a problem-solving experiment that was observable and which produced extremely useful data (just not quite in the way I had foreseen). What I realize now is, if analysed holistically as a complete image, the maps do in fact reveal a great deal about the hidden process of problem solving. The findings suggest that there are, in fact, two approaches employed by students to manage problem encounters. The first, which I will refer to here as *indexical*, is a process of copying or indexing existing ideas to which students have already been exposed, or with which they are familiar. In other words, they copy something they like or think will otherwise resolve the problem, rather than generate a new and unique solution. This goes someway to explain the preponderance of pirate and fantasy adventure maps in the *imaginary/direct* coding category. The other groups of students appear to be capable of operating in a more complex cognitive domain. They do not appear to have indexed familiar cartographic forms to arrive at solutions. The maps may tend towards abstraction but appear to function effectively at a metaphorical and symbolic level.

The question for educators then, is how to encourage a transformation within the *indexical* thinkers towards a more metaphorical process of creative problem-solving.

Framing the issue in terms of *indexical* versus *metaphorical* problem-solving may usefully provide an answer to this question. This means of framing the issue bears more than a passing similarity to ideas proposed by Duncker (1972) who suggests that the main obstacle to creative problem-solving is what he calls *functional fixedness*. He proposes that in problem-solving there is a cognitive bias at work, which limits a person to using an object the way it has been traditionally used, i.e. the solution is indexed to that which the problem-solver is already familiar. If any element of the solution has a fixed function which has to be changed in order to solve the problem, then the cognitive bias of *functional fixedness* can work to constrain possible solutions. For example, if asked to represent a personal experience through map-making, then there is a tendency to index our previous experiences of maps in order to derive a solution. This involves carrying over to the solution common ideas of maps such as pirate maps, fantasy adventure maps, computer game maps, OS maps and so on. In doing so, the generation of a novel or innovative solution may be impeded (Chrysikou et al. 2016). In this sense, the indexing of a map as a familiar object is indicative of *functional fixedness* (Duncker 1972) and works to constrain creativity.

Despite the similarity of age group, *functional fixedness* as a cognitive bias thus fits awkwardly with the idea of a 'scheme of intellectual development' such as that offered by Perry (1970) who also addresses the development of college age adults. The research suggests that actually *functional fixedness* is shown to emerge much earlier at around seven years of age (German and Defeyter 2000, 708). Ann age when children begin to position the intended use of an object as having some kind of special status among other possible or potential uses. Before that, it appears young children see all uses of equal potential and

have a fluid approach to determining object use. Other studies have demonstrated that *functional fixedness* is a universal human characteristic that is just as commonly found in pre-industrial societies (German and Barrett 2005, 3) as any other and has even been shown to exist among animals, specifically great apes (Gruber 2016, 312). While Perry's (1970) scheme of intellectual development doesn't sit well with the concept of *functional fixedness*, Piaget's (Huitt and Hummel 2003) theoretical model for the acquisition and construction of knowledge resonates strongly with the idea. Huitt and Hummel (2003) explain that at the *pre-operational* stage of development, which Piaget gives as between two to six years of age, objects can take on a variety of characteristics for a child that are often purely symbolic in nature. As the child moves into the *concrete operational*, which Piaget gives as between six to eleven years of age, there is a noticeable shift from purely intuitive to logical thinking, which dictates that objects have limited functionality. The question then arises as to what purpose the acquisition of *functional fixedness* serves in relation to intellectual development and what might a study of this shift between Piaget's *pre-operational* to *concrete operational* stages reveal about creativity and problem solving.

Of more importance to this study is the question of how to overcome *functional fixedness*, a major concern for those who encounter this bias among students and in their classrooms. The ability to move beyond the original use of an object is the primary challenge for those wishing to overcome *functional fixedness*. Studies suggest that the bias can indeed be overcome by adopting a *defixiating* approach. One such approach works through the presentation of well-designed analogies (see Chrysikou and Weisberg 2005; Solomon 1994). The use of analogy serves to offer comparable examples that exhibit similar properties and techniques and teaches students to ask the question 'how have I seen this problem solved before'. Other studies (see Carnevale and Probst 1998; McCaffrey 2012) approach problem

solving by breaking an object down into smaller and smaller parts before re-describing each part in order to disassociate it from its origins. Referred to as the *obscure hypothesis technique* (McCaffrey and Krishnamurty 2015) the aim is to decouple the object from the original context that produced the problem and unconceal that which is hidden (McCaffrey 2012, 2), thereby offering a means for getting at the array of features that exist within any object. Though these approaches offer a way forward, they also present challenges since all of the existing work on the topic appears to be concerned with objects and situations that might be thought of as having some concrete basis, whereas, media practice is largely concerned with more abstract concerns such as story and narrative. Consequently, the techniques outlined in the literature are not directly applicable to a media practice context. There needs to be further research design and testing of suitable approaches if this insight into the problem-solving strategies of creative media students is to be resolved.

It is important to note that there may also be other issues at work beyond the simple cognitive bias of *functional fixedness*. In fact, group working may well be a *confounding variable*. The noise of group working, the complexities of interactions, the differing interpersonal skill sets and the differing problem-solving styles of individuals (Treffinger, Selby, and Isaksen 2008, 393) may all be contributors that impact on a group's ability to work *indexically* or *metaphorically*. It may be that the adoption of familiar cartographic forms, such as a pirate map, is an effective solution to dealing with difficult and conflicting opinions within a group. This could, on one hand, be indicative of good group management if the decision-making process is clearly led. Or, it could be indicative of a dysfunctional group who, despite individual capabilities for metaphorical thinking, are not able to operate collectively at the symbolic level. It is clear that further research is required in order to identify the factors that limit group-based problem solving. The research design seemingly

has value, since it provides an experimental tool that provokes group-based problem solving in a manner that foregrounds the complexities of group dynamics. However, as a method for rendering the 'invisible, visible' (Rose 2014, 27) it is limited since in order to extract meaningful data from the research activity, the group interactions would still need to be observed.

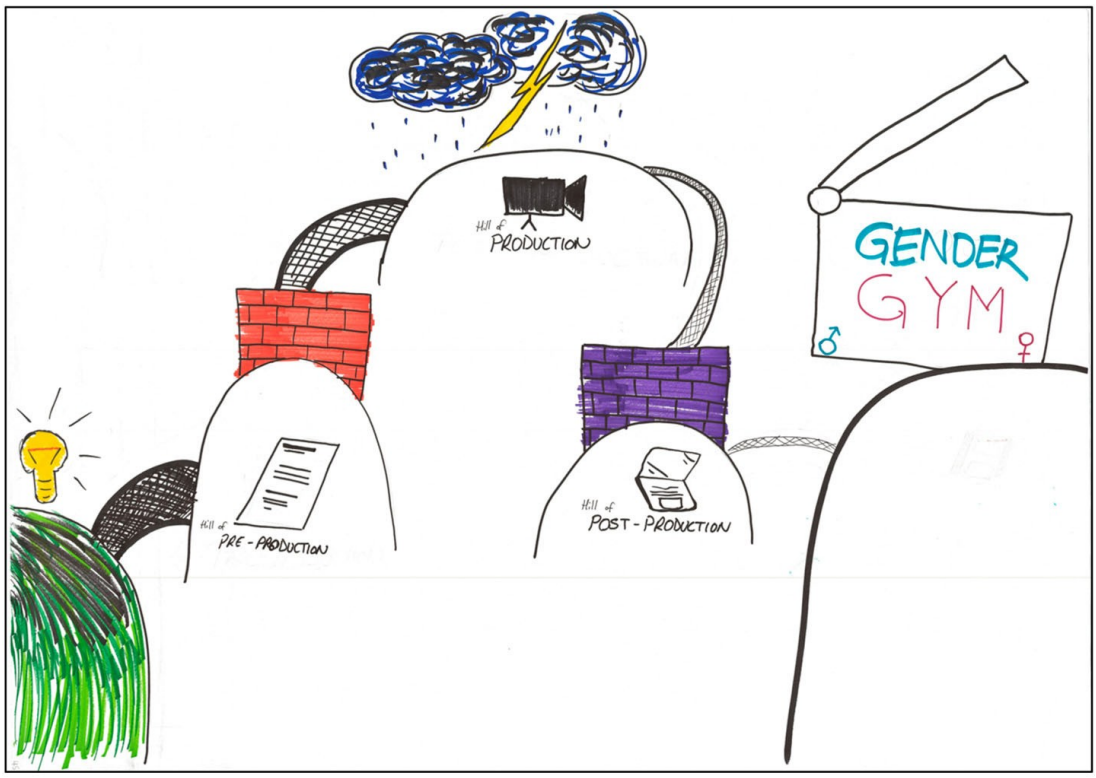
Conclusion

While I do not make any claim to have produced any startlingly new breakthroughs in this research study, I do believe that the findings offer up a range of insights around the topic of *functional fixedness*. In particular, the application of this term to a subject discipline such as media practice seems novel since the traditional domain of the literature on the subject is in psychology, business and design, tending towards the solving of concrete problems. On the other hand, problem solving as it is found in media practice is often of a more abstract nature dealing with issues of communication of meaning. It is, however, clear from the study that despite its limitations, a cartographic method for making the 'invisible, visible' has great potential as a research methodology. Asking students to think metaphorically about problem encounters can be visually revealing and offers a useful tool for exploring creative group processes. The method also usefully models experimentally the kinds of creative problems students face. As such, it provides a valuable instrument for simulating an observable experience which generates a range of useful research data. In this sense, it serves as a useful means of evaluating the experience of group working. Plus, though it does not necessarily produce any surprises, it does give voice to the challenges that students face in a way that allows educators to read in them their own perspective and point of view. It also functions as a tool for promoting reflection, negotiation,

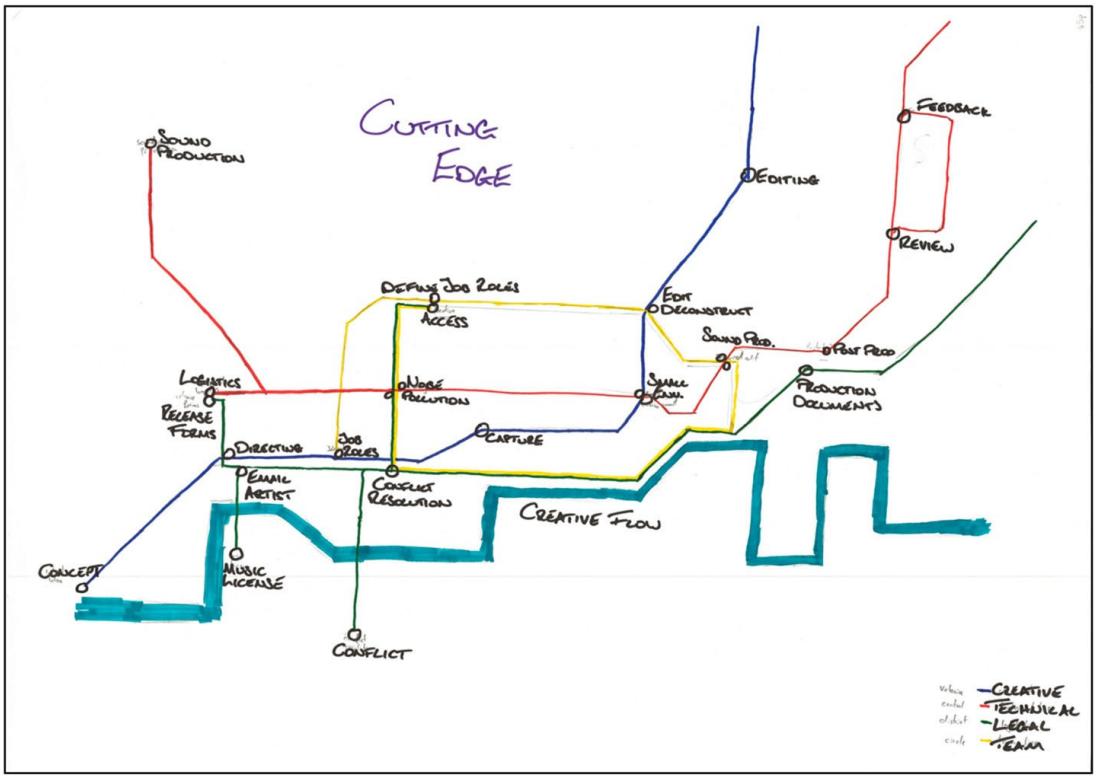
communication and other group-working skills and may have a pedagogic life beyond that of the research study.

As a practitioner and researcher, there is a direct relationship between the findings that have emerged from this study and the impact it has on my own teaching practice. The initial research questions emerged from my own reflection-on-action and have led to new insights into why some students struggle with problem solving. The role of practioner/researcher is one of a *change agent* (Trowler 2016, 19), i.e. an educator who seeks to influence a wider audience of practitioners and to advance the debate around the particularities of media practice education. Though there are challenges ahead, there are also clear avenues for further investigation that might lead to new pedagogical approaches to learning and teaching in the media practice context. The evidence that emerges from this study of the bifurcation between *indexical* and *metaphorical* approaches to problem solving now merits further exploration in the light of theories about *functional fixedness*. In particular, there is a need to look further into the ways in which *functional fixedness* constrains creative-problem solving and to consider how this might be removed as a barrier to expression and creativity.

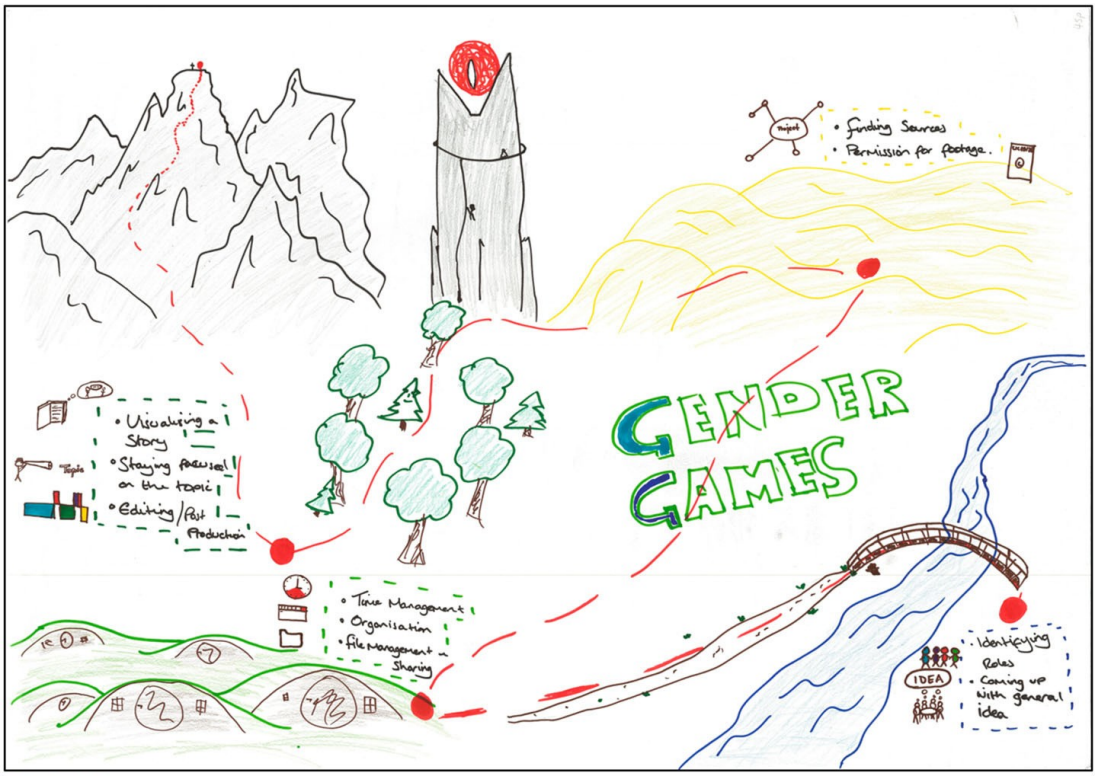
Figure 5: Maps 1-11



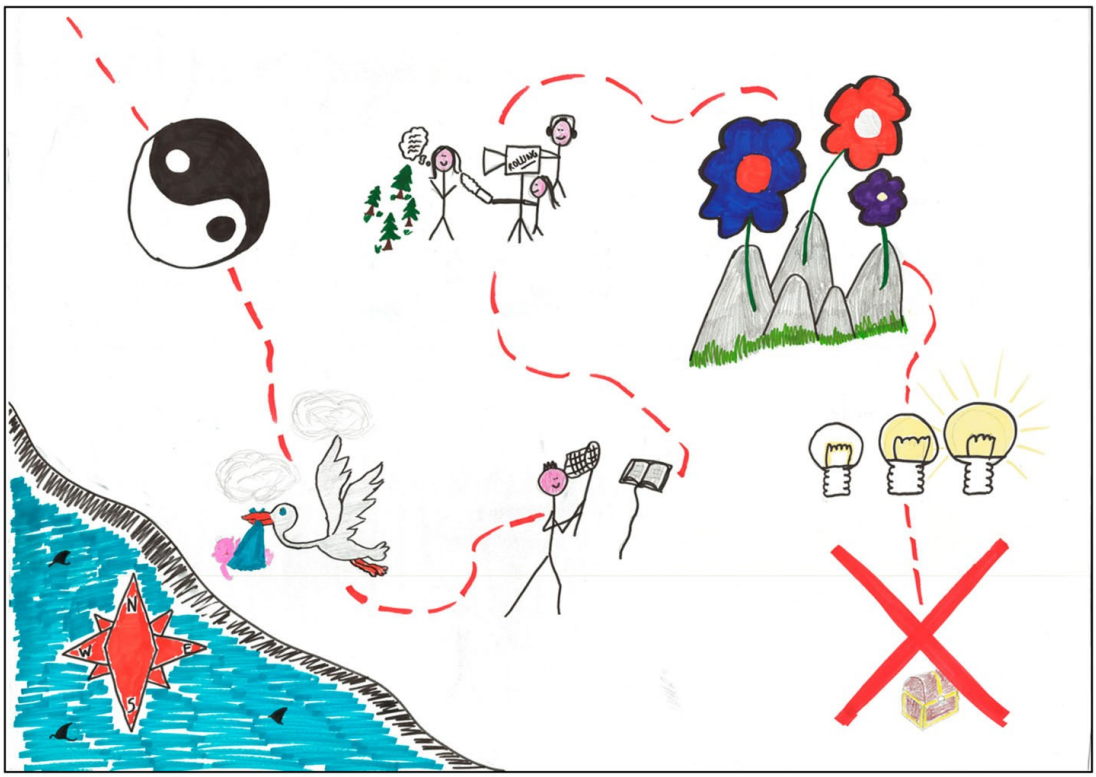
MAP 1



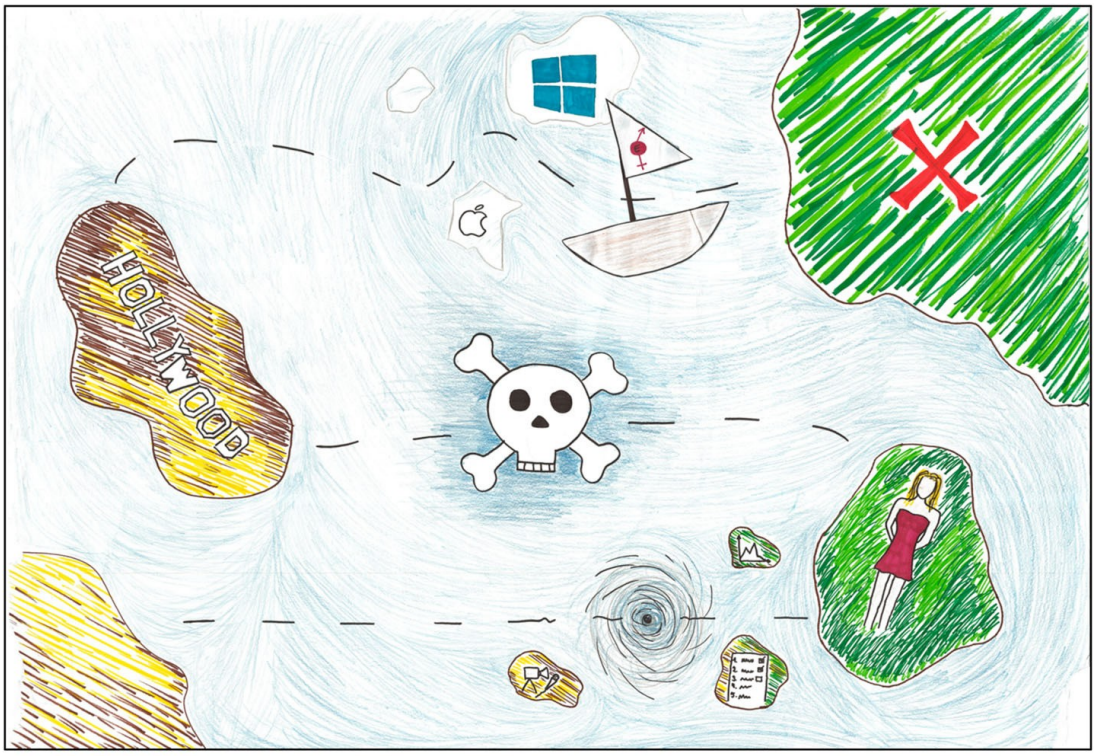
MAP 2


• Funding Sources
• Permission for footage.
• Visualising a Story
• Staying focused on the topic
• Editing / Post Production
GENDER GAMES
• Time Management
• Organisation
• File Management + Sharing
• Identifying Roles
• Coming up with general idea
IDEA

MAP 3


N
W
E
S

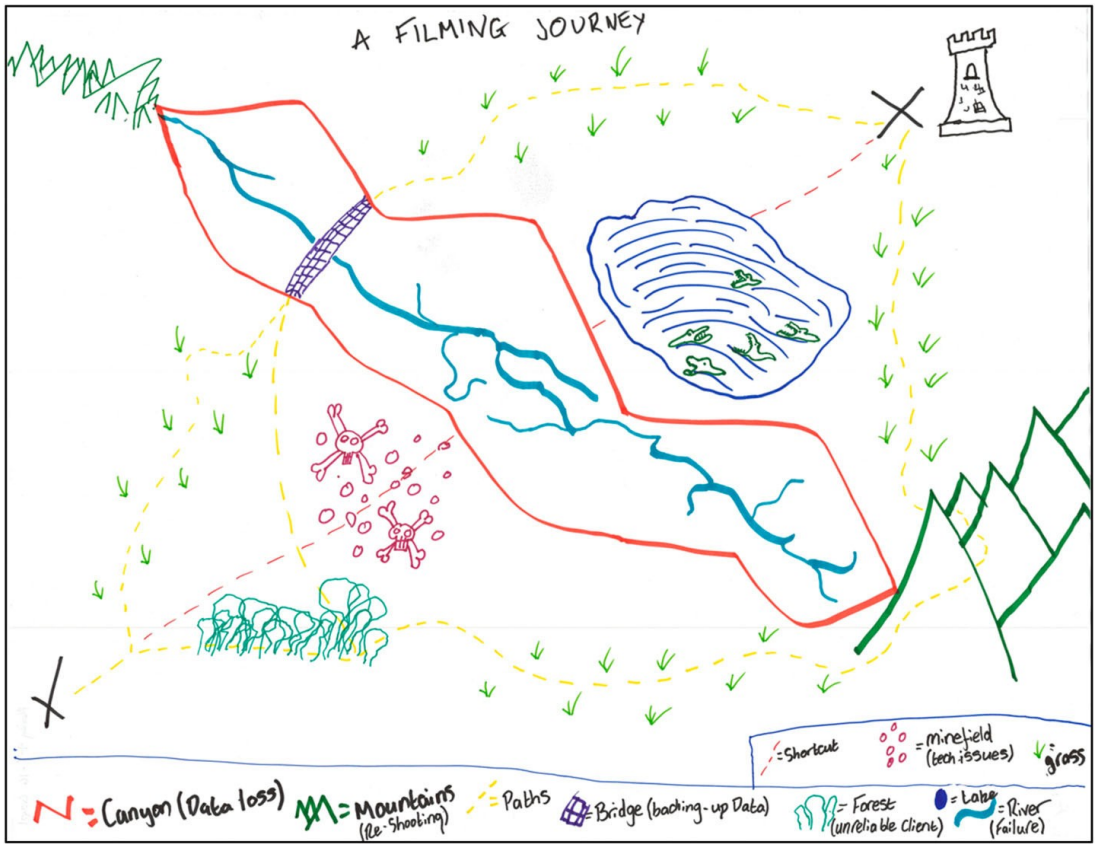
MAP 4


HOLLYWOOD

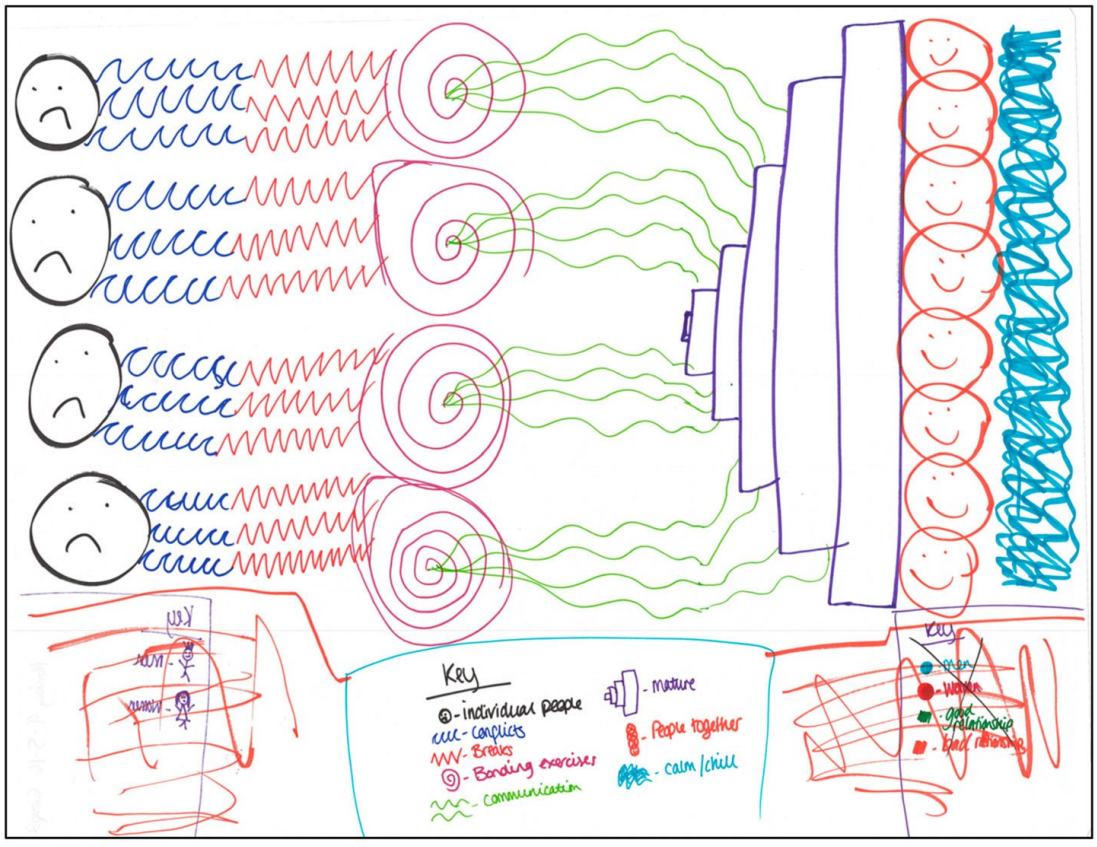
MAP 5


Gender
género
लिंग
GESCHLECHT
WORLD
MUNDO
विश्व
WELT
WARS
GUERRA
युद्ध
KRIEG
CONSENT FORM
BEFORE
AFTER
AAHH!!!
Kartoffelsalat
13:00
LEILA
(1,00,000Kgs)
(60+35+65= 160Kgs)
2 WOMEN
MIREIA
La macarena
13:00
+Canarias down there
17:00
BOLLYWOOD
SHIVANI

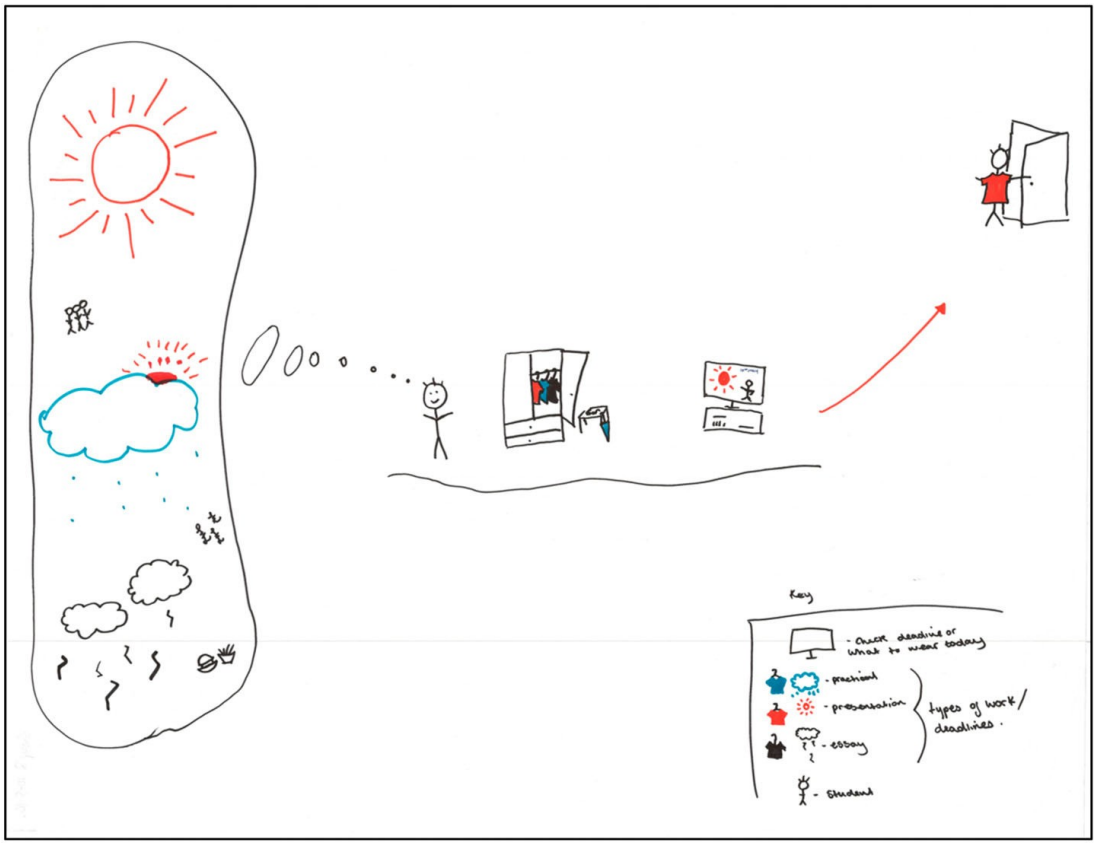
MAP 6


A FILMING JOURNEY
= Shortcut
= minefield (tech issues)
= gross
= Canyon (Data loss)
= Mountains (Re-Shooting)
= Paths
= Bridge (backing-up Data)
= Forest (unreliable clients)
= Lake
= River (failure)

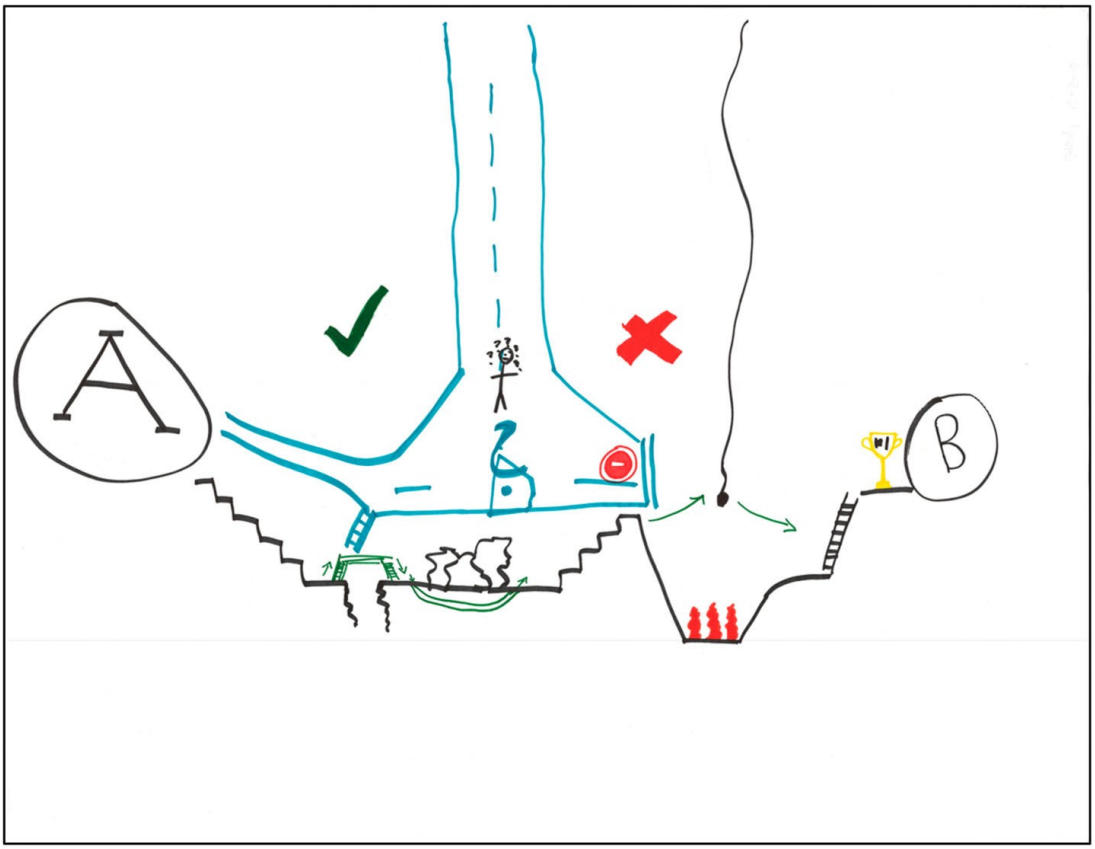
MAP 7


Key
- individual people
- conflicts
- Breaks
- Bonding exercises
- communication
- nature
- People together
- calm/chill
Key
- men
- women
- good relationship
- bad relationship

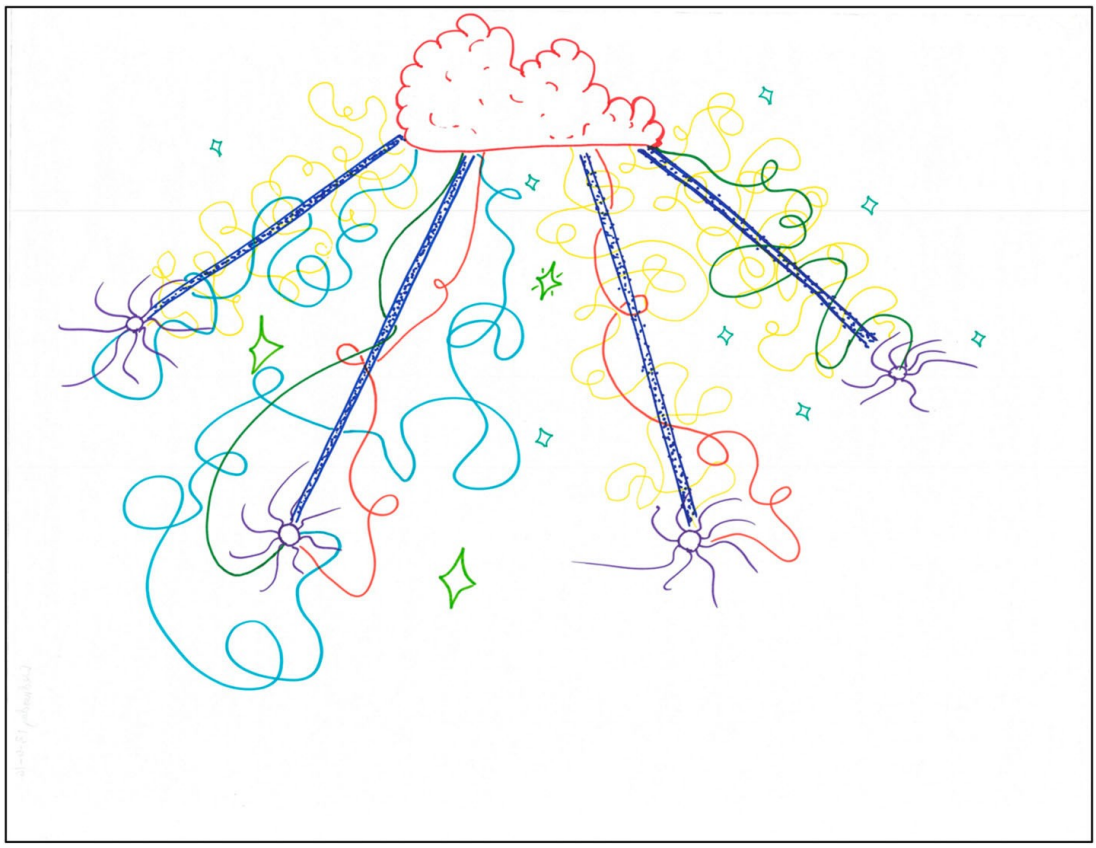
MAP 8


Key
- check deadline or what to work today
- practical
- presentation
- essay
types of work/ deadlines
- student

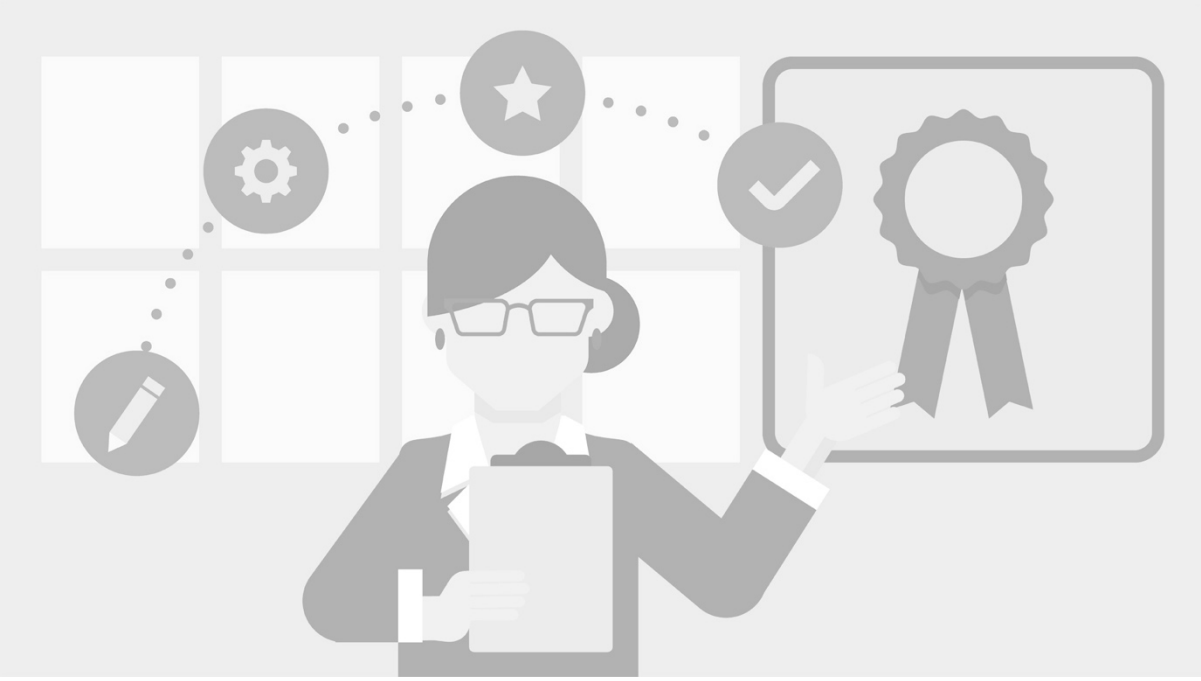
MAP 9


A
B

MAP 10



MAP 11



15. ARTICLE 5 – Reflection, identity, community - affordances of blogging for social interaction and reflective dialogue

REFLECTION, IDENTITY, COMMUNITY – AFFORDANCES OF BLOGGING FOR SOCIAL INTERACTION AND REFLECTIVE DIALOGUE

Abstract

An evaluation of the use of blogging for developing educational affordances that enhance characteristics of social interaction and reflective dialogue within learning communities. The findings emerge from a study investigating the implementation of course blogs on a media practice programme at a UK university. Literature on the use of course blogs suggests that blogging supports learning and promotes the attainment of skills in researching, academic writing, critical reflection and professional identity formation. There are however difficulties for educators seeking to promote the use of course blogs as a productive and lively social practice. The study presents data from a group of L4 students as well as a group of tutors tasked with implementing the use of course blogs. It asks: what are the barriers to developing blogging as a social practice; and seeks to identify positive actions that will enhance the implementation of course blogging. The research employs a qualitative approach drawing on the concept of 'dwelling' as a focus group methodology. The production of two data sets, one from the staff and one from students allows for a comparison that aims to identify disjunctions between the staff conception of blogging and that of the students. Thereby offering the possibility for determining the particular set of educational affordances required to achieve the aims of the project. Findings suggest that in the early stages of implementation one of the biggest challenge to developing blogging is resistance to change among staff. While among students the core theme is around ownership and motivation.

Introduction

The adoption of blogging as a pedagogic tool in Higher Education is widely explored in the learning and teaching literature (cf. Sim and Hew 2010) and is commonly thought to provide a range of benefits such as promoting the attainment of skills in research for creative practice, academic writing, critical reflection and professional identity formation. Notwithstanding some of the difficulties faced by educators wishing to employ blogging in an educational context (cf. Robertson 2011), there is a clear sense of an opportunity for learners to engage with acts of personal and critical reflection, identity building and community membership through the use of Web 2.0 technologies such as course blogs. The paper that follows explores some of these ideas through research undertaken into the implementation of course blogs on an undergraduate media production programme at an English university.

The decision to introduce blogging as a course activity followed on from a pilot study that evaluated the introduction of course blogging on one L6 course unit during the 2016 to 2017 academic year. The aim of the initial pilot was to investigate whether or not blogging might address three previously identified issues with the use of critical reflection as an assessment of practice on the programme. An evaluation of the pilot study undertaken by means of a focus group and associated written feedback from the participants, arrived a number of findings. The first issue concerned the need to integrate theory and practice into course activities so that the students practice would be informed by theory, thereby deepening the critical dimension of problem solving for creative practice. Secondly, there was a need to promote an engagement with critical concerns that circulate around ideas of practice so that the student's critical reflections are located within an appropriate

theoretical framework. Finally, there is the need to promote an early engagement with contextual material so that there could be a formative component to the act of looking back upon practice. The problem being, in the experience of the course team, students will tend to leave work on their written assessment until the last few weeks of a practice unit. Thus, the theory doesn't inform practice, engagement is purely strategic and importantly there is no draft presented for formative feedback.

It was hoped that the use of course blogs could in some way address these issues and encourage the development of capabilities for thinking through problem encounters that would see students take hold of theory as it pertains to their domain of practice and use it to inform their practical work. Evaluation of the pilot based on data gathered through focus groups supported these aims finding positive benefits to the use of course blogs. The research suggested that learners found (Hanney 2017):

- *the course blogs helped them prepare for end of unit written assessments;*
- *that they helped them connect their research with their practice;*
- *that blogging was enjoyable, fast and spontaneous;*
- *that it gave them time to find good sources to write about as they were not leaving research till the last minute;*
- *that it helped them keep track of their research;*
- *they liked seeing other students work,*
- *and they liked being able to compare their own standard of work with others.*

Subsequently the course leader for the programme and principle investigator for the study, supported by the department head, decided to roll out the use of course blogs across the entire media production programme. Funding from the university's learning and teaching institute offered the opportunity to undertake research into the implementation and through a series of research activities gather feedback on its effectiveness.

Having set out upon this course, the study presented here sought to understand the ways in which the formation of learner identity through course blogging intersects with and/or impacts upon the enhancement of student achievement. The use of blogs on the course is valued as an example of 'purposeful action' (cf. Arendt 1998) that offers the potential for a transformative pedagogy. One that manifests as the students' performance of a professional self in a public sphere. The study evaluates the effectiveness of the implementation through the framework of educational affordances (cf. Gaver 1991, Gibson 1979) in order to identify the social dimensions of the pedagogic environment and consider how action within this milieu might foster or inhibit engagement with course blogging. The research employs a qualitative approach drawing on the concept of 'dwelling' as a focus group methodology. The resulting data includes post-it notes, posters, ethnographic notes and transcriptions of recordings including data from a group of L4 students as well as a group of tutors tasked with implementing the use of course blogs. The production of two data sets, one from staff and one from the students allows for a comparison that aims to identify disjunctions between the staff conception of blogging and that of the students. Thereby offering the possibility for determining the particular set of educational affordances required to achieve the aims of the project. Interim findings suggest that in the early stages of implementation one of the biggest challenges to the use of course blogs one of change management in relation to leadership of academic teams. While among students the core theme is around ownership and motivation.

Rationale

Affordances as possibilities for action

Educational affordances are those characteristics of a pedagogic approach that determine the adoption of a learning behaviour. They can be thought of as the relationship between the particular properties of a pedagogic environment and the characteristics of the learner as they interact with that environment (Gaver 1991). An affordance is what is offered, provided or furnished, it describes the complementarity of the subject and the environment (Gibson 1979). The concept of affordance offers a means of thinking about the possibilities for action offered by particular techniques, approaches and technologies, within a specific environment, to those who might use them (Gaver 1991, 1).

This 'ecological approach' focuses on the links between 'everyday perception and actions' (Gaver 1991, 1) and provides a framework for conceptualising what we might call the user experience of a pedagogic design. With this in mind it is useful to consider that not all affordances are apparent, that in some cases they may be hidden or even false. To give an example from Gaver (1991, 2); a door handle may suggest an apparent or perceptible means of opening a door. However, the door maybe locked in which case the apparent affordance is false. Even so there may be a way of unlocking the door which in the first instance is not revealed (e.g. a key under a flowerpot); this would be a hidden affordance. Thus, apparent affordances need to match with the original intended use in order for the interaction to function effectively. In other words, there needs to be a complementarity of intention and action (Gaver 1991, 2). From this example, it is also possible to see how affordances might be culturally signposted (a door handle signifies in most cases a possibility for opening a door) and sequential (in that one may reveal another).

Affordances might take the form of objects, tools and other concrete things but might also be places, environmental factors or even people. Because the relationship of a subject to its environment extends beyond concrete physicality, the concept of affordances also necessarily includes values, beliefs, attitudes and behaviours. Equally it needs to take account of the notion that a particular affordance may be different for different subjects. For example, a wooden staff might offer the affordance of support, it might in differing circumstances offer the affordance of a weapon. In all cases an affordance is one of relations since, even though it may identifiably exist without the subject attending to it. It is the need or intention of the subject that gives importance to it. In an example given by Gibson (1979) it is understood that a letter box offers an affordance to a letter writing subject. However, if the subject doesn't write letters the affordance is still present just not necessitated. In a similar way, it is possible to say that a blogging tool is only has affordance for someone who is motivated to write.

Recognition that the concept has a social dimension and is not limited to the functional use of objects is of clear value to educators exploring the use of technological tools in a learning environment. Especially in an age when these tools, in general, pose little in the way of an obstacle to their functional use (cf. discussion section for exclusions to this assumption). Gibson's letter box is a great example of social affordance since the letter box is merely an epiphenomenon of a symbolic system which cannot be described through the relating of the its physical properties alone (Hammond 2009, 207). The social possibility afforded by the letter box is one of action, in this case the act of communication. Consequently, it is possible to see the environment of affordances as one which is 'full of potential, not of things' (Hammond 2009, 206). Social affordances can be thought of as describing the ways in which the social offers possibilities for action.

Developing this theme further, the question of affordances for course blogging becomes one of inquiry into the social properties that determine just how a thing could possibly be used (Hammond 2009, 208). In particular it is the perception of a tool, its desirability or lack of, in other words its apparent affordance, that is a key focus for this study. Of course, material properties still have a significant bearing on how the subjects using them interact and cannot be entirely disregarded. The particular genre (Gaver 1996, 113) of tools in an environment carry their own symbolic meanings. The playability of social media may for example, may conflict with the academic desire for learnability and work against educator's intentions. The 'environmental shaping of social actions' (Gaver 1996, 113) is thus, at the same time material, symbolic and social. As such, the concept of affordances is a useful one if there is a desire to explore the inherent properties of a pedagogic environment. Thinking of this environment as an ecology of affordances enables educators to consider the design and usability of the learning experience, and to ask questions about whether or not students are using the tools provided in the way that was intended. It also provides a model for understanding how the use of tools can be refined in order to more effectively make apparent the possibilities for action offered by those tools.

Praxis as purposeful action through reflection

If a theory of affordances describes the *possibilities for action* then the concept of praxis offers a means of understanding the *possibilities for purposeful action*. An action is a beginning of something, the act sets something in motion and even though prompted to act in the first instance, this beginning is the beginning of somebody (Arendt 1998, 177). If action indicates a beginning, it is for Arendt speech that is revelatory of whose beginning. Through utterance a unique personal identity is revealed and thus a place taken in the

public realm (Arendt 1998, 179). This revelatory characteristic of the utterance functions because the speaker is immersed in a field of social relations. By stepping into the public realm, the speaker begins to manifest their public and professional identity (Arendt 1998, 180). Importantly for Arendt public and purposeful utterance imbues the action with special characteristics and sets it above just being a means to an end, or in her words 'mere talk' (Arendt 1998, 180). The idea that an utterance can transcend mere talk is of interest as it is suggestive of some kind of transformative process at work. It is of course agency that is the special characteristic that Arendt (1998) describes, though of course, it is understood that being immersed in a multiplicity of social relations the agent is not the author of their own story. Instead they are embroiled in relations with other agents and take their place among people, within the public realm.

The utterance connects the subject to the social, it is for Holquist (2002, 61) 'drenched in the social' and a 'social phenomena par excellence'. It is through the voicing of the subjects own multiplicity of positions and through response to other voices and alternative positions that public identity is formed. In this sense, praxis is primarily action taken in respect of others. It is in essence performative, committed to the future and 'bears witness to personal meaning' (Melaney 2006, 465). Freire (1970) maintains that praxis involves both action and reflection suggesting that:

> *"Praxis, therefore, starts with an abstract idea (theory) or an experience, and incorporates reflection upon that idea or experience and then translates it into purposeful action. Praxis is reflective, active, creative, contextual, purposeful, and socially constructed"* (Freire 1970, 113).

Following Freire (1970) it is understood that through praxis the subject comes to embody the "unity of theory and practice" (McLaren, 2000, 5) a position that is widely

supported by the literature on experiential education (cf. Argyris and Schon 1974, Kolb 1992, Dewy 1938). Through dialogue and addressivity, in other words through the orientation of an utterance to an audience or addressee, the subject enacts a performance of self that offers an opportunity to engage with self-construction (Ross 2014, 220). It is argued here that blogging in an educational environment gives space for exactly this kind of identity construction through participation in a community of peers, where values, perspectives and beliefs are shared (Hanuscin et al. 2014, 1). It is a form of 'ongoing internal construction that prepares one for taking action" (Volkmann and Zgagacz 2004, 600) in which the formation of identity occurs through the presentation and interpretation of personal narratives within a community of actors (Hanuscin et al. 2014, 2).

However, critics have claimed that this kind of high-stakes reflection is an articulation of an addressivity that has an 'orientation towards assessment criteria, attention to teacher presence and preferences, a sensitivity towards a general other'' (Ross 2014, 219). It is suggested that this audience awareness somehow results in a loss of authenticity and reduces access to an 'unmediated self' (Ross 2014, 219). They argue that reflection is a confessional mode of writing which is personal, private and revelatory. They are concerned that reflections presented publicly or for assessment are not representative of an interior monologue but are instead performed and in-authentic expressions of self. There is some truth in these claims and in reality; any form of writing by students for academic purposes will be a constructed presentation of self. Nonetheless, Ross (2014, 230) argues that there is value in thinking of reflection as a 'performed self' and claims that 'revelations of interiority' are in fact epiphenomena of the genre. For Ross and others 'blogging might be conceptualized as a disembodied form of face-work, concerned with the art of self-representation, impression management and potential self-promotion' (Hookway

2008, 96). Acknowledging reflection as a performed act of expression in this way, means it can be celebrated it as an utterance. One that signals the beginning of an emergence into the public realm: *a possibility for purposeful action* afforded through the use of course blogging tools.

Methodology

Context for the research

The research was undertaken as a follow on from a prior study that evaluated the introduction of blogging as a learning and teaching practice to a group of L6 students on one unit of study. On the basis of positive feedback from students who participated in the pilot study the teaching team concluded that there was a significant benefit to the introduction of course blogs and the decision was taken to roll out the use of this approach across the BA programme at all levels. To support this implementation, the course team engaged in a number of staff development initiatives including practical training in setting up a Wordpress.com blog and pedagogy focused workshops aimed at supporting the integration of blogging into the delivery of their course units. Staff and students were also provided with a range of supporting materials and online resources. While, incoming students were provided with workshops during welcome week that saw them register and set up a personal Wordpress.com course blog.

Addressing the role of researcher as insider

The research team was led by a full-time lecturer at the university where the study took place. Two-part time research assistants (RA) were employed on the study while additional team members were co-opted as needed from a pool of research assistants

employed by the university's learning and teaching institute. The inclusion of the RA's in the research team provided a solution to the problem of 'researcher as insider' (Trowler 2014) which occurs when an academic with a direct teaching relationship with the students, as subjects of the research, undertakes a study at the site of their employment. It was felt that students would be more comfortable and speak more freely once academics were removed from the process. The aim being to de-escalate the power relationship between tutor and through a distancing of the lead researcher from the actual research activity. In this way, claims as to the validity of the data captured are mitigated and what is offered is a contestable form of knowing which is mediated through the social and interpreted by a researcher who is situated within a lived context. Offering the possibility for the acknowledgement of the multiplicity of positions taken by the research team and the research subject. Accordingly, the dual role of insider and researcher is acknowledged and reflexively incorporated into the research design in order to flag up ethical concerns and allow for them to be addressed.

Research site

The research site for this study is a university on the south coast of the UK situated in a large urban centre. The institution gained university status in 2005, having its origins in a private School of Art founded in 1856. The building itself is relatively new, having been constructed around 1964 and includes modern classrooms with video projectors, IT facilities, white boards and flexible chairs and tables. The university has a large media arts provision, with a reputation for industry engagement and the integration of project working with real clients into the curriculum.

Recruitment

Subsequent to ethical approval by the university's research ethics panel. In order to encourage participation, the research team offered students £20 iLive2Shop vouchers as a reward for participation and this attracted enough students to enable the study to proceed. For the staff team a complimentary lunch was offered to encourage a high degree of buy-in to the workshop, though this was intended as more of a 'thank you' gesture since the meeting had already been scheduled as a compulsory staff development session.

Sample

The participating students were drawn from two main groups. The first group was drawn from an L3 Foundation Media course that serves as a feeder for a wide range of BA pathways within the university including; film, media, television and journalism. Out of a year group of 45 students 10 took part in the study. This included a mixture of male and female students of around age 17-18. The second group was drawn from a L4 Media Production pathway. Out of a year group of 53 students 12 took part in the study. This included a mixture of male and female students of around age 18-20. The staff group included full-time (3) and part-time (5) staff members ages from 30 to 50 years with a predominantly male membership of the group.

Dwelling as a research methodology

The motivation for the design of the research methodology draws on the concept of *dwelling* or *silent discussion* inspired by the work of researchers at the 2018 Rethinking Research Conference (Giddens, Spencer and Urbanczyk 2018). Focus groups began with a short framing activity that was intended to bring to mind the participants experience of

course blogs. During the framing activity, researchers handed each participant few post-it notes and pens and asked them to write things about blogging they liked. This was followed by the *dwelling* activity which started with a brief introduction explaining the context and purpose of the 'silent discussion'. Participants were then introduced to a five A0 posters laid out on tables on which a topic word or prompt had been written. Initially participants were asked to place their post-it notes on the poster with the most relevant prompt. They were then encouraged to circulate around the posters in silence and to inscribe further responses to the topic prompts. In addition, participants were encouraged to engage in silent dialogue with each other by adding responses to each other's comments. At the conclusion of this phase of the activity small group discussions were facilitated by the research team who used ethnographic note taking techniques to capture the discussion content. At the conclusion of the discussions each group was invited to summaries and share the results of their discussion with the rest of the focus group participants. Lastly, QR codes linking to online surveys were provided in order to capture more rudimentary information about participants self-perception of their own digital literacy and practical experience of using blogging applications. The *dwelling* focus group was delivered on three occasions. First as a pilot activity to test the method with a group of L3 students. Then with a L4 group who were the target of the study, followed by a staff group to provide an alternative and contrasting perspective. Each group was presented with the topics: community, participation, confidence, engagement and critical reflection.

After each session, the research team reviewed and refined the process to enhance the dialogic element of the method. The adoption of an iterative, reflexive methodology (Clifford and Marcus 1986) allowed researchers to explore the relationship between students and academics perspectives and use this data in a way that not only enable the

research team to refine the method but to link perspectives between each group. In this way, the research team were able to map a broad range of responses and get a broader sense of the barriers to using course blogs as an effective pedagogic tool.

Results

The research generated a broad set of data including survey results, dwelling posters, ethnographic observation notes, transcribed discussions and framing activity sheets. The capture of data from both staff and students enabled the research team to undertake a comparative analysis of the views of both groups of stakeholders. The analysis of the data led the research team to conclude that there are a number of key barriers to the implementation of course blogging.

The dilemma of course blog implementation - do students feel 'forced' to participate in course blogging?

Both academic and student groups seemed to feel that engagement with course blogs is low because the activity is not assessed and therefore they are less motivated. Many of the staff group felt that the only way to 'make' students do the task is for it to be assessed and marked:

> 'STAFF 1: "Um yeah, well ultimately students often say, "well why should we do this?"
>
> 'STAFF 4: "Quite honestly trying to get students to do anything that's not assessed is...."

The students' agreed with this position and the phrase 'forced us to do' occurred quite often in the discussion:

L4 STUDENT: “Not everyone participates because then we are not actually being graded - so there’s no real point in doing them”.

However, it appears that students do not wish course blogs to be assessed, even though they agree that it would improve their engagement and motivation. Though they acknowledge that if course blogs were to be assessed, they would feel obliged to participate:

L4 STUDENT: “I would hate if they would assess the blogs”.

L4 STUDENT: “If it was assessed everyone would have to do it”.

So, it would seem that one of the biggest obstacles to encouraging student engagement with course blogging is their lack of motivation and that while there is acknowledgment that assessment would drive engagement the students are resistant to such an approach. A few of the students mentioned that some sort of encouragement, extra motivation from tutors or a reward for participation might help, while others suggested that if teachers provided more interesting topics related to their assessments, or allowed students to pick their own topics, they would be more willing to contribute and participate:

L4 STUDENT: “More people would do them if we had freedom to choose what we wrote about”.

The students see the blogging activities as another burden in their busy schedules, more academic labour for which they can see no direct value or purpose. While staff are uncertain about how to integrate blog writing tasks into their lesson planning and course design. As a consequence, rather than being an integral part of the process of researching and developing a creative project the blog writing tasks are seen as an add-on, something

extra to do, more academic labour that distracts from the core task of delivering course content. This view would seem to be supported by comments from students in the L4 workshop group where it was claimed that tutor had demotivated the students saying:

> L4 STUDENT: “Do it if you want to – this doesn’t make me want to do my work”.

It is clear that the course team also extra pressure and didn’t feel they had the time to fully engage with course blogging. During the workshop discussion one staff member expressed worries regarding lack of time to deliver high quality content whilst also implementing course blogging as an extra activity:

> STAFF 6: “It's like you said, it is at the expense of something else. So yes, is there something I'm supposed to be teaching instead in this time? As an individual teacher, I'm being asked to deliver the blogging thing, and I'm being asking to deliver content. So, if I'm to do both, something has to give at some point. The content used to come first but now this is impinging on it as an extra thing we do.”

There is then, a sense that staff are resistant to adopting new forms of pedagogic practice, that there is an attachment to ideas about content which are associated with concepts of self-identity that might be related to ideas around being a practioner and teaching practice. Consequently, there is a reluctance to embrace a new approach and this then impacts on their own motivation, which has a concomitant effect on the students’ engagement with the course blogs.

The dilemma of course blog implementation – what is it all for, it's really unclear?

A key theme in the data among both staff and students is the sense that the purpose of introducing blog writing to the course was unclear. There was collective agreement on both sides regarding this issue and as a consequence students felt there was a lack of guidance and perhaps even a lack of support for the activity. Having undertaken blog writing activities students felt their work was not being valued:

> L4 STUDENT: "the lack of feedback on the blogs, they are not sure if their blog posts are being read and because of that the whole task just loses meaning".

Staff also felt that the value and purpose of the course blogs was unclear, that they also felt they lacked proper guidance and support:

> STAFF 7: "it was unclear from the outset whether the blog was meant to be a sort of holistic blog that was about their practice or whether it was supposed to be linked to certain units or something completely extra-curricular, and I think we were unsure in terms of that so of course then the students are lacking clarity […] I mean there was a comment of 'why do we have to do this' and that's what students think".

> STAFF 7: "I've been in rooms where students have said 'you know we don't have to do this' out loud to the other students and of course if there's that perception where a student can still pass the unit without having done anything you know turns up in the last two weeks, hasn't done any blog posts says what is this all about".

The workshop data revealed that academics don't have a clear perception of how to implement blogging into their course and how to introduce blogging to students:

> STAFF 7: "I think that's really where the problem lies is it's the philosophy behind it. What is the intention of the blog? Is the blog there to facilitate their critical reflection? Is the blog there to be a window to the world, for them to share their creative work? What actually is it? And I think until we actually know what it is, it's really difficult".

Interestingly however, according to the pre-workshop survey administered to the staff team, 4 out of 7 academics answered, 'Strongly Agree' to a statement 'I understand how to use blogging as a tool for supporting assessment.' While 3 marked their answer as 'Neutral' and none marked as 'Disagree'. The contradiction between the survey results and the data from the audio transcription of the workshop discussions suggests a high level of internal confusion about how to use course blogs as a learning tool among academic staff.

The L4 student workshop data reveals that students have very similar feelings to academic staff and are also 'unclear' of how to approach course blogging:

> L4 STUDENT: "Students don't know whether blogs should be academic or personal. They don't understand what is the desired structure or what is the right way to write blog posts."

There were other issues around clarity and capability that appeared to underpin some of the confusion among academic staff. The results from the pre-workshop survey administered to the staff group revealed that while 4 out of 7 academics answered, 'Strongly Agree' to the statements 'I feel comfortable using digital technologies' and 'I am capable setting up a blog' and 3 out of 7 answered 'Agree. Indicating it was assumed, a high

level of digital literacy among the members of the staff group. This despite anecdotal observations by the course leader who lead a workshop on blogging for the academic team as part of the course blog implementation strategy. At the workshop, at least two of the staff members were unable to register an account and set up a simple wordpress.com site without extensive technical support. While some struggled to acquaint themselves with the technology, out of a group of 8 who attended the workshop only 4 were able to set up a profile on wrodpress.com unsupported. The contradiction between the academic's self-perception of their own digital literacy set against observational data suggests that despite personal technological capabilities in their own specialist areas of practice. Across the board capabilities for digital literacy are at best uneven and in some cases, might be described as profoundly inadequate.

The dilemma of course blog implementation – what if someone read my blog?

The data from the L4 workshops raised an issue around the public nature of the course blogs. Students were reluctant to put work they didn't feel showed them in a good light online:

> L4 STUDENT: "What if my future employer sees it?".

There is an obvious concern that whatever they post online might come back to haunt them in the future. Yet on the other hand students appeared to be reluctant to put enough effort into the task of writing a blog post to ensure it would be of an acceptable standard.

> L4 STUDENT: "People don't work as hard on them because they don't count towards anything"

This tension between the need to present themselves publicly and the lack of motivation to spend time on blogging tasks is resolved by the students through a contradictory discourse of detachment from the task.

The dilemma of course blog implementation – on reflection it's not all bad?

When it comes to seeing the use of course blogs as an aid to supporting the acquisition of skills in critical reflection staff and students rated blogging very highly in both surveys and in discussions. Critical reflection was mentioned as useful, relevant to the assessment, improving writing and good for tracking professional growth. The data from the L4 student workshops shows that they rated critical reflection as the most positive attribute of course blogging. When asked a question about this in this the workshop they cited the relevance to assessment, connection to professional practice, contribution to personal growth and an opportunity to track their progress. Data from the staff workshop suggested that the academic side also valued the use of blogging as a tool to support critical reflection:

> STAFF 3: "They use it as a learning log, keeping track of the process; to show research and reflect on it".

Yet the discussion also suggested that the students wanted more ownership and the opportunity for creativity. They didn't like what they referred to as a strict academic template for course blogs (*in fact this template was no more than a requirement to write 300-500 words, include an image, two references and an opening paragraph that hooked the reader*). Freedom of creativity is the most desirable feature about course blogs for the students who appeared to be convinced that staff did not want to give them meaningful, useful and interesting tasks:

L4 STUDENT: If they would give us something we are interested about".

L4 STUDENT: "They don't want to give us interesting tasks".

One student asked why they couldn't write a biography about a documentary filmmaker for one of their classes (in documentary filmmaking) which came as a great surprise to the course leader when this was related to him. He explained that this exactly the task they had been given during the course unit and expressed surprise at the disjunction between what they were asking for and what was being asked of them.

Academics agreed that course blogs are lacking the creative space and have too rigid academic template:

> STAFF 5: "I had a thought that in the induction it was very much sort of set up four categories so video, photography, it's a showcase of your professional practice - that's the selling point, right? So, it's like this is the mouthpiece for my creativity and then you've got this very rigid academic template that then inhabits that space as well and I don't think you can say- oh it's yours to show the world but then say but you're also going to show the world kind of old school academic template and that's sort of... they don't stick together".

Many of the comments above appear to refer in particular to an infographic that had been designed on behalf of the research team. The infographic had been distilled the commonly recognised general characteristics of a 'good blog post (Bonnie 2017) into a schema for writing course blogs under the heading of Anatomy of an Academic Blog Post. The only significant difference between the two approaches, other than the title, was the requirement to adopt Harvard Referencing as a means of evidencing the use of source

material. The 'anatomy of a perfect blog post' (Bonnie 2017) example can be compared directly to the researcher designed 'anatomy of an *academic* blog post' (fig. i) infographic. The main differences being the heading and the requirement to reference sources.

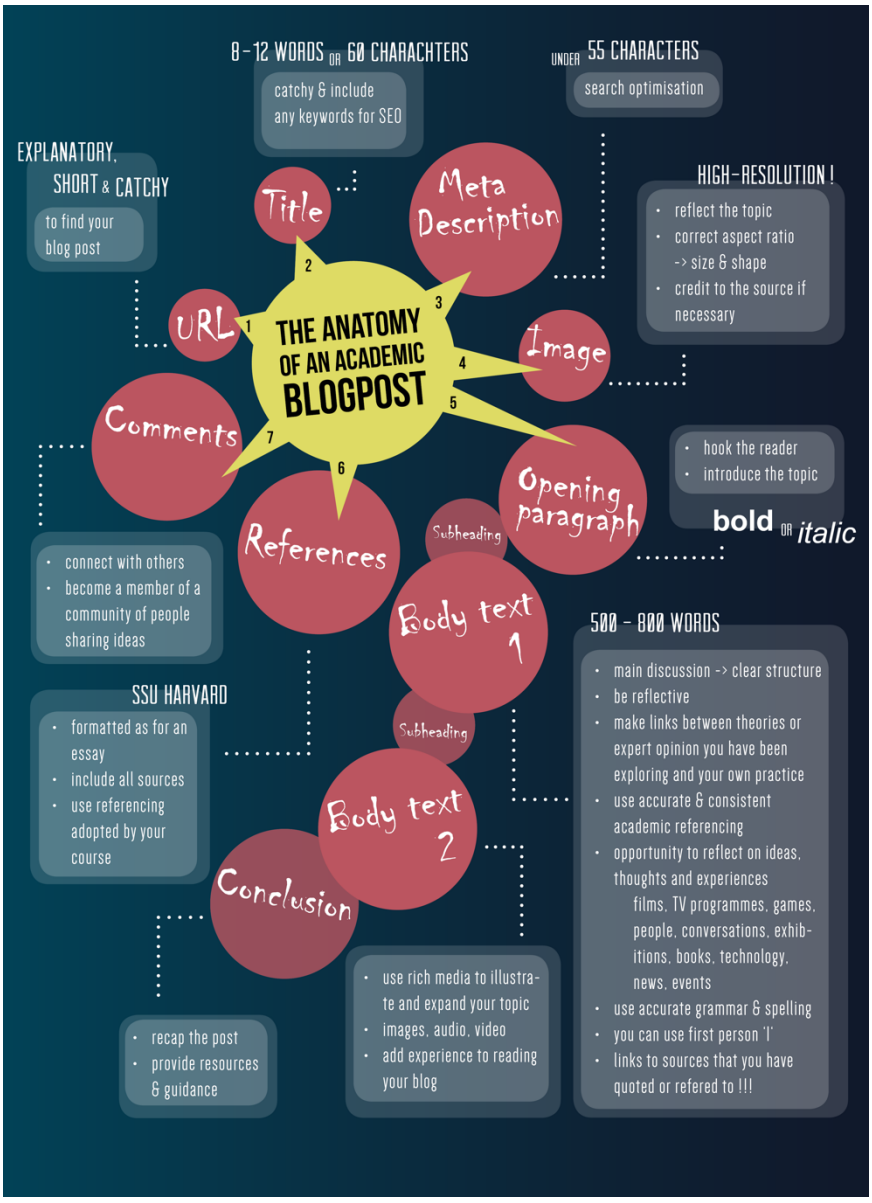


Figure 6: The anatomy of an Academic Blog Post

A quick search of the internet will reveal that the refrain of 'cite your sources' is as common in advice presented to bloggers as it is to students at a university. Within the field of non-fiction writing, it is a fundamental requirement that applies to all forms of writing practice. In the case of online writing it is common to use hyperlinks as a means to cite

sources. It is equally as common to see foot notes or other more traditional academic forms of referencing. It is the addressivity required of a particular piece of online writing that would seem to lead authors towards one approach or another. The tension here is perhaps the confusion over audience; is the blog intended for public or academic consumption. In both cases a form of referencing that functions as an archaeology of knowledge is a requirement, but the particular choice of form of citation is likely to be different. The request for students to adopt an academic style of referencing (as an opportunity to practice something that would be required for written assessment), along with the titling of the infographic as an academic writing genre appears to have created a series of misrecognitions that constructed the blog writing task overly restrictive, inappropriately constrained and addressing the wrong audience.

Discussion

The implementation of course blogging hoped to encourage an integration of theory and practice, foster an encounter with the contextual ideas and stimulate an early engagement with the process of reflecting on practice. The staff team also sought to develop students writing skills and to develop a community of practice around a shared and collective digital dialogue. If, however, an educational affordance is a characteristic of a pedagogic approach that determines the adoption of a learning behaviour. Then the data suggests that the implementation of course blogs as described in the results above has only been partially successful. It would seem that the possibilities of for 'purposeful action' afforded by course blogs are only partially apparent. The affordance is hidden, or partially occluded by a range of social factors that have resulted in a partial uptake of course blogs by staff and students. The data suggests that while there are some issues relating to digital

literacy among staff it is in the main, social factors that come to dominant the thematic analysis. There is then an opportunity to look at why that maybe and to consider possibilities for further adjustment to the use of course blogs in order to enhance engagement and participation. The analysis of the data suggests that there are two key themes that need to be addressed the first being one of change management, the second circulating around issues of ownership and motivation. From the student point of view, they need to want to do it. In other words, they need to feel motivated towards the activity. A clear sense of personal ownership needs to be afforded to the task of blogging in order to shift it from being a burden towards something they want to do, or desire to engage with. There needs to be clarity around the purpose and value of the course blogs and there needs to be an engagement with the idea of blogging as a professional presentation of self. A 'reason why', is a motivating factor that shifts affordance from hidden to apparent and would perhaps lead towards *possibilities for purposeful action* as student bloggers begin to present themselves in the professional realm. Unless the intention is there, then the affordance of blogging will remain hidden, deflected by student's inattention to the possibilities afforded by course blogs.

There is a sense, on reflection, that one of the issues is that blogging as a professional, or even just as an educational practice, is not modelled for them. There is no process for socialising the students into a community of practice (Wegner 1999) and consequently, they do not connect the practice of public writing with their own personal goals and aspirations. Clearly what would help here is more leadership from the staff team, however this would require staff ownership of the implementation process underpinned by a clear pedagogic understanding of the purpose and value of the use of course blogs. While there is also a need to develop competencies in digital literacy among the staff team (but

seemingly not among the students there appears to be a direct correlation between the staff and student's engagement with the use of course blogs. In fact, it seems clear that if the use of course blogs is to achieve the aims and objectives posed above then the primary objective for the ongoing implementation should be the development of a community or practioners i.e. a community of bloggers. This requires staff to shift away from the role of facilitator to one of activator. Or in other words, to become an agent of change (Fullan 2013, 25) who actively engages with the use of technologies such as blogging rather than just passively promoting their use. In this way, the implementation shifts away from addressing goals and becomes a process (Fullen et al 2005, 55) of engagement with change. At the core of any plan for change is the need for 'capacity building', by which is meant the development of new 'skills and competences' (Fullan 2009, 2). If it is through practice that skills and competencies are arrived at (Dewey 1938) then the community of practice approach must require all of those engaged with the implementation to become bloggers.

Having had the opportunity to reflect on the results of this study we have already undertaken some change management activities to try and enhance the visibility of the affordances for 'purposeful action' that have remained partially hidden. On the student side, we have taken the time to promote the use of course blogs, clarifying their value and purpose in lessons with the students and linking them more directly with assessment. They are encouraged to literally cut and paste their blogs into new documents as the starting point for their critical reflections. In addition, assessment briefs make clear that the 'frequency and quality' of the use of their blogs will contribute towards assessment. On the staff side, we have set up a regular blog writing group which aims to get all the staff members blogging. Not only does this address the unevenness of digital literacy competencies among staff by offering a supportive, peer mentoring environment. It also

offers the opportunity for discussion among the team about how they have integrated blogging into their classroom delivery. For the sharing of best practice, and for the review of tools and techniques that have already been developed to support the use of course blogs. There is an additional advantage to this process which is that it encourages staff to write about their research, providing a model for students to engage with. It also fosters a sense of community amongst the staff and encourages them to view themselves as researchers who are exploring the nature of practice-based research through their own personal engagement with blogging as a reflective tool.

Conclusion

If the introduction of course blogging aimed to encourage students to take their place in the public sphere and enact public personas as professionals, then it seems clear that the implementation was not entirely successful. In fact, on reflection the objectives of the implementation now appear extremely ambitious. There was a lot of confusion among staff about the value of course blogging, a lack of clarity around the purpose and the means for using course blogs. In addition, the assumption that as media practice educators there would be an even level of digital literacy among the staff team proved incorrect. This confusion and uncertainty seem to have impacted directly onto the student's engagement with the activity. From the student's point of view the overly prescriptive nature of the assigned blog writing tasks as they saw them, along with lack of motivation to engage led to a poor take up across the board. There were also issues around the buy-in of staff to the implementation exacerbated perhaps by an uneven range of digital literacies among the staff team. However, all is not lost! At the end of the summer break subsequent to the research activities described above. A returning student informally reported on the work

experience they had undertaken during the summer. She described a media company where she had been working and apologised saying “I never understood the blogging, now I do”. This revelation came about for her after she witnessed the army of bloggers employed by the media company where she had spent her summer. This real-world experience put blogging into a different conceptual framework for her and she asked me if it was possible to arrange any additional blogging experience. In fact, she threw herself into a couple of assignments for a local business which were recently published. What is revealed here is that it is the real-world contextualisation of pedagogic approaches that is the best motivator for engagement and ultimately the most effective affordance for the use of course blogs.

16. CONCLUSION

Summary of main findings

Taking the form of a series of small-scale investigations into project-based learning in that thread together in order to view the topic through a range of different lenses. In particular, the study has tried to address the question of '*how might reconceptualising project-based learning inform the pedagogy of media practice education*' in order to attend to an identified gap in the literature on the subject. Taken together, the research results presented here constitute an *assemblage* (Deleuze & Guattari 1987) of interwoven affinities: things, concepts, ideas, and thoughts representing particular *lines of flight* whose trajectories intersect *rhizomatically* in order to produce a signifying totality. In this way, the study employs an *Agile Project Management* (Highsmith 2004) approach to the research, at each stage iterating new sets of questions that emerge as the study progresses. On the face of it, it may seem as though the researcher has *muddled-through* (Lindblom 2010) the study and, indeed, this is the case since *muddling-through* and *Agile Project Management* overlap methodologically. Both approaches are suited to research that is intended as *reflexive* (Marcus 1986), unfolding by stages, and concerned with investigating of the periphery of a topic as a means of finding entry to the heart of the matter.

The study sought to satisfy its key objectives through; the production of *five scholarly articles* of publishable quality; the development of an *innovative research methodology* and its application to the undertaking of an *in-depth analysis of the student experience* of participation in project working; the *dissemination of the findings* of the study through journal publications, conference presentations and workshop facilitation and the provision of an opportunity for reflection upon these findings that has fed this new

understanding into current *course development and curriculum enhancement* activities. The publication of the findings in high-impact journals has resulted in a broad and diverse audience for the study's outputs. The study outlines a set of *theoretical underpinnings* for the use of project-based learning as a pedagogy and has made an original contribution to the literature on project-based learning through an *in-depth analysis* of the concept of a project. By taking a student-centred approach to the topic, the study sought to ask questions about the nature of the student experience and reflect on the ways in which students respond, in actuality, to the requirements of project working.

The outputs of the study are a resource for educators to draw upon as they engage in curriculum development on their own courses. They serve as a basis for understanding how project-based learning might contribute to *stimulating the development* of capabilities for critical thinking, problem solving, creativity, innovation and job-readiness. Importantly the study has synthesised material from a range of subject disciplines including organisational studies, philosophy of education and pedagogic theory in order to arrive at a theoretical framework for thinking about project-based learning. The research will therefore be of use to educators and researches in a range of subject disciplines. The articles presented here are already having an impact on the debate around the use of projects as a pedagogic tool, learning and teaching, assessment and the student experience. Both within my own practice, the practice of those within my institution and in wider fields. Being able to articulate the conceptual nature of a project empowers educators to engage with pedagogic innovation and risk taking with a firm theoretical foundation. In particular the study validates the teaching of practice within higher education as more than just an expression of vocationalism but as form of critical thinking that has real value to the student experience.

The study outputs have contributed to the knowledge and practice of project-based learning in the following ways:

- An interdisciplinary evaluation of the relationship between projects and problems that draws on the literature around problem-based learning, notions of expertise and the use of service learning as a means of drawing real world learning into the curriculum, and a consideration of the project lifecycle as a response to changing problem domains. The study presents a series of evidence-based terminological distinctions for practice, problem and project-based learning that arrives at a model for project-led problem-based learning. Adopting a two-stage approach to project working, the study goes beyond project administration as a means of thinking about projects. Instead, it presents the binary relationship of innovation/implementation as a defining characteristic of creative practice when project working. In order to present an example of the way in which the model can be applied in practice, a short case study is included with the research results (**Article 1, ch11, p41-67**);
- A critical reflection on the actuality of project working by students as novice practitioners. With a focus on the recontextualisation that occurs when moving from the domain of professional project working to that of the educational context. The first article in the series (**Article 1, ch11, p41-67**) addresses the way in which recontextualisation might lead to a decoupling of external and internal factors, resulting in the perception of project working as academic labour that has little value to students. The identification of the process of recontextualisation serves as an important milestone for the study, since it presents a key argument for why formulating project-based learning as a mirror for professional practice is

problematic. It argues instead, that project-based learning should be seen as a unique form of project working in its own right. Furthermore, it is argued that if students are to value project working as a learning experience there is a need to foreground the unfolding processes of discovery and creative problem solving at play during a project lifecycle. A recognition of the particular way in which students actually do projects may enable educators to engage with students as project workers more productively (**Article 2, ch12, p68-96**);

- A genealogical account of the concept of a project that argues for a shift away from models of management to models of practice. The study lays the ground for a theoretical shift in the understanding projects as a practice that moves from executability to learnability. Thereby positing a range of ontological characteristics for a becoming mode of project working. One in which the transformation of the subject is foregrounded as a primary goal of project-based learning. The research argues that a recognition of the concept of a project as a historically constructed one enables educators to view a project as an imagined idea, rather than something that is innate, natural or concrete. Taking such a position positions a project as an assemblage of ontological characteristics (see table 7, page 106). Thereby enabling the study to correlate the different ontological modes of project working to philosophical accounts of learning and teaching. The result of the study offers a model for an optimum or sufficient methodology for theorising project-based learning as a model for teaching practice-based subjects (**Article 3, ch13, p97-120**);
- The development and design of an innovative visual research methodology that seeks to uncover the backstage performance of students engaged in problem solving. The development, design and testing of this methodology identified an

important barrier to innovation among students engaged in creative project work, that of functional fixedness. The evidence that emerges from the research data supports the argument that cognitive bias plays a part in the process of ideation and creative expression. This bias takes the form of what psychologists have referred to as 'functional fixedness' (Duncker 1972). A bias towards the familiar in problem solving and creative thinking that limits solutions to those that have gone before. Clearly, in the field of media practice such a bias would serve as an obstruction to the success of students who wish to practice in an industry where innovation and creativity are highly prized. Though the study has evaluated a number of methods for managing this cognitive bias there is further work to be done to identify solutions that are applicable to the media practice education context (**Article 4, ch14, p121-158**);

- The evaluation of an innovative approach to formative assessment on a course of study employing a project-based learning approach to learning and teaching. The introduction of course blogging on this course of study aimed to promote early engagement with critical and contextual materials, the integration of theory and practice as well as offering opportunities for formative assessment on critical evaluations/reflections. Though the intentions behind the implementation of course blogging are shown to have a sound theoretical underpinning, the findings of the study outline a number of challenges pertaining to academic leadership and change management. The underlying conclusion of this study suggests that if educators hope to succeed in the implementation of pedagogic innovations. They will need to take an approach that ensure there is shared ownership of the proposed change among course teams. (**Article 5, ch15, p159-186**).

Limitations and suggestions for future research

There are some limitations to the study and, in particular, there is a need to address the decision not to produce a *toolkit for educators* that could be widely disseminated. Actually, to have done so would have been to produce yet another normative set of *models of management* which would contradict the position I have taken in arguing for a focus on *models of practice*. Nonetheless, it is possible to deduce an *optimum or sufficient methodology* for project-based learning from the material presented in the published papers. I argue that it is in the principles that underpin a *becoming mode* of project working that educators will find the tools they need to conceptualise projects as a practice. By offering principles at a philosophical level rather than through the provision of prescriptive, instrumental tools it is expected that educators will be able to adapt the findings of this study to their own unique contexts and situations, thereby finding their own way towards an implementation of project-based learning that will have a positive impact on the experience of project working for their own students.

Having now taken the opportunity to reflect on the outputs of the study it is clear to me that the issue of group working (that was ruled out of the scope of this study) may be due a revisit. In the light of a reconceptualisation of *projects as practice* there is the possibility for renewed consideration of the problems around group/team working. For example, if projects are considered as a form of *social practice* it is possible to imagine group/team working as a problem of socialisation rather than one of organisation. The way in which novice practitioners are inducted into *communities of practice* in the professional realm offers a model for this socialisation process — one that stands in contrast to the *Lord of the Flies* approach which sees students cast adrift and marooned on a metaphorical island

and allowed to conduct business on their own terms, often leading to a complete breakdown of the social order. With this insight, it may be possible to stare again into the abyss of group/team working, this time with a means of asking the right questions and perhaps even an opportunity for reaching a potential solution. Clearly, there are some clues to be found in the *communities of practice* literature (cf. Lave & Wenger 1991), but how to develop a *community of practice* among a group of novice learners? There are clear indications that: group size, selection process, preparation for group/team working, progress review and clarity of the task brief aid effective group working (Mellor 2012). More than that though the adoption of a collaborative working ethos proposed by scholars such as Davidson and Major (2014) is persuasive in the claim for actively teaching skills of collaboration, group and team working. Finally, and most importantly there is a need to address the emotional and psychological dynamics of group working (Gray 2018) and acknowledge the social dimensions at play.

Finally, there is clearly much work to be done on resolving the issue of *functional fixedness* when engaging students with ideation and problem solving. If the aim of creative media practice is to lead students towards creativity and innovation, then their reliance of the familiar as a means of solving problems would seem like a barrier to success. There are lots of approaches to this problem within design, business and other fields of professional practice. So far though, I have yet to find anything that effectively translates these ideas to the field of creative media practice. Consequently, I think there is a need to design, prototype and test my own tools and techniques for dealing with *functional fixedness*. My instinct suggests that there is something here about needing to model the creative process as a research practice for students. This ties neatly into the Research Informed Teaching (RIT) agenda and the need for educators to be able to articulate the ways in which our own

research as creative practitioners is made present in the classroom. Thus, an exploration of *research for creative practice* and the *process of ideation* within the field of media practice would seem to be a way forward for opening up this debate and progressing towards some useful, applied research. In particular there appears to be a rich seam of productive material to draw on in the design field. Here, what is referred to as *Design Thinking* (Lugmayr 2013), offers a methodology that is already deeply embedded and well developed. There is extensive literature on the topic which outlines a means for structuring the ideation process in a reflexive and iterative manner. It sits well with an Agile Project Management philosophy and is rooted in creative practice. So far experiments with the approach in workshops I have led at active learning conferences suggest that the methodology is transferable. Though more work needs to be done including the piloting of the approach on a media practice course. The important principle here is that we need to teach these skills and not make assumptions about the innate nature of creativity and project process.

General conclusions

As with any study into a knotty and hyper complex subject, this submission is clearly not the end of the process which began in 1999, when I first moved from the film industry into Higher Education. Back then, I found myself confounded by the way in which students undertook projects and started to ask myself questions about the nature of project working in a higher education context. Now, I think I can answer most, if not all, of the questions that I had then. Through the process of this study, as my knowledge of project-based learning and the context for its use as a pedagogic approach has deepened. New more pressing questions have arisen that interrogate the very nature of the educational enterprise with which I, as a media practice teacher, am engaged with. These though, are

questions for the future, questions that I hope to answer in time as I take a step towards a new role in academic development and as an educational researcher.

17. REFERENCES

Abudi, G. (2016). The five stages of project team development. Retrieved from https://project-management.com/the-five-stages-of-project-team-development/

Ahlberg, M. K., & Wheeldon, J. (2012). *Social Science Research: Maps, Methods & Meaning*. London: SAGE.

Alderman, N., & Ivory, C. (2011). Translation and convergence in projects: An organizational perspective on project success. *Project Management Journal, 42*(5), 17-30. doi:10.1002/pmj.20261

Allan, J. (2013). Foucault and his acolytes: discourse, power and ethics. In M. Murphy (Ed.), *Social Theory and Education Research: Understanding Foucault, Habermas, Bourdieu and Derrida* (pp. 21-34). London: Routledge.

Alliance, A. (2001). Agile Manifesto for Software Developers. Retrieved from http://agilemanifesto.org/

Arendt, H. (1998). *The Human Condition* (2nd ed.). Chicago; London: University of Chicago Press.

Argyris, C., & Schön, D. A. (1974). *Theory in practice: increasing professional effectiveness*. London: Jossey-Bass.

Aristotle. (2001). *Nicomachean ethics. [electronic resource]* (W. D. Ross, Trans.). Blacksburg, VA: Virginia Tech.

Banks, M. (2008). *Using Visual Data in Qualitative Research*. London: Sage.

Barab, S. A., & Duffy, T. (2012). From Fields of Practice to Communities of Practice. In D. Jonassen & S. Land (Eds.), *Foundations of Learning Environments* (2nd ed., pp. 33-63). Abingdon: Routledge.

Barlowe, C., Pearson, M., & Price, A. (1999). *Project Based Learning: Not Just Another Constructivist Environment.* Paper presented at the HERDSA Annual International Conference, Melbourne.

Barnett, R. (1994). *The limits of competence: knowledge, higher education and society*. Buckingham: Society for Research into Higher Education & Open University Press.

Barnett, R. (2007). *A will to learn: being a student in an age of uncertainty*. Maidenhead: Open University Press.

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. In H. Gijselaers & L. Wilkerson (Eds.), *Bringing Problem-Based Learning to Higher Education: Theory and Practice* (pp. 3–12). San Francisco: Jossey-Bass.

Barrows, H. S., & Tamblyn, R. M. (1980). *Problem-based learning: an approach to medical education*. New York: Springer Publishing.

Belbin, R. M. (2010). *Management teams: why they succeed or fail* (3rd ed. ed.). Amsterdam: Butterworth-Heinemann.

Bentley, C. (2006). *PRINCE2 revealed: including how to use PRINCE2 for small projects*. Oxford: Elsevier.

Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique* (Rev. ed.). Oxford: Rowman & Littlefield.

Blomquist, T., Hällgren, M., Nilsson, A., & Söderholm, A. (2010). Project-as-Practice: In Search of Project Management Research That Matters. *Project Management Journal, 41*(1), 5-16. doi:10.1002/pmj

Bonnie, E. (2017). Anatomy of the Perfect Blog Post. *Wrike.*

Boud, D., & Feletti, G. (Eds.). (1991). *The Challenge of Problem-Based Learning*. New York: St. Martin's Press.

Bourdieu, P. (1984). *Distinction: a social critique of the judgement of taste*. London: Routledge & Kegan Paul.

Bourdieu, P. (1988). Vive la Crise!: For Heterodoxy in Social Science. *Theory and Society, 17*(5), 773-787.

Bourdieu, P. (1990). *The logic of practice*. Cambridge: Polity.

Bredillet, C. (2010). Blowing Hot and Cold on Project Management. *Project Management Journal, 41*(3), 4-20. doi:10.1002/pmj.20179

Bussmann, U., & Schweighofer, S. (2014). *Group dynamics: the nature of groups as well as dynamics of informal groups and dysfunctions*: Anchor Academic Publishing.

Carnevale, P. J., & Probst, T. M. (1998). Social values and social conflict in creative problem solving and categorization. *Journal of Personality and Social Psychology, 74*(5), 1300-1309.

Celentano, A., & Pittarello, F. (2012). From real to metaphoric maps: Cartography as a visual language for organizing and sharing knowledge. *Journal of Visual Languages and Computing, 23*, 63-77. doi:10.1016/j.jvlc.2011.11.004

Chia, R. (1995). From Modern to Postmodern Organizational Analysis. *Organization Studies, 16*(4), 579-604. doi:10.1177/017084069501600406

Chrysikou, E. G., Motyka, K., Nigro, C., Yang, S. I., & Thompson-Schill, S. L. (2016). Functional fixedness in creative thinking tasks depends on stimulus modality. *Psychology of Aesthetics, Creativity, and the Arts, 10*(4), 425-435. doi:10.1037/aca0000050

Chrysikou, E. G., & Weisberg, R. W. (2005). Following the wrong footsteps: Fixation effects of pictorial examples in a design problem-solving task. *Journal of Experimental Psychology – Learning Memory and Cognition, 31*(5), 1134-1148.

Cicmil, S., Hodgson, D., Lindgren, M., & Packendorff, J. (2009). Project management behind the facade. *Ephermera theory & politics in organization, 9*(2), 78-92.

Clifford, J., & Marcus, G. (1986). *Writing culture: the poetics and politics of ethnography*. Berkeley: University of California Press.

Clifford, J., & Marcus, G. E. (1986). *Writing culture: the poetics and politics of ethnography*. London: University of California Press.

Cohn, M. (2006). *Agile estimating and planning*. New Jersey: Prentice Hall.

Colbeck, C. L., Campbell, S. E., & Bjorklund, S. A. (2000). Grouping in the Dark: What College Students Learn from Group Projects. *The Journal of Higher Education, 71*(1), 60. doi:10.2307/2649282

Colwell, S. (2014). Scriptwriting as pedagogy: vocational education for media production and the recontextualisation of practice. *Journal of Media Practice, 15*(2), 107-122. doi:10.1080/14682753.2014.961292

Creative Skillset. (2012). National Occupational Standards. In *Camera: Collect information and develop shooting ideas*. Online: Creative Skillset.

Crilly, D., Zollo, M., & Hansen, M. (2012). Faking it or Muddling Through? Understanding decoupling in response to stakeholder pressure. *Academy of Management Journal, 55*(6), 1429-1448. doi:10.5465/ami.2010.0697

D., B., & Costley, C. (2007). From project supervision to advising: New conceptions of the practice innovations. *Education and Teaching International, 44*(2), 119–130.

Dall'Alba, G. (2009). Learning Professional Ways of Being: Ambiguities of becoming. *Educational Philosophy & Theory, 41*(1), 34-45. doi:10.1111/j.1469-5812.2008.00475.x

Davidson, N., & Major, C. H. (2014). Boundary crossing: Cooperative learning, collaborative learning, and problem-based learning. *Journal on Excellence in College Teaching, 25*(3&4), 7-55.

Davies, M. W. (2009). Groupwork as a Form of Assessment: Common Problems and Recommended Solutions. *Higher Education, 58*(4), 563. doi:10.1007/s10734-009-9216-y

de Graaff, E., & Kolmos, A. (2007). History of Problem-Based and Project-Based Learning. In E. de Graaff & A. Kolmos (Eds.), *Management of change: Implementation of Problem-based and Project-Based Learning in Engineering* (pp. 1-8). Rotterdam: Sense Publishers.

DeCarlo, D. (2004). *eXtreme project management: using leadership, principles, and tools to deliver value in the face of volatility* (1st ed.). San Francisco: Jossey-Bass.

Deleuze, G., & Guattari, F. l. (1987). *A thousand plateaus: capitalism and schizophrenia*. Minneapolis: University of Minnesota Press.

Dewey, J. (1938). *Experience and Education*. New York: Macmillan.

Dewey, J. (1960). *On experience, nature and freedom*. Indianapolis: The Library of Liberal Arts.

Dowling, P. (2009). *Sociology as method: departures from the forensics of culture, text and knowledge*. Rotterdam: Sense Publishers.

Dreyfus, H. L. (1991). *Being-in-the-world: a commentary on Heidegger's Being and time, division I*. Cambridge, Mass.: MIT Press.

Dreyfus, S. (2004). The Five-Stage Model of Adult Skill Acquisition. *Bulletin of Science, Technology & Society, 24*(3), 177-181. doi:10.1177/0270467604264992

Duncker, K. (1972). *On problem-solving* (New ed.). Westport: Greenwood.

Engestrom, Y., & Middleton, D. (Eds.). (1998). *Cognition and Communication at Work*. Cambridge: Cambridge University Press.

Engwall, M. (2003). No project is an island: linking projects to history and context. *Research Policy, 32*, 789-808. doi:10.1016/S0048-7333(02)00088-4

Fenton-O'Creevy, M. (2005). Is practice-based learning only for professional and vocational subjects? *Open University*.

C. Fichtner (Producer). (2011). *The Agile Manifesto for Project Managers* [Retrieved from http://www.project-management-podcast.com/index.php/podcast-episodes/393-episode-186-audio-the-agile-manifesto-for-project-managers31

Finney, A. (2008). Learning from Sharks: Lessons on Managing Projects in the Independent Film Industry. *Long Range Planning, 41*, 107-115. doi:10.1016/j.lrp.2007.11.002

C. Fichtner (Producer). (2008). *Improving Outcomes on Experimental Projects* [Retrieved from http://www.project-management-podcast.com/index.php/podcast-episodes/186-episode-096-improving-outcomes-on-experimental-projects

Fletcher-Wood, H. (2018). Between novice and expert: complex tasks and intermediate learning. *Improving Teaching*.

Floricel, S., Bonneau, C., Aubry, M., & Sergi, V. (2014). Extending project management research: Insights from social theories. *International Journal of Project Management, 32*(7), 1091-1107. doi:10.1016/j.ijproman.2014.02.008

Ford, M., & Morice, J. (2003). How Fair are Group Assignments? A Survey of Students and Faculty and a Modest Proposal. *Journal of Information Technology Education*, 367.

Forsyth, D. R. (2018). *Group dynamics* (Seventh edition. ed.): Wadsworth.

Freire, P. (1970). *Pedagogy of the oppressed*. New York: Continuum.

Fritsch, J. (2008) Can a "Communities of Practice" framework be applied to the creative industries as an identified audience for the V&A? *V&A Online Journal,* (1).

Frykedal, K. F., & Chiriac, E. H. (2011). Assessment of students' learning when working in groups. *Educational Research, 53*(3), 331-345. doi:10.1080/00131881.2011.598661

Fullan, B. Y. M., Cuttress, C., & Kilcher, A. N. N. (2005). 8 Forces for Leaders of Change. *National Staff Development Council, OL. 26*, 54-64. doi:10.4135/9781452218991.n2

Fullan, M. (2009). Introduction to the challenge of change: Purposeful action at work. *The Challenge of Change: Start School Improvement Now!*, 3-8. doi:10.4135/9781452218991.n1

Fullan, M. (2013). The New Pedagogy: Students and Teachers as Learning Partners. *LEARNing Landscapes, 6*(2), 23-29.

Garel, G. (2013). A history of project management models: From pre-models to the standard models. *International Journal of Project Management, 31*(5), 663-669. doi:10.1016/j.ijproman.2012.12.011

Garraway, J. (2005). Recontextualising work into academic practices. *South African Journal of Education, 25*(4), 217-222.

Gauntlett, D. (2007). *Creative explorations: new approaches to identities and audiences*. London: Routledge.

Gauntlett, D., & Fatimah, A. (2012). Action-based visual and creative methods in social research. In I. Heywood & B. Sandywell (Eds.), *The handbook of visual culture* (pp. 589-606). London: Berg.

Gauthier, J.-B., & Ika, L. A. (2012). Foundations of Project Management Research: An Explicit and Six-Facet Ontological Framework. *Project Management Journal, 43*(5), 5-23. doi:10.1002/pmj.21288

Gaver, W. W. (1991). *Technology affordances*, New Orleans.

Gaver, W. W. (1996). The social is material for design. *Ecological Psychology, 8*(2), 111–129.

German, T. P., & Defeyter, M. A. (2000). Immunity to functional fixedness in young children. *Psychonomic Bulletin and Review, 7*(4), 707-712.

Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston; London: Houghton Mifflin.

Giddens, A. (1984). *The constitution of society: introduction of the theory of structuration*. Berkeley: University of California Press.

Giddens, A. (1987). *Social theory and modern sociology*. Cambridge: Polity in association with Blackwell.

Giddens, A. (1990). *The consequences of modernity*. Cambridge: Polity Presss.

Giddens, A. (1991). *Modernity and self-identity: self and society in the late modern age*. Cambridge: Polity.

Giddens, S., Spencer, R., & Urbanczyk, J. (2018). *Dwelling.* Paper presented at the Rethinking Research: Disrupting Challenges Research Practices.

Goffman, E. (1990). *The presentation of self in everyday life*. London: Penguin.

Goode, G., Jackson, D., & Molesworth, M. (2014). *Students and knowledge exchange in university business services*. Retrieved from Bournemouth: https://microsites.bournemouth.ac.uk/cmc/files/2014/07/BU-Students-and-knowledge-exchange-in-university-business-services.pdf

Goria, S., & Papadopoulou, M. (2012). Icons versus symbols: investigating pre-schoolers' cartographic design. *Journal for Theoretical Cartography, 5*, 1-16.

Government UK. (2009). Projects in a Controlled Environment 2. In. Online: Axelos.

Gray, D., & Gabriel, Y. (2018). A community of practice or a working psychological group? Group dynamics in core and peripheral community participation. *Management Learning, 49*, 135050761876177. doi:10.1177/1350507618761774

M. Griffiths (Producer). (2006, 21 June 2012). *Agile project management* [Retrieved from http://www.controllingchaos.com/

Gruber, T. (2016). Great Apes Do Not Learn Novel Tool Use Easily: Conservatism, Functional Fixedness, or Cultural Influence? *International Journal of Primatology, 27*(2), 296–316.

Hammond, M. (2009). What is an affordance and can it help us understand the use of ICT in education? *Education and Information Technologies, 15*(3), 205-217.

Hanney, R. (2005). Competence or capability: Work-Based Learning and Problem-Based Learning. *Journal of Media Practice, 6*(2), 105-112. doi:10.1386/jmpr.6.2.73/3

Hanney, R. (2012). Are we any good at it: Using risk as a tool for reflection and critical enquiry: Report of research in progress. *Art, Design & Communication in Higher Education, 10*(1), 103-109. doi:10.1386/adch.10.1.103_1

Hanney, R. (2013). Towards a situated media practice: Reflections on the implementation of project-led problem-based learning. *Journal of Media Practice, 14*(1), 43-59. doi:10.1386/jmpr.14.1.43_1

Hanney, R. (2016). Taking a stance: resistance, faking and Muddling Through. *Journal of Media Practice, 17*(1), 4-20. doi:10.1080/14682753.2016.1159437

Hanney, R. (2017). Blogging for Early Engagement. In. Unpublished raw data.

Hanney, R. (2018a). Doing, being, becoming: a historical appraisal of the modalities of project-based learning. *Teaching in Higher Education, 23*(6), 769-783. doi:10.1080/13562517.2017.1421628

Hanney, R. (2018b). Problem topology: using cartography to explore problem solving in student-led group projects. *International Journal of Research and Method in Education*, 1-22. doi:10.1080/1743727X.2017.1421165

Hanney, R., & Savin-Baden, M. (2013). The problem of projects: understanding the theoretical underpinnings of project-led PBL. *London Review of Education, 11*(1), 7-19. doi:10.1080/14748460.2012.761816

Hanuscin, D. L., Cheng, Y.-W., Rebello, C., Sinha, S., & Muslu, N. (2014). The Affordances of Blogging as a Practice to Support Ninth-Grade Science Teachers' Identity Development as Leaders. *Journal of Teacher Education, 65*(3), 207-222.

Hassaskhah, J., & Mozaffari, H. (2015). The Impact of Group Formation Method (Student-selected vs. Teacher-assigned) on Group Dynamics and Group Outcome in EFL Creative Writing. *Journal of Language Teaching & Research, 6*(1), 147.

Helle, L., Tynjälä, P., & Olkinuora, E. (2006). Project-Based Learning in Post-Secondary Education – Theory, Practice and Rubber Sling Shots. *Higher Education, 51*(2), 287-314. doi:10.1007/s10734-004-6386-5

Highsmith, J. A. (2004). *Agile project management: creating innovative products*. Boston: Addison-Wesley.

Hodgson, D., & Cicmil, S. (2008). The other side of projects: the case for critical project studies. *International Journal of Managing Projects in Business*, 1(1), 142-152. doi:10.1108/17538370810846487

Hodgson, D. E., & Cicmil, S. (2006a). Are Projects real? The PMBOK and the legitimisation of project management knowledge. In D. E. Hodgson & S. Cicmil (Eds.), *Making project critical* (pp. 29-50). Basingstoke: Pallgrave Macmillan.

Hodgson, D. E., & Cicmil, S. (2006b). *Making projects critical*. Basingstoke: Palgrave Macmillan.

Hodgson, D. E., & Cicmil, S. (2006b). Making projects critical: an introduction. In D. E. Hodgson & S. Cicmil (Eds.), *Making projects critical* (pp. 1-28). Baisingstoke: Palgrave Macmillan.

Holquist, M. (2002). *Dialogism: Bakhtin and his world*. London: Routledge.

Hookway, N. (2008). Entering the blogosphere': some strategies for using blogs in social research. *Qualitative Research, 8*(1), 91-113.

Hoover, D., & Whitehead, C. (1975). *An Experiential-Cognitive Methodology in the First Course in Management: Some Preliminary Results.* Paper presented at the Simulation Games and Experiential Learning in Action: The Proceedings of the Second National ABSEL Conference, Bloomington, Indiana.

Hope, A. (2013). Foucault, panopticism and school surveillance research. In M. Murphy (Ed.), *Theory and Education Research: Understanding Foucault, Habermas, Bourdieu and Derrida* (pp. 35-51). London: Routledge.

Huitt, W., & Hummel, J. (2003). Piaget's theory of cognitive development. Retrieved from http://www.edpsycinteractive.org/topics/cognition/piaget.html

Humphrey, C. (2013). Dilemmas in doing insider research in professional education. *Qualitative Social Work, 12*(5), 572-586.

Ines, S. (1994). Analogical Transfer and "Functional Fixedness" in the Science Classroom. *The Journal of Educational Research* (6), 371.

Institute, P. M. What is Project Management? In (Vol. 2018).

J, M. (2003) *Cinematography Masterclass*. Encounters Short Film Festival, Encounters Short Film Festival, Bristol.

James, P. (1996). The construction of learning and teaching in a sculpture studio class. *Studies in Art Education, 37*(3), 145–159.

Jarvis, P. (2015). Learning Expertise in Practice. *Studies in Education of Adults, 47*(1), 81-84.

Johnson-Smith. (2004). After Images: reflective practice and the production analysis. In A. Ireland (Ed.), *Group Work Assessment in Media Production* (pp. 28-33). Bournemouth: Bournemouth University.

Kane, & G. (2007). Step-by-step: A model for practice-based learning. *Journal of Continuing Education in the Health Professions, 27*(4), 220–226.

Kilpatrick, W. H. (1918). The project method. *Teachers College Record, 19*, 319-335.

Knoll, M. (1997). The project method: Its vocational education origin and international development. *Journal of Industrial Teacher Education, 34*(3), 59-80.

Kolb, D. G. (1992). The Practicality of Theory. *Journal of Experiential Education, 15*(2), 24-28. doi:10.1177/105382599201500204

Lave, J., & Wenger, E. (1991). *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.

Leth, J. (Writer). (1967). The Perfect Human. In. Denmark.

Lewis, B. (2013). *What is a project? Towards a new ontology for projects and project management.* Paper presented at the Critical Management Studies Conference, University of Bristol.

Lindblom, C. E. (2010). The Science of "Muddling" Through. *Emergence: Complexity & Organization, 12*(1), 70-80.

Linehan, C., & Kavanagh, D. (2006). From project ontologies to communities of virtue. In D. E. Hodgson & S. Cicmil (Eds.), *Making projects critical* (pp. 51-67). Basingstoke: Pallgrave Macmillan.

Lugmayr, A., Stockleben, B., Zou, Y., Anzenhofer, S., & Jalonen, M. (2013). Applying "Design Thinking" in the context of media management education. *Multimedia Tools and Applications, 71*. doi:10.1007/s11042-013-1361-8

Lund Dean, K., & Jolly, J. P. (2012). Student Identity, Disengagement, and Learning. *Academy of Management Learning & Education, 11*(2), 228.

Lundin, R. (2009). Introduction: Special Issue on Managing Projects in Television and Film. *Journal of Media Business Studies, 6*(4), 1-4.

Lundin, R. A., & Söderholm, A. (1995). A theory of the temporary organization. *Scandinavian Journal of Management, 11*(4), 437-455. doi:10.1016/0956-5221(95)00036-U

Lundin, R. A., & Söderholm, A. (1998). Conceptualizing a project society—discussion of an eco-institutional approach to a theory on temporary organizations. In R. A. M. Lundin, Christophe (Ed.), *Projects as Arenas for Renewal and Learning Processes* (pp. 13–24). Dordrecht: Kluwer Academic Publishers.

Marsh, H. W., & Craven, R. G. (2006). Reciprocal Effects of Self-Concept and Performance from a Multidimensional Perspective: Beyond Seductive Pleasure and Unidimensional Perspectives. *Perspectives on Psychological Science, 1*(2), 133-163. doi:

Maylor, H., Brady, T., Cooke-Davies, T., & Hodgson, D. (2006). From projectification to programmification. *International Journal of Project Management, 24*, 663-674. doi:10.1016/j.ijproman.2006.09.014

McCaffrey, T. (2012). Innovation Relies on the Obscure: A Key to Overcoming the Classic Problem of Functional Fixedness. *Psychological Science, 23*(3), 215-218.

McCaffrey, T., & Krishnamurty, S. (2015). The obscure features hypothesis in design innovation. *International Journal of Design Creativity and Innovation, 3*(1), 1-28. doi:10.1080/21650349.2014.893840

McLaren, P. (2000). Paulo Freire's pedagogy of possibility. In S. Steiner, H. Frank, P. McLaren, & R. Bahruth (Eds.), *Freirean pedagogy, praxis and possibilities: Projects for the new millennium* (pp. 1-21). New York: Falmer Press.

Melaney, W. D. (2006). Arendt's Revision of Praxis: On Plurality and Narrative Experience. *Analecta Husserliana, 90*, 465-479.

Mellor, T. (2012). Group work assessment: some key considerations in developing good practice. *Planet, 25*(1), 16-20. doi:10.11120/plan.2012.00250016

Mitchell, L. M. (2006). Child-Centered? Thinking Critically about Children's Drawings as a Visual Research Method. *Visual Anthropology Review, 22*, 60-73. doi:10.1525/var.2006.22.1.60

Moon, J. A. (2004). *A handbook of reflective and experiential learning: theory and practice*. London: RoutledgeFalmer.

Morris, P. W. G. (1994). *The management of projects*. London: Thomas Telford.

Myeong-Gu, S., & Creed, W. E. D. (2002). Institutional Contradictions, Praxis, and Institutional Change: A Dialectical Perspective. *The Academy of Management Review*(2), 222.

Napier. (2009). *The use of social media by electronics design engineers'*. Retrieved from http:// www.napier.co.uk/2009/08/do-engineers-use-social-media/

Navarre, C. (1993). Pilotage stratégique de la firme etmanagement de projet: de Ford et Taylor à Agile et IMS. In V. Giard & C. Midler (Eds.), *Pilotage de projet et entreprises; diversité et convergences* (pp. 181–215). Rome: Economica.

Nicholas, J. M. (2004). *Project management for business and engineering: principles and practice* (2nd ed. ed.). London: Elsevier.

Packendorff, J. (1995). Inquiring into the temporary organization: New directions for project management research. *Scandinavian Journal of Management, 11*(4), 319-333. doi:10.1016/0956-5221(95)00018-Q

Packendorff, J., & Lindgren, M. (2014). Projectification and its consequences: Narrow and broad conceptualisations. *South African Journal of Economic and Management Sciences, 17*(1), 7-21.

Pauwels, L. (2009). Visual sociology reframed: An analytical synthesis and discussion of visual methods in social and cultural research. *Sociological Methods and Research, 38*(4), 545-581. doi:10.1177/0049124110366233

Peirce, C. S. (1994). *Peirce on Signs: Writings on Semiotic*. North Carolina: University of North Carolina Press.

Perry, W. G. (1970). *Forms of intellectual and ethical development in the college years: a scheme*. New York: Holt, Rinehart & Winston.

Peterson, L. (2014). "Thats a wrap!" The organisational culture and characteristics of successful film crews *Journal of Organizational Culture, Communications & Conflict, 18*(1), 89-114.

Pitt, M. J. (2000). The Application of Games Theory to Group Project Assessment. *Teaching in Higher Education, 5*(2), 233-241. doi:10.1080/135625100114876

Porac, J., & Glynn, M. A. (1999). [Cognition and Communication at Work. Engestrom Y. & Middleton, D., (eds).]. *The Academy of Management Review, 24*(3), 582–585.

Practice-Based Professional Learning Centre. Retrieved from http://www.open.ac.uk/ pbpl/

Project Management Institute. (2013). Project Management Body of Knowledge. In. Online: Project Management Institute.

Project-based Learning Online. Retrieved from http://pbl-online.org/

Rehn, A., & Lindahl, M. (2012). Muddling through in innovation - On incremental failure in developing an engine. *Journal of Business Research, 65*(6), 807-813. doi:10.1016/j.jbusres.2010.12.020

Richardson, & V. (2003). Constructivist pedagogy'. *Teachers College Record, 195*(9), 1623–1640.

Robertson, J. (2011). The educational affordances of blogs for self-directed learning. *Computers and Education*. doi:10.1016/j.compedu.2011.03.003

Rose, G. (2012). *Visual methodologies: an introduction to researching with visual materials* (3rd ed.). Los Angeles: SAGE.

Rose, G. (2014). On the relation between 'visual research methods' and contemporary visual culture. *Sociological Review Monograph, 62*(1), 24-46. doi:10.1111/1467-954X.12109

Rose, G. (2016). *Visual methodologies: an introduction to researching with visual materials* (4th ed.). London: SAGE.

Ross, J. (2014). Performing the Reflective Self: Audience Awareness in High-Stakes Reflection. *Studies in Higher Education, 39*(2), 219-232.

Sabal, R. (2009). The Individual in Collaborative Media Production. *Journal of Film and Video, 61*(1), 6-17.

Sahlin-Andersson, K., & Söderholm, A. (2002). *Beyond project management: new perspectives on the temporary-permanent dilemma*. Abingdon: Marston Book Services.

Saugstad, T. (2013). The Importance of Being Experienced: An Aristotelian Perspective on Experience and Experience-Based Learning. *Studies in Philosophy and Education, 32*(1), 7-23. doi:10.1007/s11217-012-9329-0

Savin-Baden, M. (2000). *Problem-based learning in higher education: untold stories*. Buckingham: The Society for Research into Higher Education.

Savin-Baden, M. (2007). *A practical guide to problem-based learning online*. London: Routledge.

Schlichtmann, H. (2009). *Overview of the semiotics of maps.* Paper presented at the 24th International Cartographic Conference, Santiago, Chile.

Schlichtmann, H. (2014). Information in maps: basic characteristics. *Journal for Theoretical Cartography, 7*, 1-11.

Schön, D. A. (1991). *The reflective practitioner: how professionals think in action*. Aldershot: Avebury.

Shenhar, A., & Dvir, D. (2007). *Reinventing project management: the diamond approach to successful growth and innovation*. Boston, Mass.: Harvard Business School Press.

Shreeve, E., & Sims, A. (2006). Evaluating practice-based learning and teaching in art and design.

Sim, J. W. S., & Hew, K. F. (2010). The use of weblogs in higher education settings: A review of empirical research. In.

Skills, D. f. B. I. a. (2015). *Fulfilling Our Potential: Teaching Excellence, Social Mobility and Student Choice*. London: Stationary Office

Solomon, I. (1994). Analogical transfer and `functional fixedness' in the science classroom. *Journal of Educational Research, 87*(6), 371.

Stephenson, J. (2003). Ensuring a holistic approach to work-based learning. In D. Boud & N. Solomon (Eds.), *Work Based Learning*. Maidenhead, UK: Open University Press.

Svejvig, P., & Andersen, P. (2015). Rethinking project management: A structured literature review with a critical look at the brave new world. *International Journal of Project Management, 33*(2), 278-290.

Sydow, J. (2006). Managing projects in network contexts: A structuration perspective. In D. E. Hodgson & S. Cicmil (Eds.), *Making Projects Critical* (pp. 252–264). Basingstoke: Pallgrave Macmillan.

Thornton, E. (2018). On Lines of Flight: A Study of Deleuze and Guattari's Concept. In *Research Publications* (pp. 1-285). Royal Holloway University.

Tim, P. G., & Barrett, H. C. (2005). Functional Fixedness in a Technologically Sparse Culture. *Psychological Science*(1), 1.

Treffinger, D. J., Selby, E. C., & Isaksen, S. G. (2008). Understanding individual problem-solving style: A key to learning and applying creative problem solving. *Learning and Individual Differences, 18*, 390-401. doi:10.1016/j.lindif.2007.11.007

Trowler, P. (2014a). *Doing Insider Research in Universities*: CreateSpace Independent Publishing Platform.

Trowler, P. (2014b). *Doing Insider Research in Universities*: CreateSpace Independent Publishing Platform.

Uden, L., & Beaumont, C. (2006). *Technology and Problem-Based Learning*. Hershey, PA: IGI Global.

Vaughan, D., & Yorke, M. (2009). *I can't believe it's not better: the paradox of NSS scores for Art and Design*. Retrieved from York: https://www.heacademy.ac.uk/knowledge-hub/i-cant-believe-its-not-better-paradox-nss-scores-art-design

Volkmann, M. J., & Zgagacz, M. (2004). Learning to Teach Physics through Inquiry: The Lived Experience of a Graduate Teaching Assistant. *Journal of Research in Science Teaching, 41*(6), 584-602.

Von Stamm, B. (2003). *Managing Innovation, Design and Creativity*. Chichester, UK: Wiley.

Von Trier, L. (Writer). (2003). The Five Obstructions. In P. A. Jensen & V. Windeløv (Producer). Denmark: Zentropa Real ApS.

Warin, J., Maddock, M., Pell, A., & Hargreaves, L. (2006). Resolving identity dissonance through reflective and reflexive practice in teaching. *Reflective Practice, 7*(2), 233–245.

Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*. Cambridge: Cambridge University Press.

Wenger, E. (1999). *Communities of practice: learning, meaning and identity*. Cambridge: Cambridge UP.

West, M. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology, 51*(3), 355-387.

Whyte, J., Ewenstein, B., Hales, M., & Tidd, J. (2008). Visualizing Knowledge in Project-Based Work. *Long Range Planning, 41*(1), 74-92. doi:10.1016/j.lrp.2007.10.006

Wilcock, A. A. (1999). Reflections on doing, being and becoming. *Australian Occupational Therapy Journal, 46*(1), 1-11. doi:10.1046/j.1440-1630.1999.00174.x

Wilson, T. (2006). Lindblomian projects. *Projects & Profits, 6*(8), 11-22.

Winter, M., Smith, C., Cooke-Davies, T., & Cicmil, S. (2006). The importance of 'process' in Rethinking Project Management: The story of a UK Government-funded research network. *International Journal of Project Management, 24*(8), 650-662.

Woodward, C. M. (1887). *The manual training school, comprising a full statement of its aims, methods, and results*. Boston: Heath.

18. APPENDICES A

Ethics Review Documents

Mr Roy Hanney
PhD Student
School of Education and Continuing Studies
University of Portsmouth

REC reference number: 14/15:27
Please quote this number on all correspondence.

10th March 2015

Dear Roy,

Full Title of Study: The Problem of Projects

Documents reviewed:

Consent Form
Invitation Letters
Participant Information Sheet
Protocol
Research Tool

Further to our recent correspondence, this proposal was reviewed by The Research Ethics Committee of The Faculty of Humanities and Social Sciences.

I am pleased to tell you that the proposal was awarded a favourable ethical opinion by the committee.

Kind regards,

FHSS FREC Chair
Dr Jane Winstone

Members participating in the review:

- David Carpenter
- Barbara Russell
- Geoff Wade
- Jane Winstone

FORM UPR16

Research Ethics Review Checklist

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information

Postgraduate Research Student (PGRS) Information				**Student ID:**	353119
PGRS Name:	Roy Hanney				
Department:	SECS	**First Supervisor:**	Dr Wendy Sims-Schouten		
Start Date: (or progression date for Prof Doc students)		**October 2014**			
Study Mode and Route:	Part-time ☒	MPhil ☐	MD ☐		
	Full-time ☐	PhD ☒	Professional Doctorate ☐		

Title of Thesis:	The problem of projects: reconceptualising the use of Project-based Learning in Media Practice Education
Thesis Word Count: (excluding ancillary data)	45,933

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

UKRIO Finished Research Checklist: (If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)	
a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES ☒ NO ☐
b) Have all contributions to knowledge been acknowledged?	YES ☒ NO ☐
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES ☒ NO ☐
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES ☒ NO ☐
e) Does your research comply with all legal, ethical, and contractual requirements?	YES ☒ NO ☐

Candidate Statement:	
I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)	
Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):	14/15:27
If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:	
N/A	
Signed *(PGRS)*: 	**Date:** 10/09/2018

University of Portsmouth

Research Supervisor
Dr Sims-Schouten
wendy.sims-schouten@port.ac.uk
School of Education and Continuing Studies,
Faculty of Humanities and Social Sciences,
University of Portsmouth,
St George's Building,
141 High Street,
Portsmouth.
PO1 2HY
023 9284 5362

Participant Information Sheet

PhD. Study Title: THE PROBLEM OF PROJECTS

REC Ref No: 14/15:27

We would like to invite you to take part in our post graduate research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. Talk to others about the study if you wish. Ask us if there is anything that is not clear

What is the purpose of the study?
The study aims to investigate the use of project-based learning in creative and media practice education. It will ask questions about the student experience of this form of learning and about the most effective methods for delivering project-based learning activities on a course.

Why have I been invited?
You have been selected either because you are a student with direct experience of project-based learning; you are a university staff member with experience of supporting project-based learning; or you are an end user of the results of student endeavours related to project-based learning.

Do I have to take part?
It is up to you to decide to join the study, participation is entirely voluntary. If you agree to take part, we will ask you to sign a consent form.

What will happen to me if I take part?
The study may invite you to take part in a focus group, or to be interviewed or to provide access to documents related to the study topic. The research shouldn't involve you personally for more than a few hours though the researcher may subsequently contact you and ask some follow up questions. Any interviews or focus groups you participate in are likely to be audio or video recorded. However the researcher doesn't require you to provide any personal information.

Expenses and payments
It may be possible to cover travel expenses and food and refreshments may be available in some circumstances. Other fees/gifts maybe offered for participation in focus groups or interviews (e.g. £10 iTunes voucher per particpant).

What are the possible disadvantages and risks of taking part?
The possible disadvantages include the inconvenience of giving up your time to participate in the study.

What are the possible benefits of taking part?
You will have contributed to a study that may have an impact on; your own studies and the studies of future students; academic and institutional support for project-based learning; effective collaboration with clients external to the university.

Will my taking part in the study be kept confidential?
All raw data will be kept securely and password protected. Transcriptions of the data will be anonymised in order to protect you from being identified as a contributor to the study. However,

should you sign a consent form agreeing to participate in the study you will be given the opportunity to opt-in to being named and quoted in the research outputs. For example, a quote maybe attributed to you directly in a future publication or presentation. You will also have the right to check the accuracy of the data and make corrections if you feel it is required. It is possible that some of your data maybe made available to other bodies for the purposes of ensuring its validity. Such bodies might include educational supervisors, examiners, auditors, regulatory authorities, funding bodies and partner institutions. All of these bodies would be bound by a duty of confidentiality as a condition of their authorisation for access. On completion of the study the raw data will be destroyed, though the anonymised transcriptions and other records may be stored at the discretion of the researcher in a safe and secure location in order to make the data available for future approved research.

What will happen if I don't want to carry on with the study?
If at anytime you chose to withdraw from the study all of the data pertaining directly to your individual contribution will be destroyed with the exception of any audio/video recording of your participation in group activities. In addition, the research reserves the right to use anonymised transcriptions of your individual contribution if you chose to withdraw after the process of analysing the research has begun.

What if there is a problem?
If you have a concern about any aspect of this study, you should ask to speak to the researcher or their supervisor, who will do their best to answer your questions. The research supervisors contact details are provided at the head of this information sheet while the researchers details at the bottom of this document.

What will happen to the results of the research study?
The results of the study will form the basis of a PhD thesis that will be submitted for examination to the University of Portsmouth.The researcher may also present papers at conferences or submit articles to academic journals or provide reports to partner institutions. You will not be identified in any report or publication unless you have given your consent.

Who is organising and funding the research?
The research study is being funded and organised by the researcher and supported by the University of Portsmouth. In some instances partner institutions may offer additional support.

Who has reviewed the study?
Research in the University of Portsmouth is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by Faculty of Humanities and Social Sciences Research Ethics Committee. In the event that you wish to make a complaint you can contact David Carpenter, the University of Portsmouth Ethics Adviser via phone (023 9284 2211) or email (david.carpenter@port.ac.uk) or by writing to him at: Milldam, Burnaby Road, Portsmouth, Hants PO1 3AS.

Further information and contact details
Thank you for taking the time to read the information sheet. For further information please contact the research using the details below.

With thanks.

Roy Hanney

roy.hanney@port.ac.uk

Date: 02/12/14 Version No. 1

University of Portsmouth

Invitation Letter

Research Supervisor
Dr Sims-Schouten
wendy.sims-schouten@port.ac.uk
School of Education and Continuing Studies,
Faculty of Humanities and Social Sciences,
University of Portsmouth,
St George's Building,
141 High Street,
Portsmouth.
PO1 2HY

023 9284 5362

Study Title: THE PROBLEM OF PROJECTS

REC Ref No: 14/15:27

Dear Potential Host Institution

I would like to invite you to participate in a research study into *project-based learning* I am conducting as a post graduate researcher at the University of Portsmouth. In particular the research aims to investigate the student experience of Live Projects or Live briefs.

This letter has been sent to you as I or a partner in the study has identified you as a potential host who might be interested in supporting my research. Being a host institution for the study would take the form of providing access to a group of students who may be willing to take part in a focus group and/or a short interview. Should you need them, further details of the specific research tools to be used can be provided for your consideration. A detailed research proposal can also be provided along with a copy of the ethics review protocol for you to consider.

If, after reading these documents, you still have questions I will be more than willing to answer them. You may contact me directly using the contact details below or you may contact my research supervisor using the details above. Should you be interested in hosting research that would contribute to the study then please just send me a short email to roy.hanney@port.ac.uk and I will contact you to make further arrangements.

Thank you for taking the time to consider this invitation and I look forward to reading your response.

Regards.

Roy Hanney
roy.hanney@port.ac.uk

Date: 02/12/14 Version No. 1

University of Portsmouth

Invitation Letter

Research Supervisor
Dr Sims-Schouten
wendy.sims-schouten@port.ac.uk
School of Education and Continuing Studies,
Faculty of Humanities and Social Sciences,
University of Portsmouth,
St George's Building,
141 High Street,
Portsmouth.
PO1 2HY

023 9284 5362

Study Title: THE PROBLEM OF PROJECTS

REC Ref No: 14/15:27

Dear Potential Participant

I would like to invite you to participate in a research study into *project-based learning* I am conducting as a post graduate researcher at the University of Portsmouth. This letter has been sent to you as I or a partner in the study has identified you as a suitable participant in my research. There are no consequences to you in any circumstances should you wish to decline the offer to participate however I would hope that you will seriously consider this request.

A detailed information sheet will be provided to you and I would encourage you to read it carefully. If, after reading it, you still have questions I will be more than willing to answer them. You may contact me directly using the contact details below or you may contact my research supervisor using the details above.

Contributing to the study would take the form of either a short interview and/or participation in focus group. If you do choose to participate in the study then please just send me a short email to roy.hanney@port.ac.uk and I will contact you to make further arrangements. Should you agree to participate you will be given the opportunity to sign a standard 'consent form' which gives me permission to use any data I collect as a consequence of your participation for the purposes of my research study.

I would like to reiterate that participation in the study is entirely voluntary and you have the right to withdraw from the study at any time and for any reason.

Thank you for taking the time to consider this invitation and I look forward to reading your response.

Regards.

Roy Hanney
roy.hanney@port.ac.uk

Date: 02/12/14 Version No. 1

University of Portsmouth

Consent Form

Research Supervisor
Dr Sims-Schouten
wendy.sims-schouten@port.ac.uk
School of Education and Continuing Studies,
Faculty of Humanities and Social Sciences,
University of Portsmouth,
St George's Building,
141 High Street,
Portsmouth.
PO1 2HY
023 9284 5362

Study Title: THE PROBLEM OF PROJECTS

REC Ref No: 14/15:27

Name of Researcher: ROY HANNEY

Please initial box

1. I confirm that I have read and understand the information sheet dated 02/12/14 (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, up to the point where the research data has been processed and is being analysed. ☐

3. I understand that data collected during the study, may be looked at by individuals from [University of Portsmouth & TBC], or from regulatory authorities. I give permission for these individuals to have access to my data. ☐

4. I agree to my participation being audio/video recorded on the understanding that this material will only be used for the purposes of data analysis. ☐

5. I agree to the data I contribute to this study being retained for future, REC approved research that may be of benefit to others and understand that this data will be held securely and confidentially. ☐

6. I agree to being a named participant and being quoted by name in any publications or presentations made by the researcher as a result of this study. ☐

I agree to take part in the above study.

Name of Participant: Date: Signature:

Name of Person taking consent : Roy Hanney Date: Signature: 

When completed: 1 for participant; 1 for researcher 's file;

Date: 02/12/14 Version No. 1

Portal

University gateway for students and staff

Portal > Portal Apps > Ethics > Ethics Form Creator

Ethics Form Creator

ETHICS RELEASE CHECKLIST FOR RESEARCH AND ENTERPRISE PROJECTS

Project Name:	The Problem of Projects
Principal Investigator:	Roy Hanney
Faculty:	FCIS
Level:	Staff member
Course:	Applicable to students only
Unit code:	Applicable to students (Undergraduate) only
Supervisor name:	Dr Wendy Sims-Schouten, School of Education and Continuing Studies, University o
Other Investigators:	

Question	Yes	No
Q1. Will the project involve human participants other than the investigator(s)?	●	○
Q1a. Will the project involve **vulnerable participants** such as children, young people, disabled people, the elderly, people with declared mental health issues, prisoners, people in health or social care settings, addicts, or those with learning difficulties or cognitive impairment either contacted directly or via a **gatekeeper** (for example a professional who runs an organisation through which participants are accessed; a service provider; a care-giver; a relative or a guardian)?	○	●
Q1b. Will the project involve the use of **control groups** or the **use of deception**?	○	●
Q1c. Will the project involve any **risk to the participants' health** (e.g. intrusive intervention such as the administration of drugs or other substances, or vigorous physical exercise), or involve psychological stress, anxiety, humiliation, physical pain or discomfort to the investigator(s) and/or the participants?	○	●
Q1d. Will the project involve **financial inducement** offered to participants other than reasonable expenses and compensation for time?	○	●
Q1e. Will the project be carried out by individuals unconnected with the University but who wish to use staff and/or students of the University as participants?	○	●

Q2. Will the project involve sensitive materials or topics that might be considered offensive, distressing, politically or socially sensitive, deeply personal or in breach of the law (for example criminal activities, sexual behaviour, ethnic status, personal appearance, experience of violence, addiction, religion, or financial circumstances)? ○ ◉

Q3. Will the project have detrimental impact on the environment, habitat or species? ○ ◉

Q4. Will the project involve living animal subjects? ○ ◉

Q5. Will the project involve the development for export of 'controlled' goods regulated by the Export Control Organisation (ECO)? ○ ◉
(This specifically means military goods, so called dual-use goods (which are civilian goods but with a potential military use or application), products used for torture and repression, radioactive sources.)
For further information: http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/index.html [http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/index.html]

Scenario: An Ethics Release applies to the project.

I/we, the investigator(s), confirm that:

☑ The information contained in this checklist is correct.
☑ I/we have assessed the ethical considerations in relation to the project in line with the University Ethics Policy.
☑ I/we understand that the ethical considerations of the project will need to be re-assessed if there are any changes to it.
☑ I/we will endeavour to preserve the reputation of the University and protect the health and safety of all those involved when conducting this research/enterprise project.
☑ If personal data is to be collected as part of my project, I confirm that my project and I, as Principal Investigator, will adhere to the Data Protection Act (DPA) 1998. I also confirm that I will seek advice on the DPA, as necessary, by referring to the Information Commissioner's Office further guidance on DPA: http://www.ico.gov.uk/news/current_topics/what_is_data_DPA_purposes.aspx [http://www.ico.gov.uk/news/current_topics/what_is_data_DPA_purposes.aspx] and/or by contacting freedom.information@solent.ac.uk [mailto:freedom.information@solent.ac.uk]. By Personal data, I understand any data that I will collect as part of my project that can identify an individual, whether in personal or family life, business or profession.

Signed by (ALL) the investigator(s):
Date: 21-6-2015.

If the principal investigator is a student:

I confirm that, as supervisor:

- I have discussed the ethical considerations in relation to the project with the investigator(s) involved.
- I have read and agreed the information in this checklist.
- I will monitor progress of the project.

Signed: Print Name: Date:

Ethical clearance for research and innovation projects

Project status

Status

Approved

Your application has been approved by the General Ethics Standing Panel. You may continue with your project.

Conditions applying to all research and innovation projects

- All sensitive data must be held in a confidential and secure place and destroyed on completion of the project or associated assessment results being confirmed. Anonymity and privacy should be guaranteed. You should ensure that it is not possible to identify an individual from the data you collect. The data should only be used for the purposes it was collected.
- Informed consent should be obtained where appropriate and participants should have the right to withdraw without explanation.
- The approval given applies **only** to the submission to which it relates. If you change your research, then you are required to resubmit for approval.
- Evidence of any specific ethical requirements will be sought in the outputs from the project.
- Please remember that a breach of Southampton Solent University ethics procedures is considered as academic misconduct (2L: Student Academic Misconduct, 11.x; 4L: Procedure relating to academic misconduct in Postgraduate Research Degrees, 4.iv; Staff Disciplinary Procedure: Appendix 4).

Actions

Date	Who	Action	Comments
16/08/2017 12:54:00	Roy Hanney	Principal investigator submitted	

Ethics release checklist (ERC)

Project details

Project name: Eupraxia - the praxis of blogging: identity formation and action as reflective transformation of the learner.

Principal investigator: Roy Hanney

School: School of Media Arts and Technology

Other investigators:

Checklist

Question	Yes	No
Q1. Will the project involve human participants other than the investigator(s)?	◉	○
Q1a. Will the project involve **vulnerable participants** such as children, young people, disabled people, the elderly, people with declared mental health issues, prisoners, people in health or social care settings, addicts, or those with learning difficulties or cognitive impairment either contacted directly or via a **gatekeeper** (for example a professional who runs an organisation through which participants are accessed; a service provider; a care-giver; a relative or a guardian)?	○	◉
Q1b. Will the project involve the use of **control groups** or the **use of deception**?	○	◉
Q1c. Will the project involve any **risk to the participants' health** (e.g. intrusive intervention such as the administration of drugs or other substances, or vigorous physical exercise), or involve psychological stress, anxiety, humiliation, physical pain or discomfort to the investigator(s) and/or the participants?	○	◉
Q1d. Will the project involve **financial inducement** offered to participants other than reasonable expenses and compensation for time?	○	◉
Q1e. Will the project be carried out by individuals unconnected with the University but who wish to use staff and/or students of the University as participants?	○	◉
Q2. Will the project involve sensitive materials or topics that might be considered offensive, distressing, politically or socially sensitive, deeply personal or in breach of the law (for example criminal activities, sexual behaviour, ethnic status, personal appearance, experience of violence, addiction, religion, or financial circumstances)?	○	◉
Q3. Will the project have detrimental impact on the environment, habitat or species?	○	◉
Q4. Will the project involve living animal subjects?	○	◉
Q5. Will the project involve the development for export of 'controlled' goods regulated by the Export Control Organisation (ECO)? (This specifically means military goods, so called dual-use goods (which are civilian goods but with a potential military use or application), products used for torture and repression, radioactive sources.) Further information from the Export Control Organisation [https://www.gov.uk/government/organisations/export-control-organisation]	○	◉
Q6. Does your research involve: the storage of records on a computer, electronic transmissions, or visits to websites, which are associated with terrorist or extreme groups or other security sensitive material? Further information from the Information Commissioners Office [https://ico.org.uk/for-organisations/guide-to-data-protection/]	○	◉

Declarations

I/we, the investigator(s), confirm that:

☑ The information contained in this checklist is correct.

☑ I/we have assessed the ethical considerations in relation to the project in line with the University Ethics Policy.

☑ I/we understand that the ethical considerations of the project will need to be re-assessed if there are any changes to it.

☑ I/we will endeavour to preserve the reputation of the University and protect the health and safety of all those involved when conducting this research/enterprise project.

☑ If personal data is to be collected as part of my project, I confirm that my project and I, as Principal Investigator, will adhere to the Data Protection Act (DPA) 1998. I also confirm that I will seek advice on the DPA, as necessary, by referring to the Information Commissioner's Office further guidance on DPA [https://ico.org.uk/for-organisations/guide-to-data-protection/] and/or by contacting freedom.information@solent.ac.uk [mailto:freedom.information@solent.ac.uk]. By Personal data, I understand any data that I will collect as part of my project that can identify an individual, whether in personal or family life, business or profession.

☑ I/we have read the prevent agenda [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/445916/Prevent_Duty_Guidance_For_Higher_Education__England__Wales_.pdf].

19. APPENDICES B

Revisions made in response to external examiners report.

1. ***Make sure you proofread your thesis throughout address spelling errors, errors with the use of the apostrophe and hyphen, and various other errors and typos.***

The introduction and conclusion of the submission have been professionally proof read and copy edited addressing outstanding issues relating to spelling, typographic errors and other layout issues. All of the published articles have been professionally proof read prior to submission to the publishing journal. Subsequently they have been proof read and copy edited by the journal's editorial team.

I have also checked through the published articles in light of EE feedback to look at the issue they raised with hyphens. I have found a few that are typographic errors introduced during the OCR process that transferred the published articles back to word documents for inclusion in the thesis. It is my belief that all of the unnecessary hyphens have now been removed. However, 90% of the hyphens were added to the text by the copy editors at the journals and consequently I have left these in as they conform to the journals house style.

2. ***Sentence structure: revise sentences to avoid unnecessarily overly complex sentences.***

During the proofing process I have edited all overly long sentences to reduce complexity and improve clarity.

3. Claims about the characteristics of students throughout the thesis should be underpinned by literature.

Additional references have been inserted in the introduction and conclusion supporting claims relating to the characteristics of students. This has been focused in particular on the sections discussing group working which have been reinforced by reference to the literature. The literature on the subject is wide ranging and includes a substantial amount of research on the topic of group and team working. With this in mind a small selection of key papers has been selected as supporting references.

4. Remove reference to lack of original contribution / lack of new knowledge and state clearly the contribution that this research makes to knowledge. See, for example, page 148. Also, remove your own comments on how the thesis has satisfied the requirements of a PhD.

I have edited the sentence on page 148 of the thesis as requested by the EE to remove any reference to a lack of original contribution. In addition, I have strengthened the sections in the conclusion that discuss the impact and originality of the study in light of feedback. Finally, I have removed comments on how the thesis satisfies the requirements of a Ph.D.

5. Include evidence of ethics.

I have included the full set of ethics documents as requested by the EE in their report. Including:

i. approval letter,
ii. ethics checklist form,
iii. participant information sheet,
iv. invitation letter for host institutions,

v. invitation letter for individual participants and a consent form,
vi. Solent University ethics approvals self-release form (problem of projects)
vii. Solent University ethics approvals self-release form (praxis of blogging)

6. Change the term "results" with reference to the four articles. Just call them "articles".

I have changed the term 'results' to 'articles' throughout the thesis as requested by the EE.

7. Replace the fourth article with the article that you are currently developing, ensuring that the overall study has thus more empirical research. While the "reflective journey" aspect is an important one, you do need to ensure the study is underpinned by more actual research.

The fifth article is has been published and added to the theses. The bibliographic reference has been included in the current iteration of the theses.

Additional revisions list:

Introduction:

i. Page 2, line 3: edited first word in sentence to correct grammar.
ii. Page 11, lines 12-14: edited sentence structure to correct grammar.
iii. Page 13, lines 16: corrected spelling error.
iv. Page 13, lines 23 onwards: edited sentence for structure and clarity.
v. Page 16, lines 8: changed peoples to peoples'.
vi. Page 17, lines 2: edited sentence for structure and clarity.
vii. Page 17, lines 21: edited reference to the study, edited sentences to reduce complexity.
viii. Page 18, line 9: added additional reference to support claim that there is a need to address projects critically rather than just instrumentally.
ix. Page 21, Line 1: edited sentences to avoid repetition of opening structure.
x. Page 21, Line 10: edited sentence for structure and clarity.
xi. Page 21, line 13: edited the reference to 'study' replacing it with 'articles'.
xii. Page 22, line 14: edited results changing it to articles.
xiii. Page 24, line 23: added a range of references to support claims about group working with significant literature on the topic.

xiv. Page 25, line 23: added a reference to support the claim made about the difference between novices and experts.
xv. Page 26, line 15: added a further reference to support claims with research drawn from the literature on group working.
xvi. Page 26, line 17: added a further reference to support claims with research drawn from the literature on group working and in particular the challenges that come with group formation.
xvii. Page 27, line 11: added a further reference to support claims with research drawn from the literature on group working and in particular the challenges that come with group formation.
xviii. Page 27, line 13: soften tones of claims as requested.
xix. Page 27, line 22: added a further reference to support claims with research drawn from the literature on group working in particular referencing the views of employers on the need for and value of group working in higher education.
xx. Page 28, line 3: split sentence for structure and clarity.
xxi. Page 29, line 3: split sentence for structure and clarity.
xxii. Page 30, line 14: added a further reference to establish the relevance of the use of the concept 'lines of flight' and to link its use to the literature.
xxiii. Page 31, line 14: split sentence for structure and clarity.
xxiv. Page 38, line 6: split sentence for structure and clarity.
xxv. Page 39: added a section introducing the new article that had been requested to be included in the thesis. The section covers the research questions, methodology, thematic links and summaries the findings.
xxvi. Page 41, line 10: corrected grammatical errors in sentences.

Articles:

i. Page 152, line 8: edited the reference to creation of new knowledge as requested.

Conclusion:

ii. Page 187, line 1: removed the reference to the study being a Ph.D..
iii. Page 188, line 2: corrected sentence to give a sense that the articles are threaded together rather than standing alone.
iv. Page 188, line 9: added further material regarding the impact of the study with special emphasis on the validation of practice as a means of teaching critical thinking.
v. Page 188, line 15: added further material regarding the impact of the study to emphasise the value to other educators and researchers.
vi. Page 189, line 5: changed from 'aims to make' to 'has made'.
vii. Page 189, line 8: changed from 'seeks to 'sought'.
viii. Page 189, line 11: changed from 'are intended to 'are'.
ix. Page 189, line 15: edited the paragraph to reduce the complexity of sentences and make the meaning clearer.
x. Page 190, line 5: edited opening to emphasise contribution to knowledge.

xi. Page 190, line 5: edited the paragraph to reduce the complexity of sentences and make the meaning clearer.
xii. Page 190, line 14: edited the text to include a reference to table 7, page 106 where a there can be found a list of ontological characteristics of projects.
xiii. Page 190, line 18: edited sentence to specify which article.
xiv. Page 191, line 1: edited in additional sentences to explain the use of the phrase 'cognitive bias' and to link this to the concept of 'functional fixedness'.
xv. Page 191, line 19: edited concluding section to clarify the conclusions of the paper in relation to implementation strategies and academic leadership.
xvi. Page 191, line 22: edited the opening sentences to present a more positive active voice.
xvii. Page 192, line 5: edited the opening sentence to present a more positive active voice.
xviii. Page 192, line 5: added a reference (Dunker 1972).
xix. Page 192, line 22: edited concluding sentences for structure and clarity.
xx. Page 193, line 2: edited the concluding section of group working making links to the literature and indicating future lines of inquiry.
xxi. Page 193, line 23: added further information elaborating on the potential for further study in this area referencing an article that outlines the concept of design thinking and its correspondence to media practice education.
xxii. Page 193, line 5: added reference (Lave & Wenger 1991).
xxiii. Page 194, line 14: edited sentences for clarity.