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UNIVERSIDADE Ð COIMBRA

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How Should We Teach Design? The Studio Model and the Potential for its Development through Action Research

Julho de 2020

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UNIVERSIDADE DE COIMBRA

Dedicated to my parents.

Acknowledgements

Research question

This thesis asks the basic question, *how should we teach design?*
Or, more precisely, can the interrelated methodologies of Experiential Learning, Reflective Practice and Action Research be applied to the studio model to adapt it for the challenges of the contemporary paradigm of design education?

How should we teach design?

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Abstract

Design is a field that requires a complex mix of knowledge: practical, technical, aesthetic and cultural; it has important aspects that are objective and subjective; and demands ways of thinking that are at times both convergent and divergent. Education in design therefore requires a holistic approach. The traditional form of design education, which follows the studio model (borrowed from architecture) is under threat at universities, due to restricted budgets and an increasingly quantitative assessment model. At the same time, thanks to digital technology, design itself is increasingly distanced from its base in the creation of physical objects, becoming an area that is increasingly about systems and communication rather than material production. These conditions make an assessment and rethinking of design education both necessary and inevitable. This thesis addresses these issues through a mix of practice based and theoretical research methods. These include a series of exploratory interviews that are used to suggest a general picture of contemporary practices in design education, and a case study based on my teaching practice at the University of Coimbra.

This qualitative investigation is supported by a theoretical framework that covers the origins, variations and characteristics of the studio model, which provides a basis upon which to build a discussion of this teaching format consisting of; an analysis of the contemporary paradigm of design education, based on the reading of a series of views by educators and critics on how design education should change; and the various interrelated theories of Experiential Learning, Reflective Practice and Action Research, which, it is argued, are relevant for the transition to this new paradigm. However, this thesis provides an analysis of the ideological aspects of design education that suggests there are inherent contradictions and conflicts both within the traditional and contemporary interpretations of its pedagogy that must be resolved if the potential of the discipline is to be realised.

Como devemos ensinar design?

O *studio model* e o seu potencial para desenvolvimento através de *Action Research*

Resumo

O campo do design usa uma complexa combinação de conhecimento: prático, técnico, estético e cultural; engloba aspetos importantes, sejam eles objetivos ou subjetivos; e exige raciocínios que podem ser simultaneamente convergentes e divergentes. Como tal, o ensino de design requer uma abordagem holística. O modo tradicional de ensino de design a nível universitário, que usa o *studio model* (adotado da arquitetura), encontra-se ameaçado face a restrições orçamentais e modelos de avaliação tendencialmente quantitativos. Face à tecnologia digital, a prática do design tem-se distanciado das bases no que concerne à criação de objetos físicos, tornando-se uma área cada vez mais virada para sistemas e comunicação e menos para produção material. Estas condições tornam a avaliação e o repensar do ensino de design tanto necessário como inevitável.

Várias entrevistas exploratórias, aqui usadas com o propósito de traçar um retrato das práticas pedagógicas contemporâneas no ensino de design, e um caso de estudo baseado na minha experiência letiva na Universidade de Coimbra, compõem a abordagem qualitativa da investigação presente nesta tese. O quadro teórico que suporta esta abordagem abarca as origens, variações e características do *studio model*, formando a base a partir da qual é construída a discussão em torno deste formato de ensino. É feita uma análise do paradigma contemporâneo do ensino de design baseada no ponto de vista de variados autores, educadores e críticos, acerca do rumo que a educação de design deverá tomar. São igualmente estudadas as teorias de *Experiential Learning*, *Reflective Practice* e *Action Research*, as quais se argumenta serem relevantes na transição para este novo paradigma. Não obstante, os aspetos ideológicos da educação de design aqui analisados sugerem haver contradições e conflitos, tanto dentro das interpretações tradicionais como nas contemporâneas, que deverão ser resolvidos para que o pleno potencial da disciplina seja concretizado.

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'A hail of words, like rain in April, can do no more that keep the air sharp and sweet and the ground springy underfoot; and that is the best a formal design education can hope to do — relevantly' (Potter, 2009, p. 30).

Chapter 1

Introduction

1.1 Motivation and objectives

The arguments in this thesis grow from the question, 'how should we teach design?', and this framing of the problems of design education as 'how' rather than 'what', insists on an emphasis on context as opposed to content. It is important to stress that content is not irrelevant to this discussion, nor is it even possible to entirely separate content from context. The word context itself comes from the Latin 'contexere', meaning weaving or joining together, and indeed content and context have an interwoven nature which makes any attempt at absolute separation problematic. Thus, to set up this thesis as a study purely of *how* to teach rather than *what*, may seem to risk hubris. Yet, this emphasis on the *form* — or preferably the *model* — of design education, has to be defended, to allow for analysis and reflection on the signature pedagogy of design education.

Design includes historical and technical knowledge, which perhaps could be discussed without considering teaching models, but learning *about* design without attempting to *do* design would be to miss the point, since design is not only an area of knowledge, it is primarily an activity, and therefore it must be learnt and understood through doing. It is this aspect of active learning — *learning by doing* — that makes analysis of the design teaching model of particular interest.

That design should be learnt by doing, is the default position in design education, hence the institution of the studio model which purports to simulate actual design practice, but if the question, 'how should we teach design?', is answered with the response 'the traditional design studio model', then several problems soon emerge. This response is unsatisfactory because it assumes that the design studio model is:

- **Consistent** — leading to another question, 'what is the archetypal version of the design studio model?';
- A **realistic** simulation of practice; and
- That **simulation** of design practice is the only way that students can learn to design.

All of the above assumptions are questionable at best, but even if we were to accept that the traditional design studio model has been the best way of teaching design *until now*, this would still not be sufficiently convincing to make the argument that it is the best way to teach design in the contemporary situation, both in terms of the changes in scale and structure of universities over the last few decades and in terms of the cultural, organisational and technological changes to design practice itself.

In fact, the contemporary paradigm of design sits uncomfortably with the traditional studio model for a series of reasons that need to be elaborated in depth, but the issues at stake can be suggested by pointing out that using what is often referred to as 'master/apprentice' style teaching involves very specific power relations and a structure that is surely not appropriate for education in a field that represents the intention 'to devise courses of action aimed at changing existing situations into preferred ones' (Simon, 1988). Using a learning model that has supposedly remained relatively unchanged since either medieval times (master/apprentice training) or even the 19th Century (the studio model) should not be accepted without some reflection, especially in a field that prides itself on its innovation.

The primary objective of this thesis is to respond to the question of 'how should we teach design?' by examining, challenging and (ultimately) proposing possibilities for changing the studio model of design education, so that it be made more relevant and more appropriate to the contemporary context in which design finds itself. In summary then, this thesis aims to:

- Examine the origins, variations and characteristics of the studio model;
- Question the relevance and appropriateness of the studio model for contemporary design education;
- Propose possibilities for changing the studio model; and
- Test these proposals in practice.

These general aims are of course beyond the scope of a single thesis and it is necessary to set out the objectives in more specific terms so that a realistic

plan of investigation can be defined. The most difficult challenge implied by the above aims is to propose possibilities for changing design education. To this end, the research for this study focuses on the interrelated theories of Experiential Learning, Reflective Practice and Action Research. It is these fields of pedagogy that we argue have the greatest potential to contribute to design education, since they deal with and theorise *learning by doing* the implicit method of the studio model. Of these three fields, it is Action Research that seems the most relevant since it addresses teaching situations in the most challenging terms, with its critical and reflexive components. The overall approach of this thesis can therefore be stated in the following way: to examine the studio model and to assess the potential for its development through Action Research methodologies. This overall approach is articulated through the following objectives, to:

- Reflect on the purpose and practice of design education;
- Examine the origins and characteristics of the studio model;
- Discuss significant variations of the studio model;
- Analyse the contemporary paradigm of design education;
- Argue for the relevance of Experiential learning, Reflective Practice and particularly Action Research for this new paradigm;
- Analyse the coherence or contradictions between these theories and the studio model; and
- Test the application of Action Research to design pedagogy though a practical case study.

Each of these objectives defines a chapter of this thesis and is discussed in more detail below.

1.2 Design education: purpose and practice

This thesis begins by introducing the general themes that feed into this research in **Chapter 2**, so that these themes can be discussed throughout the following chapters. This begins with a discussion of the term *design* itself, as a way of highlighting the particularities of this field and its inherently multidisciplinary nature, being that design has characteristics of art, science, business, engineering and other fields, without fitting comfortably in any of them. This

exercise serves to draw attention to some of the complexities of revising design education, since the meaning and purpose of the field itself has a certain chimera-like ambiguity.

This theoretical discussion is balanced by a series of interviews with design educators, which are intended to open up relevant issues in design pedagogy in an exploratory manner, in order to introduce and define general issues for investigation which are returned to throughout the study. The interviews are covered according to subject matter, with the full transcripts included in **Appendix 1**. The chapter concludes with a summary of the main themes that emerged from the conversations, which are: the nature of design and design processes; criticality (or, the political aspect of design and design education); and contemporary interpretations of the studio model.

1.3 The origins and characteristics of the studio model

To establish what is meant by the term *studio model*, it is informative to look at the origins of this teaching model and to consider how it has been reformulated in different times and contexts. This is undertaken in **Chapter 3** by following the developments from its early origins in the medieval period; its refinement in the academies from the Renaissance until the late 19th Century; the emergence of design as a distinct discipline amongst the convulsions of the early 20th Century; and finally to the archetypal design school, the Bauhaus.

This historical overview is used to show that the studio model has developed though many incarnations, often maintaining ideas and practices from one historical period to the next, without necessarily resolving the contradictions that this process implies. Nevertheless, it is possible to set out the elements that constitute the modern idea of the studio model, these are: the physical studio itself; project-based learning; materiality (meaning that learning is manifested in an artefact); the crit (Shreeve, 2015) and tutorials or 'desk-crits' (Healy, 2016). A definition of each of these closes this chapter.

1.4 Beyond the studio model: HfG to Sheila Levrant de Bretteville

In **Chapter 4**, the ambitious attempts to reinvent design education in the post-war context at HfG Ulm is discussed since this provides an example of a significant variation of the classic studio model, which not only suggest several possibilities as to how the contemporary paradigm could develop, but also the challenges that such attempts inevitably face. In contrast, this chapter also discusses the pedagogy of Sheila Levrant de Bretteville, whose teaching provides an exmple of how a more radical approach, a *critical pedagogy*, could be relevant for developing the studio model to satisfy some of the aims of contemporary design education (Coelho & Hardman, 2019).

1.5 Design education paradigm shift

Historical research can only take us so far however, since the aim here is not to establish an imitation of the past, but to take a contemporary approach to design education. A literature review of the recent discourse on the theme is therefore pertinent, and constitutes a significant part of this thesis. From this background it is possible to make a comparison between several different interpretations of design education in order to establish what can be understood as the contemporary paradigm of this field. **Chapter 5** introduces the ideas and discourse around contemporary design education which shows how the current situation requires a modified notion of what constitutes design capability and that this has implications for design pedagogy (Hardman, 2017).

1.6 Experiential learning, Reflective Practice and Action Research

To consider how the studio model should be adapted to respond to the challenges of this new paradigm, in **Chapter 6** this thesis turns to key sources that theorises about learning by doing, the fields of Experiential Learning,

Reflective Practice and Action Research which, it is argued, have particular relevance for design education (Hardman, 2015). This discourse has many points of connection with design — particularly to the discourse around Design Thinking — in terms of understanding practice, participation, and the research/learning cycle. In the Experiential Learning field for example, Kolb's analysis of learning through *comprehension* and *apprehension* is covered since this is illuminating when we consider the requirements of learning by doing. These concepts are also relevant for the work of Schön, particularly his central concepts of knowing-in-action and professional artistry. Schön forms a bridge between the design and education fields since his writing on Reflective Practice is a reference in both discourses. Action Research, it is concluded, has the most potential for developing the studio model and is closely connected to participatory models of practice, although it can be argued that fully realised Action Research reaches beyond design in terms of its ethical, political and critical dimensions, and that this represents a potential challenge to the studio model.

1.7 Coherence and contradictions between education theory and the studio model

The two main areas of interest for this thesis, Action Research and the studio mode, are synthesised in **Chapter 7** through a comparison of learning and research paradigms that draw particularly on the work of Lamm — who has theorised that different approaches to education constitute ideologies of teaching; and the work of Guba & Lincoln, Figueiredo & Cunha, and Carr & Kemmis — all of whose analyses highlight the epistemological differences between research paradigms. The conclusions of this chapter highlight both the potential and difficulties of adapting the studio model for contemporary practice; the risk of setting up contradictory goals for design education; and suggests that Action Research methodologies are particularly appropriate for addressing the issue of criticality in design education.

At the more specific scale, this thesis discusses a case study based on the application of Action Research and Reflective Practice methodologies to my own teaching practice. This process began with a reflective journal and making interventions in classes throughout a semester of teaching a first year design

discipline. This approach eventually identified peer dialogue as an important issue, especially in presentation classes, which led to a second phase of investigation involving deliberate changes in this part of my teaching practice and adding focus groups to the research methods. This process is described in some detail in this thesis as an example of how Action Research and Reflective Practice methodologies can be used to adapt and develop the studio model to meet the challenges of contemporary design education.

1.8 The application of Action Research to design pedagogy: a case study

Chapter 8 reports on a practical case study based that test the ideas above by applying Action Research and Reflective Practice methodologies to my own teaching practice as a way of adapting the studio model. This case study was conducted in two phases, the first of which was based on a semester of teaching design at the University of Coimbra and took a general reflective approach which led to a second phase that developed into a focused attempt to improve the facilitation of peer dialogue in the crit (Hardman, 2019). The chapter itself discusses this process in general terms while the notes themselves and examples of student work are included in full in **Appendix 2**. The case study is used to discuss the general challenges presented by design teaching and to show how Action Research methodologies can contribute to both improvements in teaching practice and development of the teaching format itself.

1.9 Conclusion

This thesis makes the argument that Action Research has significant potential for the development of the studio model, the teaching format that defines design education and which is in need of reassessment due to the demands of both the contemporary paradigms of both education and design. By examining the history of the studio model, the perspectives of practitioners and the contemporary discourse on design education it is shown that the studio model

is still relevant and in use but faces both practical and theoretical challenges. By discussing key variations of design education it is shown that alternatives exist for how the studio model can develop. By examining and comparing theories of education, it is argued that Action Research is of particular relevance for design education. And, finally, this thesis provides an example of an Action Research based methodology being successfully used to improve a key element of the studio model, the crit, as shown in the case study that closes this document.

Chapter 2

Design education:

purpose and practice

2.1 Introduction

In order to introduce the themes that covered in this thesis, this opening chapter summarises the results of a series of qualitative interviews with design educators and reflects on the unique characteristics of the field of design, thereby establishing the perspectives that inform the discussions of the following chapters.

It is the nature of design, as a field concerned with bringing about the new, that it needs to be constantly rethought and redefined, and certainly, when attempting to build an argument around the theme of 'how to teach design', some care should be taken with the term *design* itself, since it can be used in quite varied ways. Buchanan identified two kinds of definition used in the design discourse: descriptive and formal (Buchanan, 2001) and warns that both of these serve an ideological and rhetorical purposes. Descriptive definitions tend to identify and elevate a single cause for design, such as 'design is the humanizing of technology' (Augusto Morello, cited in Buchanan, 2001, p. 19), while formal definitions leave open 'creative space' and serve a more strategic purpose in building connections in the field. Research conducted on design education at UAL suggests that both teachers and staff hold different conceptions of design, and that this has an impact on both the effectiveness of teaching and the depth of learning (Davies & Reid, 2000). Before addressing the subject of design education therefore, it is appropriate to first acknowledge that the term 'design' is open to several interpretation and to explore the nature of the discipline through a brief discussion its meaning.

This theoretical introduction is balanced by a series of interviews I conducted with peers in design education. The interviews were exploratory in nature and as such cover diverse subject matter, providing a broad base upon

which to build this thesis. Although they included material that may not be directly relevant to my central research questions, the interviews functioned as a way to introduce areas of concern for and to set the scene for the case study and theoretical research that followed.

This chapter includes a description of the approach I took to conducting the interviews and the rational for selecting the interviewees. This is followed by a discussion of the key issues that emerged, both of general interest and those that are specific to this thesis. Full transcriptions of the interviews are included in **Appendix 1**.

2.2 The meaning of design

The word design has several uses and is often applied in popular culture in a way that is at odds with the aims of our field, when, for example, the word is used as an adjective, as in 'designer sunglasses' or a 'designer sofa' this usage implies design as nothing more than styling and although this may sometimes be a role that design is given, it is the least relevant in the hierarchy of applications of design. Design can be used as a verb, as in the act, 'to design' or as a noun, meaning the product of design, a drawing, model, or plan. One way to understand this duality is to consider design (the verb) as the asking of questions, and design (the noun) as being the answers (Steinitz, 1995). Understanding design as an activity that both raises questions and proposes answers provides a useful insight; instead of seeing design processes as having a problem/solution structure, we can think of it as a process of questions and answers, which suggests something that may seem surprising: *design is a conversation*. Potter's definition of design, if it can be summed up in a single citation, is as follows:

> 'Design is a field of concern, response, and enquiry as often as decision and consequence' (Potter, 2009, p. 9).

The inclusion here of the words 'enquiry' and 'response' again evoke this conversational nature of design processes, in which design is a reflective conversation with a situation (Schön, 1983), but what is emphasised by the words 'concern' and 'consequence' is that the outcomes of design have significant and lasting effects that should not be underestimated.

Redefining design allows us to see different aspects of our field, which has a multifaceted complexity that at times may be easy to forget. Another side to this problem is that the design field includes quite distinct disciplines, that nevertheless use the term 'design' quite freely to describe what they do, which may be convenient in some respects, but in terms of research this can often be problematic. Passages of text that theorise about design may often be interpreted quite differently depending on the type of design one is imagining when reading it. An example of this type of problem can be observed in discussions of Design Thinking (another problematic term) — a methodology that is much quite commonly and usefully applied in fields such as product or service design, but which can seem like an irrelevance in other fields such as editorial design or branding. Hence the misunderstandings that can be detected in criticisms of the sort made by Jen (2018, February 23) that Design Thinking is of no use in designing (for example) beautiful typography, for which the only prerequisite is a combination of craft, compositional awareness, and taste — none of which of course, are necessarily that useful in solving typical service design problems, such as creating an ergonomically suitable work space, or streamlining a bureaucratic process.

Pragmatically, it can be argued that when the term design is used, it should be understood in its broadest sense, encompassing all design fields, including architecture, but also related fields for which creating new products, environments or systems is an intrinsic part. For the Romans, there was no distinction between architecture and engineering as separate fields, both were considered forms of making, the term *architecture* itself suggests this, coming from the Greek 'arkhi' (chief) and 'tekton' (builder, carpenter). Yet, there may be some difficulty in deciding where a broad definition of design should end. In *The Sciences of the Artificial* (to give the canonical example) Herbert Simon stated that design is 'the transformation of existing conditions into preferred ones' (Simon, 1996, p. 111) or rather, design is any combination of plan and action that is intended to improve a situation:

> 'The intellectual activity that produces material artefacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training; it is the principle mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of law and architecture, business, education, law, and medicine, are all centrally concerned with the process of design' (Simon, 1996, p. 111)

Buchanan's preferred definition of design has a similarly wide range:

> 'Design is the creative human power to conceive, plan and realise products that serve human beings in the accomplishment of their individual and collective purposes' (Buchanan, 2001, p. 19).

These interpretations of design may cause difficulties however, since they imply that we should consider that any entrepreneur, lawyer, or politician is a designer. They may well design in a sense (at times) yet they are not generally thought of as being designers, there must then be further distinctions that to be made.

Perhaps the most obvious of these is that design should have an aesthetic aspect, while this may less relevant in other fields. This quality is most easily imagined as being visual, a connotation that makes a connection between the word design and its Latin root *designare* (to mark out) and its connection to the French *dessin* (to draw). But the aesthetic aspect of design need not be visual: auditory, tactile, or otherwise sensory aspects are also aesthetic, consider sound design for example. It is helpful here to recall one of the earliest definitions of design, which comes from the Roman engineer and architect Vitruvius who used the term 'venustas' to point out that design should not only be functional, but have a quality that can be translated as 'beauty', or even 'delight', as it is in this early citation from Wotton:

> 'The end is to build well. Well building hath three Conditions. Commoditie, Firmness, and Delight' (Wotton, 1624, p. 1).

The words of Vitruvias, 'Utilitas, Firmitas, Venustas' were also included in the definition of design in the 1911 edition of the Encyclopaedia Britannica, written by William Richard Lethaby, who was a crucial figure in the development of design education in Britain. His particular definition of design is remarkable, because it deals with a series of relevant issues such as design's relation to art, history, and originality. He points out that the idea that design should be original is a relatively new idea (at the time of his writing of course) and highlights the slow consistent progression that characterised design in various eras, from ancient Greece to the Renaissance, warning that when design is a discovery, it should be a discovery of what seems inevitable emerging as a response to conditions and necessity, and thus should be 'less the new than the true' (Lethaby, 1911, par. 1). What emerges though Lethaby's definition is a sense that design is not only a plan or a scheme in just any sense, but a continuation and development of

a cultural tradition. And it is here we can develop our definition of design further, design is not only a conversation, but a *continuation* of a conversation that flows through cultural histories. But these types if statements should be made with care, because design must look to the future, even if it builds on foundations from the past. For Lethaby, design must satisfy the demands of particular conditions and limitations, and should do so by working from tradition, while being careful not to rest too much on precedent, since:

'The best and most useful meaning we can give to the word design is exploration, experiment, consideration of possibilities' (Lethaby, 1911, par. 2).

Design should be, therefore, a continuation of cultural tradition, a plan for bringing about a desired future, a source of delight, and an experiment. It is important to see design as a multifaceted field and that design projects are effected by multiple influences, both in the present, the past, and the desired future. Summarising Aristotle, Figueiredo & Cunha explain that:

'Aristotle proposed, in Physics II, 3 (350 BC), a classification of four kinds of causes: material causes, the materials out of which things are made (such as the bronze in which a statue is cast); formal causes, the statements of essence (such as the sketches that lead to the statue); efficient causes, the agents or forces that produce change (such as the sculptor who makes the statue); and final causes, or purposes for which things exist (such as the intent of a statue made to represent justice)' (Figueiredo & Cunha, 2007, p. 11).

So in this view, although it may seem paradoxical, the final result can be considered a cause, in the sense that we strive towards it.

Design is the meeting of art and technology, a tension that is implicit in the etymology of these terms, a theme that Vilém Flusser elegantly explored in his essay, *About the word design* (Flusser, 1999). 'Technology' for example comes from the Greek word *techne* meaning 'art'. Each of these words have roots that relate to the ability to make, but also the intention to deceive (artifice). Even the word 'machine', has an implication of deception, coming from the Greek word *mechos*, which suggests 'trap', for which Flusser provides the Trojan Horse as the archetypal example. Through his discussions of etymology, Flusser ultimately concludes that design, art and technology all share a similar characteristic: they are ways to deceive nature, or to deceive ourselves into believing we are outside of nature.

'This is the design that is the basis of all culture: to deceive nature by means of technology, to replace what is natural with what is artificial and build a machine out of which there comes a god who is ourselves' (Flusser, 1999. p. 19.).

Conversely, he follows this argument with the proposal that we ourselves are not deceived by our own artifice, our designs, because ultimately the artefacts we make become disposable, and above all, people remain mortal: nature is not to be deceived and we must reach this realisation (Flusser, 1999).

Indeed, some designers have realised that nature cannot be deceived by design, as can be recognised in the emerging fields of Slow Design (Fuad-Luke, 2008), designing with nature (McHarg, 1969) and the dematerialization of the products of design (Thackara, 1988). 50 years ago the designer and educator Gui Bonsiepe was already warning about the need for universities to be radically changed to produce designers that could respond to the urgency of rapidly increasing environmental problems (Bonsiepe, 1968), arguing for an environmentally focussed interdisciplinary model of design. Yet, half a century later, this does not appear to have occurred. Perhaps the common understanding of design as the solution to a problem is partly to blame, design properly defined, should include challenging or even changing the problems with which it is concerned. Christopher Alexander provided a nuanced version of this idea, stating:

'The ultimate object of design is form (…) The form is the solution to the problem; the context defines the problem. In other words, when we speak of design, the real object of discussion is not the form alone, but the ensemble comprising the form and its context' (Alexander, 1964, p. 15-16).

In this light, we can see that we deceive ourselves when see design as separate from its context, or similarly, ourselves as separate from nature. Design does not only respond to a context, it changes it, and unfortunately, design does not only solve problems, it creates them, and in our current context of political upheaval (influenced to no small extent by information technology) and environmental crisis (in which the products of design play a significant role) it is important to recognise that design is not a purely positive influence in the world.
That being said, it is also true that blaming design for our problems gets us nowhere, and we should be reminded that 'definitions do not settle matters once and for all — nor should they' (Buchanan, 2001, p. 18), or, in other words, everything is still possible and design can still (and must) be redefined by each generation, as they attempt to respond to their own new context.

2.3 The interviews

There are six interviews included in this chapter. Later, in the case studies, other shorter interviews were conducted to address particular points in the research. The interviews in this chapter however are exploratory in nature and address the subject of teaching design in a broad sense. The interviewees chosen are all practicing educators.

The research for this thesis was conducted in Portugal and one of the factors that should not be overlooked is language, the interviewees had to be comfortable conducting the interview in English, and this excluded some possibilities, there are colleagues at the University of Coimbra for example who could have provided valuable views but were excluded for this reason. It is also possible that in some cases the language barrier may have effected the fluidity of the conversation, but I believe this rarely occurred.

In each case there was a different reason for inviting the participants to be interviewed, I will cover these in more detail in each section, but to give a concise version, the rational was as follows: **Susana Lobo** has taught for more than a decade on the Architecture course at the University of Coimbra, and was selected to provide an account of the design studio format from an Architecture perspective; **Artur Rebelo** provides the views of a designer who is highly innovative and respected in his field professionally and has a rich experience as a teacher at degree level but also has given many workshops outside of academic contexts; **Andrew Howard** is a respected graphic designer and is course leader of the MA in Communication Design at Escola Superior de Artes e Design Matosinhos (ESAD) and the founder and organiser of the Porto Design Summer School; **Francisco Laranjo** is the editor and publisher of the journal, *Modes of Criticism*, as well as a design teacher and practitioner, and provides a particularly political and critical perspective; **Sofia Gonçalves** is a professor of Communication Design at Faculdade de Belas-Artes da Universidade de Lisboa (FBAUL) and is the founder of both the design studio Flatland and the publisher Dois Dias, she has significant experience of both academic teaching and workshops; finally, **Pedro Miguel Cruz** was invited to provide the viewpoint of a younger designer-educator whose work is particularly contemporary, being focussed on information visualization. His experience teaching in both Portugal and the United States also gives his interview an international dimension.

2.3.1 Interview methodology

The interviews were exploratory and semi-structured, the conversation was allowed to flow naturally in order to allow pertinent themes to emerge freely. In each case I told the interviewees the general theme of my thesis so that they had an idea of the subject matter to discuss, then we discussed the subject for around an hour. I recorded the audio for these interviews on my laptop at first, then later on a digital audio recorder which was less obtrusive.

The interviews were conducted mostly in public places: the cafés of the Gulbenkian in Lisbon and Serralves in Porto; the ESAD Design Incubator in the Market in Matosinhos; and classrooms in the Department of Informatics Engineering in Coimbra. I transcribed the interviews myself, then refined them by exchanging the texts with the interviewees to clarify details and confirm that the information is correct. The interviews were edited to remove redundancies such as repetitions or affirmatives when they do not contribute to the meaning. Sentences that trail off are indicated by an ellipsis. Footnotes were added to the text to explain points when necessary and to provide references where useful.

It is also worth noting that in some cases the interviews were the first time I had met the participants (Sofia Gonçalves, Andrew Howard), in other cases I have only previously talked to them very briefly (Pedro Miguel Cruz, Francisco Laranjo), while at the other extreme (Artur Rebelo, Susana Lobo) I already knew some of the participants quite well as friends and colleagues. This factor may be reflected in the style and fluidity of the conversations.

This information in this chapter is presented by theme, rather than by interview. To achieve this, each interview was analysed and the themes that emerged are used as the sections for discussion so that contrasting opinions and experiences can be compared. These themes are: learning design; teaching design; the design studio model; workshop style teaching; critical thinking; and design and politics. These more detailed sections are preceded by a summary of each of the interviews which provide relevant biographical and background information and note the main issues that were discussed in each case.

2.3.2 References

To avoid unnecessary cluttering of this chapter, the full APA style citation for each interview is only used for the first reference to each interview, following references are abbreviated to the interviewee's surname and year only.

2.4 **Biographical information and interview summaries**

2.4.1 Andrew Howard

Andrew Howard is the course leader of MA in Communication Design at ESAD in Porto where he has been teaching design since 1993. He is also the founder of the Porto Design Summer School which he has run since it began in 2012. He is a curator of exhibitions on design and devised and coordinated the Personal Views seminar series. Of course, his professional design experience is also relevant to his ideas on design education and he has a significant career as a designer, running Studio Andrew Howard since 1994. Along side this core design background, a further element of his practice was discussed during the interview, which was his time spent in the Islington Bus Company collective, a multimedia resource group which he joined in 1980 in London.

2.4.2 Artur Rebelo

Artur Rebelo is the cofounder of design studio R2 along with Lizá Defossez Ramalho which they have run together since 1995 and he has been teaching design since 1998, currently on the BA and MA courses in Design and Multimedia at the University of Coimbra. This work is combined with his other activities in design such as running workshops, curation and organisation of congresses, all of which make him a person with a relevant perspective on design education. He studied Graphic Design at the Faculty of Fine Arts of the University of Porto, Design Research in the Faculty of Fine Arts of the University of Barcelona and has PhD in Contemporary Art from the College of Arts, University of Coimbra so his experience of university education is also quite broad. In the interview Rebelo talked about his time studying graphic design in Porto which was also the period when he started working with his partner. He then continued to discuss his approach to teaching design.

2.4.3 Francisco Laranjo

Francisco Laranjo is best known for his editorial project *Modes of Criticism*, a 'research platform, journal and graphic design studio' (Modes of Criticism, 2018), particularly the publication which takes a critical response to graphic design and design discourse. Laranjo is a prolific contributor to design discourse through his writing for *Design Observer*, *Eye*, *Creative Review*, *Grafik* and *Público* and has taught widely as a teacher and lecturer in various institutions including the Sandberg Institute, CalArts, Royal College of Art (RCA), Central Saint Martins, London College of Communication (LCC), Kingston University, Zürich University of the Arts, University of the Arts Bern and speaker at the University of Applied Arts Vienna, University of South Australia, University of Porto, University of Lisbon, University of Coimbra, ESAD.

The interview with Laranjo covers his experiences with design education as a student, which he was not entirely satisfied with, and his attempts to respond to these perceived failings through his own teaching practice. He also discussed in some detail the relation between his academic research, his design practice and his publishing endeavour *Modes of Criticism*.

The coincidence that this interview followed Andrew Howard's made for a striking comparison, since the two conversations have various shared topics that are dealt with in quite contrasting ways. These topics include the issue of how politics can be included in design education and the problematic relation between theory and practice. It is also worth noting that Laranjo himself was a student of Andrew Howard's at ESAD in Porto before he went on to study at the RCA for his masters and LCC where he completed his PhD.

2.4.4 Pedro Miguel Cruz

Pedro Miguel Cruz makes an interesting subject for this series of interviews because he represents a new generation of designers who have moved beyond the traditional definition of graphic designer, he defines himself instead as a data visualization designer and has a background in science as well as design. He has a PhD in Information Science and Technology from the University of Coimbra and is currently Assistant Professor in Information Visualization at Northeastern University in Boston, MA, USA.

Since much of the current discourse around design education refers to the problems of how to prepare designers for new paradigms of interdisciplinary

design and to use the possibilities of new technology, it would seems that the experiences of a designer with exactly this background should be relevant. A supplementary area of interest in this interview is the fact that Cruz is now a teacher of design in the USA and is therefore in a position to give some insights into a context of design education that may contrast with the situation in Europe.

2.4.5 Sofia Gonçalves

Sofia Gonçalves has taught design at the Faculty of Fine Arts at the University of Lisbon (FBAUL) since 2003. She has a degree and a PhD in Communication Design, also from FBAUL and an MA in Arts and Communication from the Faculty of Social Science and Humanities at the University of Lisbon. She is a cofounder of Dois Dias Edições and cofounder of Flatland design studio. She has run a series of workshops since 2010 based on graphic design and publishing.

This interview was of particular relevance to this thesis because Gonçalves is actively interested in challenging and investigating teaching formats. Her approach to setting student work tends takes a reflexive approach, drawing attention to the act of learning itself. In the interview she describes an example of this which is the project 'Curricula Imaginado' (Imaginary Curriculum) in which the students were invited to reflect upon and define the content of a design course — a brief which implies a demanding amount of research for the students to undertake. This interview also includes a significant discussion of the dynamics of student teacher interaction within different teaching formats and the role of evaluation in learning.

2.4.6 Susana Lobo

Susana Lobo has been a teacher in the Department of Architecture at the University of Coimbra (DARQ) since 2008. She was also a student in the department, so her teaching reflects the continuity of the tradition of Architecture pedagogy in Coimbra. The intention with conducting this interview was to get a rough idea of how Architecture education uses the design studio model of teaching.

The interview focuses on her project based teaching practice, including: critical thinking; verbal teaching; the design process; and guiding student work. Some other subjects are touched upon that are quite relevant to subject

of design learning: she mentions the importance of student dialogue; the classroom dynamics in the department; and reflections on the changes in design education before and after the introduction of the Bologna Accord.

2.5 Building an understanding of design

2.5.1 Conflicting conceptions of design

It is easy to assume that students fully understand what design is at the beginning and even during their studies, but this is not necessarily the case. Throughout these interviews, it is clear that there are different interpretations of what design it is, and accordingly how it should be taught. This aspect of design makes it in some respects a difficult subject to learn about, or to do. In the interview with Gonçalves for example, she points out that it was only by the third year of her undergraduate degree that her understanding of design really clicked. Rebelo's account of his time at university supports this idea, he claims that it was only after starting professional practice that he developed his approach to design (A. Rebelo, personal communication, May 24, 2016). The description that Cruz gives of seeking out his tutors after classes and of reading extensively about his areas of interest also suggest that students need to absorb a lot of different viewpoints about design before they can position their own understanding of the subject. One of the aims of design education is to build a concept of what design is, in its multifaceted variations, potentials and implications.

The fact that design courses are often housed in art departments may in some respect complicate the process of understanding design. Rebelo's experience of learning about design as an undergraduate was that he was working in an art school context with shared disciplines such as theory and drawing. It seems as though there were some gaps in what thsi degree course provided, because he relates that it was only after he left university that he learnt to take a systematic approach to design and typography.

An emerging conception of design seems to be linked to student motivation, in the interview with Cruz this theme was touched upon. Recalling his time as an undergraduate design student, Cruz related that once he was able to identify what he wanted to do, he to set out to learn it himself:

'While I was in Coimbra I started looking more at posters, I started noticing some posters that FBA did and something struck me because everything seemed so simple, technically. I thought, well, I could do this — but I can't! What is it that's missing? It seemed so beautiful and elegant, and I could do it, I know the tools — but I can't. So I started reading about it [typography]. I read, I read, I read. Then I started doing some posters, I did a poster for a week of arts here in the humanities faculty, I did a poster for a book fair for the student's association and I did a poster for a play at the theatre'
(P. Cruz, personal communication, October 6, 2016).

This feeling of getting hooked on the subject matter is exactly what is needed to inspire and motivate students, the problem of course is how to achieve this effect and facilitate this kind of motivation.

2.5.2 Defining design

When the subject of defining design emerges in the conversation with Howard he defines it as follows, 'design is not a puzzle, it's not a piece of the puzzle, it's a way of putting the puzzle together' (A. Howard, personal communication, June 1, 2016), which highlights his view of design as an abstract process, although he also stated that design is, 'an editorial process in a lot of ways' (A. Howard, p. c., 2016), which suggests that design must deal with the organisation of information, and by extension, meaning.

For Gonçalves and Laranjo, design often seems to be literally interpreted as editing, and many of their projects (both their briefs and their actual practice) focus on producing publications. This approach focuses on the discussion and selection of content, which suggests a role for designer to stimulate and engage in debate and research, and to contribute to discourse through publications.

2.5.3 Design education as a brief

An example of how to encourage students to build their understanding of design was provided by a project that Gonçalves described in her interview, 'Curricula Imaginado' (Imaginary Curriculum) which used education as a theme, in a particularly reflexive strategy: the problem she set for her students was to plan an alternative design curriculum. Gonçalves told me that she

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found this project very gratifying (S. Gonçalves, personal communication, July 20, 2016) and it seems to be an effective idea, for students to decide what information and activity would be relevant to learn design, they would of course have to partake of a lot of research and to ask themselves important questions about what design is about and for. The project had several outcomes including individual publications, a compilation publication and other follow-on work that analysed the first round of outcomes and cumulated in a conference (Em Voz Alta, 23rd May 2014).

2.6 Design Pedagogy

2.6.1 Universal design principles

Howard related that his approach to teaching is based on what he calls the 'components of design' which include, navigation, juxtaposition and narrative, 'component parts that in theory could be applied to everything' (A. Howard, p. c., 2016). This approach, assumes that there are universal design principles, or 'design basics' and is an idea that has roots in Modernism and Bauhaus pedagogy. However, this abstraction of design is problematic for some, Laranjo for example, describes this type of approach — which he considers to have been his experience at ESAD — as 'anachronistic', and problematic, since it approaches design as if it exists in 'a vacuum' (F. Laranjo, personal communication, June 9, 2016). This difference in perspective relates to the problem of whether design is universal or whether it must always be situated in a specific context and is a question that relates to broader epistemological differences — conflicting understandings of the nature of design.

2.6.2 Teaching a nonlinear design process

Related to the conception of design is the idea of the design process, in these interviews this subject was addressed most directly by Lobo in her description of the difficulty some students have in understanding that there is not a single solution to design problems, nor is there a linear process to follow.

However she does point out that there are specific stages that projects should go through. Cruz also demonstrated a preoccupation with the design process in his descriptions of his teaching, with students going through distinctive stages of producing draft work, iterations and final proposals. Howard tackled this subject in his interview by highlighting the editorial nature of the design process, drawing on diverse fields of expertise and knowledge, and using the metaphor of a puzzle, design is 'not a piece of the puzzle, it's a way of putting the puzzle together' (A. Howard, p. c., 2016). These discussions suggest a possibility for investigation, which is the extent to which the development of an understanding of design is related to an understanding of the design process. Related to this is the challenge of teaching design: how a nonlinear design process can be taught, and whether it is better to intervene in the learning of this process or better to only allow for its discovery.

There is some ambiguity around this issue, because although the design process is not linear, it can be described in terms of steps, Lobo explained that:

> 'There is a process I try to teach them. A process of thinking. Because there are different stages and it's important for them to take those steps. There are some students — and those are the good students — that can take those steps almost alone, that I don't worry that much because I know that if I don't talk to them today, or if I criticise them today, the next class they will have it straightened out or have solved the problem' (A. Lobo, personal communication, May 9, 2016).

Lobo believes that it is important not to try too hard to explain process to the students, because they need to find out by themselves. She reported that she guides them in the creative process mostly by showing them examples in order to broaden their field of reference and that she tries to wait until there is a sign that the students know what they want to achieve and only then intervenes directly. Lobo cautioned that there is often a danger of interfering too much in the early stages of the students' projects.

Similarly, Cruz also explained that he slowly built up exercises in a structured way when he was teaching 'computer graphics' (which in this context means creating images with code), he would give the students simple and specific tasks to build their ability:

'I'll give you some examples, we could have something in typography but in computer graphics, a sphere with some light around it, some squares arranged on a grid, composing things' (P. Cruz, p. c., 2016).

Simple visual relations appear to be useful subject matter, not only for learning the relations themselves but also for learning to use a new medium. Cruz uses the term 'building blocks', meaning that he helps the students build their abilities and knowledge piece by piece as a way to provide a 'safe path' for the students. Another notable aspects of Cruz's description of his teaching is that he provides the data for the students, rather than posing subjects for them to research. The reason he gives for this is that it saves time and since for data visualisation projects the challenge is usually to represent large amounts of quantitative data there is clearly a strong argument for this. He points out that some other teachers in his area keep the projects open and ask the students to source the data, but he maintains that from his point of view it is important to make sure all the students have 'the same assignment, the same data, the same problems' (P. Cruz, p. c., 2016).

Rebelo aims to address the thinking process of design in his teaching, he states that, 'I really push them to explore and think about the way they design and the way the process is and how they relate ideas, influences and theory' (A. Rebelo, p. c., 2016). He approaches this challenge by drawing specifically on his professional experience by sharing his own working process.

Like Lobo, Rebelo considers that providing references from design history is an important part of this process and Rebelo says that, 'we drink from history' (A. Rebelo, p. c., 2016), which expresses this approach. What is notable here is that these examples from design history are not presented as in a planned way, but rather, are spontaneously drawn upon when they can usefully contribute to the learning process of the student. In this sense, this approach to teaching is centred on the student, rather than the material. Although it depends of course on the knowledge of the teacher being relevant to the issue at hand.

2.6.3 Verbal teaching

Lobo very is conscious of the way she speaks to the students and sees her style of dialogue as appropriate to their level (first year).

'It's a very particular year, I think that my way of teaching is also influenced because of that. I think I'm best fitted for the first year because of the way I teach and the way I speak. I'm very direct and I'm not very eloquent and theoretical when I speak with them. I keep things quite simple' (A. Lobo, p. c., 2016).

On the subject of dialogue between teachers and students, she notes that the gender of the professor influences the attitude of the students, noting that they listen more carefully to the male professors.

2.6.4 Student dialogue

When I asked Lobo about dialogue between students, she made an interesting point, which is that the older students like to 'play the role of the teacher' (A. Lobo, p. c., 2016), which they do when they come into the first year studio. To some extent the students are using their experience to show off and impress their younger colleagues, but even so, this wish to share their knowledge appears to have some pedagogical potential.

2.6.5 Discipliniarity

In the interview with Howard, one subject that was briefly touched upon, but that deserves reflection, is the question of the democratization of design skills and how this relates to the specificity of the design discipline:

'In an attempt to demystify skills, the danger is you inadvertently abolish them. In that you say, "anyone can do anything". Can they? I'm not so sure about that now. I don't think so' (A. Howard, p. c., 2016).

There is an important point being made here in terms of discipliniarity. Care must be taken that in advocating multi/inter/cross-disciplinary design that core design skills are not neglected. This seems relevant to the contemporary dilemmas of design education.

2.6.6 Critical thinking

The problem of how to teach (or even encourage) critical thinking is a challenge for design education.

Lobo makes a conscious effort to address this problem. She told me that one aspect of her teaching differs from her colleagues is the way that she tries, 'to teach my students how to criticise, how to look at their work with a critical eye' (A. Lobo, p. c., 2016). The method she describes for this is to give the students 10–30 minutes to write down their first ideas right after they are given the brief. These notes are then put on the wall and used for discussion. The students present their ideas and receive criticism from the teacher.

She notes the importance of encouraging the students to engage with each others work and argues that this opening crit functions as practice for the final presentations.

2.6.7 Collaboration at post-graduate level

Drawing on his experiences teaching at the Sandberg Institute and at the RCA, there is a section in his interview in which Laranjo discusses the differences in teaching design at post-graduate level. He argues that the role of the teacher should change at the more advanced level, not just providing 'slightly more difficult' challenges, but instead becoming a 'co-researcher', encouraging the students to develop a 'commitment to the culture of research and commitment to the public space and other researchers' (F. Laranjo, p. c., 2016), this suggests an ethical approach to research that should be instilled in the students. He also highlights an important factor, that the students should be learning to be independent, his aim is for the student 'to develop their own methods and to become autonomous as investigators and designers' (F. Laranjo, p. c., 2016). It seems that his teaching practice at post-graduate level has an emphasis on collaboration, he told me that in these classes the students 'decided on the most useful or productive approach or strategy for their own practice and their peer's practice' (F. Laranjo, p. c., 2016) and that they 'donated that time to their peers work and that they developed methods for their colleagues' projects' which allowed them to form 'a range of different approaches' (F. Laranjo, p. c., 2016).

2.7 **The studio model**

Each conversation focussed on different aspects of the contributors experiences and approaches to teaching. The interviews with Howard, Rebelo, Lobo and Cruz described personal interpretations of the traditional design studio model, based around project based working, using one-to-one tutorials and culminating in final presentations. Each of these teachers have their own nuanced way of using this format and it is worth noting that the design briefs that they set are not necessarily simulations of professional practice. Rebelo made this distinction clear by pointing out that students should work in a much more open an exploratory way than in professional practice, while Cruz described a step-by-step approach to teaching, slowly increasing complexity to allow for the learning of specific competencies. Similarly, Lobo described projects that focus on abstract concepts such as designing the 'void', the negative spaces in an around buildings, but she also described projects that work with real sites. Howard also discussed the use of 'live' projects that have a real audience and situation his opinion on different teaching formats however was that he does not think that they really exist anymore and that everything depends on the strength of character of the teacher (A. Howard, p. c., 2016).

The interview with Lobo provided a picture of a more traditional version of the studio, that is perhaps more embedded in Architecture schools than in other areas of design. Her descriptions of shared working areas with large physical drawings and models, and that is open and used by the students 24 hours a day, may seem in some respects old-fashioned, but it should be recognised that this kind of environment provides many opportunities for informal collaboration and peer-learning in a way that is not so fluid in a computer focussed classroom. This is one of the reasons that this thesis argues that design teachers should actively create situations that facilitate productive student interaction.

Lobo does however provide an instance of making a direct intervention into the teaching format, which is the 'critique session' she describes at the beginning of the projects when students must come with a rapid proposal for the project which is then discussed and critiqued in a group session. Planning specific moments in which the ordinary activity of studio style learning changes seems to have some potential as a way to augment and adapt the more traditional teaching formats. Susana described a fairly classic style of studio based teaching. She sits at her desk with drawing materials and each student comes to her with their work for feedback. She then draws over their work

using tracing paper while talking to them about the project. Lobo recounts that this is the way she herself was taught. So this is architectural teaching as a continuation of tradition. I asked her if she sometimes used different teaching styles and she replied that all the teachers on the course teach in this way.

The interview with Cruz revealed that although he teaches data visualization, a very contemporary form of design, he still relies on a traditional studio style form of teaching,. The following passage sums this up very clearly, as a description of classic studio model teaching:

> 'To give you an example from the information design studio. I wanted them to go through the design process. They had one assignment with three phases where they had deadlines and deliveries and with each deadline they had to do a presentation. For the first one they had to show me their sketchbook — which could be digital — and present it with all the ideas they had been developing. Drafts and drafts. Then you have the first iterations, what have you programmed, what are you challenges, where are you right now. Then you have the final iteration where you present your results and your final designed application, your answer. Since I had this structure and it was a studio, the assignments were individual, in the other class the work was always individual. I can do that because I had 8 to 14 students top. For each course I had three and a half classroom hours with them and then I had office hours. For most of the time I was just sat with them you know, asking them to show me what they had done. Then I could talk with that student for half an hour and anyone could get involved in the conversation' (P. Cruz, p. c., 2016).

This style of teaching is one of the main subject areas for investigation in this thesis and it's origins, development, variations and criticisms are discussed in the following chapters.

2.7.1 The crit

The final presentation of projects in Cruz's classes also apparently follow a classic crit format, although he told me that he uses some strategies for increasing the pressure of these classes, by inviting other teachers or more subtle changes, for example:

'I remember that in their first presentations for information design I appeared in a bow tie. What I want to say them is that, this is not our usual interaction, you are selling your idea to me and your colleagues and everything should be good, even your presentation. They took the message I think' (P. Cruz, p. c., 2016).

In another example, he recounts a particular crit when a student used a typeface that was not acceptable, Cruz told me that he was 'pretty reactive' about it and gave 'a very harsh speech' (P. Cruz, p. c., 2016). Again, this description is quite characteristic of what has been criticised in recent years as 'teacher centred' approach, demonstrating clearly hierarchical relations between teacher and student. This is a subject of some debate and is covered in some detail in the following chapters. Rich feedback that provides information on the details of design work must be given to students, as Cruz says, 'someone has to talk to them about it' (P. Cruz, p. c., 2016), but what can be problematic here is giving detailed information in the 'high pressure', situation that the crit can often present.

2.7.2 Studio atmosphere and dynamics

Lobo describes quite a fluid working space in her department, with much movement between spaces. For example, they have a system of leaving unwanted model making material in large recycling bags in each room so that students can scavenge from each other.

Apparently there are a lot of opportunities for students to work and socialise together, since the Architecture building at the University of Coimbra is open all night and all the students have both their own work area and access to shared spaces that they can use in the building. One imagines that this provides them with many opportunities for helping and learning from each other, indeed Lobo's description of her time as a student suggests this:

'When I was studying (I'm from Coimbra) I worked at school because of the ambient that was created, I liked being with my colleagues and working. Because we worked normally at night, we spent the whole night working, until four or five o'clock in the morning. So instead of being alone at home I would be with my colleagues and it would also be important to understand at which point we were in our work. So, "he's more advanced, I should move

on". It's important, and also it's a good time to discuss the work and to go to the other rooms and see what the others are doing' (S. Lobo, p. c., 2016).

It is also noteworthy that there is an ongoing tradition of working long hours in the architecture department, which the teachers promote.

In his interview, Rebelo drew attention to the changing mood of the studio classes, he points out that the atmosphere should change depending on the stage of the work and the development of the project:

> 'I think there are different moments. I think there are moments when it's nice to have tension and the quiet is sometimes nice, when we feel that they are concentrating, working. But of course the class is an opportunity to discuss things, to share ideas' (A. Rebelo, p. c., 2016).

Rebelo presents a picture of flexible teaching style and seems to aim for a collaborative relation with students rather than a more hierarchical dynamic. He sees design teachers as mediators who should adapt and discuss subjects as and when they emerge, rather than by following a predefined program.

2.7.3 Materiality

Howard notes the importance (in graphic design) of printing work as it progresses. This in necessary for students to understand the questions of scale and relationships between elements. It is also worth noting that Cruz insists on preparatory sketches on paper at the beginning of the data visualization projects. It seems that for communication design, analogue process continue to have utility.

2.7.4 Final exhibition

Gonçalves explained that the main design project for the third year of the undergraduate degree at FBAUL lasts a whole semester and sets the theme for the final exhibition. The idea of a final degree show is quite common in art and related subjects, but we discuss this in the interview because it is not included in every design course (the one on which I teach for example). Gonçalves highlights the way the final year exhibition motivates the students and faculty

to work together for a common goal. There is also a catalogue to accompany the exhibition with a website, each of which are designed by groups students, so the final exhibition also has the benefit of creating challenging design projects that require collaboration both within and between the different groups of students.

2.7.5 The Bologna Process

Lobo brings up the subject of the Bologna Process in the interview, which she sees as a problem because it restricts the time students can spend on the main projects due to the necessity to complete additional disciplines such as geometry (S. Lobo, p. c., 2016). The Bologna Process is therefore another factor that undermines the studio model to some extent.

2.7.6 Student numbers

Like the Bologna Process, high numbers of students per teacher also makes the traditional studio model different to maintain, and also creates difficulties in attempts to improve teaching. Gonçalves for example, related that projects that require a lot of discussion in class are challenging, since she teaches classes of 30 students at FBAUL, (meaning that there was typically around 25 students in the classroom). Cruz made the point that he is able to make his teaching very personalised because he usually has classes of only 8-14 students.

2.7.7 Studio teaching and professional practice

Rebelo sees considers his professional practice as the main source of his design knowledge and that his own teaching as being different to how he was taught. When I asked him about how his teaching relates to his experience as a student, he replied:

> 'Not at all. I was invited in the beginning because I was a graphic design professional: for practice. I'm more about sharing, opening my experience and giving professional experience, sharing episodes that I've had since I started working, maybe 20 years ago' (A. Rebelo, p. c., 2016).

change in behaviour in the workshop format, including her own behaviour. This was particularly marked because the first workshop she ran was a four month course with students and non-students and took place in the university, so even though the location and some of the participants were familiar, the behaviour (including her own) was more collaborative and open. She noted also that the difference in terminology that was used reflects this difference, 'participants' take part in workshops, while 'students' enrol in university courses.

The intensity of the workshop format was mentioned several time, it seems that a crucial element of this format is that it brings together a group of people who become very focussed in their shared work. Gonçalves notes that these workshops worked best when there was a higher level of intensity with activity happening all day and into the evenings, when ultimately the feeling of being in a classroom would 'collapse'. She concludes that, 'the workshops showed me that if you change the environment, the outcomes change too' (S. Gonçalves, p. c., 2016). This suggests that there is a necessity to think about the framework in which learning takes place in terms of the organisation and occupation of space, and the dynamic of interactions between participants in the educative experience.

Howard puts some of this more emotive side of workshops down to the feeling of bonding that a group of strangers may have when they go through a shared experience. However there may be other contributing factors to the change in dynamics that occur in some workshops; Gonçalves noted that even in circumstances when she was working with students she already knew, their behaviour changed in the workshops, as did her own in this more informal mode of teaching. There is surely then, a strong possibility that reflecting on the characteristics of workshop style learning may provide some insight into how design teaching in general could be developed. For example, Howard told me that at ESAD Porto their is some use being made of workshop style of projects, which are more intense than usual design projects, with a greater density of work condensed into only one or two days, which are included on the MA design course as 'short bursts' (A. Howard, p. c., 2016).

2.8.1 Evaluation and motivation

Gonçalves raised the subject of evaluation and how it effects learning. In the workshops, there was no evaluation, yet the participants were highly motivated in their work. This may seem strange, if one considers the purpose of evaluation as being the encouragement of higher standards of learning.

He also made an important point about the difference between teaching students and working with the designers in the studio. He encourages students 'to explore their own way of doing things', but he points out that this is different to the way he works with designers in the studio, because in that context it is important for the work of R2 to maintain the authorship of Rebelo and Ramalho. So in an important sense here, 'studio teaching' is not a simulation of professional work. Its aims are different.

Yet, for Howard, it is important that some of the student projects are 'live', that they have a real audience and context, he notes that 'live' meaning that they take place with 'a real audience in a real situation'. He notes that these public projects mark a significant change in how the students approach the work.

2.8 Workshop style teaching

Gonçalves, Howard, Laranjo and Rebelo all discussed teaching workshops in their interviews, all noting that they can provide valuable opportunities for cultural exchange and highlighting their characteristic intensity as a benefit of the workshop format. Cruz describes his teaching in some classes as being 'very workshop based', in that he programmes with the students and works closely with them on a technical level. Howard, referring to the Porto Summer School, argued that a benefit of the workshop format is its intensity and he noted that the differences in background between participants adds to the richness of these events pointing out that it adds to the learning experience when participants come from different backgrounds, both culturally and in terms of the point in their careers (A. Howard, p. c., 2016). The workshops that Gonçalves described had participants with different backgrounds, outside of design but related to design and publishing, such as researchers, historians, artists and curators. What is not mentioned, but perhaps is implicit in this aspect of summer schools and workshops is that they can be very useful in terms of networking for aspiring designers.

The interview with Gonçalves, went further in examining the difference between workshop and studio style teaching formats. She highlighted many positive aspects of the workshops she has been involved with and reported that in this less formal, evaluation free context, participants tend to take a more positive and collaborative attitude. She related that she noticed a significant

'In the case of the workshops, there is no evaluation, there is no grade. So people enrol in workshops because they really want to be there. They know that they have to follow a briefing somehow, but they are not going to have a grade. That frees you up a lot. But it doesn't take away responsibility because you are there. You want to be there and there's no obligation' (S. Gonçalves, p. c., 2016).

Gonçalves related how she has tried to implement this principle in formal education by introducing moments when an outcome has to be produced, but without evaluation. These include outcomes such as posters or booklets and moments such as round table discussions. She told me that she could not see a difference in motivation when the students were not evaluated but that students seemed to respond well to this approach and would directly voice their appreciation.

2.8.2 Participative processes

There was a slight tangent in the subject matter of the interview with Howard when the conversation turned to the workshops he ran at the Gulbenkian and with The Islington Bus Company. These workshops were not focussed on design but had more of a social program. However, the discussion is quite interesting in its relation to participatory design processes, for example Howard noted the political difficulties in engaging with communities. I asked him if he thought engaging with a community through making posters was a good example of using design as a tool for political change and he replied:

'Yes. And there are some interesting lessons to be learnt from that, in lots of ways, because I think that we did lots of interesting things, [had] lots of interesting ideas, but [we made] lots of mistakes as well, political and ideological mistakes in my opinion' (A. Howard, p. c., 2016).

The example that he provided of this kind of ideological mistake was that a participant in a screenprinting workshop complained that he wanted to take part in the social processes, but that he was not interested in becoming a screenprinter. It seems then that in these participative activities there was a danger of simply teaching the skill rather than addressing the actual issues, which returns us to the problematic relation between form and content, or surface and meaning. Design it seems, often runs the risk of become superficial,

and design education must also take care not to lose itself in focussing on materialistic concerns.

2.8.3 Making design education less formal

Gonçalves told me that she has become 'a little bit sceptical' about change in design education, she thinks that is difficult for this to happen, particularly in Portugal. She recounted that she felt her interactions with students were more open at the beginning of her teaching career and that she has slowly become influenced by the teaching styles of her colleagues, which means fitting into a more hierarchical model, but that she would like to address this and to change behaviour:

> 'It's something that's very difficult to impose, because I think there is a previous layer, that you know that you have to perform when you are in a classroom and that behaviour layer happens not only with the teachers but also with the students. The students enter in a classroom in a different way than they enter in a workshop. I try to see how can we build bridges between formal and informal models of education but it's not that easy to implement' (S. Gonçalves, p. c., 2016).

Therefore she recognises the need to address the student/teacher hierarchy to improve the interactions in the classroom, but despite her knowledge of this and her experience teaching in different formats, this issue remains problematic. However, she acknowledged that running the workshops had convinced her that change in student and teacher behaviour was possible and that slight changes in behaviour could make an important difference:

> 'I think this is very relevant in education and in design education, because it's a practice and creative based education, so the behaviours, they are very relevant and they can really change the outcomes, that's for sure. I'm not saying that some outcomes are more relevant than others, because I don't think that's the case. But the level of exploration and experimentation becomes very wide in the workshops and follows expectations in the other case' (S. Gonçalves, p. c., 2016).

This statement makes the argument for a closer look at student and teacher interactions in design education.

2.9 **Design and politics, theory and practice**

2.9.1 The political aspect of design

On the subject of politics and design, Howard expressed uncertainty about the inclusion of politics within the curriculum, suggesting that it should be present in day-to-day teaching:

> 'You know, I don't pretend with my students that I'm somehow neutral. Obviously I'm not. I think I'm objective but I'm not neutral. So I'll say that I have very particular ideas about our dominant form of economic organisation and what it means for us, and I'm going to talk about those things' (A. Howard, p. c., 2016).

He insists that design cannot be separated from sociopolitical issues, 'that is really separating the waters, as if there is a social design and a nonsocial design' (A. Howard, p. c., 2016). On this subject, he referred to an article he wrote for Eye Magazine entitled '*There is such a thing as society*', which argued that graphic design should be seen, 'as a form of social production rather than as individual acts of creativity' and that 'we must be able to locate it within a historical context that relates it to economic and political forces' (Howard, 1994). In the interview he related how he rejected an invitation to write a follow up to the article because, 'it's a conversation that most designers really didn't want to have' (A. Howard, p. c., 2016). He continued that line of thought by highlighting the manipulative nature of design:

> 'We designers don't simply live in a world of information we inhabit the world of perceptions and that's what makes it particularly relevant. A lot of the time we are Moulding perceptions' (A. Howard, p. c., 2016).

His position on design and politics is that the two are inexorably linked, but he seems to have doubts about how the subject of politics (criticality) can be approached in design education, suggesting that it could be included in curriculum as 'contextual studies' or a 'general frameworking', but that it is problematic and he never covers politics in class because, 'as a designer, content is not what you should be concerned about, it's form' (A. Howard, p. c., 2016). This part of the interview was inconclusive, effectively ending by Howard

asking the rhetorical question, 'is it content that changes the nature of things? I don't know' (A. Howard, p. c., 2016). The ubiquity of design means that it inseparable from it's sociopolitical context but this does not mean that it is clear how to deal with this subject in design education.

It is perhaps ironic that Laranjo remarked of his experience as a student at ESAD (where Howard teachers) that, 'we were not engaging with the surrounding political, social or cultural circumstances' (F. Laranjo, p. c., 2016), in the light of Howard's comments that, design should be seen, 'as a form of social production rather than as individual acts of creativity' (A. Howard, p. c., 2016). Interestingly, both Howard and Laranjo seem to use similar terminology on this subject, but as Laranjo continued the difference in their views became apparent, 'things were always dealt at the superficial level. Focused on form and how form was articulated and how balanced it was' (F. Laranjo, p. c., 2016). It seems then that Howard's assertion that the 'history of graphic design is the history of form, not content, and that's what students need to learn about: form' (A. Howard, p. c., 2016), is contentious . Laranjo was also unsatisfied with the level of criticality at the RCA:

> 'The department under Dan Fern was called *Communication Art and Design* where Åbäke and Daniel Eatock were being extremely popular in design practice, and so, all those trends transferred to the design curriculum which forced graphic design's natural habitat to be the art gallery' (F. Laranjo, p. c., 2016).

This statement highlights the difference between taking an intellectual approach to design and a political or social approach. If design directs itself at the gallery it runs the risk of losing its relevance. Laranjo makes a connection between the 'uncritical' in design and the 'post-political' in democracy. It is clear that although he did not find the answers he was looking for in education, he was nevertheless able to develop his own sense of context independently, or perhaps in reaction, to this apparent lack.

The other interviews provided contrasting perspectives on this subject, Cruz and Gonçalves both described projects that dealt with political subject matter which is one level of dealing with this issue, but it was only in Laranjo's interview that this subject was really approached in detail, and importantly, Laranjo could actually give a concrete example of teaching that was itself political (or critical) in the sense that he actively attempted to create 'confrontations' in which conflicting ideologies would be 'made visible' in the classroom. Laranjo also described how the political

aspect of design can be brought into the design process itself, by mapping the logical political positions of the audience and client so that the designer can explicitly see their own relative position in the project. There is clearly room for further discussion of this issue which will be returned to further in the following chapters.

2.9.2 Confrontation as teaching strategy

Laranjo started teaching straight after graduation from the RCA and he recounts how right from the outset he intended to make the relations between design and politics evident by provoking confrontation and attempting to 'make these confrontations a productive space of debate and of production' (F. Laranjo, p. c., 2016). He relates how he builds his ideas on those of Jan Van Torn who aimed to reveal conflicting interests in design projects by finding ways to make ideology visible.

As an example of his teaching methods Laranjo describes an approach to mapping political affiliations, which could be used in practise to reveal conflict between different stakeholders. His method is to use the political compass[1], he argues that using this tool in the classroom, especially studio classes, not only sparks debate, but has direct application in the project work:

> 'All this starts to gather a productive space in which they start comparing this and applying it as a working process. So for example, if they are researching a project they would identify what is the logical dominant position of the client and they decide that they want to adopt a radical approach, what would a radical approach mean in relation to their own political beliefs and the client's?' (F. Laranjo, p. c., 2016).

Laranjo claimed that this kind of exercise in the classroom can help students to see their work differently by promoting a critical attitude and improving their understanding of what constitutes a radical position in design.

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1   A diagram that uses four poles to define the political spectrum adding an authoritarian/libertarian axis to the more conventional left/right alignment

2.9.3 Reception of overtly political teaching

I asked Laranjo how the rest of the faculty reacted to his teaching methods. He replied that there was some 'disruption', that he puts down to the conventionality of the courses where he taught and the mentality that affirms, 'that you have to learn the rules first and the basics and then you can break them and the root of everything is typography' (F. Laranjo, p. c., 2016). He points out that this approach is problematic, not least because it prepares students for an industry that is already obsolete. Laranjo believes that he created tension by going against the dominant ideology of design courses, which tend to follow a model of teachers attempting to reproduce their own approach to design, even though it may no longer be relevant.

2.10 Summary

2.10.1 Building an understanding of design

Misunderstandings about the nature of design may cause problems for learning, as do conflicting conceptions of design which can be held by both teachers or students. Design can be defined and conceptualised in a variety of ways such as problem solving or editing, or as the initiation of debate, among other possibilities. In other parts of the conversations the question of whether design should be taught through 'universal principles' that can be applied to any project was raised by Howard but criticised by Laranjo, who argued that this approach was anachronistic. Once of the issues in design education seems therefore to be finding ways to engage with or articulate inconsistencies between perspectives on the nature of design. A possible strategy to deal with this problem is suggested by one of the briefs by Gonçalves, which directly raises the meaning of design as an issue, by asking the students to define their own curriculum.

   The design process itself also appears to be a persistent issue in design education, since students struggle to adapt to this nonlinear way of working. The challenge for teachers appears to be the extent to which they intervene in design projects and guide the students, or on the other hand, allow mistakes and discoveries to happen so that students can develop their own approach.

2.10.2 Critical thinking

Teaching critical thinking is related to these issues. Design teachers want to encourage critical thinking but it is not clear how this can be achieved. Lobo suggested some strategies for stimulating debate in the classroom such as a scaffolded ideas crit at the beginning of the project, while Laranjo argued for encouraging students to develop a commitment to the culture of research.

2.10.3 The studio model

In general, the teaching described in the interviews fits the traditional studio model, consisting in essence of project based working and a final crit, although Gonçalves highlighted that this form of teaching becomes difficult with larger class sizes and that studio time is somewhat reduced because of the Bologna Process. Lobo described the most traditional form of studio based working, in which students have large studio spaces which they can access 24 hours per day. At various points in her interview the opportunities for peer learning within the informal space of the studio were highlighted. The authority of the teacher within the studio model is seen as coming from professional experience and taste as well as academic status.

2.10.4 Workshop style teaching

Workshop style teaching is a variation of studio style learning that may have benefits for teaching design because it tends to flatten hierarchy and encourage collaboration. The student-teacher dynamic can work as a barrier to learning and it seems important to find ways to address this.

A further benefit is seen as the intensity that a workshop of several days or up to a week of focussed working has in contrast to the longer projects typical of the studio model. An important feature of this format is that the workshops keep the group continually working for entire days, rather than a few timetabled hours. Gonçalves also highlighted the fact that workshops usually do not include evaluation and that this seems to have a positive effect on motivation.

2.10.5 Design and politics

Design and politics are seen as being inexorably linked, but it is unclear how this relation can be addressed in design education. Howard argued for a position that this aspect of design may be implicit but should not directly be taught, while Laranjo recounted various attempts to foreground this issue in his teaching. However common ground can be found. For example, a key insight from the interview with Howard was his insistence that design is about Moulding perceptions – it is manipulative. This is coherent with Laranjo's strategy of making the ideological positions of the designer, client or public visible. So perhaps there are ways that the difficulties between design and its political aspect can be addressed.

2.10.6 Conclusion

The interviews discussed above have introduced several of the key themes of this thesis, which relate to the challenges facing contemporary design education. It is clear that the studio model is still in use, although it is subject to many strains and stresses, and that design teachers struggle with certain shared issues such as how to define design, how to encourage students to learn their own approach to the design process, how to encourage collaboration and peer learning, how to teach critical thinking, how to deal with the political aspects of design, and how to deal with ideological and economic pressures on design education. These issues are addressed in more detail in the following chapters which discuss the history and development of the studio model.

Chapter 3

Origins and characteristics of the studio model

3.1 Introduction

In a sense, the crux of this thesis is the issue of the design studio model and whether it should be maintained, adapted or abandoned in order to meet the requirements of contemporary design education. This issue is current, with calls to move beyond studio style teaching becoming more frequent, it has been argued for example, that 'if design education is to contribute towards social change, then it needs to rid itself of the master-apprentice instructional model' (Souleles, 2017) because mimetic learning, focussing on the master's skill rather than analytical thinking is inappropriate for the demands of contemporary design education (Belluigi, 2016) and that teacher-centred aspect approaches lead to students taking a superficial approach to learning (Davies, 2002). In response to criticisms that studio style teaching is too teacher-focussed however, it could be argued that the studio model is more student-focussed than ordinary academic lecturing, it may only be a question of changing the emphasis of the teaching, and for the studio supervisor's role to become that of a critical friend (Belluigi, 2016). Before it is possible to approach these issues in any depth, it is necessary to look at the reasons behind the challenges in more detail (which is undertaken in the later chapters of this thesis) and before the studio model, or the master-apprentice model can be criticised, it is relevant to first clarify the origins, characteristics and variations of what is meant by these terms to that they can be discussed with the required clarity.

This chapter then, consists of an overview of the historical origins of design education, covering early antecedents such as the medieval guilds, master-apprentice teaching, the Renaissance academies and the 17th century Academie des Beaux-Arts in Paris which later became L 'École des Beaux-Arts,

the origin of the atelier model. Each of these diverse institutions have had an influence on the development of the studio model and it is informative to consider how assumptions and ideas from these antecedents continue to be felt in the 21st century discussions of design education.

After establishing the foundations of the studio tradition, the changes that occurred during the modern movement are described and analysed, briefly covering Romanticism, the Arts and Crafts movement, the Werkbund and of course the Bauhaus, an institution which embodied several fundamental changes in thinking about design and requires close attention due to it's influence since then. In this period, from the beginnings of the modern movement to the end of the Bauhaus, the relation between craft and mass production presented a dilemma for design, and the role of the designer moved closer to our contemporary conception, becoming more rational and eventually breaking away from the notion of designer as artist, although this was not achieved without some difficulty.

The nature of design and the role of the designer were reevaluated again in the post-war period as the more towards greater rationality in design continued and certain political issues moved towards the fore, this change was perhaps most intensely present in the period of The HfG School of Design (Hochschule für Gestaltung, HfG) which ran from its establishment in 1953 to its controversial closure in 1968. The story of this institution, which in some senses continued the legacy of the Bauhaus, also seems analogous to the break down of the utopian-rational period of Modernism into the more slippery ideologies of post-Modernism that followed. In this period, the role of design was challenged again and accordingly there are important points to be made about the formats for teaching design.

The discussion of the HfG school is crucial to even this superficial retelling of design education history, but it is also important to have an idea of what kind of teaching format continued generally in the post-war period, this is provided by a look at the shift from polytechnics and art schools into the university system, this is provided mainly by looking at the situation in the UK due to the available material, although the subject of the Bologna Process in Europe is also relevant here, in order to understand the situation in design education today. Pressure on the design studio model have increased over the last few decades due to the dominance of neoliberal policies across Europe since the 1980's through under-funding, increased student numbers, the introduction of fees, pressured which increased further since the austerity measures adopted after the financial crisis of 2008.

It has been argued (Laranjo, 2018) that these conditions have led directly to the growth in popularity of the short format workshops and summer schools, which provide further variations on the studio model of design education. The key types of short format workshops are outlined in order to bring this historical sequence up to the current day and to show how each format of design education embodies its own particular epistemology whether intentional or otherwise.

This chapter then closes with a summary of the characteristics of the studio model in order to clarify exactly what is meant by this term in the context of this thesis and each of these elements are briefly described: project based learning (PBL); tutorials; the crit; the final show; and assessment.

3.2 Master-apprentice to the atelier model

3.2.1 The Guilds

In 15th Century Europe, artistic skilled labour was carried out through the guilds, associations of artisans and merchants who controlled and oversaw the practice of a craft in a town. These guilds maintained standards and functioned as monopolies, usually comprising of all the artisans and craftsmen in a particular branch of industry or commerce in a particular town or city. ('Guild', Encyclopedia Britannica, 2018). The course of instruction completed according to the guild and the membership of the guild give professional status, citizenship, and the right to practice as an artist. It is notable, that in this era, the term 'designer' was not yet in use as a profession and an artist was not considered to be in a separate category to craftsmen, the special status of the artist as genius only developed much later. In a significant reference on this era, The Social History of Art, Hauser describes the status of the artist as being regarded as:

> 'higher-grade craftsmen and their social origins and education do not make them any different from the petit bourgeois elements of the guilds […] They are subject to the rules of the guild, and it is by no means their talent which

entitles them to practice as professional artists, but the course of instruction that completed according to guild regulations' (Hauser, 1999).

In this period then, it does not makes sense to think of separate fields of art, design, craft or even Architecture — an architect was simply a master builder. In The Art of Work, Coleman makes this point forcefully, 'The history of art is really the history of skilled work — no more, no less — and when we marvel at the products of other periods and cultures, we marvel at the achievements of a tradition of skilled work, not "art".' (Coleman, 1988). Accordingly, the education of an artist followed the same format regardless of the particular skills being learnt, the only difference was the expertise of the master:

> 'Their [artists] education is based on the same principle as ordinary craftsmen, they are trained not in schools but in workshops, and their instruction is practical, not theoretical. After having acquired the rudiments of reading, writing and arithmetic, they are apprenticed to a master while still children and they usually spend many years with him.' (Hauser, 1999, p. 46).

Variation in the standard of the training would depend on the skill of the master and their ability in passing on these skills, in the early Renaissance some workshop leaders started to introduce more individual teaching methods and gain a reputation for teaching as well as artists, attracting more applicants, from whom they could select the best apprentices.

During the medieval and early Renaissance period it was necessary to have official status as an artisan in order to practice professionally and this permission could only be given by a guild, after the apprentice had completed the required time as an apprentice. However, in 1590 a legal case took place which significantly loosened the guild's grip on the arts.

> 'The outcome of the proceedings of the Genoese painters' guild against the painter Giovanni Battista Poggi, who was to be prevented from practicing his art in Genoa, because he had not undergone the prescribed seven-years course of instruction there, is of symptomatic importance. The year 1590, in which this case took place and which brought the fundamental decision that the guild statutes were not binding on artists who did not keep an open shop, brings to a close a development of nearly two hundred years.' (Hauser, 1999, p. 50).

The artists' studios, even those of the painters, took on varied work and many minor orders of a purely technical nature. Hauser (1999) lists items that were produced in the workshop of the painter Neri di Bicci as including, armorial bearings, flags, shop signs, tarsia-works, painted wood-carvings, patterns for carpet weavers and embroiderers, decorative objects for festive occasions among other things, suggesting that the workshops would turn their hands to producing whatever was required. However, things were changing at this time, by the period of Michelangelo mere handicraft would no longer be considered compatible with the self-respect of an artist and the great separation between art and craft began — and with it, the separation between theory and practice. Coleman (1988) has remarked on the irony that the Renaissance should have codified the separation between hand and brain which has become endemic in culture, expanding the gap between intellectual and manual skill.

In summary, the master-apprentice teaching model as used by the guilds was essentially practical in nature, focussed purely on the ability to make goods. It was a mimetic teaching model: the master taught by demonstrating the 'correct' and specific way of practicing skilful work; the apprentice learnt by imitating the master. This model may now be considered obsolete for contemporary design education, but is it has been argued that elements of this model may still have some value and that, 'the processes of enculturation and epistemological access inherent within this tradition should perhaps not be overlooked' (Belluigi, 2016, p. 23). The greatest attribute of this model then was the emphasis on the high standard of the outcome of the work and the direct way of passing on these skills.

3.2.2 The academies

In the early 16th century the academies begin to be founded initially with a liberal purpose: freeing the artists from the obligation of belonging to a guild and the restrictions of the guild system. The academies were created to replace the guilds as both corporations and teaching institutions but, 'they turned out to be, after all, nothing but another form of the old strait-laced system they were supposed to be replacing' (Hauser, 1999). The crucial change was the idea of 'a canon of education, which, though it was only realised in France in the next period, had it's origins here' (Hauser, 1999, p. 118). Although concrete ideas existed about the tasks and proper methods of an art school, change could only come slowly, because the old craft teaching methods were still so deeply rooted.

The immediate changes were in the organisational structure and scale. In the Accademia del Disegno in Florence, founded at the instigation of Giorgio Vasari, by Grand Duke Cosimo I in 1561, 36 artists were invited to be members and Michelangelo headed the institution along with the Duke. Theoretical subjects were introduced such as geometry, perspective and anatomy. In the Roman academy of St. Luke, Zuccari stressed the importance of lectures and discussions on questions of art theory. There was a distinct change from the practice-based learning craft skills in the master-apprentice model, to the introduction of the idea of theoretical knowledge that could be separated from practice.

Academies became more and more powerful and exclusive, they became centres of consultation on questions such as the setting of works of art or of building planning. Accordingly, the status of the artist was raised and differentiated from that of the craftsman, academic status soon became a means of raising some artists, namely the more culturally and materially independent, above the level of the uncultured and poorer elements and served to bridge the gap between productive working artist and the cultured layman (Hauser, 1999). In effect the artists begin to mingle with the aristocracy. Tellingly, the training in the academy was also intended to teach good principles and taste (Jewison, 2015), which is coherent with this elitist aspect.

In the 17th century the academies reached their apogee when Le Brun headed both the Rome and Paris academies and controlled both the production and validation of art, so far from liberating art and design from the control of the guilds, the founding of the academies let to an even more powerful monopoly, an arrangement that was influential across Europe where most academies were run on the French model established by Charles Le Brun (1619—90) on behalf of his master Louis XIV (Llewellyn, 2015). The model of the academy was widespread, and in 1768, at the behest of George III, the Royal Academy of the Arts became the first regular school of art in England (Souleles, 2013). By this time there were already fifty-one academies of art in existence in Europe, primarily in Italy, France and Germany, but also in Spain, the Netherlands, Switzerland and Denmark (Jewson, 2015). By this stage the artist was a figure ever more distanced from practical work, the image of the painter at this time was of 'an intellectual whose manual skills are discreetly hidden, who has attained high social status, a professional whose education is based on carefully organised training (centred on drawing)' (Llewellyn, 2015, p. 16). Observational drawing was the main activity of students, consisting of around 30 hours a week (Souleles, 2003), an activity which strongly differed from the main activity in the guilds: making. This shift from the artist as distanced

observer, rather than practical maker, is clearly relevant to the formation of the contemporary roles of designers and architects as planners and decision makers rather than as builders and makers.

Inevitably perhaps, the exclusivity of the academies could not be maintained, and the aristocratic institution of the academy could not withstand the upheavals of the French Revolution, which began in 1789. The Legislative Assembly abolished the privileges of the academy in 1791 and two years later the academy was completely suppressed in France:

> '...to begin with, merely as owner of the monopoly of exhibition, it continued to exercise its monopoly on instruction for some time and thereby preserved much of its influence. Soon, however, its place was taken by the "Technical School for Painting and Sculpture" and art instruction began to be given in private schools and evening classes as well. In addition drawing instruction was also introduced into the curriculum of the high schools (écoles centrales)' (Hauser, 1999, p. 151).

This era of democratisation included the establishment of the first art and design schools in Europe, motivated to a large extent by economic concerns. In the UK for example, these included the Government School of Design in London in 1837 (which would be given its current name, The Royal College of Art in 1896), The Birmingham Government School of Design in 1843, Leicester School of Art in 1869 and The Slade School of Art in 1871 (Jewison, 2015).

The era of the academies marked a change in art education mainly in the sense that it created a two-tier system, the high-level of fine arts (painting, sculpture, Architecture, planning) separated from the crafts. An 'atelier model', as we might call it, to distinguish from the modern studio model of design education would only be formalised in the 19th century within a later version of the academy, L'École des Beaux-Arts in Paris.

3.2.3 L'École des Beaux-Arts

Despite the attempts to democratise culture that occurred during the revolutionary period in France, the influence of the idea of the academy would continue, and the Académie des Beaux-Arts in Paris would itself have a direct influence on the development of the design studio model. In 1863, this institution changed its name to L'École des Beaux-Arts after it was granted independence

from the government, and with the introduction of two specific curriculums, 'Academy of Painting and Sculpture' and 'Academy of Architecture', a formal architectural model of education developed for the first time (Koch, 2002). This model was characterised by rationalism with a separation from context and an emphasis on self-sacrifice. It has been argued that the instructional methods used in the Architecture design studio have inherited the historical tradition of the École des Beaux-Arts, (Oh, Ishizaki, Gross & Do, 2012) and that this model continues to be perpetuated in design education:

> 'Studio culture pedagogy originates, in part, from 18th and 19th century French rationalism, which held that through the analysis of precedent and the application of reason we could arrive at a consensus about the truth in a given situation. This rationalism underlays the teaching methods of the École des Beaux Arts […] Many of the features of today's design studio — the unquestioned authority of the critic, the long hours, the focus on schematic solutions, the rare discussion of users or clients — were begotten by that 150 year-old system' (Thomas Fisher cited in Koch, 2002, p. 5).

Koch has pointed out that this model includes a mythic idea of the architect and that this myth is the source of some undesirable ideas that students hold about design, that include but are not limited to, a belief in the necessity for personal artistic struggle and self-sacrifice; that the best design ideas only come in the middle of the night; that creative energy only comes from the pressure of deadlines; and that it is possible to learn about complex social and cultural issues while sitting at a studio desk (Koch, 2002). This classic studio model also relies on a form of teaching that is dependent almost exclusively on professional experience that is passed on intuitively (Schön, 1985) and not usually articulated theoretically (Oh, Y. et al., 2012).

In the Beaux Arts system it is possible to recognise many characteristics that are still in use in the modern design studio model. This system consisted of the 'design problem' assigned to the student early in the term and carefully developed under close tutelage. It began with an 'esquisse' (a sketch) and ended 'en charrette' (charrette, refers to the carts in which the finished drawings were placed at the deadline hour) (Lackey, 1999). The term *charrette* is still used to refer to an intense period of work on a design project just before a deadline. Projects were judged by a jury of professors and guest architects, usually without the students present (Lackey, 1999). This description differs from the modern design studio model most notably in that nowadays the student would

always be present in a crit. It is also noteworthy that the criteria for assessment in this model was purely the 'good taste' of the jury, which did not require theoretical justification.

In the atelier model there is a significant difference to the master-apprentice model: the focus shifts from the work of the master, to the work of the student, which becomes the main medium of learning (Belluigi, 2016) and the main activity is no longer focused on applied skill in manual craft making, but rather on observational drawing (Souleles, 2013) which is considered the most important skill.

3.3 Arts and Crafts to the Werkbund

3.3.1 The Arts and Crafts Movement

The French Revolution was already mentioned in the previous section as a moment when the cultural monopoly of the academies began to be dismantled in order for a more democratic system of art and design education to emerge. While this political upheaval was taking place, a parallel and perhaps even more significant upheaval was underway in Britain: the Industrial Revolution. This period the created conditions that led to the great ruptures in art and design in the 20th century, with the formation of the various movements that constitute Modernism. While this thesis is clearly not the place to rehash the history of the last century's art movements, it is relevant to summarise the most essential changes that occurred in design education through this period leading up to the founding of the Bauhaus and these changes are closely linked to the initiation of Modernism.

The beginning of Modernism as a tendency could be considered to have started at various moments, but from the point of view of this discussion it is useful to consider Romanticism a logical place to start, after our look at the academies. Romanticism rejected Classicism in favour of the glorification of the medieval and was a direct reaction to the Industrial Revolution. The ideas of Romanticism would influence two crucial figures in the development of design education John Ruskin and William Morris. Ruskin was an art critic who wrote on the subject of Architecture and argued in favour of gothic (medieval) rather

than classical ornament, the rational for which being that gothic ornament was the result of craftsmanship rather than design. Essentially, what is crucial about Ruskin's ideas for this discussion about design education, is that he wanted to address and rectify the division that had occurred between craft and fine art during the Renaissance. This may seem like a step backwards, but as we shall see, that emblematic school of Modernism that is the Bauhaus is closely connected with this idea of a return to craft.

Importantly, Ruskin saw craft as an antidote to the division of labour that had occurred with the Industrial Revolution in a vision that both addresses the problems of alienation of the individual and has an emancipative aspect:

'We want one man to be always thinking, and another to be always working, and we call one a gentleman, and the other an operative; whereas the workman ought often to be thinking, and the thinker often to be working, and both should be gentlemen, in the best sense. As it is, we make both ungentle, the one envying, the other despising, his brother; and the mass of society is made up of morbid thinkers, and miserable workers. Now it is only by labour that thought can be made healthy, and only by thought that labour can be made happy, and the two cannot be separated with impunity. It would be well if all of us were good handicraftsmen in some kind' (Ruskin, 1854, p. 29).

Thus, craft is seen as a way of making healing a society that we can infer, in Ruskin's view, was made ill by the developments of the Industrial Revolution.

The other crucial figure in the beginning of Modernism that had a significant influence on the development of design education was William Morris, who began to question the idea that design (especially Architecture) consisted mainly of ornament, opening up the issue of the extent and importance of Design. Along with Ruskin and the architect Augustus Pugin, William Morris was one of the most influential figures in the Art and Crafts movement, which continued this idea of linking a return to craft with an economic and social reform.

In his book *Pioneers of modern design, William Morris to Walter Gropius*, Nikolaus Pevsner recounts how, towards the end of the 19th century, architectural debate would centre on the choice between Gothic or Palladian styles: this was design reduced absolutely to styling, and worse than this, reduced to styles already defined that were simply interchangeable options; a matter of taste. In this era, mass produced objects were already abundant, but

were of poor quality, using 'sham materials and sham techniques' (Pevsner 1975). Skilled craftsmanship was being replaced by mechanization, which nevertheless produced overly ornamented, crude objects. In essence, Morris took issue with a retrogressive theory of art that had combined with a situation in which technology had destabilised traditional skilled production, and sought to set out on a new path that would reassert the necessity for solid, high quality, well produced objects. Morris founded a company that could produce exactly what he himself found lacking. The firm of *Morris, Marshall & Faulkner, Fine Art Workmen in Painting, Carving, Furniture, and the Metals* was established in 1861, an event that arguably marked the beginning of a new era in Western Art (Pevsner, 1975).

The aspects of Morris's thought that are so crucial to the modern movement, were that he was concerned with the social condition of art and the life quality of the crafts people who would produce it, and that he aimed to produce high quality products that would be part of everyday life. It is this aim to prioritise the utility of design and the social value of material production that continues right through Modernism. As Pevsner has it, 'we owe it to him that a man's dwelling-house has once more become a worthy object of the architect's thought, and a chair, a wallpaper, or a vase a worthy object of the artist's imagination' (Pevsner, 1975, p. 23).

However, despite these apparently progressive ideas, both Morris and Ruskin held views of aesthetics and design that were essentially backwards looking: they lamented the lost culture of guilds and medieval forms of production, but they did not have a vision of what could be an alternative to their own milieu. The dilemma was embodied in the production methods of Morris's firm which, since it insisted on handicrafts in his workshops and resisted mechanization, all his firm could produce was expensive goods that were ultimately exclusive art destined to serve the luxury of the rich (Pevsner, 1975).

The next crucial step in breaking this deadlock came when Charles Robert Ashbee, after following the doctrine of Morris and attempting to run a school based on similar ideas (the Guild and School of Handicraft, founded in 1888) and struggling to compete with modern methods of manufacturing, concluded that it was necessary to accept the machine, and by 1910 he would write that, 'Modern civilisation rests on machinery, and no system for the encouragement or the endowment of the teaching of the arts can be sound that does not recognise this' (Ashbee cited in Pevsner, 1975, p. 25). The dilemma of this period then, became the question of how to reconcile the high standards (and costs) associated with craftsmanship with demands of mass production. This

situation then provides a difficult challenge for the atelier model of learning design — how could an apprentice-master relation work when the aim was not to imitate existing artefacts and techniques but to *make it new*.

3.3.2 The modern aesthetic

Morris and others from the Arts and Crafts movements emphasised the practice of craft skills, but craft making could only result in expensive luxury products and could not therefore respond to the challenges of industrialisation. In order for design education to become more forward looking, it needed an ideology that embraced the future rather than looking for an approach in the ideas of the past. There were however, several architects who were beginning to demonstrate a new sensibility and began to admire the machine and actively imagine the possible positive consequences for Architecture and design. Pevsner (1975) lists five key figures; Otto Wagner, Adolf Loos, Louis Sullivan, Frank Lloyd Wright and Henri van de Velde. A picture of how the ideas of the modern movement were starting to take shape can be suggested by the following brief summary of the writing of these architects but another architect must be added to this list, Herman Muthesius, not only because his ideas contribute to the emerging image of the modern movement, but also because he was a key figure in the Werkbund and an important influence on Gropius and the development of the Bauhaus (Wick, 2000).

From the rejection of Classicism in the Arts and Crafts movement, all forms of historical styles were becoming questionable, Loos rejected all forms of ornamentation in his article of 1908, *Ornament and Crime*, arguing that ornament was a waste of labour that should only be tolerated if it uplifted the craftsman, but that ultimately, 'freedom from ornament is a sign of spiritual strength' (Loos cited in Conrads, 1971, p. 19). Sullivan, who had adopted a functional aesthetic along with the new materials and techniques that allowed for him to design some of the first skyscrapers, coined the notorious phrase *form follows function*, in an article advocating the modern style building that was beginning to emerge:

> 'Whether it be the sweeping eagle in his flight, or the open apple-blossom, the toiling workhorse, the blithe swan, the branching oak, the winding stream at its base, the drifting clouds, over all the coursing sun, form ever follows function, and this is the law. Where function does not change form does

not change. The granite rocks, the ever-brooding hills, remain for ages; the lightning lives, comes into shape, and dies in a twinkling' (Sullivan, 1896, p. 5).

It seems curious in retrospect, to note the invocation of nature by Sullivan, which makes modern Architecture seem an inevitable force. Wright too used a metaphor from nature to describe his approach to design, by calling it 'Organic Architecture', emphasising the interrelatedness of the spaces in his building, looking for an essential unity, 'one great thing instead of a quarrelling of little things' (Wright cited in Conrads, 1971, p. 25). Wright exulted the machine age, claiming in a lecture in 1901 for example, that the machine had dealt art a 'death blow' (Wright cited in Coles, & Reed, 1961, p. 52) and argued that design should give up the 'wearisome struggle to make things seem what they are not, and can never be' (Wright cited in Coles, & Reed, 1961, p. 53). Another architect of the time, Otto Wagner expressed similar ideas to Wright's, writing that design should abandon historical styles, and 'must correspond to the new materials and demands of the present if they are to suit modern man' (Wagner, 1902, p. 78). His views highlight the utopian vision that is inherent to the modern movement, continuing to assert that design should, 'illustrate our own better, democratic, self-confident, ideal nature and take into account man's colossal technical and scientific achievements, as well as his thoroughly practical tendency' (Wagner, 1902, p. 78). This plea for scientific rationality in Architecture marked a shift away from the artistic view of design, demanding a more objective and logical approach. Van de Velde stated this idea forcefully by demanding, 'thou shalt comprehend the form and construction of all objects only in the sense of their strictest, elementary logic and justification for their existence' (Cited in Conrads, 1971, p. 18). Accordingly, design education would need to be radically changed to deal with this new ideology.

A summary of the sensibility of the modern movement can be found in the writing's of Muthesius which show that Modernism is inextricably linked to technical rationality, using, as he does, criteria such as 'scientific objectivity':

'If we wish to seek a new style — the style of our time — its characteristic features are to be found much more in those modern creations that truly serve our newly established needs and that have absolutely no relation to the old formalities of Architecture: in our railway terminals and exhibition buildings, in very large meeting halls, and further, in the general tectonic realm, in our large bridges, steamships, railway cars, bicycles, and the like. It is precisely here that we see embodied truly modern ideas and new

principles of design that demand our attention. Here we notice a rigorous, one might say scientific objectivity [Sachlichkeit], an abstention from all superficial forms of decoration, a design strictly following the purpose that the work should serve' (Muthesius, 1994, p. 13).

It has been argued that the conservative reaction to Muthesius's ideas directly led directly to the founding of the German Werkbund in Munich in 1907:

'His postulates and arguments met with a scathing rejection from the conservative Trade Association of Workers in the Arts and Crafts (an association of manufacturer), which demanded that the Emperor dismiss him as an advisor on arts and crafts schools in the State Department for Arts and Crafts in Berlin. This episode provided the external motivation for several progressively minded manufacturers, artists, and writers to join together in an umbrella organization for good design, which led to the founding the German Werkbund in Munich in 1907.' (Wick, 2000, p. 25)

The founding of the Werkbund was an important development because it meant a further clarification of the ideas of the modern movement and brought them to the public through conferences and debate.

3.3.3 The Werkbund

The Werkbund was an association of manufacturers, architects, artists and writers formed with the aim of producing high quality industrial products using flawless, genuine materials and the attainment of an organic whole (Pevsner, 1975). The Werkbund was not opposed to industrialisation but rather aimed to use the machine with an aim to improve quality rather than only reduce costs. Other European countries followed Germany in founding similar organisations, the Austrian Werkbund in 1910, the Design and Industries Association in England in 1915, the Schweizerischer Werkbund (Swiss Werkbund) in 1913 for example. ('Deutscher Werkbund', n.d.). In Sweden the Svenska Slöjdföreningen (The Swedish Society of Crafts and Design), had been founded in 1845 to safeguard the quality of the Swedish crafts industry but was also influenced by the wave of modernisation to adopt a more utilitarian approach in this period, taking on the slogan 'Beautiful Everyday Goods' in 1919, ('Svensk Form: History', n.d.). The true occasion of the birth

of the Deutscher Werkbund (German Arts and Crafts Society) was the Third
German Exhibition of Applied Art in Dresden in 1905 which was the stimulus
for the founding of the society (Conrads, 1971). Muthesius set out the aims
of the society in a programme that lamented the brutalisation of forms and
the epoch's lack of culture, arguing that the progress of the Arts and Crafts
movement was not enough to deal with these problems and of the true task of
the Werkbund, he claimed,

> 'Far more than the material aspect is the spiritual; higher than purpose,
> material, stands form. Purpose, material, and technique might be beyond
> criticism, yet without from we should still be living in a crude and
> brutal world […] without a total respect for form, culture is unthinkable'
> (Muthesius cited in Conrads, 1971, p. 27).

An internal conflict ran through both the output and the discussions of the
Werkbund, this conflict was apparent in the work produced by its members which
ranged from the neoclassicism of Behrens to the austere objectivity of Gropius
and Meyers (Conrads, 1971). This conflict was voiced publicly in the Werkbund
Conference in Cologne in 1914 in a debate between Muthesius who proclaimed
standardisation, and van de Velde who advanced the contrary thesis of the artist
as creative individualist (Conrads, 1971). Muthesius argued for the development of
'universally valid, unfailing good taste' (Muthesius cited in Conrads, 1971, p. 28),
he referred to the need for Germany to present a distinct and standardised style in
order to present its design and Architecture to the rest of the world. Van de Velde,
however, did not accept this and argued for diversity, claiming that the artist in the
Werkbund should reject the creation of an approved style and canon and would
protest against any attempts at imposition. He argued that a canon and style would
only emerge through a whole period of endeavours and that trying to define the
style too early would be 'to destroy the embryo in the egg' (Van de Velde cited in
Conrads, 1971, p. 30). His thought at this stage was still closely linked to the aims
of the Arts and Crafts movement, since he argued for the cultivation of 'manual
skill, joy and the belief in the beauty of highly differentiated execution' and an
idea of the designer as artist, citing the 'gifts of invention, or brilliant personal
brainwaves' (Van de Velde cited in Conrads, 1971, p. 30). This conflict between
the concern for individual approaches to design and cold-headed rationality would
continue to play out at the Bauhaus (Wick, 2000) and in many ways continues
even now in discussions about the value of intuitive approaches versus evidence
based design, inevitably this issue that must be returned to later in the thesis.

In summary, the period of the start of the Arts and Crafts movement meant two important challenges to the classical style of design education that had developed in the academies. First, there was an aim to return to craftsmanship, for designers to better understand materials and techniques of making, while on the other hand, a modern sensibility was emerging that recognised the need to embrace the machine age and the rational and standardising approaches that this suggests. Both the aim to return to craft, and to embrace modernity, though seemingly incompatible, reflected a need for design to reinvent itself in terms of a practice and profession and also in terms of creating a new aesthetic. It is important to highlight the importance that was given in these debates to improving society and the spiritual condition of its members. In the following section we will see how these themes were manifested at the Bauhaus.

3.4 The Bauhaus

3.4.1 Introduction

This section examines the main factors that contributed to the development of the Bauhaus model of design education with the aim of clarifying the influence that this institution has had on contemporary design education and to show how Bauhaus pedagogy constitutes a major step in the development of design education. However, it should be recognised that other similar initiatives started around the same, such as the educational endeavours of the various werkbunds founded in Europe, or the Vkhutemas, the Russian state art and technical school founded in 1920 in Moscow, which was similar to the Bauhaus in its intent, organization and scope (Takayasu, 2017). Some care should also be taken with defining Bauhaus pedagogy too simply. Wick pointed out in his extremely thorough book, *Teaching at the Bauhaus* (to which this section refers to extensively) that there is a persistent myth about the Bauhaus that everything was ideologically aligned and based on a utilitarian and instrumental conception of design, in spite of the emancipative and nonrational pedagogical practices of individual teachers (Wick, 2000). So, in fact, it is not correct to say there was a definitive model of Bauhaus education, yet there is no question that the Bauhaus has been extremely

influential, it seems necessary therefore to unpack some of the different ideas that were developed at this institution.

It has been argued that education at the Bauhaus was 'hardly monolithic in orientation, but rather a series of positions, varying and sometimes at variance with one another' (Bergdoll and Dickerman, 2009, p. 15), and Bauhaus pedagogy was too richly faceted — and the pedagogical practices of the artist-instructors active at the Bauhaus too varied — for it to make sense to search out the educational theory of the Bauhaus. To do so would be to reduce a complex whole to an overly simple outline (Wick, 2000). There are however several tendencies in the Bauhaus teaching that can be defined, such as projects that dealt with abstract formal exercises (unlike design teaching at the academies which focussed essentially on applied design projects). The development of an abstract visual language and a mastery of materials developed through craft-working are perhaps the most enduring elements of Bauhaus pedagogy, while the *Vorkurs* meaning preapprentiship or basic course — which all would-be designers, artists and architects had to complete before specialising — was the curriculum innovation that has been most widely applied, being the basis of the *Foundation Year* that students in the UK usually complete before entering degree courses in Art and Design, to give but one example. A mention of these more well-known aspects of Bauhaus pedagogy provides a hint of how the teaching developed into a recognisable format, but more detail is required to understand how the return to craftsmanship was reconciled with the goals and ideals of Modernism and there are differences in the pedagogies of the Bauhaus teachers that can provide useful insights for this chapter, as we build up a more nuanced, albeit brief, description of Bauhaus pedagogy.

The institution itself moved through several phases in which these pedagogies developed, but within these phases individual teachers practiced in quite distinct ways. One of the crucial factors in the enduring legacy of the Bauhaus depends upon these remarkable artists and designers, 'plucked from the crucible of the avant-garde' (Bergdoll and Dickerman, 2009, p. 15): Herbert Bayer, Marianne Brandt, Lyonel Feininger, Johannes Itten, Wassily Kandinsky, Paul Klee, László Moholy-Nagy, Hannes Meyer, Oskar Schlemmer, Joost Schmidt and so on. Clearly, one would not expect such a group to share a universal approach to design education, so it is important to distinguish the ideas of individuals in the Bauhaus from what is now understood as Bauhaus pedagogy, although of course, some of the faculty influenced the received understanding of the Bauhaus more than others, due in part perhaps, to the fact that certain teachers went on to teach in the United States, raising their

profile significantly (Albers, Gropius, Moholy-Nagy, van der Rohe) or left a more influential published legacy, Johannes Itten's ideas for example may easily be mistaken as the archetypal 'Bauhaus Pedagogy', while in fact he was often in conflict with Gropius (Wick, 2000).

3.4.2 Conceptual orientation of the Bauhaus

In retrospect, the Bauhaus may seem to exemplify radical Modernism, as was claimed afterwards, 'What is the Bauhaus? The Bauhaus is an answer to the question: how can the artist be trained to take his place in the machine age' (Bayer, Gropius and Gropius, 1938, inside cover) but at the moment of it's founding, this intention was not so clearly defined. The Bauhaus manifesto has been described as 'Janus-faced' (Haxthausen, 2009) because on the one hand it is associated with progress and modernity but on the other it harks back to a back to a romantically idealised medieval past. The manifesto claims a futuristic mission, 'let us desire, conceive, and create the new structure of the future [...] like the crystal symbol of a new faith', while simultaneously demanding a return to craft, 'let us then create a new guild of craftsmen without the class distinctions that raise an arrogant barrier between craftsman and artist!' (Gropius cited in Wingler, 1993, p. 31). Its contradictions in terms of approach can also be seen to be encoded in the manifesto, the phrase 'Avoidance of all rigidity; priority of creativity; freedom of individuality, but strict study discipline' (Gropius cited in Wingler, 1993, p. 32) summarises neatly the dilemma of how to unite the freedom of art with the rigour of craft.

The goal of the Bauhaus was to reunite painting, sculpture, and Architecture in the longed for *Einheitskunstwerk* (single unified work) or the *Gesamtkunstwerk* (total work of art) and this Gropius aimed to achieve by following Ruskin and Morris in reviving the lost tradition of manual craft: 'The old schools of art […] must be merged once more with the workshop […] the school is the servant of the workshop, and will one day be absorbed in it.' (Gropius cited in Wingler, 1993, p. 31). It is not a coincidence that Gropius used a wood cut of a Gothic cathedral to illustrate the Bauhaus manifesto of 1919, this building is a symbol of the achievements of the medieval guilds, and so refers to an earlier era of skilled hand work. Structurally, the curriculum also drew more on the tradition of the guilds than of the academy: 'the Bauhaus school was in many ways an extension of the apprentice system, in which students gained mastery of certain technical skills in several disciplines,

obtained aesthetic training in applying these skills in the age of modernity, and required to pass journeyman tests to obtain cards for various disciplines in order to have an employable skill when graduating' (Lackey, 1999, p. 3). So while Gropius presented the aim of the Bauhaus as creating the new buildings of the future, the intention was not to break completely with the past, but to draw upon aspects of the preindustrial, pre-academy ways of working in order to move forwards and to use art itself as an instrument of cultural and social regeneration (Wick, 2000).

As covered in the previous section, through the discussions between Muthesius and van de Velde, the aim to modernise and the urge to draw upon the medieval period were not necessarily compatible, and at the Bauhaus this dilemma continued. It has been argued that the basic conflict between the idea of free artistic expression and the requirements of mass production pervaded the entire history of the Bauhaus (Wick, 2000). This tension was particularly apparent between the outlooks of Gropius and Itten. Itten's outlook was more individualistic and expressionistic, while Gropius had a vision for the Bauhaus that was more practical and utilitarian. Itten was a devoted follower of Mazdaznan, a mystical branch of Zoroastrianism and did not separate his religious beliefs from his teaching which contributed to his eccentric, cult-like persona. This was problematic for Gropius, who wanted to ground design pedagogy in a more pragmatic socioeconomic climate, a view he expressed by stating that 'the Bauhaus could become a haven for eccentrics if it were to lose contact with the work and the working methods of the outside world. Its responsibility consists in educating people to recognise the basic nature of the world in which they live, and in combining their knowledge with their imagination so to be able to create typical forms that symbolise that world' (Gropius cited in Wingler, 1993, p. 51).

This dilemma between the expressionistic and the pragmatic can be perhaps be better understood, as Findeli has pointed out, as an attempt not only to reconcile art and technology, but to implement a threefold technology/art/science structure (Findeli, 2001). Aims such as making 'an effort to combine the greatest possible standardisation with the greatest possible variation of form' (Bayer, Gropius, and Gropius, 1938, p. 30) are obviously difficult to resolve. One may wonder if this tension is a characteristic of design, and indeed this dilemma can be detected in discussions of the purpose of design education even now, as well shall see in the following chapters of this thesis. What is certain is that Gropius wanted to direct the Bauhaus at concrete problems, which should take precedence over the development of the

individual artist: 'what is important then is to combine the creative activity of the individual with the broad practical work of the world!' (Gropius cited in Wingler, 1993, p. 51).

3.4.3 The Vorkurs

The backbone of the pedagogical system of the Bauhaus was the *Vorkurs,* a 6 month long period of work originally developed by Itten and Gropius (and developed further by Albers and Moholy-Nagy). The basic course was intended to offer an introduction to issues of colour, form, and materials considered fundamental to all visual expression, this preliminary course can be said to have erased the boundaries between craft and fine-art education (Bergdoll and Dickerman, 2009). There was a clear aim to focus on definite principles and skills that could be shown to work in practice, which follows one of the most crucial ideas that featured as founding principle of the Bauhaus: the notion that art cannot be taught, but techniques from the crafts could (Wick, 2000). By dealing with the elements of visual design separate from context, the Vorkurs broke with the project based learning structure of the academies, in favour of an analytic, formal approach was a major shift in design teaching. A key contribution of Itten was to focus on abstract visual relations:

> 'The bulk of Itten's preliminary course consisted of exercises in which students explored the effects of these contrasts in abstract compositions using a limited range of basic forms (the circle, the square, the triangle). Collages and assemblages of found scraps scavenged from drawers and workshop floors, charcoal drawings with marks of varying intensities, and wood and plaster reliefs experimenting with texture and three-dimensional form proliferated' (Bergdoll and Dickerman, 2009, p. 13).

The importance of composition and formal relations between elements was brought to fore, notably by excluding any form of content or context:

> 'Itten's basic pedagogical premise, [was] a type of radical formalism at a moment when Modernism's embrace of abstraction was still new: all art could be understood as a series of oppositions, of colour, texture, material, or graphic mark' (Bergdoll and Dickerman, 2009, p. 17).

Moholy-Nagy built upon Itenn's work, by treating the principles of art rationally, an approach he developed by emphasising language. He made an effort to establish terminology to distinguish between the appearance of various materials and to define these terms precisely (Wick, 2000). This approach of addressing the language of design as an issue to be worked with gave his approach to education an analytical character. After defining the terms, *Struktur* (structure), *Textur* (texture), and *Faktur* (surface aspect) he used these categories as a way to devise and organise practical exercises in the classroom (Wick, 2000). We should recognise then, that a rational approach to teaching design must not only deal with practical formal exercises, but must also establish and define ways of talking and writing about design.

It should also be noted that the *Vorkurs* was interdisciplinary in nature (within the broad field of design in general), since all students needed to complete it before specialising. The course suggested a permeability of disciplines, in which designers should feel comfortable crossing fields, as Wick explains, discussing the pedagogy of Albers, 'it was a central pedagogical goal of Josef Albers, especially within the preliminary course, to pass along to his students something of the spirit of versatility that was so characteristic of the Bauhaus as a whole.' (Wick, 2000, p. 172). The *Vorkhus* provides an example of interdisciplinary teaching, to the extent that it was concerned with teaching fundamental principles that could be applied across all art and design disciplines.

3.4.4 The workshops

Once the basic course was completed, the students moved on to the specialised workshops, each with its own 'work-master', a master craftsman, and led by a 'form-master', an artist. However this partnership was unequal, since the masters of craft were excluded from decision making powers, unlike the masters of form. The workshops were organised as followed: printing, ceramics, stone sculpture, metal, mural painting, glass painting, cabinet making (later renamed 'furniture' workshop), weaving, stage (design) and bookbinding (Wick, 2000). These workshops imitated the medieval master-apprentice tradition to an extent, but the inclusion of the two masters in this teaching format, meant a richer experience for the students; exposure to the radical ideas of the artists alongside the deep knowledge of materials and skills of the craft masters. In addition, classes were taught in 'non-artistic' disciplines such as mathematics and building materials ('Teaching at the Bauhaus', n.d.).

Perhaps what was most important about the teaching of craft skills at the Bauhaus was that they were not treated as a purely mimetic activity with the aim of producing craftsmen, but instead an understanding of materials and techniques was seen as a necessary basis for innovation. The teaching of Albers for example, focussed on open ended experimentation rather than learning through imitation"hinders creation and invention"' (Wick, 2000, p. 174). It can be argued that workshops helped to stabilise the Bauhaus, by providing training aimed at the acquisition of specific technical/artisanal and artistic/design abilities in the form of practical work with concrete tasks, some of which had the explicit character of projects (Wick, 2000).

Perhaps surprisingly, there was officially no teaching of Architecture until 1927 when Hans Meyer took over as director. Previously, the only exposure to Architecture training was the opportunity some students were given of participating in Gropius's building projects. In the period between 1923 and 1931 however, a focus on 'goal-orientated tasks' took precedence, some of which were commissions from industry (Wick, 2000). Practical design solutions were produced, of which some went into actual commercial production, gaining another source of income for the school.

3.4.5 From craft to technology

Bauhaus pedagogy was not a fixed phenomena and it developed through several phases. After the initial founding period, already discussed briefly above, it became apparent that further change was needed. In 1921-22, for example, Theo van Doesburg visited Weimar several times, giving private seminars on design, which were attended by members of the Bauhaus. Wick reports that in these seminars van Doesburg:

> '...sharply criticised the expressionist tendencies and the production of individual works of art at the Bauhaus and by recalling the original intentions of an artistic and social synthesis, of which he could find no trace, van Doesburg's contribution to the clarification of the school's self perception and the determination of a new course was by no means trivial' (Wick, 2000, p. 38).

A crucial step towards further change came with the departure of Itten in 1923. He was a controversial figure at the Bauhaus, and his ideas were often at odds

with those of Gropius, creating an untenable situation which had ultimately led to his resignation in 1922 (Wick, 2000). When Itten left he was replaced by Moholy-Nagy and the Bauhaus entered a phase of consolidation in which the functionalism, economy of means, and the practical application of abstract principles, for which the school is now known became dominant. Unlike many a socialist romantic of the 19th century, Moholy-Nagy was not thinking of eliminating the system of production of industrial society but rather of humanising it and he emphatically included technology in his theoretical conception and his educational program (Wick, 2000). That Moholy-Nagy's thinking was far removed from Gropius and Itten's earlier preoccupations with 'manual craft', can be illustrated by this anecdote about Moholy-Nagy's 'telephone paintings':

> 'In 1922, just before Moholy assumed his position at the Bauhaus (and perhaps because of his precocious appointment), in order to warn/challenge his prospective colleagues, he "ordered" five paintings (two of which have since been lost) of porcelain enamel on steel, identical in pattern but different in size, from a sign manufacturer by telephoning instructions to a factory supervisor — an innovation that at first strikes us as a Cagean procedure designed to produce and unprecedented, "chance" result; however, since both Moholy and the supervisor were working from the same graph paper and the same colour chart, the experimental aim was not at all to create aleatory art but to provide the existence of objective visual values and to emphasise the artistic primacy of conception — two points that, together with procedure, caused considerable controversy' (Kostelanetz, 1970, p. 9).

The notion of mechanical reproduction now became a universal guiding principle for action, with the result that the production of individual works of art was by and large banished to the sphere of the private studio. With the gradual elimination of the romanticism of the crafts and the expressionist cult of the unique object, a rigorous, sober functionalism began to develop (Wick, 2000). With the arrival of Moholy-Nagy, a new phase at the Bauhaus was initiated and, 'it was above all Moholy-Nagy's personal interpretation of Constructivist attitudes that contributed to the emergence of a recognizable Bauhaus style [of industrial design]' (Naylor cited in Kostelanetz 1970, p. 4).

Gropius provided a catchphrase that expresses this new phase of the Bauhaus, 'Art and Technology: A New Unity', which he used as the name for the

1923 international exhibition about the school held in Weimar (Findeli, 2001). In the same year, Gropius invited one of the first graduates of the Bauhaus, Josef Albers, to begin teaching on the *Vorkurs*. The appointment of Albers further consolidated this move away from the medieval model because he objected to the teaching of knowledge and skills based on tradition and argued that imitation, 'hinders creation and invention' (Albers cited in Wick, 2000, p. 174).

It was in this phase starting in 1923 then that Bauhaus pedagogy developed into the radical form that it has become famous for, but in a parallel development, this was the same year in which the school's funding was cut in half and the process began that would move the Bauhaus to Dessau where things would change again. Under the directorship of Hannes Meyer from 1928 then Ludwig Mies van der Rohe from 1930, the Bauhaus ultimately developed into a kind of college of technology for Architecture. Mies van der Rohe reduced the structure and importance of work in the workshops. The art and workshop department now mainly served as groundwork and orientation for developing a more up-to-date form of Architecture that used contemporary structures and materials ('Teaching at the Bauhaus', n.d.). Throughout all three directorships the Bauhaus conceived of itself as the spearhead for an up-to-date art and Architecture, as a laboratory for the development of exemplary prototypes for industry (Jaeggi, 2009) in this, the Bauhaus can be understood as representing another development in design education, that design schools can and should, directly engage with industry. Teaching at the Bauhaus both represents a separation of form from context, through its emphasis on abstraction and formal exercises, while at the same time, there was a concerted practice of engaging with industry and to realise designs.

3.4.6 Radical pedagogies

Aside from the shift to formal and abstract subject matter, the methods of teaching at the Bauhaus were also radical in several ways, such as the emphasis on open ended experimentation over goal-orientated projects, and emphasis on artistic development rather than evaluation. These approaches to teaching drew on influences beyond both the academy and the master-apprentice traditions. There are several points to make about the teaching of Itten and Albers in particular that have some relevance to the general theme of this thesis.

Itten's pedagogy, for example, 'was not nourished on the spirit of the academic training for artists or the sources of orthodox drawing but rather

stood in the tradition of the liberal pedagogical reform movement or Rousseau, Pestalozzi, Fröbel, Montessori and others' (Wick, 2000, p. 114). Part of this understanding of teaching and learning made evaluation problematic, for Itten the highest principle was the effect of teaching on the individuality of each student and because of this he would not correct the students' work (Wick, 2000). Wick provides an example of Itten's thinking on this subject 'the teacher as a constant corrector becomes the gravedigger of the initial childlike thinking […] Don't cripple the students inside by making corrections but overlook their mistakes with praise and approval. This increases their self-confidence, their faith in themselves. And every time the results are astonishingly good' (Itten cited in Wick, 2000, p 115). The issue of evaluation is of considerable importance and its effect on learning should not be underestimated.

It can be argued that Itten's approach to teaching was student-centred:

'The idea of an education that points the students at the centre of its concerns, that starts with their temperament, their talent, and their abilities, that builds up from the basis of an informal student-teacher relationship, that gives priority to action over purely cognitive learning is one that stands within a large context of tradition with a highly complex nature. I am referring to the tradition of reform pedagogy' (Wick, 2000, p. 115).

Again, this issue is of central importance to contemporary discussions on design education: the form that student-centred teaching should take. This is an issue not only for the practice of individual teachers, but a structural issue for teaching institutions.

In order to give an example of Albers's position, Wick cites his 1924 essay, *Historisch oder jetzig* (historical or contemporary), which criticised the traditional education, in which he argued, 'people are teaching, writing things up and writing things down, reading things aloud and looking them up, finding snacks everywhere but never eating their fill' (Albers, cited in Wick, 2000, p. 172). This statement uses a metaphor of food to draw attention to the way education is conceptualised as matter to be consumed. Albers also criticised the overly intellectual emphasis of traditional education, 'today, passing something along without increasing its value is called wangling. So the school produces wanglers rather than creators. Rather than having the students design, it has them take notes […] That is a way to make managers, not designers' (Albers, cited in Wick, 2000 p. 172).

Wick writes that Albers' approach to teaching could be summarised as leaning by doing (Wick, 2000). It depended on the students being exposed to phenomena so that they could make their own interpretation of their experiences. Wick points out that Albers was influenced in this respect by Georg Kerschensteiner in the relation between practical experience and reflective discussion:

'Albers himself characterised his method of instruction as inductive. That meant that he did not confront his students with an elaborately worked-out theory that was abstract and often remote from the students' range of experience… but rather he let the students — freed from all theoretical bombast — accumulate primary experiences with the simplest materials of the sort that had traditionally been considered unworthy of art: paper, cardboard, wire, glass, straw, rubber, cellophane, matchboxes, razor blades, phonograph needles, and so on. Uninhibited experimentation with these materials, with an eye to their technical and aesthetic possibilities, led directly to experience with elementary forms that — in the classic manner of reform pedagogy — were reflected on in the process of self-control and collective discussion of the results (for, according to Kerschensteiner, there is no purely manual activity, it always implies an intellectual activity as well). In this way, the students inductively achieve through "precise observation and new vision" not only a basic technological understanding but also knowledge of universal formal principles like harmony, rhythm, scale, proportion, and symmetry' (Wick, 2000, p. 175).

This description of open ended experimentation followed by group discussion and analysis is quite pertinent, since it suggests a cycle of activity and action — a process that is crucial to forms of Experiential Learning such as Action Research and Reflective Practice, which are discussed later in this thesis.

3.4.7 Legacy of the Bauhaus

Despite its short period of activity, the Bauhaus left an educational legacy of great significance to design education: both as a new pedagogical format that drew on, but moved beyond, the medieval master-apprentice model; and as a collection of influential pedagogies that explored the possibilities for teaching design through rational and analytical formal work, combined with the

sensitivity to materials developed through craft working. Perhaps even more importantly, the Bauhaus represents the successful resolution of the need to reconcile the high standards and inventiveness of art with the needs of mass production and industry. Although this resolution did not occur only at the Bauhaus, the work achieved at the institution can be considered a crucial step in the development of a form of design that was able to finally separate itself from classical and historical styles, creating a new abstract visual language, and innovative approaches to materials that could be effectively used by industry.

Unfortunately, the original aims of Gropius for design to be a force for the improvement of society were far from resolved when the project of the Bauhaus was stalled by the rise of the National Socialist Party and the events of WWII. In spite of this, the legacy of the Bauhaus would be continued directly in a variety of forms, especially in the United States where many of the Bauhaus members continued their work. For example, in the iconic Black Mountain College in North Carolina founded in the same year the Bauhaus closed and where Josef Albers, Ani Albers, Lyonel Feininger and even Gropius himself taught, the Harvard Graduate School of Design where both Marcel Breuer and Gropius were on the faculty, or The New Bauhaus in Chicago founded by Moholy-Nagy in 1937, (now the Illinois Institute of Technology). As mentioned earlier in this section, American architects Louis Sullivan and Frank Lloyd Wright had been important in the founding of the Modern Movement and Moholy-Nagy saw in the United States a unique possibility for the development of design, writing, 'America is the bearer of a new civilisation whose task is simultaneously to cultivate and to industrialise a continent. It is the ideal ground on which to work out an educational principle which strives for the closest possible connection between art, science, and technology' (Moholy-Nagy, 1947, p. 10). However, although Moholy-Nagy's vision was to further unite art, science, and technology, his thinking was still quite attached to Bauhaus ideas:

> 'To reach this objective one of the problems of Bauhaus education is to keep alive in grown-ups the child's sincerity of emotion, his truth of observation, his fantasy and his creativeness. That is why the Bauhaus does not employ a rigid teaching system. Students and teachers in close collaboration are bound to find new ways of handling materials, tools, and machines for their designs… It is the practical exercise, and the pleasure in sensory experiences which lead him to a security of feeling, and later to the creation of objects which will satisfy human needs that are spiritual as well as utilitarian' (Moholy-Nagy, 1947, p. 11).

It is also important to note here that the Bauhaus legacy was continued in England also through a direct connection to Gropius who, after fleeing Germany in 1933, served on the advisory board at the Central School (now Central St. Martins, part of the University of the Arts, London), (Jury, 2018) there, William Johnstone introduced a 'Basic Course', which was intended as a re-education in seeing and taught the student a crucial 'grammar of art' (Hester and Williamson, 2015). In fact, Johnstone saw this course as continuing the ideas of the founder of the Central School, William Lethaby, who was also connected to the beginnings of the Modern Movement, and was perhaps an influence on Muthesius and other pioneers of Modernism in Germany, allowing for a possible retelling of this story in which the Central School became the parent of the Bauhaus (Hester and Williamson, 2015). In any case, the Basic Course at the Central School and the deliberate interdisciplinary and internationalist outlook certainly drew on the influence of the Bauhaus in the post war period.

Although these other threads of the story of the development of design education would be valid to grasp and continue this investigation, it was at the Hochschule für Gestaltung (HfG), in Ulm, Germany where the direct continuation of the Bauhaus idea found a new form and went though a distinct development that makes it most relevant to the comprehension of the current dilemma in design education. This is because at the HfG an attempt was made to truly rationalise design and to try to sever it from and art in favour of a rationalised scientific approach. This attempt ultimately failed, but not before it had far reaching results that connect to the discourse in design education today in crucial ways. The developments at the HfG are covered in the following chapter.

3.5 Summary of the development of the studio model of design education

In this chapter each of the main stages in the development of the classic studio model have been discussed, from the guilds of the middle ages to the influential Vorkurs at the Bauhaus. The following table (Table. 1) provides a summary of the main differences between each variation in the development of the studio model.

Historical development	Characteristics	Influence on the studio model
The guilds	Mimetic / tacit learning Focus on maintaining the standard of the outcome of skilled work Artists studios take on a broad range of work both in type and scale Theory and practice are indistinguishable Absence of critical, reflective, or analytical thinking	Master-apprentice learning
The Academy	Drawing as main learning activity Elevated social status of the artist Focus on classical arts and Architecture from ancient Greek and Roman culture Analytical and rational thinking but no critical or reflective thinking	The separation of theory and practice Separation of (high) art and craft
Beaux-Arts / atelier model	Mythological figure of the architect Taste as criteria Introduction of the design jury (crit) Project based learning Separation between design project and its context	Formalisation of the atelier (studio) model
The Arts and Crafts movement	Return to medieval aesthetics (Gothic) Reintroduction of manual skills Social concerns Humanise work Dilemma of reconciling craft and technology	Attempted rehabilitation of craft skills Art school as factory
Werkbund / Modern Movement	Abandonment of historical styles and ornamentation Science, engineering and logic instead of craftsmanship Making use of new technology but with an aim for high quality goods Respect for form and unity Utopian Dilemma between standardisation and individualism	Search for a new design aesthetic
The Bauhaus	Continuation of the return to craft Master-apprentice model with innovation of master of craft and master of form Rational and analytical approaches Formal exercises combined with some project based working Open ended experimentation Design for mass production Acceptance of the machine in art Attempt to bridge the gap between art and industry Introduction of interdisciplinary foundation course	Reinforces the master-apprentice model Introduces the idea of the foundation course and fundamental / universal design principles Abstract exercises Interdisciplinary

Table.1 The historical stages in the development of the studio model

It is hoped that this analysis helps to clarify differences so that it can be seen that there is no single coherent version of the studio model, but rather, that it has been formed from diverse and at times conflicting ideas and motives. The table is a summary of developments and necessarily simplifies matters, creating the illusion that the historical phases were entirely distinct. One should remember that the innovations of the Bauhaus did not replace the Beaux Arts model and neither did the founding of the academies signal the end of the tacit learning of craft skills that occurred in the medieval guilds. It should also be recognised that the Werkbund and the Bauhaus may seem to represent coherent ideas in retrospect, but at the time those involved argued and disagreed on a wide number of issues form aesthetics to teaching styles.

Looking at the table it becomes clear that certain problems in design education have been causing difficulties for an extremely long time and are still not resolved. These include the relation between theory and practice — which were indistinguishable in the guilds where knowing how to make artefacts and knowing about making were essentially the same thing — yet at the academies, mathematics and history began to be taught as separate subjects, severing them from their role as applied and contextualised knowledge. The articulation between technology, science, craft, art and engineering is another recurring and unresolved theme and not a progression that moves inevitably in one direction, as might easily be assumed. An example of this is the role of manual making, which has passed through several phases of being considered irrelevant, to being rediscovered. We can note also a contradiction in the role of the teacher in the Bauhaus – although the aim was to make design rational, this phase actually emphasised the individual approaches of the 'masters'.

This brief analysis encompassed in the table also allows us to see that the aesthetic and ideological ideas of the Arts and Crafts movement only had a minimal impact on the design studio model, however it should be pointed out that these movements were extremely influential in terms of aesthetics and that this period saw the founding of many art schools and colleges across Europe and further afield. A deeper analysis of the changes in art and design education effected by the movements of modernism is not possible here.

3.6 **Characteristics of the studio model**

After the discussion of the historical developments that led to the formation of the studio model it is now appropriate to set out the essential characteristics of the studio model, in order to be clear exactly what elements this teaching model entails. These are: the physical studio itself; project-based learning; materiality (meaning that learning is manifested in an artefact); the crit (Shreeve, 2015) and tutorials or 'desk-crits' (Healy, 2016). It should be added that there are other common supporting elements such as lectures, technical workshops, study visits and in some cases a final exhibition or show. These are included to provide a picture of a typical design education structure, which is useful for the discussions of this thesis, particularly in regard to the articulation between theory and practice. The point should also be made that the aim of this section is to set out the core elements only — of course it is true that some courses may offer additional elements: seminars, traditional classroom style teaching, and so on, but since these are not typical, they not covered here.

3.6.1 Core Elements

Studio as physical space

The studio, is of course a physical space, and although 'studio style' teaching is possible in any classroom, it is important to recognise that the format of a particular teaching style may determine the architecture of the learning institution, which in turn perpetuates the pedagogical approach (Shulman, 2005). The physical space of the studio is closely linked to the teaching model itself. The studio then, consists of a space where students are assigned individual desks that are, in most cases, available to them at all times and students encouraged to work in the studio rather than at home during off-hours (Cennamo, 2011). It is informative to read a description of the studio from the perspective of an 'outsider', in this case a psychologist:

> 'Here students assemble around work area with physical models or virtual designs on computer screens, there is no obvious 'front' of the room. Students are experimenting and collaborating, building things and commenting on each other's work without the mediation of an instructor. The focal point of instruction is clearly the designed artefact. The instructor,

whom an observer identifies only with some difficulty, circulates among the work areas and comments, critiques, challenges or just observes. Instruction and critique are ubiquitous in this setting, and the formal instructor is not the only source for that pedagogy' (Shulman, 2005, p. 54).

This description suggests some important features of the studio model:
- Nonhierarchical spacial arrangement;
- Informal transfer of knowledge between teacher and student;
- Collaborative peer to peer learning;
- Learning focussed on the artefact;
- Experimentation as learning; and
- Learning by doing.

Also implicit in this description of studio learning is a certain abundance of physical space in which the students and teachers may circulate, and likewise and abundance of time for these interactions to take place. One may easily see how increases in student numbers or reductions in available physical space or teacher contract hours are problematic for this kind of teaching model. Indeed the necessity for the teacher to sit with each student in turn to discuss their work, 'sitting with Nellie', was criticised in a well known article by Swann (1986) as being an inefficient use of teachers time. However, others have defended this teaching format as being an ideal (or perhaps the only) way to pass on 'professional artistry' and 'tacit knowledge' in design education because much of design knowledge is only applicable in practice, when practitioners 'know more that they can say', in what Schön calls 'knowing-in-practice' and 'knowing-in-action' (Schön, 1983, 1984, 1987). Although ultimately a defender of the studio model, Schön himself identified a weakness of the format: if the teacher fails to communicate with the student (for example by taking a defensive stance) then learning can be compromised.

It can be argued that the physical studio itself contributes to learning. Corazzo (2019) identifies six themes in which the literature discusses the materiality of the studio, these are: studio-as-making, studio-as-bridging, studio-as-meaning, studio-as enabling, backgrounding, and studio-as-disciplining. The table below explains each theme:

Studio as	Theme
Making	The studio is a place to make artefacts and to some extent, make selves as architects or designers.
Bridging	The studio acts abridge between two contexts: academic and professional. These overlapping contexts can be experienced in the studio.
Meaning	The studio generates meanings and associations. For example, for some students the studio may legitimise educational activities, while for others consider activity in the studio as not being 'real practice'.
Enabling	The studio enables or constrains activities, experiences and interactions.
Backgrounding	The studio is the background to the activity of learning.
Disciplining	The studio is a space in which professional norms are learned and professional identities can be developed.

Table.2 Thematic breakdown of the materiality of the studio

A conclusion that must be drawn from the many discussions of the studio is that as a space, the studio plays a complex and multifaceted role in design education, contributing to the development of students in a variety of ways, many of which may not be obvious and may not be easily measured or justified by quantitative means. It can be argued for example, that the studio renders the material dimension of learning visible (Shreeve, Sims & Trowler, 2010) and that the visual environment that design students create in their work spaces, 'artful surfaces' (Vyas & Nijholt, 2012) can have both inspirational and functional uses. The physical space of the studio then can contribute both to the formation of a design student, both in the professional and cultural sense. In discussions of the studio it is essential that the space should not be considered a mere background for education activity — although this is often implied — rather, space should be seen as both shaping and contributing to learning (Corazzo, 2019).

Projects

Design studios universally apply the semi-structured learning strategy of experiential leaning (Crowther, 2013), meaning 'learning-by-doing', and for this to happen the students are presented with a design problem, work individually or in groups to solve it (Cennamo, 2011). Effective project working requires students to use an iterative cycle, following steps that include problem formulation, identification of the required learning or action, testing the new version of the solution, and reflecting to establish general principles. Critics of the studio model have noted that the final stages of project working, and perhaps the most important, the process of reflection and abstraction, are

usually absent in studio based learning (Kvan, 2001). This cycle ends with the presentation of the final work in the crit (or possible with an exhibition at the end of the course). These projects may vary in length between a few weeks, a whole semester or even a whole year in more advanced courses (post-grad for example). These projects may be very specific briefs provided by the teacher, general themes, or even defined entirely by the student in some cases. We should note that although it is possible to imagine studio learning without projects, but with a series of specific exercises, this is not typical.

Tutorials / desk crit

As already mentioned, the teacher generally circulates around the desks to give feedback and guidance to the students on their projects. It is useful to distinguish between this informal form of critique, which can be called a 'desk-crit' or 'tutorial', and the more formal presentations that are know as a 'jury', 'defence' or 'crit'.

These are usually one-to-one dialogues between teacher and student (or students if it is a group project). If conducted in the studio, these conversations have the possibility to suddenly change character by drawing in other students, or by the teacher deciding that a subject has emerged with deserves a general comment to the whole room. A further variation of these dialogues is the slightly more formal tutorial which may be a meeting only between teacher and student to discuss their work. However in these cases, as well as in some instances in the actual studio space, the same feedback may be repeated to several students and the teacher may have to repeatedly correct the same or similar errors (Bender and Vredevoogd, 2006).

The crit

The crit is a fundamental element of the design studio model of teaching, itself rooted in the master-apprentice form of craft learning in which an apprentice would spend many years working closely with a master craftsman, directly learning a specific practice through imitation and instruction (Koch, et al., 2002). The crit was an addition to this model that comes from architecture, specifically the influential École des Beaux-Arts in Paris (Koch, et al., 2002), (Oh, et al., 2012), (Lackey, 1999). The crit consists of a presentation of a design project by the student to the class, the teacher and sometimes guests, followed by a discussion in which points about the project and design in general can be raised (Lackey, 1999). The crit as a more public, open forum is due to the influence of the Bauhaus and is conceived as a learning experience for the

students, not only as assessment (Flynn, 2005). The exact form of the crit varies substantially across disciplines, institutions and locations in terms of size, format and who is involved (Healy, 2016), (Sara & Parnell, 2012), however it is possible to describe a typical crit and set out the components of which it is constituted. A typical crit consists of 15-20 students presenting to one or two teachers, each student would present their work for 5-10 minutes and then receive feedback from their teacher for up to 20 minutes. It is rare for the students from the audience to enter into the discussion or ask questions. This lack of peer discussion is a significant problem of the typical crit. The traditional crit format present several problematic characteristics, such as its stressful nature and questionable utility as a teaching tool, these issues are addressed in detail in **Chapter 8** of this thesis.

The final show

Although not rarely mentioned in the literature on design pedagogy, the final show is an important fixture at many design (and art) universities (certainly in the UK, the extremely popular RCA final show is just one example of many) and serves both as a motivation for students to present their work with the highest possible standards and also serves to promote the courses on show. It would seem that an investigation of graduation exhibitions as a part of design pedagogy would provide an opportunity for further research.

Assessment

In the studio model students are assessed primarily via their design projects. Or to put it another way, unlike other academic subjects, design students do not undertake a written exam or test to prove that they have learned the necessary knowledge a course provides. Instead their work itself is assessed; projects are compared and discussed between faculty and/or external examiners in order to reach a grade. Teachers knowledge of the students and how much effort they have put in to the work or how much they have contributed generally to the studio may also be a factor but this is secondary. Critics have pointed out that assessment focused on the product of the design process neglects to focus on the process itself, a weakness of the studio model (Kvan, 2001). Yet, it is important to note that studio based learning is perfectly conceivable without this form of assessment. We may accept that learning occurs through engagement in the design process but it does not necessarily follow that assessment should focus on the output of the design process.

Supporting Elements

Lectures

Traditional design education supports studio based learning with lectures. This implies a division between theory and practice that may be problematic. These lectures can be roughly divided into two typical categories, again reflecting this division: theoretical subjects such as art and design history; art movements; semiotics; cultural anthropology, etc.; or, designers (faculty or invited guests) talking about their professional practice, usually relying heavily on showing examples of work and talking about their own processes. Finding ways to bridge the theoretical and practical domains remains a challenge in the studio model.

Technical workshops

Especially in institutions that have developed from old art schools or technical colleges, there are often technical facilities were students may learn practical skills which can be applied directly in their design projects. Printmaking, model making, photography and so on. Unfortunately these practical workshops are becoming rarer as institutions often close them down to save money on equipment and technical staff or to save space for increased student numbers. Separate areas for computers fall into this category, although these are becoming less relevant due to ubiquitous use of laptops. These workshops primarily play a role in the development of specific skills and knowledge of materials and processes. They also have secondary roles to play since they provide spaces for informal collaboration between students across years and disciplines (in art universities students from varied courses will still share the same workshops), and provide a respite from the difficulties of project working since in the workshops students can focus on making rather than planning. Technicians may often also maintain their own art, design or teaching practice, and may also play a role as an additional unofficial tutor.

3.7 **Conclusion**

The complex and flexible nature of studio education can be seen to accommodate three types of learning: learning to *do* design; learning *about* design; and learning to *become* a designer (Crowther, 2013). The act of designing is always an act of uncertainty and, as such, the design studio is (and should be) an environment of unpredictability and serendipity. It is also, critically, a social environment in which students are expected to present their work to their peers and to academics for discussion, review, and assessment (Crowther, 2013). This chapter has discussed the historical development of the studio model and shown that it represented a form of pedagogy that embodies several conflicting and contradictory positions. It has also summarised the key features of studio style teaching to set out the elements that define this signature pedagogy of design education. What remains to be discussed are the challenges to the studio model that have emerged in recent years and that can be considered a paradigm shift, these will be covered in later chapters of this thesis, but before these contemporary issues are discussed, it is important to first revisit two significant variants of design education that occurred at the HfG Ulm and in the teaching of Sheila Levrant de Bretteville, which can be considered experiments in radically modifying design education, these are discussed in the following chapter.

Chapter 4

Beyond the studio model: HfG to Sheila Levrant de Bretteville

4.1 Modernism in crisis

In some senses, the Bauhaus can be seen as the archetypal school of Modernism, embodying certain values such as truth to materials, abstract visual language, abandonment of decoration and so on. It also represents a significant step in the development of design education and in many ways it suggests and idea of the designer as an interdisciplinary figure who can form a bridge between art, science and technology. However, in many ways this project of the Bauhaus was incomplete, cut short by the convulsions at the middle of the 20th Century. In the post-war years Europe needed to physically rebuild itself, which created a great opportunity and challenge for design, but more than this, there was a need to seriously reconsider the politics and beliefs that had made WWII possible. The HfG Ulm was founded as a direct consequence of the end of the war as will be discussed in this chapter, and it had a radical founding philosophy with a strong social mission. This institution would explicitly continue the project of the Bauhaus, with aims to make design a truly interdisciplinary field, but at the same time the HfG would be the site of great conflict between contradictory ideologies of formalism, positivism, and an emerging radical humanism. Issues that would be unresolved when the school eventually closed just 15 years after its founding, a short but influential period, reflecting the short life span of the Bauhaus itself.

The year of the HfG's closing, 1968, was of course an emblematic year in many countries, with student protests and strikes in France, students movements in Italy, Mexico, Pakistan, Poland and Spain; protests against the

military dictatorship in Brazil; civil protests in Czechoslovakia; civil rights movements in Ireland and in the USA; and so on. It is around this time that faith in the Modern Movement's ability to create a better world seems to have finally collapsed, marking the transition into the complex ideologies of Post-modernism. It is in this context that Sheila Levrant de Bretteville began to develop her explicitly political approach to design education, founding the first design program for women at the California Institute of the Arts, in 1971. Her teaching is discussed as some length in this chapter because it represents a radical change in direction for design education and offers some clues for how ideological conflicts inherent in the studio model might be addressed. This chapter then discussed and contrasts two further variations of design education, the developments at HfG Ulm and the radical pedagogy of de Bretteville.

4.2 **`HfG Ulm`**

4.2.1 `Overview`

The HfG Ulm is considered one of the most important schools in the twentieth century (Neves, Rocha and Duarte, 2013), and like the Bauhaus, its historical value to the integration of design disciplines in terms of education and practice is extraordinary (Heller, 2012). It is relevant to this discussion of the development of the contemporary design studio model because the HfG represents a distinct shift in epistemology from the ideas of the Bauhaus, while at the same time continuing and extending some key aspects of the Modern Movement. The discourse of the Design Methods movement of the 1960's in Britain, the influence of cybernetics and semiotics, and the eventual crisis of positivistic approaches in design, are all closely connected with the process of change that the HfG went through during the few years it was open. Overall, the institution moved from a formalist approach under the first rector Max Bill, through various phases of increasingly rationalist and theoretical concerns, perhaps the instability of the institution was a result of its ambitious program:

'The work of the HfG Ulm represents a marriage of Modernism of form and appearance with highly developed theoretical interests. The marriage was a convenient one: formal expression could diminish as the theoretical labour — the work of analysis — flourished. And this did seem to fit, at least for a time' (Kinross, 1989, p. 384).

But the crucial idea of the HfG has been formalised to a certain extent in what is known as the Ulm Model. The purpose of this section is primarily to summarise this educational format so that it can be related to the other variations of design education that have been covered in this chapter but it also includes a contextualisation of HfG and briefly discusses its legacy in order to show how the school connects to wider developments in design.

4.2.2 Founding of the HfG Ulm

The founding of the HfG was explicitly political and directly related to its context in the aftermath of the end of WWII. It was founded in 1953 by the designer Otl Aicher (now famed as the identity design of the 1972 Summer Olympics in Munich) and Inge Scholl, whose sister and brother, Sophie and Hans, had been murdered three years earlier by the Nazis for their part in the *White Rose* resistance movement against the regime. Their story provides part of the background to the founding of the school which was intended to contribute to the curbing of whatever nationalistic and militaristic tendencies still remained and to make a progressive contribution to the reconstruction of German social life (Kapos, 2016). Although originally planned as a political-journalistic school, the HfG grew into a leading contributor to postwar German design (Takayasu, 2017).

This change in orientation can be attributed to Max Bill, who was invited as a high profile figure who could attract funding to the institution, and he radically changed the focus of the school to put design at the centre of the curriculum and excluded those subjects directly concerned with politics (Kapos, 2016). Although pushed aside however, political concerns would return to the fore return as an indispensable element of design training and practice, just as events forced the closure of the school (Kapos, 2016).

4.2.3 Max Bill and the continuation of the Bauhaus

Max Bill formed a strong link to the Bauhaus and at the HfG he aimed to re-establish the institution. It was he who suggested the name Hochschule für Gestaltung — which was the subtitle of the Weimar Bauhaus — as a way to make direct claim to the continuation of its legacy (Kapos, 2016), although he had first proposed the even more explicit 'Bauhaus HfG' (Spitz, 2002). The German word *Gestaltung* literally means 'form giving' and refers to a modernist construction concept that is often used as an equivalent for the English word *design* (Takayasu, 2017). The issue was a source of conflict right from the beginning, because Aicher and Scholl had more a more progressive vision for the school and believed that education should not imitate cultural traditions, it was precisely because the circumstances of the 1950's differed totally from those of the 1920's that Aicher rejected the idea of a seamless continuity to the Bauhaus (Spitz, Heller interview, 2012).

The start of Bill's career in education itself had come from a Bauhaus connection, when Itten invited him to the School of Applied Arts in Zurich to take over the course in form in 1944 (Thomas, 1993). Bill had been a student at the Bauhaus, in 1927 he enrolled in the newly formed Department of Architecture in Dessau, where he was assigned to Moholy-Nagy's metal workshop. Always a restless figure, he later abandoned Moholy-Nagy's workshop for Schlemmer's stage workshop, and he also attended Klee and Kandinsky's painting classes and took mathematics and construction courses. He was exposed therefore to the ideas of many of the key figures of the Bauhaus and he also entered into the interdisciplinary spirit of the school. He built a friendship with Albers who he later invited to HfG to establish fundamental principles of the basic course in the areas of form and colour (Thomas, 1993) and following this, Albers taught colour theory at HfG for a time (Ranjan, 2005).

The Bauhaus legacy is recognisable in the structure of the HfG curriculum, which began with a first year interdisciplinary 'basic course', followed by specialisation in the following years. The abstract nature of the exercises in the first year also had the character of Bauhaus pedagogy as can be recognised in this account:

> 'One of the teachers I recall vividly was Helene Nonné-Schmidt, who had been at the Bauhaus and taught colour theory using water colours

— systematically over-painting overlapping areas with basic colours creating systems of different hues. Here exercises made irrelevant the idea of artistic self-expression. Those unwilling to suspend preconceived ideas, be patient, and apply extreme care would not be able to create the effects of combining primary colours to create secondary, tertiary… colours, and could see for themselves whether they succeeded or failed the exercise' (Krippendorf, 2008, p. 56)

However, the continuation of the Bauhaus legacy was limited and coupled with, and Bill's character, it led to conflicts with the younger lecturers who demanded an independent teaching model rooted in science and theory, a disagreement that ultimately led to Bill's departure in 1957 ('The Ulm Model', n.d.). The factors that contributed to this event, known as the 'Bill crisis', were complex, and related also to an impetus to move away from the authoritarian management structure of the rectorship. While Bill believed in the predominance of free art, he was unwilling to introduce the natural sciences; however, the younger lecturers thought that it was anachronistic to begin with artistic practice, claiming that design needed to incorporate the latest scientific knowledge (Takayasu, 2017). Accordingly, when Bill resigned the role the position was replaced by a governing board consisting of Otl Aicher, Hans Gugelot, Tomás Maldonado, and Friedrich Vordemberge-Gildewart; with Bill as an associate member (Spitz, 2002). Under this new leadership, teaching at the HfG took a different direction: cybernetics, theory of information, systems theory, semiotics, ergonomics and disciplines such as philosophical theory of science and mathematical logic were explored, with the aim of bringing a solid methodological foundation to design thinking (Ranjan, 2005).

4.2.4 Transition to the HfG Model

After the initial phase of the HfG, in which the ideas of the Bauhaus continued to be dominant, Bill's resignation meant that the teachers were free to develop the 'Ulm model' in which more weight was given to science than free art and which had a strong connection with industry (Takayasu, 2017).

In the second issue of the Ulm journal in 1958, a long text by Maldonado set out the key ideas of this new approach and explicitly distanced the new direction for the institution from Bauhaus pedagogy which he argued was characterised by argumentative exaltation of expression, intuition, and action,

above all of 'learning by doing' (Maldonado, 1958, p. 39). This summary is very apt considering the focus of this thesis, but it is worth noting here that it is difficult to see how a subject like design could be completely removed from practice based learning, and Maldonado was making this point as a way to criticise the Bauhaus approach to show that it was an inappropriate model for the teaching of industrial design, arguing that this educational philosophy is incapable of assimilating the new types of relations between theory and practice that are engendered by the most recent scientific developments. This did not mean a return to what Maldonado termed, 'neo-humanism', or 'learning by speaking'. Instead he advocated a 'new educational philosophy', which would be founded on 'scientific operationalism'. For this, Maldonado stated that the corresponding new designer would need qualities of 'finesse and precision of his methods of thought and work, on the breadth of his scientific and technical knowledge, as well as on his capacity of interpreting the most secret and most subtle processes of our culture' (Maldonado, 1958, p. 40).

Takayasu has pointed out that the shift in emphasis can be seen in the changes in the names of the departments. The department first named *Architektur und Stadtbau* (Architecture and city construction), was changed to *Bauen* (construction), then finally, *Industrialisiertes Bau* (Industrial construction). Similarly, *Produktform* (product form) was changed to *Produktgestaltung* (product design), *Visuelle Gestaltung* (visual design) became *Visuelle Kommunikation*. These changes marked the shift away from artistic tendencies and formalism to more scientific and rationalist approaches (Takayasu, 2017). Coupled with this approach was a growing awareness that designers needed the capacity to grasp the complexity of the production process, in all its aspects (Kapos, 2016).

4.2.5 The Ulm Model

Although HfG went through various phases each with different emphasis and direction, it is possible to state what is the definitive 'Ulm Model', which according to Spitz can be broken down into four key features: that it was elitist; the building itself; the link between theory and practice; and the attempt to develop the whole person through liberal education (Spitz, 2002). While others have highlighted the interdisciplinary approach of the school (Vukić, 2013), and it could be argued that the most accurate way to define the Ulm Model would be with the slogan, 'Science and technology; a new unity', since at the HfG the

idea that design was applied aesthetics had been replaced by a new theoretical model, considering design as applied (human and social) science (Findeli, 2001). Indeed, Spitz also argued that the reason that HfG is so important to the history of design is that its platform gave design a scientific foundation (Spitz, 2002). Based on these other views, two other features that characterised the Ulm Model should be noted: the attempt to construe design as a science; and its interdisciplinary aspect. Let us now look in more detail at each feature, based on the four categories provided by Spitz:

HfG was elitist

By this Spitz means that it had a highly selective admissions policy and was always conceived as an institution for a limited number of students. It's selection process was unusual in that it not only in the ability of students but also their political, social, and cultural ideas, as Krippendorff recounts of the application form in 1956:

> 'it inquired about the newspapers we read, which public figures were important to us, the movies we liked, our opinion about several depicted examples of art, Architecture, and design, and what we thought were the causes of fascist forms of governments. The school seemed to look for students who connected intellectual, cultural, political and technological conceptions and willing to act accordingly. To me this was most appealing' (Krippendorff, 2008, p. 55).

So by selecting students with high criteria for ability and their views ensured that only a special type of student was accepted to study at HfG: 'Free of the system, unbiased, task-, not prestige-oriented, committed to serving society as a whole and thus also the national economy' (Ohl cited in Spitz, 2002, p. 21). This approach should result in a higher standard of graduate but one may wonder how was reconciled with the democratic aims of the school.

The building itself

The HfG building was designed by Max Bill and was modelled on the idea of an American campus, and accordingly promoted a compact college life. The apartments of students and faculty crowded around the core of the college: auditorium, bar and cafeteria, lecture rooms for theory, workshops for practice (Spitz, 2002). This proximity of faculty and students intensified the experience for all involved.

Linking theory and practice.

A novel feature of the HfG model was the direct connection to industry, which was achieved through the Development Group, a design office that was separate from education, but employed students during vacations and was responsible for the design of Braun's industrial products and Lufthansa's visual identity (Takayasu, 2017). It also meant that lecturers could apply theory directly to industry, suggesting that theory could make itself more relevant. At the Bauhaus there was also some connection to industry including several various Architecture commissions but there, unlike at HfG, there was no official department for these ventures. The Development Group brought financial benefits to the school although this arrangement also contributed to funding issues later and the model itself was questionable since it eventually became disconnected from teaching (Spitz, 2002).

Developing the individual through liberal education

Social responsibility was central at HfG and there was an emphasis on understanding wider social connections. From the start it was the goal of its educational theory not only to train the students to be designers, but to strengthen and to refine the development of their personalities by means of wide-ranging ideas relating to the liberal arts and sociology (Spitz, 2002). Hence, a characteristic of HfG pedagogy was to become aware of and deal with complexity at various levels to an extent that had not been attempted before.

Interdisciplinary nature

Some have claimed that the HfG School developed the first interdisciplinary curriculum for design (Vukić, 2013), although it is not clear if this interdisciplinary aspect extended beyond the shared first year course, since in the following three years the students would stay within their own departments (Krippendorf, 2008, Takayasu, 2017), and of course, the Bauhaus already had already introduced an interdisciplinary curriculum, since it combined fine art, craft, technological and mathematical subjects. Certainly, the curriculum at HfG was ambitiously broad, providing a comprehensive understanding of design for mass production through the study of theory and practice in all fields of design as well as the basic concepts of statics, mechanics and physics (Kapos, 2016), and liberal arts subjects such as sociology and modern history (Kesting, 1958). This already broad curriculum was later expanded to include cybernetics, games theory, mathematical operations analysis and ergonomics (Kapos, 2016). It is relevant to note that interdisciplinary collaboration was made explicitly a

goal at the HfG. The first Ulm journal defined a crucial aim of the foundation course as training the students to work together in various disciplines to prepares them for teamwork, in committees of specialists, each of whom understands the problems and outlook of his collaborators (Kesting, 1958).

Perhaps an undervalued contribution of the HfG structure, was that it considered communication design not only as the production of media but also of content, accordingly there was not only industrial design, building and visual communication departments but also an information department that covered press, broadcasting, television and film, and which aimed to train writers for work across all communication fields (Kesting, 1958). This discipline seems such a natural partner to a visual communication department that it is strange that this arrangement is not repeated elsewhere. There have been those who have argued for this however, in 2017 an article published on the Design Observer blog made this point, by claiming that since graphic design is primarily concerned with shaping the language of writers, it should be considered a literary discipline, and that writers, editors, and designers speak the same language (LaRossa, 2017).

Design and science

The HfG model cannot be adequately defined without reference to its increased emphasis on science and rationality. For example, in setting out the direction of the school after Bill's departure Maldonado clearly defined the need to move away from the subjective epistemology of the Bauhaus to assimilate new types of relations between theory and practice following principles of scientific operationalism (Maldonado, 1958). This idea was taken to an extreme which was eventually quite problematic for design when, 'in the name of rationality, precision and objectivity, the design process was to be purged of all nonrational framing devices, whether these were taken to be normative, ethical or political in kind' (Kapos, 2016, p. 10).

4.2.6 The failure of the positivistic model

By the late 1960's, a realisation was growing that design was a field where political conflicts played out, with concrete social, civic and environmental effects but that a full clarification of the role of a critical design practice in distinguishing real from illusory needs, let alone the contribution it had to make towards the latter's correction, was still not forthcoming (Kapos, 2016)

and that even if morality could be swept out of the way, assumptions of what people think is good always remain in the background, hidden behind concepts of functionality (Walzel, 2012).

The positivistic version of design that was proposed at HfG was ultimately unsuccessful because in the end design and science are too fundamentally different, science describes what is; design proposes what should be. 'Natural science and design theory do not share the same semantics […] design theory also describes what is actually there, but it also has to ask, "What, then, is desirable? What do we want for the future?" Design theory then moves in the field of deontic and moral propositions' (Walzel, 2012, p. 302).

There were problems that could not be solved by following a positivist approach. In HfG Journal 19/20, a long essay by Claude Schnaidt addressed these issues, and concluded that as designers we must realise that we work in a field of conflicting interests and that if we want to change society, we must know it and must commit ourselves politically (Schnaidt, 1967). This idea is incompatible with scientific operationalism which maintains the contradictory requirements that design be both critically exterior to and operationally integrated within the process of production. The ideal of the artist-designer shaping society from a position of distance had been thoroughly repudiated (Kapos, 2016). In summary: design has a moral and political dimension that can be hidden or ignored but cannot be avoided. This is an important conclusion that although not explicit in the Ulm model, is nevertheless part of its legacy.

4.2.7 Beyond HfG

By the last issue of the Ulm journal, produced in 1968 when it was already apparent that the HfG was about to close, there is a distinct feeling that the institution had led itself to a dead end with its attempt to apply technical-rationality to design and that it was becoming obvious that the degradation of the environment, which had been facilitated by design, was a complex problem that could not be addressed by positivistic methodologies. Reflecting on this in the journal, Bonsiepe wrote:

'In view of the urgency and the rapidly increasing proportions of the problem confronting the occupants of a world environment it would be hopeless to wait for the universities to reform their organisation and

their activities […] To deal with the problems looming up there it would be necessary to create new versatile institutions where environmental design could be studied on a broad and interdisciplinary basis. Here would be a field of experiment for that collaboration between sociologists, psychologists, economists, engineers, doctors and designers which has so often been aimed at and so seldom attained […] this would spell the end of the obsolete arrangement whereby designers and architects are "advised" by scientists' (Bonsiepe, 1968, p. 13).

The design field had benefited in many ways from the attempt at HfG to combine design and science, but it was becoming clear that this form of education was lacking in a social and political dimension and that many issues had not been resolved but rather, complicated further:

'A bundle of enmeshed issues — the school's relation to the Bauhaus (and thus also to art), the relation of design to social ends, the terms in which these were to be understood and the means through which they might be achieved — were held in unresolved tension throughout the brief period of the school's existence. Indeed, the internal history of the school, up to its premature closure in 1968, was shaped as a sequence of incompatible positions taken up by its leading members on these issues. Ultimately, politics would return as an indispensable element of design training and practice just as the development of events forced the closure of the school' (Kapos, 2016, p. 5).

Bonsiepe was able however to imagine an alternative to the HfG model, as he wrote in a theoretical description of what an alternative educational institution might be like:

'Trials could be made with new didactic ideas according to which each student is no longer the competitor of the others. Certificates of attendance as the expression of a repressive principle of performance, and indeed any didactic system which operates with the threat of minimal frustrations, would be replaced by an emancipating form of instruction. Lectures, which are a highly uneconomic way of imparting knowledge unless it is new, would drop out and be replaced by teaching programmes in which existing knowledge is concentrated. Heuristically orientated instruction would be replaced by instruction in which the solution of a problem is the focus of

attention. The members of working groups might team up on the basis of their motivations and interests rather than be assembled according to the fortuitous criterion of their date of registration. The learning process would become productive instead of reproductive' (Bonsiepe, 1968, p. 13)

This statement is remarkable, because it is almost as if Bonsiepe is writing the mission statement of a new school, and it is a radical vision: no competition between students, emancipating forms of instruction, no lectures, solution focussed teaching, collaborative groups of mixed ages. These are ideas worth exploring, but these do not seem to be initiatives that have been adopted in contemporary education, with perhaps a few exceptions as we will see in the following section on the pedagogy of Sheila Levrant de Bretteville. We should also note that some of these ideas, such as the criticism of competition, also relate to earlier versions of design pedagogy, recall how Itten refused to grade student's work for example.

There are many threads of influence from the HfG that run through design theory, especially in the Design Methods movement and in the work of Herbert Spencer, and the relation of cybernetics to design that began to be explored at the HfG was continued in the institution that followed, the *Institut für Umweltplanung Ulm* (IUP), where design began to be understood as being part of a system rather than separate from it:

> 'The changes in the social situation since the closure of HfG were, by the way, highlighted by the remark from the Stuttgart Rector that HfG had been designing cups and ashtrays, and he couldn't imagine that still being an important exercise in the future. Joachim Heimbucher retorted that IUP would surely not be dealing just with cars, but with transport systems. That was the yardstick: the individual object within the network of an entire thought system' (Curdes, 2012, p. 65).

The HfG period marked a shift from artistic tendencies in design, to a positivistic position, but the issues with this position became apparent through the 1960's, and a similar attempt in the design methods movement led to the realisation that a more nuanced interpretation was required that understands design as being fundamentally different from science. Horst Rittel, who had taught Design Methodology at HfG would later provide a crucial concept for this development, the notion of *wicked problems*, in an article written with Melvyn Webber (Rittel & Webber, 1973).

4.3 Emancipative design education: Sheila Levrant de Bretteville

4.3.1 Overview

It is important to note that although the developments at HfG — and even at the Bauhaus — have been influential, this does not mean that they were universally adopted in design education. Rather, each new variation of design education provides another possibility and other way of understanding what design is, or could be. To complete this chapter satisfactorily, it is necessary to briefly cover another variation that provides a useful contrast to the historical canon already described. This section then, examines the teaching of Sheila Levrant de Bretteville, which can be considered an example of an explicitly emancipative form of design education. De Bretteville's approach to design implied seeing education as a platform to engage in the prospect of reimagining and redesigning the world (Wild & Karwan, 2016) but beyond the physical aspects of design, de Bretteville's focus was rather on its social and political effects. Students were encouraged to go beyond conventional notions of design studies as job training: to see their work as having social and cultural power and relevance (Wild & Karwan, 2016). As such, de Bretteville's pedagogy offers clues as to how design education could develop, with the potential of resolving, or at least continuing to engage with, the contradictions that emerged at HfG and that were implicit throughout the Arts and Crafts and Bauhaus eras, namely the relation of design to art and how design can be socially responsible. Sheila de Bretteville taught at CalArts (the California Institute of the Arts) from 1971-73, which she left to found (with Judy Chicago and Arlene Raven) the Feminist Studio Workshop (FSW), the first independent school for women artists, later the Woman's Building, in Los Angeles. She then taught at the Art Institute/Parsons School of Design in 1980 (presently known as the Otis College of Art & Design) and since 1990 she has been the Director of Graduate Studies in Graphic Design at Yale School of Art.

In the 1970's de Bretteville had begun to question the hierarchical, authoritarian aspects of design and the fading modern idea that there were singular formal principles that were universally appropriate (Wild & Karwan, 2016). Accordingly, her pedagogical approach was influenced not only by the modernist background of her education at Yale in the sixties, but by the ideas of the feminist movement and the radical pedagogy of Paulo Freire, which had

convinced her that teaching could be a horizontal exchange of information (Berenson & Honeth, 2016). De Bretteville's teaching was part of what can be seen as a new wave of radical changes to teaching in design, which were rooted in the counterculture (Wild & Karwan, 2016), including exponents such as Keith Godard, who at Yale began the first course of graphic design history; Marice R. Stein and Larry Miller, who were behind the 'anti-textbook', Blueprint for Counter Education (1970); and Victor Papanek, author of the seminal Design for the Real World (1971), then Dean of the School of Design at CalArts; who de Bretteville approached to start the Women's Design Program at the school (Berenson & Honeth, 2016).

4.3.2 Design and design education as emancipation

The Women's Design Program gave de Bretteville the chance to begin developing her pedagogy, but it was when she broke away from CalArts with Raven and Chicago to establish the Feminist Studio Workshop that she was able to formulate it as a distinct approach (Wild & Karwan, 2016). An article she wrote for the journal Icographic sets out her ideas clearly, including a description of her techniques, philosophy and rationale, which are explained using examples of student assignments and her own design work. What is striking in this article is the clarity with which de Bretteville is able to describe her understanding of design which expands its significance beyond the realm of aesthetics or utility:

> 'The process by which forms are made and the forms themselves embody values and standards or behavior that affect large numbers of people and every aspect of our lives. For me, it is this integral relationship between individual creativity and social responsibility that draws me to the design arts' (de Bretteville, 1973, p. 4).

In this statement it can be seen that art is returned to the fore, but not for its sublime or 'spiritual' qualities as in previous eras, but to highlight the emancipative potential of design, and crucially, the way in which artefacts embody values. In the program description for the Graphics Centre in the Women's Building, de Bretteville further clarified her understanding of the relation between design and art:

'An artist traditionally speaks to a narrowly defined audience (other artists, collectors...) The result is often an incestuous and elitist atmosphere for the arts. The designer, on the other hand, reaches a broad audience and speaks a common language [...] The limitation of design is that the designer represents the voice and image of the firm she works for and very seldom feels any personal connection to what she creates' (de Bretteville cited in Walkup 2011, p. 270).

Thus, a mutual correspondence is shown between the problems of art and design which could only be resolved by their reunification. For de Bretteville, design becomes a way to know ourselves and others, and to create new values. Social responsibility is foregrounded, but in a completely different sense than at HfG or the Bauhaus. Here, rather than economic or artistic concerns, the emphasis is on the way the artificial world, especially the media, shapes consciousness.

'The design arts are public arts, and as such are major vehicles for forming our consciousness. Consciousness is, in turn, illuminated by communications, objects, buildings and environments. The design activity stands between us and our material existence, affecting not only our visual and physical environment but a sense of ourselves as well' (de Bretteville, 1973, p. 4).

Design is no longer construed as a neutral activity, as in Modernism and positivistic epistemologies, instead design becomes an explicitly political activity:

'As I become increasingly sensitive to those aspects of design which reinforce repressive attitudes and behaviour, I increasingly question the desirability of simplicity and clarity. The thrust to control almost inevitably operates through *simplification*. Control is undermined by ambiguity, choice and complexity, because subjective factors in the user become more effective and the user is invited to participate. *Participation undermines control*' (de Bretteville, 1973, p. 4).

This inverts the stand point of the scientific rationality propagated at the HfG, where complexity was to be understood and mastered, for de Bretteville, complexity becomes a productive factor that can be used to challenge paternalistic hegemony. De Bretteville advocated for a form of design that would embrace ambiguity of messages and complexity of content as a way of

supporting individual subjective opinions (de Bretteville, 1973) as a proactive, person-centred practice that built and strengthened individuals by encouraging the expression of new ideas and new communities (Wild & Karwan, 2016). In this sense, the aim of communication design becomes to counteract its previous success in advertising and other media. De Bretteville was clearly aware of the contradictions of this position however, writing that:

> 'Design appears to be a particularly ambiguous enterprise — and design for social change, even more so — in comparison with the other arts. The designer is often paid by those very institutions which would be affected by her attitudes in forming and shaping design: the contradictions for a freelance designer is thus apparent. Because design is attached to the world of business and industry in this way, it is difficult to know if one's design will be used to reinforce values that the designer opposes' (de Bretteville, 1973, p. 5).

Her solution to this dilemma was that design should produce artefacts in which a political standpoint was explicit, and to this end even the design process had to be reimagined as a public and social process, no longer a mysterious activity only practiced by a skilled elite. To this end, the sharing of technical knowledge, especially of publishing, was crucial.

In the article de Bretteville describes the process of creating a nonhierarchical design solution with an emphasis on its social context rather than its form, providing the example of a publication she design for the International Design Conference in Aspen, 1971. Participatory methods were used to produce the content, and even the reader is considered a participant in the construction of meaning, since they were required to 'create and combine these fragmented responses into their own personal picture' (de Bretteville, 1973, p. 6), this reconstructs the role of the designer, not as a conduit for the clients message, but rather as a facilitator for the creating of meaning, as such, de Bretteville considered her role to be a facilitator of a participatory process (de Bretteville , 1973), and this nonhierachical approach was applied to her pedagogy as well as her design work.

4.3.3 The teaching model

There are various elements of de Bretteville's pedagogy that diverge from the studio model as previously practiced, which are set out in this section. In

general it can be said that her pedagogy is characterised by pushing the idea that design is a proactive practice and should not be driven only by corporate service (Berenson & Honeth, 2016). It emphasises the personal perspective of the student not as expression, but as communication, the intent was for all students to move toward producing meaningful content of their own, and this requires that they should seek out and include varied perspectives for each project. Ambiguity and complexity is encouraged rather than simplified and a supportive approach to education is crucial so that students have freedom to fail, a sense of community, support, and feel they can take chances (Berenson & Honeth, 2016).

Interdisciplinarity

For de Bretteville interdisciplinarity is more profound than the practical aim for designers to able to collaborate with other experts in industry, instead the purpose of this teaching approach is to develop the ability of interpreting other perspectives:

> 'I believe that a productive tension comes from diverse points of view, and that students should grapple with diverse points of view for any act of design. We have given students readings from various critical perspectives, including psychoanalytic, semiotic, postmodern feminist and formalist. And we encourage them to take classes at the university, from people whose daily work is thinking from perspectives' (Bretteville cited in Lupton, 1993, para. 15)

Student-centred learning

De Bretteville uses the term 'person-centred' rather than the more familiar, 'human-centred' or 'student-centred', but the meaning is closely related. In this pedagogy the student is given the responsibility to actively define their own learning, emphasizing the students' desire to communicate, and focusing on what each student felt necessary to be made and said and to whom they wanted to say it (Berenson & Honeth, 2016). Of this approach de Bretteville highlights the viewpoint of the students:

> 'It is important to me that this programme be person-centred. The students are encouraged to put and find themselves in their work; my agenda is to let the differences between my students be visible in everything they do. In most projects — not just in thesis work — it's the students' job to figure out what they want to say.' (Bretteville cited in Lupton, 1993, para. 6)

This approach is a manifestation of the need to challenge hierarchies. The implication here is that for the teacher to relate to students on the same level, then the students must take the responsibility for their own learning and decide for themselves what is relevant, becoming co-researchers.

The object project

One specific element of de Bretteville's teaching is known as 'the object project', which reflects the idea that forms themselves embody values. At the Women's Building, de Bretteville developed the exercise in an interdisciplinary class taught with Jivan Tabibian, a political scientist and Ben Lifson, a photographer at CalArts, throughout her teaching career, and continues to use the format at Yale (Berenson & Honeth, 2016). The exercise involves asking students to bring an object to class, which each student then takes turn to describe to the class. The discussion of these objects is a way of investigating the history, production, cultural/social impact of objects and therefore of design (Winter, 2015) but it is also very revealing of the students themselves (Berenson & Honeth, 2016). It pertinent to note that this exercise is not typical of the studio model — this is an exercise in which the discussion itself is the outcome, unlike conventional exercises that teach principles of design, or projects focussed on producing design. For designers to derive content from objects upends Modernist principles, as form becomes the basis for a transformative experience (Berenson & Honeth, 2016). The concept, 'form follows function' is undermined by extracting content from form, rather than form from content.

Practical design skills

De Bretteville is a graphic designer and so it is not surprising that many of her teaching projects focus on printed matter such as posters and publications, or on public art and graphic installations. There is another dimension to this aspect of her pedagogy that should be recognised however, which is that the teaching of typographic, editorial and printing skills are all ways of providing means of mass communication. Giving tools of communication to participants (non-students) through these design projects, and of course to the students themselves, contribute to the empowering aspect of this approach to teaching. These tools were not necessarily cutting edge, there was for example, a strong connection between the Women's Building and short run letterpress printing, which in many ways suggests a reunion of craft skills (printmaking), with art concerns (artists books, conceptual art publications), and the social and emancipatory themes of the feminist movement.

Consciousness raising

In de Bretteville's earlier teaching (presumably less-so after she returned to university education in 1980) there was an emphasis on 'consciousness raising', a technique that focuses the attention of a wider group of people on some cause or condition (Berenson & Honeth, 2016). This activity was frequent at the Women's Building, in one undated schedule of classes for a fall term, consciousness-raising sessions appear in three separate weekly time slots (Walkup, 2011). In practice this meant discussions in which a group of students (and potentially teachers and other participants) would sit around a table to discuss a pertinent topic such as money, power, sex, work, but unlike an ordinary discussion each participant had to speak and for an equal amount of time as the other participants (Maberry cited in Gaulke et al., 2018). In a process that was difficult but valuable, as Cheri Gaulke relates, an ex-student from the Woman's building who later held a position on its board:

> 'It was agonizing to have to talk for five minutes. We couldn't say, "Ah, skip me, I've got nothing to say." We were not allowed. Everybody had to sit there and, one by one, talk about our experiences, share things we'd never told anybody. And then listen to the other women in the group. It really was a discipline. That's where the personal became political, though, because in sharing our experiences as women, we were like, "You were raped? I was raped." We started to connect dots that we as women had never really been able to connect before' (Gaulke cited in Gaulke, Wolverton, Maberry, & Cotton, 2018, p. 17)

The role of discussion then in this teaching model is not only to deal with design related knowledge: personal experience is also considered crucial.

4.3.4 Summary

This section has used the pedagogy of Sheila de Bretteville as an example of how the design studio model of design education has been adapted to take on a more explicitly political, social and emancipative character. This form of teaching design is not limited to de Bretteville of course, but this formulation of design has its roots in the radical movements of the 1970's counterculture, and it is important to recognise this as these ideas become more current, as Wild & Karwan argue:

'Focussing on communities instead of clients, valuing individual engagement over professional detachment, bypassing top-down hierarchy in favour of feedback and audience engagement, and expanding the visual vocabulary to reflect experience are all factors of underground design that are now an accepted part of design practice' (Wild & Karwan, 2016, p. 57).

This is not to say however that all of these ideas about emancipated education come from the counter culture. Coming from quite a different perspective, the influence of cybernetics on design also suggests that students should define their own area of study, as discussion of the establishment of the developments after the HfG was closed and the IUP was established show: 'The roles of teachers and students were thus redefined: Anyone who had specialist knowledge of a particular aspect was a teacher for that field. The funnel method, from the top downwards, had been abolished' (Curdes, 2012, p. 66) and specifically, 'At IUP we dreamed that the people involved would be the controllers themselves and steer their own course. In cybernetics, that is known as feedback control. A thermostat doesn't need anyone to intervene all the time; it regulates itself. That was later called autopoiesis' (Maser, 2012, p. 76).

In conclusion, we can say that although challenging and often controversial — for example, Paul Rand resigned from Yale in protest at de Bretteville's appointment (Lupton, 1993) — this emancipative model of design education offers a prototype for how the field can change, and as will be shown in the following chapters, de Bretteville's pedagogy relates quite closely to many of the concerns for design education that have emerged in recent years.

4.4 Comparison of the radical variations of design education represented by the Ulm Model and de Bretteville's pedagogy

A comparison of the two variations of design education described in this chapter are summarised in the following table:

Variation of studio model	Characteristics	Implications for the development of the studio model
The HfG Ulm	Built on Bauhaus ideas Continuation of Bauhaus style foundation course and with broader curriculum Explicitly interdisciplinary outlook and structure Direct connection to industry Simplification of form gives way to recognition of complexity Initial emphasis on scientific methodology and provable results gives way to more nuanced holistic approach represented by Rittel and Webber's 'Wicked Problems' Shift from formalism, through positivism, to a call for a ecological and social form of design	Interdisciplinary design education should include not only science and technology but also politics and journalism — the social context of design Design education must recognise complexity
Emancipative model (Sheila Levrant de Bretteville)	Productive tension Contradictions are accepted Teaching as horizontal exchange Participative methodologies Collaborative relation between student and teacher Consciousness raising Interdisciplinary collaboration as a way of understanding and including Multiple perspectives Direct connection to public Art revalidated as an intrinsic part of design and vice versa Subjective positioning, personal experience is considered crucial	Hierarchies should be flattened, relation between teacher and student should be that of equal collaborators Designer as author Design as emancipation

Table.3 Comparison of radical variations of design education

These two variations of design education present a rather complex picture, but show that there are more possibilities for how the studio model can be adapted that might first be assumed. The developments at the HfG Ulm provide an excellent example of how positivistic methodologies, although attractive for many reasons (provability, certainty, repeatability, etc.) are ultimately not suitable for design as they represent both an oversimplified picture of design problems and an fragile and incomplete model of design practice. Important

lessons can be taken from the story of how HfG progressed, particularly the fact that the original, more explicitly political programme for HfG was abandoned but that by putting these problems aside, the institution and its aims ultimately failed, with Bonsiepe eventually concluding that what was needed was a new form of education with no competition between students, emancipating forms of instruction, no lectures, solution focussed teaching, and collaborative groups of mixed ages, disciplines and abilities, but shared interests — a description of a form of teaching that is strikingly similar to de Bretteville's pedagogy. What emerges through the comparison of these two significant variations of design education is that although they come from entirely different contexts, the share a similar conclusion: design must recognise its intrinsically political nature and design education must radically change to adapt to this position.

These ideas seem to be approaching a suggestion of how the studio model of design education should be adapted to respond to the contemporary situation, but the demands of this context have yet to be discussed, this is the aim of the following chapter which considers a range of viewpoints and challenges to design education in order to form a picture of the emerging contemporary paradigm.

Chapter 5

Design education
paradigm shift

5.1 Introduction

5.1.1 Overview

In the previous chapters, the historical developments that have contributed to the design studio model were looked at in detail and variations in design education at the HfG Ulm and in the radical pedagogy of Sheila Levrant de Bretteville were discussed. This chapter now takes a more synthetic approach to the requirements of contemporary design education by drawing on the views of teachers and critics who have put forward their arguments for how design education should change through a variety of (relatively) recent publications. In comparing these various views it is clear to see that there is a shift in the design education paradigm taking place, but that this change is far from resolved. Taken together, it can be seen that these various sources, through diverse, make a coherent call for a shift from what is described as teacher-focussed to a student-focussed teaching model. It is the purpose of this chapter to set out the characteristics of this paradigm shift in order for it to be fully comprehended. In the chapters that follow the various sides to this idea are then examined, from the perspective of the roots of these ideas to their implications for teaching design and possibilities for implementing them. This chapter is based on a conference paper of mine entitled *Framing design education within the contemporary paradigm*, (Hardman, 2017), but it is expanded here with additional material that is particularly pertinent to this thesis.

This chapter draws on a series of contemporary sources, mainly academic papers and publications, to show that there is a significant argument being

built up that demands a fundamental paradigm shift in design education. This shift is related to several external factors such as developments in technology, financial pressures and the demands of industry, but perhaps more importantly, the need for a change in the design education format comes from a change in how educators are thinking about design in the light of the theoretical developments of the last few decades, namely the discourse around human centred design, critical design, participatory design and especially design thinking — a subject which is beginning to be the subject of a backlash (Jen, 2018). An in-depth discussion of these subjects is beyond the scope of this thesis, but it is necessary to say that these concepts are influencing design education in substantial ways. For the purposes of this thesis, it is sufficient to recognise the general aims for design education that can be identified in recent discourse, since these are the ideas and concerns that make up the (as yet unrealised) contemporary paradigm in design education.

This synthesis of ideas is based on two main sources that provide several contrasting voices and ideas, which are examined in detail to build up a picture of the contemporary situation. The first source is the collection of essays that responded to, and were included with the publication of, the *Icograda Design Manifesto 2011* (Bennett & Vulpinari, 2011). This document includes the perspectives of a diverse group of designers, writers and critics whose ideas diverge, but which, when taken together in an overview, help us to build up a picture of contemporary concerns. There are contributors to the publication that write from Asian, African and South American perspectives, so their views may help to address the dominant North American and European sources that are generally available, although it should be noted that this issue is not easily addressed. The second key source is the more recent *Beyond Discipline* report by Lara Furniss (Furniss, 2015), which is based on interviews with leading teachers and practitioners in the UK, this report is of particular interest because it sheds light on the changes in practice which are provide further reasons for design education to change.

The *Icograda Design Manifesto 2011* was produced by ico-D, the International Council of Design. This publication consists of a design manifesto, which was an updated version of the *Oullim Manifesto*, originally published in 2000 (Sang-Soo, 2000) and a collection of essays which are the responses to this manifesto, written by an international group of design educators. The key themes of the manifesto aim to outline the core ideas of the contemporary design paradigm which include: collaboration, interdisciplinary, participative design, sustainability, research, criticality, technological and

professional changes and the relation of design to society. Closely related ideas that are repeatedly called for but are not yet necessarily incorporated sufficiently into design education, nor are they necessarily understood consistently. Being 'critical' for example is frequently mentioned, but it is a term that is open to considerable variation in interpretation and usage.

The Icograda manifestos directly address education, for which, along with the incorporation of the above ideas, the key intended change is to make a transition from a 'one to many' to a 'many to many' learning model. Described elsewhere as moving from a 'teacher-centred' to a 'student-centred' model for education. The various essays that accompany the manifesto provide a critical reflection on these ideas and help to illustrate some of the related problems and opportunities. Indeed, some of these texts are critical of the manifesto itself. Notably (Sless, 2011) who argues that there can be inherent violence in a manifesto as a new order attempts to replace the old, and there are warnings that we must practice care when formulating universal declarations since we can easily get lost in generalisations (Capeto, 2011) and adopt a homogenised and monocultural position (Lange, 2011), this is a problem that should be acknowledged as having some relevance for any work that attempts to form a synthesis of ideas from a large number of sources, as is of course the case in this thesis. However, an examination, comparison and discussion of the various views gathered in this publication serves to reveal some of the complications and subtleties that the manifesto cannot provide on its own, with the aim of forming an overview of the issues at stake, rather than generalising, keeping open the possibility of difference within the pluralistic field of design.

In order to give an updated perspective, I refer to the recent publication Beyond Discipline, by Laura Furniss which gives a picture of the contemporary situation in design education in the UK and of the demands of a selection of design studios with regard to graduates. It is important to recognise that how we conceive design effects how we teach, learn and practice (Davies & Reid, 2000). Therefore an overall view of how design is changing is essential, if elusive. What may be the most crucial aspect of these texts is the discussion of how design education should structurally change, since the paradigm shift does not appear to fit comfortably into the traditional design studio model. This does not necessarily mean that this model should be abandoned, but it may well need to be rethought. The Icograda manifesto's call for 'many to many' teaching, suggests that the historical master-apprentice model must be transformed, but we have ask: into what, and how will it work? These questions have been raised before (Swan 1986, Souleles 2006) but attempts at providing answers tend to

lead to more questions, and of course this is not suprising, since it is easier to argue that the traditional model of design education should change than it is to propose how, as Souleles has acknowledged:

> 'The calls to widen the spectrum of required knowledge and skills, as opposed to providing design education for narrow working contexts as was traditionally done, indicate attempts to reflect the contemporary workplace realities of the design domain within the context of the knowledge economy. Although this does not tell us much about the ideal learning and teaching methods, it can be assumed that the delivery of anthropology, sociology, linguistics and semiotics is unlikely to happen in a prescriptive, sitting-with-Nellie manner' (Souleles, 2013, p. 253).

The aim of this chapter then, is to explore the demands of contemporary design education from various perspectives with the aim of setting out a broad definition of the emerging paradigm, an attempt which is undertaken with the awareness that forming such a synthesis of ideas risks making generalizations. However, the proposed synthesis with which this chapter concludes is necessary in order to form a coherent argument for how design education should develop in future.

5.1.2 Methodology

This chapter is a literature review and uses the methodology of a document analysis. Themes are examined from a variety of perspectives to move towards a synthesis of ideas and to identify crucial problematics for design education. Through these texts, recurrent ideas are identified, along with critical points of departure. The main difficulty one discovers in undertaking this process, is that there is superficial agreement on certain things, such as the idea that design education should focus on 'collaboration' or that design should 'be critical', but that this agreement does not mean that there is a consistent shared understanding of the ideas in question. It is also true that it is a lot easier to say that designers need to be 'interdisciplinary' than it is to set out what this means in practice, within the existing structures of education or a new structure, if necessary. The chapter highlights contrasting views of the key recurring themes that make up this paradigm; this is followed by a tabular analysis of oppositions, to further clarify the paradigm.

5.1.3 Changing Terminology

That there is a shift in the design education paradigm is demonstrated by the proliferation of new terms that have entered the discourse of design education in recent decades — many of which still seem difficult to conclusively pin down to definite meanings. It is also true of course that it is easier to call for 'student-centred teaching', than it is to define exactly what this would entail. In reading the 2000 and 2010 Iconograda manifestos, it is clear that there is a self-conscious attempt within the field to redefine the discipline of design for but that this attempt is still unresolved. In the past decade or so, new terms have entered the field of design that reflect changes in industry, but that have their roots in developments in theory, terms such as human centred design, critical design, participatory design, and design thinking. Introduction of these terms relate to a need within the discipline to reassess and redefine what design is and what it does. These terms all refer to different aspects of a new paradigm. The *Icograda Design Manifesto* (Sang-Soo, 2000) recommended the adoption of the term 'communication design' to replace 'graphic design', marking a strong intention for change. In industry, UX or 'user experience', a term that originally referred to an approach to design problems, is now used to distinguish those who design screen based interfaces from other graphic designers (Siang, 2016), however this term excludes multimedia, branding, information design and so on, although the distinction is becoming less clear (Myers, 2011).

5.2 Key themes

5.2.1 Collaboration

Design in general, as the planning for making of systems, policy, artefacts and the built environment is an undeniably collaborative area, where even at an extremely small scale, such as artisanal making of objects, there is usually more than one actor, with more than one area of specialism, but which, at the other end of the scale, can include an incredibly complicated process involving multiple teams, with layers of expertise, who may work together over several years. The ability to collaborate therefore is a fundamental competence for

the designer. However, within the contemporary design paradigm, under the influence of human factors theory, design thinking and the closely related participatory design and the legacy of the Design Methods Movement, collaboration has been brought to the forefront of discussions of how design education should change. The Beyond Discipline report notes the requirement of collaboration across and beyond design disciplines as a key element of design education (Furniss, 2015).

Collaboration can be defined as working together towards a common goal and can be a counterbalance to ego; it is a way of working that can also have value for client relationships by casting clients as collaborators (Heller & Talorico, 2011).

For Triggs, the designer should become a 'connectivist', taking a proactive and guiding role in interdisciplinary teams (Triggs, 2011) and they should use communication design to facilitate knowledge exchange. Collaboration then should become an area of expertise for designers. Trivedi argues that communication design is emerging as an integrative profession (Trivedi, 2011), while Capeto describes it as an integrated field (Capeto, 2011).

Rogal calls for the teaching of participatory design and codesign — suggesting a need for clarity in describing distinct types of collaboration (Rogal, 2011). Collaboration with users may take place be from the beginning of projects (Rogal, 2011), throughout, or towards the end, for testing and revising designs (Sless, 2011).

In 2018, Creative Review conducted a survey with supports the argument that collaboration is becoming mode important in design practice. *The Creative Review Design Employer Survey* (Siang, 2018) gathered results from 200 design employers in the UK, to which 96% of respondents stated that it was 'very' or 'fairly' important that design graduates could demonstrate collaboration skills.

5.2.2 Interdisciplinary Learning

An extension of collaboration, interdisciplinary learning requires collaboration with experts from other areas. Some call for cross-cultural and trans-disciplinary collaboration (Rogal, 2011) while others argue that design should be involved in collaboration with cognitive science, cognitive art (Vukić, 2011), business, science, ethnography, psychology, human factors and policy making (Triggs, 2011).

Hunt gives some clear requirements of what is needed for successful collaboration in an interdisciplinary context, he points out that students

must adapt, learn quickly, and effectively communicate their role, skills and responsibilities. He also suggests that we must teach students how to work with professionals who do not share a disciplinary language and method. This requires being able to talk about design without using design specific jargon. Practical opportunities for collaboration with those outside of the design area would be desirable (Hunt, 2011).

5.2.3 Research, theory and practice

The call for integration of theory and practice is common but vague. Ideas such as 'integrating research and practice fluently in design languages and technologies is essential to building a foundation for design' (Heller & Talorico, 2011, p. 83) needs to be accompanied by examples. Rogal argues we must teach qualitative, quantitative and human centred research methods (Rogal, 2011), which suggests teaching clear and distinct methods of research. For Rogal, human centred research requires fieldwork in a project environment and includes teaching how to engage with communities. Research and collaboration are thus linked. He also reminds us that we must ensure that students are able to apply research to projects, since there are occasions when there are failings in this area (Rogal, 2011). Therefore the relevance of research to projects needs to be demonstrable.

Tunstall gives actual examples of how research, theory and practice can be linked. She gives some examples of teaching what she calls 'respectful design', that are worth paying attention to, such as teaching drawing, 'not just as a technical skill in seeing, but as a philosophical skill in coming to understand one's contextual environment and place within it' (Tunstall, 2011, p. 134), although it is not clear how this is achieved. She also mentions a project that begins dialogues between 'indigenous Australian visual expressions of knowledge and Bauhaus design principles' (Tunstall, 2011, p. 134) an approach that has much potential for developing a critical approach to authority along with its visual formal element.

Her approach also includes a deep involvement with media; doing exercises where students make their own paper and dyes developing their awareness of processes and origins of objects. This method links abstract conceptual aims and physical hands on activities.

5.2.4 Fieldwork

Fieldwork is a specific type of research which, as Rogal testifies, has the benefit that discovery and exploration leads to empowerment for the students (Rogal, 2011) and can teach them how to engage with clients and the community. Fieldwork can be conceived therefore as a kind of collaboration. It can be argued that design education must engage more closely with real situations (Furniss, 2015).

5.2.5 Criticality

The manifesto itself uses the term 'critical thinking' in reference to solving problems. But one may also ask if critical thinking actually works like this, it may be a way to problematise solutions, but the other way around is more suspect. A clearer understanding of what critical thinking is and how it is related to the design process is necessary.

Hunt demands that students become strategic, critical thinkers and reflective practitioners (Hunt, 2011) while for Capeto, a profoundly critical attitude is desirable (Capeto, 2011). In some cases criticality is best understood as raising the consciousness of students and teachers so that they better understand their own, and design's place in a wider context. 'Working on a problem implies working on oneself', states Vukić (2011, p. 139) and adds that self-reflexivity should be fostered.

5.2.6 Social responsibility, ethics and sustainability

There is a tone of optimism throughout the Icograda essays, proposing that communication design can help to undo some of the environmental and social damage wreaked by globalization and capitalism. For Trivedi, visual communication can propose, design and implement necessary and emergent global changes (Trivedi, 2011) but for some, this is hubris (Tunstall, 2011) and we are reminded that, 'design contributes to the proliferation of large problems but offers little to their solution' (Lange, 2011, p. 92).

We should also beware of reducing terms such as responsibility and sustainability to feel-good mantras, if designers wish to claim a proposal is sustainable, designers must provide evidence (Capeto, 2011).

For some, ethics and social responsibility is linked with the development of designers themselves rather than focussed on outcomes. There are various related ways of describing the ideal contemporary designer: we may note calls for the development of informed, empathetic and culturally competent designers (Rogal, 2011), with compassion (Capeto, 2011) and for the practice of respectful design (Tunstall, 2011). Others are more ambitious, proposing that graphic designers need to understand, 'aesthetics, psychology, communication and social and functional needs of a changing society, as well as the driving forces behind these transformations' (Min, 2011, p. 99)

This shift is laudable, but not unproblematic. Sless points out that the transformation from design as planning for making things, to design as active social/political/economic engagement, requires entirely different competencies and a different approach to evaluation, since within this frame it is the effect that is emphasised, not the product (Sless, 2011). Capeto points out that design as a profession is not in a particularly strong position to question powerful structures and reminds us of the often contradictory task of design, to resolve the conflicting demands of social desirability, feasibility, environmental and political implications and commercial constraints (Capeto, 2011).

5.2.7 Problem framing and design expertise

In contrast to the traditional idea of design solving problems is the shift to problem framing. This idea connects to criticality — to not taking things at face value — and also to participatory design and design thinking, in which problems should be identified with or by a community (Rogal 2011). Ultimately, problem framing is seen as more important than problem solving (Dubberly, 2011) and design as problem solving has itself been called into question:

> 'Conventional wisdom about the nature of problem-solving expertise seems often to be contradicted by the behavior of expert designers. In design education we must therefore be very wary about importing models of behavior from other fields. Empirical studies of design activity have frequently found "intuitive" features of design behavior to be the most effective and relevant to the intrinsic nature of design. Some aspects of

design theory, however, have tried to develop counter-intuitive models and prescriptions for design behavior. We still need a much better understanding of what constitutes expertise in design, and how we might assist novice students to gain that expertise' (Cross, 2011, p. 17).

The traditional idea of design as the solution to a problem is now therefore considered suspect and it has been recognised that design problems are not usually stable but changeable (Dorst, 2010).

5.2.8 Industry

Discussions of business and industry are strangely absent from the majority of the essays from Icograda, with the exception of Heller and Talarico who argue for the importance of entrepreneurship (Heller & Talarico, 2011). If the contemporary paradigm of design education requires building contacts beyond the university, then the relation to business should be something direct, rather than based only on an idea of how business works. The *Beyond Discipline Report* (Furniss, 2015) however, warns of a serious mismatch between the requirements of changing industry and education.

5.2.9 Craft

In recent years there has been resurgence in interest in craft, and it remains a subject of some debate, since there is a tension between accepting that certain forms of making are now obsolete, and the recognition that craft processes may have new meaning and possibilities when combined with new technology. For some of the writers here, craft is a source of knowledge that we must be wary of losing (Sless, 2011) while for others it is as important as ever (Malouf, 2011). The ideal may be to exploit the possibilities of craft, while not allowing the discipline of design to be defined by obsolete media. Craft should also be valorised because of the satisfaction it can bring to students who want to make things, whether virtual or physical and we should remember that this is why many choose design (Heller & Talorico, 2011).

5.2.10 Linguistics and literacy

As educators we must encourage people to express their thoughts publicly and clearly (Vukić, 2011) and several of the essays mention the need to ensure students have the ability to read and write well (Heller & Talorico, 2011). Sless points out that an essential part of the design process is prototyping, which he claims may consist of around 50% writing (Sless, 2011). We might add, since communication design products are mostly typographic, the relation to written text is crucial on the level of the artefact.

Hunt argues that communication designers must become more capable of articulating the specificity of their practice and argue for the strategic value that they add to industry (Hunt, 2011). In this sense the value of written and oratory ability is brought into focus. Designers must be able to discuss design issues with non-designers, but in order to collaborate and market themselves successfully, it can be claimed they must also be able to speak the language of entrepreneurship (Heller & Talarico, 2011).

There are other aspects of language that provide us with conceptual tools that can be applied to both writing and design, such as rhetoric, narrative and semiotics (Malouf, 2011), potentially, these should be given greater emphasis.

5.2.11 Adaptability and specialisation

The quality of adaptability is cited variously as an ideal quality for students, the outcomes of design, and for courses themselves. Students should attain the quality of adaptability in order to respond to the rapid pace of change in technology, culture and events. Hunt demands that designers be both solidly specialised and flexibly generalised (Hunt 2011), which highlights the problems of achieving balance. He points out that it is a challenge for designers to be conscious of — and sensitive to — all aspects of a project, from the 'mark on the page' to the context of the artefact.

Changes in technology modify the tools of design, which have already become widely available to nonprofessionals. Some have a positive view of the democratisation of design tools, highlighting benefits such as a greater understanding of creativity (Trivedi, 2011), while others see it as an erosion of the profession. In essence, rapid technological change is seen as running counter to specialisation, since skills and knowledge can become obsolete and a media based focus becomes less relevant as platforms and devices

converge, making the boundaries between disciplines fluid (Dubberly, 2011). The outcomes of design are also subject to this modification. There is a shift from fixed outcomes to flexible outcomes as change becomes continuous (Dubberly, 2011).

Some argue that typography continues to be the *lingua franca* and foundation of communication design (Heller & Talarico, 2011) since it is just as relevant for screen as it was for print, although now it takes on new uses since typography has essentially become the interface (Reichenstein, 2006). We should be aware however that technology may soon replace yet more expertise in this field, with the development of devices that can recognise and reproduce typographic style instantly (Carman, 2016).

Dubberly makes the case for students to become fluent in programming, since 'programming requires a lot of invention by the programmer' (Dubberly, 2011, p. 80), so designers may then lose control, which the programmer takes over. Yet, if we remind ourselves that the role of a designer is a connectivist (Triggs, 2011) who must collaborate and work strategically, then perhaps they should cede control to experts in programming, just as they would to other specialists in a multidisciplinary team. It is true of course that, like other tools, programming languages can also become obsolete, although related abilities, such as in logic and mathematics, do not.

5.2.12 Complexity

A recurring theme through these texts is complexity. It is necessary to understand the complex and adaptive nature of design products and also of the context in which design must operate. Thus, complexity requires adaptability within the current paradigm; we should note that this is an ideological response, since it is also possible to imagine responding to complexity by simplifying or calling for order and structure. For Davis, the complex nature of the global context of design demands an appropriately flexible model and curriculum for education (Davis, 2011). She warns that there is a tendency to teach design in a way that separates it from its context, thus concealing much of the complexity that exists between different actors. This is an important point, since it suggests that we must actively connect design projects to their context. That is to say, plan our projects so that they go beyond simulation and directly connect with wider society. Hence, the new paradigm requires fieldwork and other forms of nonstudio work.

5.2.13 Agency

As educators we must encourage people to think with individuality, (Vukić, 2011) and provide students with decision making capacities (Rogal, 2011). These characteristics can be referred to by the term 'agency', but are also linked to entrepreneurship and self-determination. Choueiry highlights some of the problems that teachers may face in this area, since it becomes necessary for design education to undo some of the effects of the school and college that precede it:

> 'When these students come to university, we ask them to experiment so they can unleash their creativity. How can we expect this of them after they have been in stagnant waters for almost 15 years? It is difficult to break 13 to 15 years of conditioned behaviour' (Choueiry 2011, p. 60).

If designers are going to create projects as authors, by developing a personal voice or narrative, or contribute to projects as content providers (Heller & Talorico, 2011) then they must be encouraged to be initiators of projects, who can define and explore their own areas of concern. Design education therefore must adapt to this challenge.

5.2.14 The teaching model

Suggestions that all teaching and learning could be shifted to a digital or virtual level (Colucci, 2011) are at odds with aims to increase skills in collaboration and community engagement, which require empathy and interpersonal skills. Indeed, increasing technology in universities does not address the fundamental issues. One possible approach that encourages agency and skills in problem framing is for students to create their own briefs, since problem statements defined by faculty may lack the complexity and contradiction of real problems (Davis, 2011). However it is clear that teachers must guide students in this process.

Hunt argues that many may see the ideological shift from product-centred to user-centred design as a threat to formal design curriculum, and that this is true for product design and architecture (Hunt, 2011). Sless (2011) points out that there is understandable resistance to changing the traditional teaching model, for reasons of losing craft knowledge, but also the difficulties of making the transition from the notion of the designer as heroic individual to evidence

based professional, but he argues that currently design education misses much of what is needed by professionals, the largest part of which being the political management of all parties involved in the design process (Sless, 2011). In this view, the role of the designer becomes that of a moderator between conflicting requirements of stakeholders.

Capeto (2011) provides us with criteria for considering changes in design education; we should ask ourselves whether a given change would contribute to self-determination in practice and teaching. Therefore changes must empower both students and teachers. Malouf (2011) makes the case for plurality in education, pointing out that there are many kinds of designers. He suggests that education should combine formal and informal modes and argues for maintaining a formal studio structure with a focus on the development and execution of artefacts. There are important competencies for designers that may be best developed in a studio context such as understanding materiality, learning to externalise thought through visual thinking, promoting expressiveness, and physical making (Malouf, 2011). However he also calls for various competencies that do not naturally fit into the studio model, such as understanding of psychology, anthropology, politics, economics, technology, science and linguistic theory. In this light, a combination of different teaching models may be more appropriate than relying mainly on the traditional studio model.

5.3 **Summary**

Following the above analysis, it is possible to build a table of oppositions that help to delineate the traditional and contemporary paradigms of design education as follows:

Traditional paradigm	Contemporary paradigm
Tangible	Experiential
Object orientated	Service orientated
Client centred	User centred
Things	Systems
Specialised	Adaptable
Individual	Group
Working alone	Collaboration
Rules	Ethics
Problem solving	Problem framing
Finished solution	Adaptive solution
Fixed outcome	Flexible outcome
Studio model	Fieldwork and research
Master to apprentice	Peers to peers
Design as planning for making things	Design as active social/political/economic engagement
Aesthetics	Effectiveness
Quality	Performance
Taste	Evidence
Structural systems	Complex systems
Simplify complexity	Manage complexity

Table.4 Summary of traditional and contemporary paradigms of design education

By examining the points of view above we may begin to grasp what is at stake in the new paradigm of design, and what is at risk of being lost. It is clear that we must positively embrace and guide this transformation.

For example, if students and teachers are going to interact more through digital devices (Colucci, 2011) then we may need to proactively encourage situations for face to face interaction. If we begin to question the studio model, we should recognise the benefits of this type of learning, such as the students seeing each other's projects develop, the informal sharing and developing of ideas through casual conversation and the opportunities that a dedicated studio space gives for plastic experimentation. We may need to emphasise these aspects in other ways. If the trend for the reduction of art based subjects in schools (Furniss, 2015) is continues, then the need for provision of basic artistic formation will be increased.

Collaboration must be encouraged both inside and outside of the classroom, since this is so crucial to design. Technological and curricular development is important, but so is emersion in the inherently rich, complex, stimulating and fascinating world of human relations.

As technology replaces many analogue means of working, some contact with traditional means of making becomes much more important, not necessarily as a 'return to craft' — although this also may have some value in itself — but rather, to encourage creativity, play and an understanding of materiality and externalising thought. We must recognise that experimentation in design may have a scientific aspect — to formally analyse a prototype for example — but that there is also a necessity for experimentation in the sense of trying things out, seeing what happens, whether this is with material or ideas or both. For this, there must be a space — temporally and physically — in design education for open ended work that is not subject to the restrictions of evaluation. Within the university system this may well be a challenge. But this does not make it less of a necessity.

Problem framing creates a challenge for the traditional problem/solution structure of traditional design projects. The implication is that students must actively engage in society and culture to identify problems and opportunities for transformative action.

Throughout the Icograda essays, there is lack of reference to the economic realities of the contemporary design industry. However, there are some researchers addressing this issue, for example the project *Precarity Pilot* (Brave New Alps, 2015), which delineates another side of the situation in post-crisis neo-liberal economies, that designers are already subjected to precarious working and living conditions, such as bulimic work patterns, long hours, poor pay and anxiety (Brave New Alps, 2015). Therefore design education needs to produce designers who are not docile and who are aware of labour politics. These designers should be working towards creating conditions that are less precarious. They argue that there is a need for 'subversive' career advice to create practical strategies to reduce insecurity of employment. In this way, a key aim for design education and for critical designers is to approach the design profession as a problem that needs to be reframed (Brave New Alps, 2015). One is compelled to agree with the argument that we must set aside assumptions and transform both the content and structure of design education (Davis 2011). The following chapter will discuss several possibilities for this transformation by examining the potential of Experiential Learning, Reflective Practice and Action Research for design education.

Chapter 6

Experiential learning, Reflective Practice and Action Research

6.1 Introduction

This chapter examines the interlinking ideas of Experiential Learning, Reflective Practice and Action Research, and considers how these may have particular application for design education. These three distinct but related fields focus on forms of knowledge that are only available through direct apprehension, and forms of learning that are rooted in participation, collaboration, interdisciplinarity and (fundamentally) doing. This chapter proposes that these ideas can contribute to a theoretical framework for an evolving epistemology of design education. This chapter is based on a conference paper of mine entitled *What is a design experience: thinking, doing, learning*, (Hardman, 2015), which examines the ideas of Experiential Learning, Reflective Practice and Action Research in turn and discusses the ramifications they could have for design education. It is likely that some of the ideas contained in these epistemologies of teaching are already in use to a greater or lesser extent, and may already have direct or indirect influence on many teachers and institutions within design. However it is the aim of this study to foreground these ideas in their essential forms in order to work towards a conscious and critical approach to the activity of design teaching.

At the root of the ideas addressed in this paper is a concern for the phenomenological aspect of the learning process. Although the content of any course is important and requires attention, the actual classroom experience that the students are involved in has it's own possibilities and value — the activity that takes place in the learning process is its own kind of content that should

not be overlooked. There is a crucial side to learning that occurs beyond the direct teaching delivered by the teachers, which depends on the interactions between students themselves, the dynamics of the classroom and even the uses of physical spaces inside institutions.

I want to argue that this is of particular importance to consider in design, which, due to it's technical aspect, is always in danger of being taught as a technical subject, when in fact it contains many aspects that cannot easily be taught as a series of nuggets of knowledge. Skill such as the synthesis of ideas, and the reframing of problems, for example, require cognitive skills and deeper engagement with complex situations than a straight forward problem/solution dichotomy can provide. While collaboration with peers, clients and stakeholders — a key aspect of design practice — is a skill not easily facilitated using conventional teaching methods. This study proceeds in the anticipation that the theories of Experiential Learning, Reflective Practice and Action Research can provide a theoretical approach to addressing these concerns.

6.2 Experiential Learning and Learning Styles

6.2.1 Overview

Kolb sets out the aim of Experiential Learning as to suggest 'a holistic integrative perspective on learning that combines experience, perception, cognition, and behaviour' (Kolb, 1984, p. 20). It is then a phenomenological approach to education, that places an emphasis on the experience of learning itself and the nature of learning in a given context. In simple terms, we can consider Experiential Learning to be the defence of learning-by-doing and the idea that there are many areas of practical knowledge that can best (or only) be learnt 'by doing', seems beyond doubt, one cannot learn to be a chef by reading recipe books, but must also cook the food. This much is obvious, but how learning-by-doing can be applied in schools and universities and to what extent, as well as the question of which areas of knowledge can or should be taught 'by doing' leads us to much less certain ground.

The most important source for this section is the work of Kolb, for his formulation of ideas about cycles and styles of learning, however there are earlier exponents of Experiential Learning and related ideas that should be acknowledged, for example, the influence of Jean Piaget and Jerome Bruner for their work on introducing cognitive learning theory into education, and the classic imperative to introduce Experiential Learning which comes from the American philosopher John Dewey, writing in relation to progressive schooling: 'there is an intimate and necessary relation between the processes of actual experience and education', (Dewey, 1938, p. 19). Dewey highlighted the fact that there is not a choice between education that uses an experiential aspect and one that doesn't, since going through a process of education is itself an experience. We must therefore pay attention to the kind of experience that education provides (Dewey, 1938), or in other words, in any form of pedagogy, there is a 'hidden curriculum' (Koch, Schwennsen, Dutton & Smith 2002) of implied social relations which include hierarchy, values, and behaviour, and these are also part of the experience that learning provides.

The writing of Bruner contains many insights that could be of relevance to design education, for example, in his reflections on the way children learn, we can easily see parallels with the type of learning needed by designers:

'It is only through the exercise of problem solving and the effort of discovery that one learns the working heuristics of discovery; the more one has practice, the more likely one is to generalise what one has learned into a style of problem solving or inquiry that serves for any kind of task encountered — or almost any kind of task. I think the matter is self evident, but what is unclear is the kinds of training and teaching that produce the best effects. How, for instance, do we teach a child to cut his losses but at the same time be persistent in trying out an idea; to risk forming an early hunch without at the same time formulating one so early and with so little evidence that he is stuck with it while he waits for appropriate evidence to materialise; to pose good testable guesses that are neither too brittle nor too sinuously incorrigible?' (Bruner, 1982, p. 94).

The dual skills of persistence and cutting ones losses, the ability to quickly formulate solutions but not to get stuck to them, how well these behaviours describe the activity of designers. He continues:

'Practice in inquiry, in trying to figure out things for oneself is indeed what is needed — but in what form? Of only one thing I am convinced: I have never seen anybody improve on the art and technique of inquiry by any means other than engaging in inquiry' (Bruner, 1982, p. 94)

This is very much the essence of the idea of Experiential Learning and the relevance for design education is indisputable, to learn how to do something — and design, as discussed earlier in this document (x) is fundamentally concerned with doing — must involve practice in this doing. The dilemma is how to articulate this practice to encompass the fullness of design activity in all its complexity.

Kolb has argued that the contribution of Piaget to Experiential Learning theory is also crucial:

'Piaget's theory describes how intelligence is shaped by experience. Intelligence is not an innate internal characteristic of the individual but arises as a product of the interaction between the person and his or her environment. And for Piaget, action is the key. He has shown, in careful descriptive studies of children from infants to teenagers, that abstract reasoning and the power to manipulate symbols arise from the infant's actions in exploring and coping with the immediate concrete environment' (Kolb, 1984, p. 12).

As we shall see in the following sections on Reflective Practice and Action Research, Experiential Learning differs by gives greater focus to the part played by concrete experience. The connection between the concrete and the abstract is of central importance for Kolb as will become clear as we consider his discussion of knowing through apprehension.

6.2.2 The Experiential Learning Cycle

Crucial to the idea of Experiential Learning is that learning is a process rather than an end, and as such, learning is conceived as occurring in a cycle that starts with an experience, followed by reflection and theorising general principles, which in turn lead to new situations and experiences, as follows:
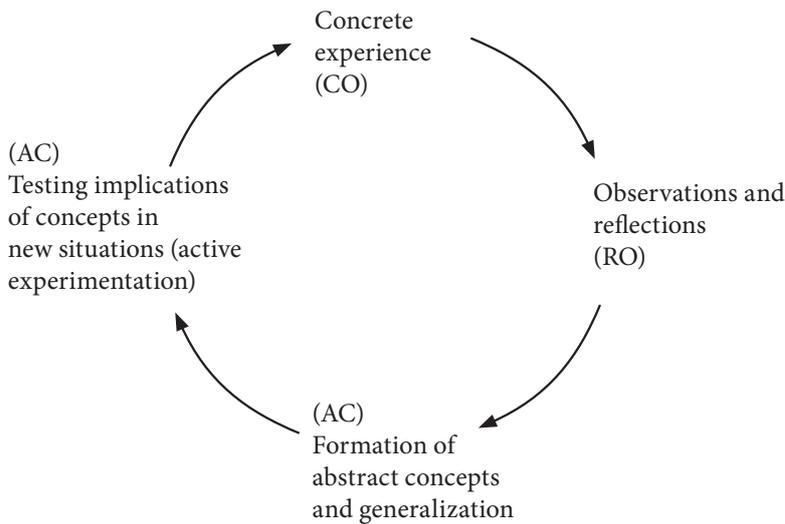
Figure.1 Experiential Learning Cycle (adapted from Fry & Kolb, 1979, p. 81)

These stages are understood as relating to skills that the learner should develop, so that they learn not only about the phenomena in question, but also become better at conducting the learning process itself. To elaborate:

> "That is, he or she must be able to get involved fully, openly, and without bias in new experiences (CE), to reflect upon and interpret these experiences from different perspectives (RO), to create concepts that integrate these observations in logically sound theories (AC), and to use these new theories to make decisions and solve problems (AE) leading to new experiences' (Fry & Kolb, 1979, p. 81).

Looking at this model of the learning process, it is clear that this type of learning requires a holistic approach to teaching and learning and for the student to develop a variety of complementary skills.

6.2.3 Conception of Knowledge
in Experiential Learning

Kolb is particularly critical of the dominant ideology of education, which Freire (Freire, 2005) has termed the banking metaphor of education, because it is incompatible with a constructive view of knowledge. The banking metaphor describes a kind of education in which the student is seen as a vessel in which the teacher 'deposits' pieces of information and where 'the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits' (Freire, 2005, p. 72). Criticism of this one directional exchange between teachers and students, is of course relevant to all pedagogies that aim for an open and symmetrical mode of communication between participants in a learning situations (teachers and students). Kolb argues that such a materialistic understanding of learning depends on a different conception of knowledge that of Experiential Learning, because it assumes that knowledge is static, whereas, for Experiential Learning:

> 'Ideas are not fixed and immutable elements of thought but are re-formed through experience […] learning is […] a process whereby concepts are derived from and continuously modified by experience. No two thoughts are ever the same, since experience always intervenes' (Kolb, 1984, p. 26)

However, the banking metaphor of education is extremely ingrained in the culture, it is even difficult to talk about knowledge without using metaphors of ownership and containment, to take a few examples, we 'gain' knowledge, we 'have', 'share', and are 'full of' ideas (Lakoff & Johnson, 2003).

For Kolb this is the antithesis of education, because he considers that education is a process and that to understand knowledge as being fixed pieces of information is to misunderstand its nature. Crucial to this argument is the difference between knowing through comprehension and apprehension. Kolb discusses these two forms of knowledge in depth through his discussion of the learning process. He explains the distinction by comparing the experience of sitting in a chair (feeling it supporting your weight, touching your body at various points, relative hardness and softness, etc.) with knowing the concept of a 'chair':

> 'A convenient way to summarise a whole series of sensations [...] the concept also ignores particular aspects of your chair that may be important to

you, such as hardness or squeakiness [...] In this sense, concepts and the associated mode of knowing called comprehension seem secondary and somewhat arbitrary ways of knowing' (Kolb, 1984, p. 43).

Kolb's point is that we tend to assume that the secondary form of knowing (comprehension) as being more important that the primary form (apprehension). One of the aims of Experiential Learning is to valorise concrete experience as a primary way of knowing, and attempts to elevate it to be on equal terms with comprehension.

Another way of explaining this distinction would be this lyric from Bill Callahan, 'I could tell you about the river, or we could just get in' (Callahan, 2007). Knowing the river through swimming in it is clearly as valid an understanding as other theoretical knowledge, such as the physics involved in the behaviour of liquids, for example. A comparison between the two types of knowing that Kolb identifies is shown below:

Knowledge through apprehension	Knowledge through comprehension
Synthetic	Analytic
Concrete	Symbolic
Analogic	Abstract
Nonverbal	Verbal
Nonrational	Rational
Spatial	Digital
Intuitive	Logical
Holistic	Linear

Table.5 Comparison of knowing through apprehension and comprehension (adapted from Kolb, 1984, p. 49)

By considering each side of the table, we can see that as a discipline, design requires both types of thinking, and in fact it seems to be characteristic of design to make a connection between the two: the holistic, synthetic nature of design, which seeks to resolve complex relations between things, to make integrated wholes, but that must always relate to rational practical problems. Design needs a combination of the two modes of thought, to narrow a problem down, but also to take multiple viewpoints. Convergent and divergent thinking are both required. Of course, not only design needs these two approaches to knowledge, this links us to Schön's concept of the 'Reflective Practitioner' (Schön, 1983), who is able to creatively reframe a problem while attempting to solve it. Consider a surgeon for instance, who uses rational, scientific knowledge and strict procedures at all times. They are still working in a tactile, concrete way, handling another body, working in a malleable three-dimensional space, making rapid instinctive

decisions based on graded information — this is the artistry that Schön refers to when he describes the 'artful ways in which some practitioners deal competently with the indeterminacies and value conflicts of practice' (Schön, 1983, p. 19). In design the concrete and instinctive must be dealt with simultaneously, as must the abstract and the rational. The two modes of knowing should not be seen as having a binary opposition, but as existing in a necessary dialectic relation.

6.2.4 Learning styles, situations, environments

From the phenomenological basis of examining the nature of knowledge and perception, Kolb builds his argument for a version of Experiential Learning which is exemplified by four learning styles and four learning situations, termed as 'learning environments', see the table below:

Learning Environment	Type of knowledge / problem.	Social dynamics	Characteristics
Symbolically Complex	Problems that have a right answer or clear best solution. Information, topic or problem is abstract or can be accurately represented by data.	Teacher represents a body of knowledge. Teacher is also an enforcer of rules and schedules. Learners not responsible for managing their own goals or timekeeping.	Learners guided and constrained by externally imposed rules. Learners must recall rules and relevant symbols, themes or jargon from memory. Success can be measured objectively.
Perceptually Complex	Complex subject matter. Identify relationship between concepts. Define problems. View a problem from different perspectives.	Open exploration of ideas, opinions and reactions. Differences between participants are seen as constructive.	Focus on methodology rather than outcome. Reflection to guide future activities. Success is not measured against rigid criteria.
Behaviourally Complex	Applying knowledge or skills to a problem that may be faced in professional practice. There need not be a single right answer, but learners should be able to 'complete' the problem. The completion aspect is an essential component.	Teacher is in passive role as coach and advisor. Participants responsible for their own behaviour and time management.	Focus on doing. Activities linked so that establishing cause and effect. Success is measured against diverse criteria such as how well something worked, feasibility, cost, aesthetic quality, etc.
Affectively Complex	Simulation of professional work. No right answer or complete solution to problem. Reflection on experience to generate insight.	Teacher serves as role model (more as a colleague than authority). Personalised feedback. Feedback from peers and teacher.	Events are more emergent than prescribed. Success is open for discussion. Discussion and critique of the course is accepted.

Table.6 Kolb's four learning environments, showing how different types of learning suit different learning styles (Adapted from Kolb, 1984, p. 198)

Kolb's argument is that different types of learners respond better to different types of learning environments, a concept that is not without its critics (e.g. Pashler et al., 2009), but the question of whether it can be proved that individuals have different learning styles is beside the point, if we are interested in an analysis of how learning experiences can be organised with a particular cognitive emphasis in mind.

Comparing the above table with the requirements of design education, it can be seen that the identification of the four learning environments has the potential to be useful for the pedagogy of our discipline. The following table relates Kolb's four learning environments to design education:

Learning Environment	Potential uses in design education
Symbolically Complex	Technical classes: typography, geometry, computer programming, etc.
Perceptually Complex	Holistic competencies, design history. Conceptual, critical, and research abilities.
Behaviourally Complex	Hands on, practical workshops. Production skills.
Affectedly Complex	Project based learning as in the traditional studio model.

Table.7 Comparison of Kolb's four learning environments with design education

A comparison of the above shows that traditional design education does have a bias towards certain kind of learning and an affectively complex learning environment, but it also shows that there is the potential for it to benefit by considering how the other aspects could usefully be integrated. Here we can see the importance of balancing the different learning styles. In the same way that a designer's education should not only be the learning of design history and technical skills, it is also insufficient to focus only on process based experimentation and making. The education of the designer must strive to create a 'self-renewing', 'self-directed' individual with integrated abilities. Therefore a holistic approach to education is required.

> 'Thus it would seem that a central function for the larger university organisation is to provide integrative structures and programs that counterbalance the tendencies towards specialisation in student development and academic research. Continuous lifelong learning requires learning how to learn, and this involve appreciation of and competence in diverse approaches to creating, manipulating, and communicating knowledge' (Kolb, 1984, p. 205).

In this description of the aims of Experiential Learning we can also see what could be a description of the role of a designer, whose practice consists of

'creating, manipulating, and communicating knowledge' (Kolb, 1984, p. 205). In summary, by using a holistic approach to learning, that acknowledges the importance of concrete as well as abstract and technical knowledge, Experiential Learning aims to develop students that will engage in life long learning and are protected from the dangers of over specialisation through their adaptability and flexibility. Like Schön's concept of Reflective Practice, discussed in the following section, Kolb recognises the diverse artistry that is needed for successful professional practice over a career.

6.3 Reflective Practice

6.3.1 Overview

The term Reflective Practice refers to Donald Schön's work on the phenomenology of professional practice developed through two influential books, *The Reflective Practitioner* (Schön, 1982) and *Educating the Reflective Practitioner* (Schön, 1987). His ideas have emerged through a close look at the nature of actual professional practice in a number of areas such as management, town planning, architecture, and teaching — professions in which the core work cannot be practiced by using set rules and procedures, but has to be constantly adapted by using what Schön describes as 'artistry'. That is to say, the professionals exhibit artistry in the way they behave and make decisions in the midst of practice.

6.3.2 Criticism of technical rationality

The development of Schön's ideas are, as with Kolb, in direct opposition to positivism, usually referred to as 'technical rationality' by Schön (Schön, 1982, 1987). He observed that in the latter half of the 20th century, most professions attempted to make themselves more rational and scientific (a phenomena that can also be recognised in design as course, with the Design Science movement and the developments at HfG Ulm, as discussed in Chapter 3) and 'embedded not only in men's minds but in the institutions themselves, a dominant view of professional knowledge as the application of scientific theory and technique to

the instrumental problems of practice' (Schön, 1982, p. 30). Schön criticises this view, and maintains that it represents a misunderstanding of how professional knowledge works, arguing that practical knowledge is an anomaly for positivism, since 'we cannot really treat it as a form of descriptive knowledge about the world, nor can we reduce it to the analytical schemas of logic and mathematics' (Schön, 1982, p. 33). For Schön, the crucial failing of looking at professional practice from the perspective of Technical Rationality, is that it reduces practice to problem solving, ignoring the framing or setting of the problem, a criticism that is of course quite relevant for discussions of design:

> 'But with this emphasis on problem solving, we ignore the problem *setting*, the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen. In real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the materials of problematic situations which are puzzling, troubling, and uncertain. In order to convert a problematic situation to a problem, a practitioner must do a certain kind of work. He must make sense of an uncertain situation that initially makes no sense' (Schön, 1982, p. 40)

Indeed, Schön uses an example of town planning to illustrate his point in a way that recalls the 'wicked problems' described by Rittel & Webber (Rittel & Webber, 1973) in which design problems are shown to resist a simple problem/solution structure for a great variety of reasons:

> 'When professionals consider what road to build, for example, they usually deal with a complex and ill-defined situation in which geographic, topological, financial, economic, and political issues are all mixed up together' (Schön, 1982, p. 40)

Schön argues therefore, that although technical and scientific methodologies can be useful for practitioners, they cannot completely satisfy the requirements of practice because problem setting is not itself a technical problem, but rather is based on balancing a multitude of conflicting possibilities and interests.

These challenges are relevant to practice at the meta scale of framing and setting the problem, but there is another dimension to Schön's criticism of 'scientific' approaches to practice which deal with a more immediate scale: the decisions and changes in strategy that practitioners must take *while* they

are engaged in practice. Schön terms the type of knowledge that professionals use while working as 'knowledge-in-action', and points out the difficulty in describing this knowledge without the context of the particular situation in which the expertise is applied. In making these observations, Schön was building upon Michael Polanyi's concept of 'tacit knowledge' (Polanyi, 2009), which is a way of defining the knowledge that we have which is not describable in words and is usually implicit in our behaviour rather than something we explicitly recognise, even for ourselves.

> 'An explicit integration cannot replace its tacit counterpart. The skill of a driver cannot be replaced by a thorough schooling in the theory of the motorcar; the knowledge I have of my own body differs altogether from the knowledge of its physiology; and the rules of rhyming and prosody do not tell me what a poem told me, without any knowledge of its rules' (Polanyi, 2009, p. 20).

We may readily accept that tacit knowledge is at work in the practice of design or other subjective disciplines, but importantly Polanyi — himself a chemist as well as a philosopher — also argued that tacit knowledge can be seen to be at work even in the following of scientific methodologies, as the scientist senses that they are working towards a discovery, and follow this instinct as they are 'filled with a compelling sense of responsibilty for the pursuit of a hidden truth' (Polanyi, 2009, p. 25) and act, albeit in a rational and methodological way, as if 'guided by the sense of a hidden reality toward which our clues are pointing' (Polanyi, 2009, p. 24). Discussing artistry and competence in unique and unpredictable situations, Schön notes how striking it is that these abilities 'do not depend on our being able to describe what we know how to do or even to entertain in conscious thought the knowledge our actions reveal' (Schön, 1982, p. 22). Schön shows this with a series of basic examples such as the knowledge and ability used in catching a ball, and maintains that there is an aspect of this tacit knowing in much more advanced and psychological knowledge, such as, for example, the ability to gentle convince and persuade in a conversation (Schön, 1982).

6.3.3 Reflection-in/on-action

Other key concepts that comes from Schön include 'reflection-in-action' and 'reflection-on-action'. Schön makes this distinction to describe the ability to think and change behaviour in response to a situation as it happens (reflection-

in-action) and the activity that occurs when a practitioner reflects on their practice after a situation is concluded (reflection-*on*-action). These terms are particularly useful when considering how professional practice actually functions and is also relevant in understanding how learning to perform a particular activity must also work, as artistry is applied through a 'conversation with the situation' (Schön, 1982) and how knowledge is constructed in dialogue between teacher and student within a specific context. Using and example from an architecture tutorial, Schön shows how, at its best, a one-to-one crit can be a collaborative conversation involving various levels of communication to develop a shared set of concepts that could only be developed 'in action' as the 'aspiring member of the linguistic community of design' (Schön, 1982, p. 98) learns to use and distinguish particular meanings of terminology in context.

A related term of Schön's is 'knowing-in-action' which he refers to as the application of tacit knowledge, 'implicit in our patterns of action an in our feel for the stuff with which we are dealing. It seems right to say our knowledge is *in* our action' (Schön, 1982, p. 49). But when a practitioner reflects on this knowledge as they practice, they are engaging in another process, 'reflection-in-action', in which they question and criticise their tacit knowledge as they work. Schön highlights several levels on which this reflection-in-action may take place: a questioning of the original understanding of the phenomenon or problem; the construction of a new way of setting the problem (framing); or of questioning the values at stake in the situation, all of which may be done as the activity continues. Summarising how reflection-in-action can be recognised in many real life examples Schön concludes:

> 'In examples such as these, something falls outside the range of ordinary expectations. The banker has a feeling that something is wrong, though he cannot at first say what it is. The physician sees an odd combination of diseases never before described in a medical text. Tolstoy thinks of each of his pupils as an individual with ways of learning and imperfections perculiar to himself. The teachers are astonished by the sense behind a student's mistake. In each case, the practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomena before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomena and a change in the situation' (Schön, 1982, p. 68).

The point that Schön is making here is that in situations where there is no possibility of creating controlled, repeatable experiments, decisions must be taken and strategies of actions adapted, in the midst of practice. This does not mean that the practitioner is acting completely by instinct or completely according to established practices — rather they are reflecting on their possible moves and reformulating their behaviour 'in-action'. For Schön then, to develop as a 'Reflective Practitioner' is to do something not covered by Action Research — which, as is shall covered in the next section, proposes clearly sequenced periods of action and reflection — it is to develop the ability to be self-reflexive and self-aware while actually practicing, to develop the ability of reflection-in-action as well as taking part in a cycle of activity and evaluation.

6.3.4 Schön and the studio model

It is of particular interest to this study that Schön takes the design studio model to be the ideal format for teaching a student the artistry that they need for in professional practice in subjects even outside of design (although he is also able to show through observations of real crits how they can go wrong). When it succeeds, the studio model allows for a kind of one-to-one 'coaching', championed by Schön, which is exactly the attitude that is required for successful Action Research: symmetrical communication; openness and honesty between participants; a shared aim of constructive criticism. For Schön the studio model has the advantage of giving the teacher the role of a coach and giving students the chance to learn by doing, by practicing:

> 'Students practice in a double sense. In simulated, partial, or protected form, they engage in the practice they wish to learn. But they also practice, as one learns the piano, the analogues in their fields of the pianist's scales and arpeggios. They do these things under the guidance of a senior practitioner — a studio master, supervising physician, or case instructor, for example. From time to time these individuals may teach in the conventional sense, communicating information, advocating theories, describing examples of practice. Mainly, however, they function as coaches whose main activities are demonstrating, advising, questioning, and criticising' (Schön, 1987, p 38).

This one-to-one coaching does not always work though, Schön gives examples of these occurrences and argues that when things do not go well it is because there is an absence or unbalance of communication the above, and then the crit resorts to a kind of game theory situation, in which the teacher and the student both try to emerge from the encounter as the 'winner', meaning that in fact, as with a domestic argument, both end up as 'losers'. Schön points out that by perceiving a crit as a win/lose situation both the teacher and student begin to defend their own positions and make confrontational arguments, while hiding what they actually think and feel about the subject. Thus, Schön argues for a form of discourse in which participants 'reflect out loud, and at the time', (Schön, 1987, p. 299).

They way that the participants behave in Schön's examples of the successful and the doomed crits are termed *Model I* behaviour (defensive, controlling, closed, risk averse) and *Model II* behaviour (openness, freedom, risk taking, collaborative) (Schön, 1987). Here we can see a clear indication of the type of designers (and teachers) we should be trying to produce and to be. Importantly I would argue, *Model I* behaviour is worsened when the participant attempts to stick to a predetermined program, whereas successful *Model II* behaviour depends on free access to a repertoire of strategies and options. This, I suggest, is a useful way of thinking about what differentiates design practice. In dealing with unpredictable, complex, and ultimately, human situations, designers must use a *Model II* type of behaviour, keeping options open, considering multiple viewpoints and unpredictable outcomes. To follow a program too strictly in a design process, is to ignore what may be most important and to become a misguided technician.

By reading Schön's transcripts of the crits, a teacher engaged in this kind of work cannot help but run over in their minds situations they have experienced themselves and make plans as how to attempt to operate in future. It is exactly this kind of reflection-*on*-action, even reflection on someone else's action, that has the potential to improve performance and the ability to reflect-*in*-action, to take pause and become aware of one is doing. Thus it seems that reflection-in-action can be considered a kind of mindfulness, although rather than having some kind of mystical base, it is an idea that comes from analysis of real experiences and real life examples. Schön's contribution then is mainly concerned with of individual practitioners and theorises aspects of an individuals practice and how this practice can be developed and improved both through coaching but also through learning to reflect on the practice itself. The following changes this perspective somewhat to consider practice in a wider context, in which the focus is no longer the development of the individual, but rather to change situations, in the broader social and political sense.

6.4 **Action Research**

6.4.1 Overview

'Action-research' was a term first used by the psychologist Kurt Lewin and refers to a cyclical process of planning, action, observation and reflection to be undertaken by a research group to progressively change and improve a situation, organisation or institution. It is cyclical in that the part that deals with reflection is aimed towards further action, linking it to the planning stage and thus continuing the cycle in a spiral that moves towards the goals of the project. The most important aspect of this idea is that social science, if restricted to research that is limited to documenting and interpreting, cannot lead to significant improvements in society, and so instead, the social scientist should be compelled to take an active role in the situations with which they engage. In Lewin's words:

> 'The research needed for social practice can best be characterised as a research for social management or social engineering. It is a type of action-research, a comparative research on the conditions and effects of various forms of social action, and research leading to social action. Research that produces nothing but books will not suffice' (Lewin, 1946, p. 35).

Lewin was writing with particular problems in mind from his consultations on group relations for communities, organisations, school systems, governments, and unions. The problems that he was dealing with were especially difficult because they defied easy definition and involved the conflicting views and needs of varied social groups. When there is uncertainty about the consequences of actions, and when there are many people involved in situations, straightforward solutions are difficult to find, just as the problems themselves may be hard to define in such a way that takes into account all of the contingent factors. It is characteristic of Action Research to address complex problems within a social context and this makes it particularly relevant for design. It should be noted that Action Research encompasses both experiential learning (with its focus on the phenomenological aspect of learning) and Reflective Practice (with its focus on self-reflection), both of which use circular learning/practice methodologies, while Action Research goes further than either of these by aiming to change the student (or participant), and the teacher (or researcher) in the process, and crucially, to change the wider context of the learning situation as well.

6.4.2 The Action Research Cycle

Like Reflective Practice and Experiential Learning, Action Research uses a cyclical process of activity which can be defined as:

'(1) strategic planning, (2) implementing the plan (action), (3) observation, evaluation and self-evaluation, (4) critical and self-critical reflection on the results of (1)–(3), and making decisions for the next cycle of Action Research — that is, a revised plan, followed by action, observation and reflection, and so on' (Zuber-Skerritt, 2001, p. 19).

The varied nature of the complex social situations to which Action Research can be addressed means that it is not possible to define a single prescriptive methodology of Action Research, and what is meant by each of the steps, such as 'action' itself, must vary depending on the context. With reference to education, it makes sense to think of the action stage as a particular activity in which the class is engaged. The essential difference from an ordinary teaching process is that in Action Research the teacher not only attempts to improve the way they teach particular material, but rather investigates the entire learning situation including their own role in it. A more radical formulation of the Action Research cycle would require that the wider context in which learning takes place is also taken into consideration and that not only the teacher, but the students themselves, should be engaged in planning the learning activity and in structured reflection afterwards. This implies that participants (both students and teachers) should also become critical of the learning situation and the institution in which it takes place, and that their concerns should continue to move out to the wider context of society in general, always with the intention of making some kind of change within their own immediate area of experience and action.

6.4.3 Variations and interpretations of Action Research

Although the term 'Action Research' usually implies a learning process, we may also make the distinction between Action Research as being focussed on changes in a system or institution and Action Learning (or Action Inquiry) which can be used to refer more directly to learning from experience — focussed on development of the individual. Both processes require the inclusion of active learning, problem

solving, and inquiry, the most important distinction is that Action Research should have the goal of change beyond the confines of the immediate context and it's results should be made public, since it requires action in the fields of both practice and research (Tripp, 2005), while Action Learning aims to develop an individual or group and it need not generate published material (Zuber-Skerritt, 2001).

Action Research aims to transform institutions and individuals, but for transformation to be possible then it is essential that those involved adopt various attitudes of openness, and crucially a critical and self-critical attitude. Teams must have 'communicative symmetry', meaning that each member of the group must be considered to bring an equally valid set of views, opinions, experience and knowledge to the process. Critique must never be taken, or given as a personal attack, but always as part of a constructive process. Change and learning are achieved through critique and reflection. Carr & Kemmis note that critique is not only a process of sharing and gaining knowledge, but of overcoming misconceptions, for them, critique should be 'a process of rational discussion which actively seeks to overcome coercion on the one hand and self-deception on the other' (Carr & Kemmis, 1986, p. 148). This highlights the depth of critique that Action Research proposes, it is not a case of superficial discussions, but of close examinations of behaviours and ideas.

The above seems to be straightforward common sense, but when it is applied to situations that normally have very particular hierarchies, such as a classroom (even the 'studio model' classroom) it is clear that these types of relations do not represent common practice. In the case of the design crit, in which the aim is to provide 'critique', we can see how this an approach based on Action Research could provide a different way of looking at this long-standing practice. If the students are considered to be equal contributors in an exchange with the teacher, then the crit would lose some of its defensive aspect, and become a more open forum for discussion. This is of course, easier said than done. As already mentioned in the section on Reflective Practice earlier in this chapter discussions can between teacher and students can be easily be prone to misunderstandings and distorted by conflicting perceptions and interests.

Grundy has distinguished between three types of Action Research: technical, practical, and emancipation (Grundy cited in Leitch & Day, 2000). Technical Action Research aims for improvement in the skill of the participants, in terms of effectiveness and efficiency, and suggests a limited view of Action Research based on method. Practical Action Research is a model that aims for improvements in a process, and in this sense is closely connected to the technical model but with more of an emphasis on evaluation of processes. If a technical approach to Action

Research has a tendency to reduce the emphasis on self-critical reflection, then in contrast, the practical model may overly emphasise the reflection and analysis of behaviour to the point that it risks becoming a form of therapy (Leitch & Day, 2000). The third type, emancipation, which can also be called Critical Action Research, should consist of critical, emancipatory inquiry, (Carr & Kemmis, 1986). This conception of Action Research is connected to Freire's argument that the only true goal of education is to deal with oppression: for the oppressed to become conscious participants in their situation and to change it through praxis:

> 'This pedagogy makes oppression and its causes objects of reflection by the oppressed, and from that reflection will come their necessary engagement in the struggle for their liberation' (Freire, 2005, p. 48).

However there may be a need to add a fourth type, Dialogic Action Research, which shares the critical and emancipatory aims of Critical Action Research, but differs in that it abandons the concern with classic scientific method and does not necessarily seek emancipation and critique, but rather aims for mutual learning and democratisation (Maurer & Githens, 2010).

There are then several possible interpretations of Action Research and accordingly, care should be taken with using the term, since it may refer at one extreme, to a method for improving ones professional practice; it may be broader in scope, aimed at changing organisations or institutions; or at the far end of the spectrum, it may be considered an explicitly political activity, aimed at challenging hegemony. These three variations in Action Research can be compared to design education. Technical development focuses on the actual technique of design: how to make the object, graphic, building, etc. Practical would relate to the process of design, analysing a problem, developing ideas, presenting these ideas and arguing for them: the intellectual aspect of design. The third mode of Emancipatory/Critical/Dialogic Action Research suggests the aim of achieving both self-reflexivity, and of forming a critical practice that addresses wider social, political, and ideological issues.

Lewin defined his area of interest as 'social practice', I would suggest that it is difficult to make an argument that puts design outside of social practice: it is social on every level, in terms of the complexities of effects and the multiple connections between business, investment, marketing, communication, development and so on, to design is an intrinsically social act. An integration of the principles of an emancipatory model of Action Research into design education would be an important step in the development of design as a critical practice.

6.5 Relevance for design

The interrelated concepts of Action Research, Reflective Practice and Experiential Learning have been conceived for education in general, but seem to have particular resonance for design. Experiential Learning and Reflective Practice share similar conceptions of tacit knowledge (Polanyi, 2009), lifelong learning, and ways of knowing, but while Reflective Practice is more directed at self-reflexivity, Experiential Learning is concerned with the phenomenology of learning situations and differences in learning styles. Action Research, when defined in its fullest sense (rather than restricted to a technical methodology), encompasses these concerns while being characterised by a more critical outlook that addresses hierarchies, power structures and wider sociopolitical contexts.

There are definite overlaps and connections between design and Action Research. It can be argued that the practice of design in engineering and industry and the practice of research in academia are converging and are approximating ever more closely an Action Research methodology. The term 'designerly action research' can be used to refer to action research in knowledge domains in which design plays a central role (Figueiredo and Cunha, 2007). Similarly, Swann has suggested that design itself could be conceived as a form of Action Research:

> 'I suggest that Action Research and the action of designing are so close that it would require only a few words to be substituted for the theoretical frameworks of Action Research to make it applicable to design. Action Research has been described as a program for change in a social situation, and this is an equally valid description of design' (Swann, 2002, p. 56).

There is not enough space here to fully explore the possibilities of each of these learning theories for design education, but the aims that they share, and their epistemologies based as they are on recognition of tacit knowledge and knowledge through appreciation, along with there shared ultimate aim of emancipation means that these theories require a more in depth examination of their relevance for design education. It can be argued that:

> 'A self-aware, self-reflexive teaching population, capable of producing the highest quality learning situations for pupils, is a laudable and necessary aim in a world characterised by social fragmentation, increasing economic competition and personal turbulence.' (Leitch and Day, 2000, p. 186).

And, it seems equally true to repeat this statement in reference to design, that design education should aim to produce a self-aware, self-reflexive population of designers — for this to happen design education faces the challenge of becoming more critical of its own situation, and one way to do this would be to explore the possibilities of embracing the Action Research methodologies.

It is therefore a challenge to develop the notion of the design as a method of societal change — but it is necessary. Design teaching must develop and expand the awareness of what design is, to challenge preconceptions about the discipline, and also to develop the thinking that is used in the design process. It must also create the conditions for the next generation of designers to become critical practitioners and thinkers who can redefine the discipline themselves. This chapter proposes that emancipative Action Research methodologies have significative potential for application to this task.

Chapter 7

Education epistemologies and the studio model

7.1 Introduction

7.1.1 Identifying implicit conflicts and contradictions within design education

This chapter aims to analyse and compare the findings of the previous chapters in order to create a synthesis of ideas and to reach conclusions about the various interpretations of the studio model and how these can be compared with (and informed by) methodologies such as Action Research. To achieve this, it is necessary to analyse the contemporary and traditional paradigms of design education at an epistemological level, in order to evaluate whether the theory of Action Research can be considered to be conceptually coherent with these ideas.

   In the preceding chapters the characteristics of the studio model of design education were introduced and its origins were discussed. It has been shown that there are various interpretations of the studio model and that there is significant impetus for the studio model to change, based on internal and external factors which, when taken together, can be seen as a paradigm shift to a contemporary version of design education. I have presented the interconnecting ideas of Experiential Learning, Reflective Practice and Action Research as relevant pedagogical theories that can contribute to the development of design pedagogy, suggesting that Action Research presents much promise in this regard. When fully realised, Action Research includes the concern with ways of knowing that is inherent to design practice (Cross, 2001, Lawson, 2005) and is that are fundamental to Experiential Learning and Reflective Practice, and that it also shares the concern for self-reflexivity and communication of the

later, while going further in that it requires a more critical outlook. However, there are conflicts inherent in the debate surrounding design education and it is relevant to attempt to identify the underlying epistemologies that can be considered the source of these difficulties. In many ways, the debates within design education mirror the debates that are present in other research areas that deal with human problems, namely the social sciences, in which there is a conflict between varyingly quantitative and qualitative methodologies.

What this analysis is attempting to clarify, is the structural relation between different forms of design education and the educational philosophy that each implies in terms of its ontology (view of the world) and epistemology (view of knowledge). Necessarily, this approach has to work on an abstract and generalised level, taking a somewhat broad view of the subject matter, but despite this, it is argued that the resulting comparison is relevant and can have implications for actual teaching practice. This type of analysis can serve to facilitate discussions and decisions about education, through revealing inherent coherence or contradiction between ideas, aims, and teaching models. This should make it possible to see that the way a subject is taught is directly relevant to the subject matter and to the competencies that students are intended to learn. Thus, attempting to teach critical thinking in a teacher-centred, lecture format leads to contradictions in the clash between theory and practice. Equally, attempting to develop autonomous designers becomes problematic if the teacher is presented and seen as an absolute authority on the subject area. These contradictions are similar to the problems that arise when the aim of a project is for the students to make visual experiments, yet the evaluation criteria requires refined and professional results.

Conflicting paradigms of education – such as the traditional and contemporary variations of the studio model that have been discussed thus far – reflect different assumptions about the nature of knowledge. When such fundamental assumptions change, there are corresponding consequences for methodology, practice and heuristics. Therefore, it is essential to attempt to understand the roots of these differences in order to better understand their surface manifestations. To give an example, some have argued that the practice of design in engineering and industry and the practice of research in academia are converging, and that this tendency is a manifestation of a general shift from a formist/mechanist world view to a new paradigm of organicism/contextualism (Figueiredo & Cunha, 2007). This proposition is consistent with the shift in design education from simplicity to complexity and is reflected in the shift from typical metaphors of modernism focussed on machines, to the metaphors of

postmodernism such as the rhizome (Deleuze & Guattari, 1988). If this is the case, then methodological changes do not represent purely practical considerations, but reflect epistemological changes at a deeper and more structural level.

Although it may be argued that there is room for many approaches to teaching within design education, it should be acknowledged that each approach implies specific types of learning, and that a given learning model reflects a particular set of beliefs. This is what can be referred to as the 'hidden curriculum' of a teaching model (Dutton, 1987). It has been argued that the design studio model, as any other signature pedagogy, can be understood as having three levels to its structure:

'(A) a surface structure of operational acts of teaching and learning, (B) a deep structure of assumptions about how best to impart knowledge and skills, and (C) an implicit structure as a set of beliefs, values, and attitudes. This third dimension is referred to as the "hidden curriculum"' (Crowther, 2013, p. 55).

These three levels are thus methodological (surface structure), epistemological (deep structure) and axiological (implicit structure). It is the aim of this chapter to unpack these levels of the studio model and Action Research to demonstrate to what extent they may be considered coherent or contradictory in a paradigmatic sense.

7.1.2 Conceptual models of paradigm analysis

Before presenting these comparisons in depth, it is useful to first introduce the key theoretical ideas that have informed this analysis and serve as models for making comparisons between different paradigms in design education. These are the three *education ideologies*, proposed by Lamm and elaborated by Harpaz; the *world hypotheses* of Pepper; and the paradigm analysis of qualitative research by Guba & Lincoln. As a background to these concepts it is also useful to consider Ryle's articulation of the difference between 'knowing how' and 'knowing that' (Ryle, 1945), to which Terry has added the logical counter part 'knowing why' (Terry, 1997), suggesting different ways of thinking about the aims of education. These can also be related to the three *knowledge interests* of Habermas (Terry, 1997), which provide a useful conceptual model for analysing education paradigms.

Lamm has argued educational theories have the structure of ideology (Lamm, 1986) in that such theories, in the same way as ideology, are based on the following four elements: a diagnostic proposition that determines 'what is' (or what is wrong); an eschatological component that constitutes the ideal state of affairs (ever in a idealised past or a utopian future), a third component that provides a diagnosis, what must be done to bring about this change; and finally a fourth part that defines the roles of certain publics – who it is that would bring about this change acting on whose behalf. The main difference from a political or religious ideology is that an educational theory diagnoses problems through the focus on the student, the desired 'educated adult' (Lamm, 1986). It is important to note an aspect of Lamm's argument that asserts the essentially irrational nature of educational theories – he argues that no theory of education is correct, all are equally irrational.

Nevertheless, the analysis that Lamm makes of the structure of educational theories is quite useful as a way to understand how debates about education may reflect the incompatibility of conflicting views at a deeper level. Lamm categorises all educational theories into three 'meta-ideologies of education' (Lamm, 1986): *socialisation*, *acculturation*, and *individuation* within which all education models must fit, setting the boundaries in which debates about the form and purpose of education inevitably play out. The division of educational theories into these categories stems from the basic dilemma that every educational system faces, since it must serve three 'masters': society, culture, and the individual. Yet, the interests of each of these three are not identical and are in some ways even contradictory (Lamm, 1986). Harpaz (2010) develops this analysis further and claims the possibility of a fourth meta-ideology or 'pattern' that he argues is incompatible with the other three and is based on the rather counter intuitive concept of 'undermining' pedagogy, a category in which he includes critical thinking.

These arguments suggests of course, that the studio model can also be categorised in this way, and can be fitted into one of the three great overriding ideologies. I would like to show that it is more helpful, in fact, to consider that there are different ideologies that can recognised *within* the studio model, each of which logically relate to these different education ideologies, as a way of better understanding the structural tension that is implicit in different viewpoints on how design education should develop.

Different ideologies suggest different understandings about knowledge and therefore, differing philosophical paradigms, both in terms of what is knowable and in terms of the nature of knowledge itself. Yet, if there is one recurring

and essential theme of the research undertaken for this thesis, it is that it is the nature and purpose of design to bridge these seemingly irrevocable divides. Therefore, theories about design education require a more nuanced articulation of research and knowledge, for which this chapter relies principally on the work of Guba & Lincoln in their analysis of competing paradigms, not only between quantitative and qualitative research, but also *within* qualitative research, in which they identify four broad paradigms: *positivism*, *postpositivism*, *critical theory*, and *constructivism* (Guba & Lincoln, 1994 and Figueiredo & Cunha, 2007) which they analyse and compare in terms of ontology, epistemology, and methodology. This form of analysis provides a useful model for application to design education as is shown in this chapter.

There are several links between the education ideologies and the paradigms of qualitative research mentioned above, but there is a significant difference between the arguments in that Harpaz claims that the choice between ideologies is 'tragic', meaning that to adopt one ideology is to reject the other since each implies contradictory propositions (Harpaz, 2010). Conversely, Guba & Lincoln view the research paradigms as existing on a sliding scale, with positivism at one end and constructivism at the other (Guba & Lincoln, 1994). This theoretical difference presents a conundrum which suggests the need for further analysis.

This chapter also briefly discusses the ideas of Pepper, who argued that conflicting epistemologies are based on the different root metaphors that people use to interpret their experience, which he terms these 'world hypotheses' (Pepper, 1961) and like the competing paradigms of qualitative research, or the education ideologies, an analysis and comparison of these metaphors can help to shed light on broad differences in opinion that occur in debates such as those that surround design education.

The root metaphors, education ideologies, and research paradigms mentioned above provide the theoretical background to this chapter, each providing a different way to reframe and compare aspects of the traditional and contemporary variations of the studio model. In each case a summary of the essential ideas are presented in tabular format in order to facilitate comparisons between concepts and suggest possible correlations and consistencies where possible. The resulting synthesis shows that differences within design education relate to broader epistemological questions. These findings are then compared with Action Research to show the extent to which this methodology is coherent with the demands of the contemporary paradigm of design education. Conclusions can then be drawn about the possible paths that the development of design

education can take, and about the implications for the current paradigm and attempts to adapt design education to a new, emerging paradigm.

7.2 The three ideologies of education

The problem of asking questions such as 'how should we teach design?' is similar to the problems of interpreting answers such as 'make it more critical', people's understanding of the two key terms here, 'design', and 'critical', may differ significantly. Even if we reach an agreement on making design education critical, this is insufficiently clear to put any change into practice, since there is still far too much ambiguity. Drawing on the typology of instruction proposed by Lamm (1986), Harpaz has attempted to resolve such issues by highlighting the fundamental workings of education conflicts, which he suggests can be best understood as *patterns of instruction*, organised into *super-goals* or *meta-ideologies* (Harpaz, 2010). He argues that these logics serve not only for categorising existing forms of education, but also delineate possibilities for educational change:

> 'The existence of the three logics is not coincidental; rather, it is a necessary product of the three components of the human condition: society, culture, and the individual (Lamm: "Education is a servant to three masters"). These three elements dictate the needs that established instruction must meet: training young people for a role in society, introducing them into the culture, and supporting the actualization of their personalities' (Harpaz, 2010, p. 6).

These logics are the result of the overall goals of education, 'super-goals' which imply certain 'logics', types of relations between teacher and student, school and society and so on. Of these, Harpaz explains:

> 'The logics are based on the meaning that the dimensions receive from the super-goals. The super-goals of instruction are referred to as "Socialisation," "acculturation" and "individuation." Every logic prioritises one of the three foundations of the human experience — society, culture and individual — and derives its goals from it' (Harpaz, 2010, p. 6).

This conceptual model can help us to understand, for example, why design education should use a different style of teaching than scientific disciplines, since the goals of design are not to interpret phenomena, but 'the transformation of existing conditions into preferred ones' (Simon, 1996, p. 4). The table below shows the way in which ideology defines all aspects of the an education model.

Super-goal / ideology	Socialisation Adapt the student for society, this is the dominant mode.	Acculturation To mould the student's character. To transfer values.	Individuation To allow and enable each student to fulfil himself or herself.
Pattern of instruction	Imitation	Moulding	Development
Nature of aims in teaching	Extrinsic aims	Extrinsic aims control intrinsic ones	Intrinsic aims control extrinsic ones
Nature of desired achievement	Performing according to given models	Acting according to given principles	Discovering new principles and criticizing them
Status of the learner	Homogeneous group member	Heterogeneous group member	Unique individual
Status of the content	Utilitarian	Intrinsically valuable	Supportive of the learner's capacities
Status of the teacher	Employee	Cultural agent	Specialist
Preferred kind of motivation	Specific teacher's activities	Means as well as end of education	Self-motivation and self-regulation
Preferred kind of activities	Attention	Teacher-directed activities	Pupil-directed activities
Preferred kind of leadership	Autocratic	Authoritative	Permissive

Table.8 Education ideologies, (Adapted from Harpaz, 2010)

Further on in this chapter I will compare the variations of the design studio model to this ideological breakdown in full, but even at a glance it should be clear that it is not plausible to change any single field without causing contradictions: an autocratic teacher cannot respond to students as unique individuals; learning through imitation is unlikely to lead to the discovery of new principles or allow for their criticism; and so on. The three ideologies of education are summarised below.

7.2.1 Socialisation

Within the ideology of *Socialisation*, the ultimate goal is to prepare the student for a role in society, it is a way to make the student 'fit in'. This is the type of education criticised by Ivan Illich in *Deschooling Society* (Illich, 1983). The teacher is an authoritarian figure, who imparts unquestionable knowledge, that is considered to be useful and practical. Learning is seen as utilitarian, it has a

specific purpose. The student is not thought of a unique individual, but rather as a member of a homogenous group who will either pass or fail the discipline. Learning takes place through passive attention from the students and imitation of the teacher.

7.2.2 Acculturation

The education ideology that is most obviously similar to design education is acculturation, in which the ultimate aim is to produce an 'educated person' (Harpaz, 2010), a concept that can easily be found in design education, as the aim of producing a cultured designer. In this ideology the teacher transfers their values to the student through example, and by so doing, mould the students' character. The teacher imparts their knowledge by exemplifying principles, which are seen to have intrinsic value, rather than definite usefulness. Education is seen as valuable for its own sake. Students are seen as members of a heterogeneous group, meaning that differences are acknowledged, but not emphasised. The overall pedagogic approach is intellectual and ethical, abstracted and removed from practical matters. However, this ideology can be seen in several ways to complement *Socialisation*, since the production of a cultured individual without practical knowledge implies the necessity for other individuals who do take on these roles, and likewise, the ideology of *Socialisation* suggests that cultural and ethical matters are to be left to others. It seems implicit that the first two ideologies can be seen as a logical pairing in a class based society, just one reason amongst many possibilities of how these ideologies suggest problematic analogies in society.

7.2.3 Individuation

The third education ideology is the most radical and is set in opposition to the other two ideologies, since a crucial aspect of *individuation* is that it considers conventional education to be a mechanism for mental and spiritual oppression (Lamm, 1986), therefore individuation aims to counter this perceived effect. This ideology is a significantly different to *acculturation*, since the aim is no longer to reproduce values or to pass on cultural knowledge, but for the student to become a fully realised individual. As such, this ideology can easily clash with the others, since it undermines the value of the knowledge and

authority of established cultures and behaviours. *Individuation* implies that the student is not taught by the teacher as such, instead they are supported as they develop by themselves. In this ideology students must learn to motivate themselves and regulate their own learning, therefore the role of the teacher must become passive, allowing the students to make their own mistakes and discover (or create) knowledge for themselves. This approach suggests a greater risk for students, but ultimately, a more desirable goal (especially from a design education perspective) — for them to become truly independent and innovative.

7.2.4 Incompatibility of ideologies and the possibility of a fourth ideology

Harpaz argues that these ideologies are incompatible. Meaning that in order to be effective, only one ideology can be adopted, otherwise contradictions must occur. This is inevitable because each ideology implies a different end goal. In *socialisation* the aim of education is to prepare students for work in a defined role, in *acculturation* the end is culture, and *individuation* aims to develop the individual, thus, attempting to prepare a student for work, but focussing on the development of their individuality leads to obvious problems. I would suggest that these kind of conflicts are common in design education, both historically and in the contemporary context. Examples of this problem can be seen in the differences between 'deep' and 'surface' approaches to learning or teaching (Svensson & Edstrom, 2011) and difficulties that students may have in adapting to the studio model (Davies, 2002), if they are used to the ideology of *socialisation* rather than *acculturation*. Harpaz argues that students do not primarily learn the content of classes, but rather the inherent ideology embodied by the teacher and the learning situation. This makes attempts to change education difficult. More so when the aim is for students to question ideology, as in critical thinking, which Harpaz uses as an example of a contradictory proposition for education:

> ´This deconstruction was meant to assist us in responding to the central question: In what pattern of instruction should critical thinking be taught? However, we seem to have been led to a dead end. The two "positive" patterns, imitation and moulding, necessitating a priori educational goals, damage the autonomy and authenticity of the individual — a fundamental condition for critical thinking. The "negative" pattern, development, that

rejects a priori educational goals, assumes what is being sought: that a person is critical from the outset, and if we merely leave the child alone he will develop into a critical thinker par excellence' (Harpaz, 2010, p. 14).

This paradox may remind the reader of the line in the Bauhaus manifesto that states 'art cannot be taught' (Gropius cited in Haxthausen, 2009). For an artist to be truly individual and free of artificial style, what can they be taught? This apparent problem is dealt with by Harpaz by postulating the possibility of a fourth education ideology that functions as an 'undermining didactic':

> 'The essence of the undermining didactic is the use of educational pressure, whose goal is to undermine mental structures — habits, dispositions, concepts, beliefs, etc.' (Harpaz, 2010, p. 15).

This proposal signifies a striking difference with the more permissive *individuation* and seems to be an approach that is more likely to be effective in teaching critical thinking, since it would have the potential to proactively challenge ideological structures rather than passively hope that the student develops critical thinking on their own. There are similarities to this idea with the distinction made between 'critical' and 'dialogic' Action Research, made by Maure & Githens (2010), who claim that the latter is distinguished by an emphasis on deliberate and methodological inquiry into values.

> 'Dialogic inquiry requires careful planning and skilful application of techniques that lead participants to dialogue through inquiring into accepted norms and mental models and allowing them to question dominant values. This type of dialogue rarely occurs automatically or naturally' (Maurer & Githens, 2010, p. 9).

It is notable that this is not a passive approach: values have to be made visible through structured inquiry. This dialogic approach seems to be coherent with the requirements of the fourth education ideology that Harpaz suggests is possible.

7.2.5 Application of Greimas's semiotic square to the ideologies of education

The discussion above suggests that further analysis of the education ideologies would be useful in order to more clearly articulate the relation between each category and to go further towards projecting what the fourth ideology might be. To this end, Greimas's semiotic square can be applied in order to more clearly identify the contrary, contradictory or complementary logics at work. Although this method of analysis may be criticised for not producing provable or repeatable information, it is nevertheless useful in that it can make dilemmas visible, by placing ideological oppositions and contraries in a filed of logical relations (Corso, 2014), and while there may be a danger of using the Greimas Square (as with other conceptual devices) 'as little more than an objective-looking framework which gives the appearance of coherence and grand theory to loose argument and highly subjective opinions' (Chandler, 2002) this kind of analysis be considered appropriate if it, 'advances our understanding of the phenomenon in question' (Chandler, 2002).

The semiotic square works by unpacking and adding nuance to otherwise binary oppositions. So that A/B becomes A/B and ≠A/≠B. This allows the difference to be understood between what is contradictory and what is merely contrary while providing the possibility of seeing further connections and relations. In this instance, it is difficult to see how to place *Socialisation*, *acculturation* and *individuation* in complementary or contradictory arrangement. However, if we work with the terms related to knowledge types then some possibilities emerge. For this thought experiment I have used the words *concrete* and *abstract* to create one opposition which relate to knowledge based on apprehension or comprehension; then the words *practical* and *theoretical* to refer to knowledge that is related to applying knowledge or interpreting meaning. This selection of terms is inevitably open to some debate, but it seems to fit the purposes of this exercise and produces the following model:

In this model, the complementary aspects of practical knowledge and concrete application suggest *Socialisation*, in which the aim of education is to prepare the individual for a useful role in society where they will apply the methods that the teacher has demonstrated. On the opposite side of the diagram, theoretical knowledge is combined with abstract application, suggesting *acculturation*, in which the teacher demonstrates how meaning can be interpreted. These two forms of education ideology are based, it seems, on combining complementary forms of knowledge, practical + concrete and abstract + theoretical, thus these two ideologies have distinct goals, yet appear to be two sides of the same coin, in the sense that both are based on the shaping of the individual and maintaining the status quo. In both cases the emphasis is on the authority of the teacher.

As for the less conventional education ideologies, we can see that logically, there *does* need to be two of them, yet, these are based on uniting contrary (but not contradictory) forms of knowledge. Beginning with *individuation*, we can see that it emerges from the combination of practical knowledge with a abstract application, suggesting an experimental or art based form of education in which the individual interprets culture and discovers their own way of working. Finally, the proposed fourth ideology of an *undermining didactic*, uses theoretical forms of knowledge in a concrete context, suggesting what might be described as 'critical practice', in which a student is concerned not with their own individual development or cultural knowledge, but instead with interpreting society. These two ideologies both seem to share an emphasis on the autonomy and freedom of the student, and are forward looking and progressive, whereas the conventional ideologies are historical and conservative.

Or course, this exercise cannot be considered definitive, but it allows us to see various aspects of the problem that would otherwise be difficult to identify. By examining the diagram further we can see that there are inherent pairings and clashes that emerge between adjacent categories. For example, *Socialisation* and *individuation* both emphasise the individual, but they clash in terms of individual freedom. While *acculturation* and *undermining didactic* appear to share concerns with society and culture, yet they clash in terms of their correspondingly abstract or concrete character.
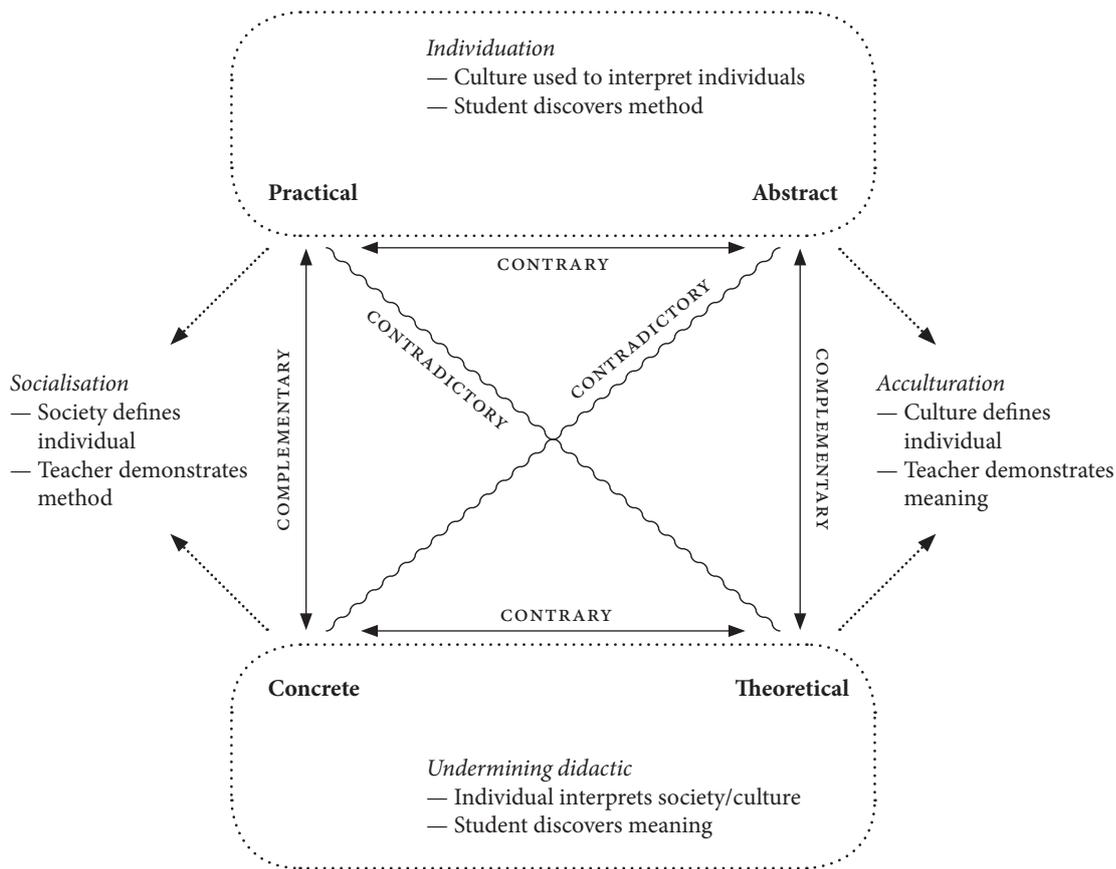
Figure.2 Semiotic square used to articulate the ideologies of education

7.2.6 Comparing ideologies of education with conceptions of design

As discussed in the introduction to this thesis, there can be significant variation in how the meaning of design is understood. Davies & Reid (2000) use the term 'the design entity' to refer to the conception of design that is held by an individual and have defined a typology of three main variations of this design entity that are held by members of the education community, including teachers, students and others. Their research suggests a correlation between the conception of design held and a resulting implication for learning and teaching (Davies & Reid, 2000). It is informative to compare their typology with Harpaz's education ideologies, providing an outline of how conflicting ideologies may interact within design education.

The variations of the design entity identified are *extrinsic technical* (design is about doing), *extrinsic meaning* (design is about interpreting), and *intrinsic meaning* (design is about living), which can then be compared to four

conceptions of learning, as shown in the table below, in which I have added in parentheses the related education ideology:

Design entity	Extrinsic Technical (Socialisation)		Extrinsic Meaning (Acculturation)	Intrinsic Meaning (Individuation)
	Design is about doing. Design is understood as a combination of technical skills related to a specific discipline.		Design is about interpreting / doing something to solve a problem. Describes a more integrated view of design where the focus is the production of useful work.	Design is about living. Personal understanding of the world articulated through design.
Learning conception	Learning to design. Learning is about developing skills, acquiring knowledge and remembering techniques. The students focus on learning enough things so that they can choose the appropriate skill when they get out to work.	Learning to be a designer. Learning is about applying and experimenting with techniques. Students recognise the difference between learning at university and work and understand university learning to be preparatory.	Learning to be part of the design community. As in the previous conceptions learning is understood to be the acquisition and appropriate application of skills and knowledge. This conception is different because students focus on the social aspects of design focus their learning on learning as part of a team.	Learning to innovate and change. Learning is understood to be discovering about themselves. The focus is on self-expression, reflection, and integration.

Table.9 The design entity and learning conceptions (Adapted from Davies & Reid, 2000)

Like Harpaz, Carr & Kemmis have proposed a typology of three education forms, which they refer to as: *natural scientific*; *interpretive*; and *critical* (Carr & Kemmis, 1986). They reject the first two of these and argue for the validity of the latter, finding the objectivist natural scientific form particularly problematic — which they argue ultimately reduces people to objects — but they point out that the interpretive form is also flawed when applied to human activity, because it offers no way of examining the ideological character that these meanings and actions possess (Carr & Kemmis, 1986). This typology is shown in the table on the facing page.

It is possible to see that the first column, the natural scientific view of education theory and practice, aligns with the *socialisation* ideology — education serves a specific purpose with a defined end and inevitably is dependant on controlling students and restricting nonconformity. The interpretive mode seems coherent with *acculturation* in that it introduces subjective meanings. The critical view in this typology however has an explicitly political character that seems quite different to the ideology of *individuation*, which of course has a political character, but here this aspect has much more emphasis and it can be noted how this changes the description of the role of

the teacher as 'active participant', rather than 'permissive', and the aim as being 'emancipation' rather than 'development of the individual'. These differences point to the necessity for further exploration of the education ideologies.

	View of Educational Theory and Practice		
	Natural Scientific (Socialisation)	Interpretive (Acculturation)	Critical (≠Individuation)
Character	Objective / deterministic	Subjective / individualistic	Critical / emancipative
Educational situation	Governed by definable laws	Governed by psychology	Governed by ideology
View of human behaviour	Behaviour is controllable and predictable Behaviour that is not predictable is irrational Behaviour has purpose	Behaviour is explainable Behaviour that is not predictable is understandable Behaviour has meaning	Behaviour is political Behaviour that is not predictable is an expression of power relations Behaviour has meaning within a social context
Role of teacher	Passive conformity	Neutral interpreter	Active participant
Aim of theory	Explanation	Interpretation	Emancipation

Table.10 Views of Educational Theory and Practice
(Adapted from Carr & Kemmis, 1986)

A direct reference to the political meaning of design is also lacking from Davies & Reid's typology of learning conceptions and the design entity, which again suggests that there is an element missing from the categories. This brief comparison clearly shows that further articulation of education ideologies is required.

The three ideologies of education outlined above show how attempts to change education must be coherent, otherwise contradictions are sure to emerge. The pedagogical ideology that is most closely related to the studio model seems to be *acculturation*, but even a superficial comparison with possible interpretations of design and learning show that it is quite plausible that the are ideological conflicts at play *within* design education. This argument requires further elaboration, as is attempted in this chapter, to explore how inherent aspects of design education relate to different ideologies and therefore, conflicts are inherent to this debate.

7.3 Pepper's World Hypotheses

Pepper's *world hypotheses* are root metaphors which he proposed structure our understanding of problems. That is to say, each persons approach to dealing with a given problem, and thereby their understanding of the problem, can be seen to depend on the root metaphor that structures their approach. These *world hypotheses* used by a given individual will be coherent with their interpretation of a given problem. Pepper proposed that there are six *world hypotheses*: *animism*, *mysticism*, *formism*, *mechanism*, *organicism* and *contextualism*, but that the first two are considered inadequate for contemporary thinking (Berry, 1984) and so are typically ignored. The remaining metaphors can be seen as articulating a scale with positivism at one extreme and constructivism at the other (Figueiredo, & Cunha, 2007) and can be summarised as follows:

> 'When we take a formist view, we try to understand the world through the apprehension of its categories, identifying similarities and differences between things and placing them into categories as our knowledge progresses. If our view is mechanist, we try to understand how things work, looking for causes and consequences and decomposing what is complex into constituent parts. Organicism gives us an organic perspective of the world, concerned with the coherence between the parts and the whole in the creation of integrated visions of processes, abstractions and entities. Contextualism makes us see the world in the complexity of its contexts and in the need to adapt permanently to its unpredictability and contingency' (Figueiredo and Cunha, 2007, p. 5).

If the four root metaphors are compared with the education ideologies discussed above, some coherence can be detected as is shown in the resulting table.

	World hypotheses			
	Formism	**Mechanist**	**Contextualism**	**Organicism**
Root metaphor	Similarity between objects	Operation of machine	Unique events / complexity	Organic life
Relation to knowledge	Phenomena can be categorised	Phenomena can be divided into working parts and controlled	Phenomena can be understood only within a specific context	Phenomena is part of an integrated whole
Educational ideology (Harpaz)	Socialisation		Acculturation / individuation	

Table.11 Pepper's world hypotheses (Adapted from Berry, 1984)

The attempted exercise above provides several difficulties however, because the categories do not seem to correlate in a way that is completely clear. For example, the education ideology of *individuation* seems quite comfortable within the *world hypotheses* of *organicism*, where root metaphors related to organic life can easily be applied, students should be 'nurtured' and allowed to 'grow naturally' etc. Yet, does it could also be argued that this ideology of education is also coherent with *contextualism*, since when we talk of adapting teaching methods to students and making learning student centred, we are recognising the 'uniqueness' of students. If the *world hypotheses* are seen as complementary parings, then comparisons become much more comfortable and can usefully be related to the other education typologies discussed above.

	World hypotheses	
	Formism / Mechanist	**Contextualism / Organicism**
Root metaphors	Similarity between objects Operation of machine	Unique events / complexity Organic life
Relation to knowledge	Phenomena can be categorised Phenomena can be divided into working parts and controlled	Phenomena can be understood only within a specific context Phenomena is part of an integrated whole (that can only be understood within limitations)
Educational ideology (Harpaz)	Socialisation	Acculturation / Individuation
Design entity (Davies & Reid)	Extrinsic technical / meaning	Intrinsic meaning
View of Educational Theory and Practice (Carr & Kemmis)	Natural scientific	Interpretive / critical

Table.12 World hypotheses as pairs compared with education typologies

The resulting table shows that when aligned as two main parings, an analysis of the *world hypotheses* has the potential to explain how differences in approaching basic questions about problems have far reaching ramifications in the resulting approach to education. It is possible to look back at the dilemmas and debates at Ulm and the Bauhaus and see that these conflicting hypotheses were playing out. The approach of a designer such as Max Bill was to take a *formist* approach, insisting on rational, geometric, consistent design solutions, while a theoretician such as Horst Rittel would be a *contextualist*, recognising the complexity of design problems and the uniqueness of the required design solutions. It should be mentioned that there is some irony in attempting the

synthesis of ideas attempted above, since the very approach of categorization and analysis that has been applied itself suggests a formist world hypotheses, in which complex ideas can be universally be understood and categorised. As such, the comparisons proposed here should be considered only as models — tools for demonstrating heuristic possibilities, rather than definitive solutions.

7.4 Competing paradigms of qualitative research

The ideologies of education above go some way to explain differences in approaches to teaching and learning, but they do not address another and perhaps more important side to the issues of conflicting ideology, which is the different conception of knowledge that each ideology implies and the metaphysics (essential beliefs) upon which they are based. As was discussed in Chapter 5, the debates around design education imply a paradigm shift towards a contemporary model, yet, to understand if this really is the case, and the extent to which it is possible, it is useful to expand and deepen then notion of the paradigm and to make the connection between competing ideology and its implied metaphysics.

Guba & Lincoln identify four broad paradigms of qualitative research, which provide a useful typology for exploring this theme: *positivism*, *post-positivism*, *critical theory*, and *constructivism*[2] (Guba & Lincoln, 1994 and Figueiredo & Cunha, 2007) each of which they analyse and compare in terms of ontology, epistemology, and methodology. This form of analysis provides a useful model for application to design education as is shown in this chapter. These four paradigms are described and compared below, then briefly discussed in relation to design education.

---

2   Unrelated to the art movement of the early 20th Century.

Paradigm			
Positivism	**Post-positivism**	**Critical Theory**	**Constructivism**
Ontology Naive realism — Reality is 'real' and apprehendable	Critical realism – Reality is 'real' but only imperfectly and probabilistically apprehendable	Historical realism — Reality is shaped by social, political, cultural, economic, and gender values Crystallised over time	Complex/ phenomenological – Reality is emergent from complex interactions, imposes limits to reductionism Reality is knowable only from situated individual perceptions of phenomena
Epistemology Dualist/objectivist Findings are true	Modified dualist / objectivist Critical tradition / community Findings probably true	Transactional / subjectivist Value-mediated findings	Transactional / subjectivist Created findings
Methodology Experimental/ manipulative Verification of hypotheses Chiefly quantitative methods	Modified experimental / manipulative Critical multiplism Falsification of hypotheses May include qualitative methods	Qualitative methods Dialogic/dialectical	Qualitative methods Hermeneutical / dialectical

Table.13 Alternative Inquiry Paradigms (Adapted from Guba & Lincoln, 1994)

7.4.1 Positivism

Positivism is the received and dominant view in the physical and social sciences. In this paradigm it is assumed that a relatively stable and knowable reality exists which is controlled by immutable laws. Research aims to discover the way things are and is conducted by researchers in a controlled context or in circumstances in which context is considered irrelevant, it is assumed that researchers do not effect the phenomena under investigation and vice versa. It is assumed that biases and values can be and are removed from investigations. Phenomena is carefully controlled in order to conduct empirical and repeatable studies, which produce absolutely true results (Guba & Lincoln, 1994).

This paradigm is comparable to scientific and formist approaches to design, in which it is assumed that problems can be stated definitively and precisely and that the interests, beliefs and values of the and designer do not influence the design solution. Nor would design be considered to have an political or ideological role. The ideas of universal design principles and gestalt theory seem to comfortably fit this paradigm. In terms of education, the coherent ideology is *socialisation*: since knowledge is considered stable and definitive, and values are not questioned, this paradigm requires an autocratic, traditional form of pedagogy.

7.4.2 Postpositivism

Also termed 'critical realism', the paradigm of *post-positivism* assumes that reality is only imperfectly apprehendable due to both fallibility of human perception and intractable nature of phenomena. Emphasis placed on the validation of knowledge though established controls such as critical traditions, editors, peer review etc. Findings are not absolutes, but true within the realms of reasonable doubt. In terms of research methodology, the emphasis shifts to falsifying rather than proving hypotheses. Discovery is reintroduced to research, and research situations are assumed to be complex and imperfectly controllable (Guba & Lincoln, 1994).

This paradigm still relates to a problem/solution structure to design practice, although a more complex picture of the situation is allowed. I would suggest that this paradigm relates to a noncritical use of Design Thinking and UX design methodologies, in which design problems are considered unique and complex, yet universal methodologies are applied, and larger issues such as the values and interests of clients are not questioned.

In terms of education, this paradigm continues to appear coherent with the *socialisation* ideology, since knowledge is still considered as exterior to the investigator, and the researcher is considered an authoritative and neutral figure. Although it is also plausible that the recourse to 'critical traditions' in this paradigm already suggests some aspects of *acculturation*.

7.4.3 Critical theory

For critical theory, reality is assumed to be apprehendable, but it is a reality shaped by historical, social, political, cultural, economic, ethnic and gender factors creating structures that are now perceived as 'real' (and to all intents and purposes are). In this paradigm the investigator and the phenomena are interactively linked, problematizing traditional objective ideals. Inquiry is considered transactional and dialectical. It is not, therefore, repeatable, and results cannot be considered 'true' except in the specific circumstance of the investigation. The researcher is no longer considered neutral nor disinterested, but is assumed to have values and beliefs that effect the investigation (Guba & Lincoln, 1994).

In terms of design, this paradigm suggests nuanced and individual approaches in which the work of the designer is not considered neutral, but

that it represents subjective and specific elements that are only relevant within a particular context. Clients and users would also not be simplified within this paradigm, but assumed to have values and beliefs that effect their outlook and behaviour. Therefore forms of critical or explicitly political design would be coherent with this world view.

This paradigm relates to the education ideology of *acculturation*, since culture is assumed to be entwined with reality, and although the teacher can comfortably be authoritative within this paradigm, they would encourage students to challenge and criticise received knowledge. In this paradigm then, the role of the teacher is that of a special kind of expert with access to privileged knowledge, whose aim is to raise the consciousness of the students. This emphasis on the knowledge and interpretations of the teacher suggests that this paradigm is coherent with the education ideology of *acculturation*, indeed the teacher in this paradigm moulds the ideas of the students. Thus, approaches to education based on critical theory or which aim to teach critical design or critical thinking, must take care to avoid creating a paradoxical position, in which attempts are made to encourage students to question existing hierarchies and structures while relying on these very structures to define the teaching model. In other words, how can design education challenge social or political structures when it is already constrained or defined by them?

7.4.4 Constructivism

In the case of *constructivism*, distinctions between reality and knowledge collapse, since reality is considered to be actively constructed by those who experience it. Constructions are not more or less true, but simply more or less informed or sophisticated. Investigator and subject are interactively linked as in the *critical theory* paradigm, but now the situation is even more dynamic, since it is assumed that findings are literally created as the investigation proceeds (Guba & Lincoln, 1994).

The role of the designer that this paradigm suggests is different to that associated with critical design. The designer in this paradigm would not attempt to attack the dominant ideology or take a confrontational stance, instead coherent design methodologies would be more orientated to engaging with and facilitating communication between communities, participants or stakeholders, in an effort to achieve closer understandings and shared interpretations. When seen in this way, it starts to become clear that 'critical

design' and 'participative design' are aligned in a quite different way, although they may share some superficial similarities.

   With the paradigm of *constructivism* it is possible to recognise some of the characteristics of the (proposed) contemporary paradigm of design education as discussed in Chapter 5. Teacher and student should be collaborators who discover or construct knowledge together, or rather, knowledge emerges through the shared learning experience between students and the teacher. This is closely related to dialogic Action Research. Emancipation is not necessarily the aim, as in critical theory, but through dialogical processes, ideological distortions should still be addressed.

7.4.5 Comparison of research paradigms and education ideologies

It seems then that the four paradigms of qualitative research that Guba & Lincoln propose, can be shown to relate to the education typologies discussed above. A proposed comparison is shown in the following table.

Paradigm			
Positivism	**Post-positivism**	**Critical Theory**	**Constructivism**
Characteristics Naive realism Findings are true Experimental/ manipulative Verification of hypotheses Quantitative methods	Critical realism Critical tradition / community Findings probably true Falsification of hypotheses Qualitative/ quantitative	Historical realism Value-mediated findings Transactional / subjectivist	Anthropological relativism — local and specific constructed realities Created findings Transactional / subjectivist
Education ideology / view of theory and practice			
Socialisation / natural scientific	**Acculturation / interpretive**	**Critical / undermining didactic**	**Individuation**
Characteristics Behaviour is controllable and predictable Performing according to given models Utilitarian	Behaviour has meaning / is explainable Acting according to given principles	Behaviour is political Methodological exposure of ideology through dialogic methods	Behaviour has meaning To allow and enable each student to fulfil himself or herself.
Role of teacher	Conformity / autocratic	Neutral interpreter / authoritative	Active participant / expert	Permissive / participant
Aims	Explanation Extrinsic	Interpretation Extrinsic controls intrinsic	Emancipation Criticising ideology	Intrinsic aims control extrinsic ones

Table.14 Comparison between education ideologies and research paradigms

This brief discussion of the four qualitative inquiry paradigms of *positivism*, *post-positivism*, *critical theory* and *constructivism* has shown how an analysis of these different world-views has the potential to shed light on discussions of pedagogy both in general and specifically for design education, since they suggest, as do the ideologies of education, that changes in methodology also imply a relative change in ontology and epistemology. In other words, to challenge an existing format of education is also to challenge basic assumptions about knowledge itself.

It is notable that this four part model of research paradigms opens the possibility of resolving the problem of the missing fourth ideology in Harpaz's typology, by forming a synthesis with the notion of critical education proposed by Carr & Kemmis.

7.5 Ideological variations of design education

Using the discussion of the various typologies of paradigms of research and ideologies of education as a base, it is possible to analyse the historical, traditional, and contemporary variations and developments of the studio model as described in this thesis in order to better understand the articulation between the ideas embodied in design education and its discourse. In conducting this exercise, one of the first results to emerge is that both the Bauhaus and the HfG Ulm resist categorization. At both institutions there were a series of personality clashes and conflicts and several distinct periods of development, so this should not be entirely surprising. However it is notable that the progression from the guilds to the academy to the atelier model is seems to have a corresponding and coherent transition from *Socialisation* to *acculturation*, while both at the Bauhaus and Ulm, characteristics of all of the education ideologies can be detected, including *Socialisation*, which in some senses seems dominant in both schools, with the tendency to the teach first principles and definite rules through controlled exercises. At the Bauhaus however, the conflict is more between the established *Socialisation* and *acculturation* against the more radical *individuation* of certain teachers, especially Itten, with his encouragement of individuality and disdain for evaluation (see Chapter 3). The ideological conflicts at Ulm resulted from the

attempt to shift from a positivistic approach to a more nuanced critical model that was ultimately unresolved. This makes a contrast with the way in which the emancipative teaching of de Bretteville seems to fit quite comfortably into *individuation* without necessarily suggesting the need for a fourth ideology.

Historical development	Characteristics	Education ideology
The guilds	Mimetic / tacit learning Training in skills Absence of theory, critical, reflective, or analytical thinking	**Socialisation**
The Academy	Drawing / mimetic / tacit learning Focus on classical culture Analytical and rational thinking but no critical or reflective thinking	**Socialisation / acculturation**
Beaux-Arts / atelier model	Taste as criteria Introduction of the design jury (crit) Separation between design project and its context	**Acculturation**
The Bauhaus	Master-apprentice model with innovation of master of craft and master of form Rational and analytical approaches Design for mass production	**Socialisation**
	Formal exercises combined with some project based working Attempt to bridge the gap between art and industry	**Acculturation**
	Open ended experimentation Interdisciplinarity Development of the individual artist	**Individuation**
The HfG Ulm	Simplification of form Direct connection to industry Emphasis on scientific methodology and provable results Controlled exercises	**Socialisation**
	Explicitly interdisciplinary outlook and structure Recognition of complexity Nuanced holistic approach	**Shift towards critical position, but unresolved**
Emancipative model (Sheila Levrant de Bretteville)	Teaching as horizontal exchange Participative methodologies Collaborative relation between student and teacher Consciousness raising Art revalidated as an intrinsic part of design Subjective positioning, personal experience is crucial	**Individuation**

Table.15 Ideological comparison of the historical developments and variations of design education

Turning now to the traditional and the contemporary paradigms of the studio model it is possible to make further analysis as shown below:

Paradigm of design education	Characteristics	Education ideology	Research paradigm	World hypotheses
Traditional studio model	Master / apprentice Client centred Problem solving Finished solutions Fixed outcomes Simplify complexity	**Socialisation**	**Positivism**	**Formism / mechanism**
	Aesthetics Quality Taste Cultural traditions	**Acculturation**	**Postpositivism**	**Contextualism / organicism**
	Individuality Working alone Artistic tendencies	**Individuation**	**Constructivism**	**Contextualism / organicism**
Contemporary	Effectiveness Performance Evidence Service orientated	**Socialisation**	**Positivism**	**Formism / mechanism**
	Flexible outcomes Collaboration Peers to peers Complexity Fieldwork Agency and autonomy	**Individuation**	**Constructivism**	**Contextualism / organicism**
	Ethics Problem framing Adaptive solution Design as active social/political/economic engagement Critical thinking	**Fourth ideology / critical / undermining didactic**	**Critical theory**	**Contextualism / organicism**

Table.16 Ideological comparison of the traditional and contemporary paradigms of the studio model

In this comparison several possible conflicts emerge in terms of ideology and research paradigm in both the traditional and contemporary paradigms. Firstly, the studio model always involved certain implicit contradictions, including the residual master/apprentice relation between teacher and student, which is in conflict with the need for students to be autonomous and develop their own individual approach to design. The requirements of design to provide rational and justifiable outputs, to 'solve problems', implies a conflict with criteria relating to culture, aesthetics and taste. These problems are perhaps not surprising, yet it is informative to see that the contemporary paradigm does not seem likely to be capable of resolving these contradictions, although it does of course shift the emphasis, which may become more directed to a dialogic or critical view of education.

7.5.1 Contradictions within the contemporary paradigm of design education

It is worth reiterating at this point that the contemporary paradigm that is under discussion here is based on a synthesis of a variety or arguments about design education that do not necessarily agree (see Chapter 5), and indeed contradictions can be detected frequently in the discourse, both in the literature review described above and in the opinions of the teachers interviewed for this study. In the contemporary paradigm there is a distinct emphasis on evidence based methodologies and testable results for design, not to mention of course the increasingly business-like organisation of universities themselves, an approach which also leans towards a *Socialisation* (positivistic / materialistic) ideology, with students as customers who are effectively seen as buying a course of training to guarantee themselves a place in the job market.

What is markedly different in terms of the ideology of the emerging paradigm in comparison with the traditional model, is that there is a distinct shift away from *acculturation*, with notions of the importance of taste and aesthetics being superseded by effectiveness and evidence, and a shift towards the *fourth ideology* (critical/undermining didactic) based on a constructivist model that implies a more dialogical, emancipative emphasis. Valorisation of ethics, problem framing, and adaptive solutions suggests a flexible and reflective form of design practice that does not sit comfortably in *acculturation* or *socialisation*, and the rigour required for design focussed on critical thinking and political engagement seems incompatible with *individuation*. Therefore there is a need to strive for a *fourth ideology* that can accommodate these goals. We should question how to articulate the relation between these tendencies, and what the implications are for teaching. One might ask for instance, if the emphasis is on an *undermining didactic*, that focuses on making ideology visible and revealing values, what kind of teaching format would still allow for peer to peer learning, dealing with complexity, and developing autonomy? In the following section, Action Research is discussed as a possible response to these questions.

7.5.2 Action Research as an appropriate methodology for the contemporary paradigm of design education

The characteristics of the main forms of Action Research are summarised in the following table (for more detail see Chapter 6).

Action Research type		
Technical	**Practical**	**Emancipatory / Critical / Dialogic**
Improving professional practice	Evaluation of processes	Exposing values
Efficiency	Improving processes	Participative processes
Reduces emphasis on reflection	Emphasis on self directed reflection	Aims of mutual learning and democratisation
		Emphasis on political/societal/ideological reflection

Table.17 Action Research typology

What should be clear from examining this typology is that it is the most radical form of Action Research — which aims towards mutual learning and democratisation, and emphasises the exposure and examination of ideology — is most coherent with the aims and characteristics of contemporary design education. Since there is a need for design students to develop self-determination (Capeto, 2011) and to increase plurality in design education (Malouf, 2011), research methods should be as participative and democratic as possible. If problem framing is seen as more important than problem solving for the contemporary designer (Dubberly, 2011), then it makes sense to use Action Research methodologies that can accommodate multiple perspectives in defining the issues to be addressed. If we recognise that there is a need to reassess both content and structure of design education (Davis, 2011) and that the design profession itself is in flux and should be a subject of investigation and reinvention (Brave New Alps, 2015), then research methods that accommodate reflection on the wider social and political context must be considered essential.

If the studio model is to be adapted to suit the developments and challenges of the immediate future, then Action Research appears to be an appropriate methodology for initiating this process by being integrated into teaching practice. There could potentially be a place for elements of Action Research to be included in actual design practice, as a methodology that could contribute to participative approaches, for example. Engaging students in Action Research processes in the studio, as a form of collaborative learning, could be a valuable way of introducing them to a more critical, reflective and participatory form of

design activity. The potential that Action Research methodologies have for both design education and practice require further investigation.

7.6 Conclusion

This chapter consists of a series of comparisons between typologies that attempt to describe the competing paradigms that define approaches both to education and research. It has been shown that surface conflicts in education can be understood as manifestations of deeper contradictions in world views that are inherent to education ideology. It is important to recognise that these typologies are conceptual lenses that can support the recognition and analysis of issues in education, design, and research, but they are still models, and as such are subject to revision and modification. The main difficulty that emerged in this process is in making distinctions between constructivist and critical ideologies, but it is hoped that further research and debate will help to further clarify these distinctions.

The most significant result of the analysis conducted in this chapter is that from an epistemological point of view, Action Research would seem to be an appropriate methodology to be applied in the development of design education, specifically in the evaluation and adaption of the studio model. It can be argued that a more emancipatory, critical, dialogic form of Action Research would be most coherent with the contemporary paradigm of design education, since aims such as producing autonomous, adaptable, critical thinking designers, and student centred learning models, would suggest that research methods themselves should emphasise these characteristics. A modest attempt to apply Action Research methodologies to a key element of the studio model, the crit, is discussed in the following chapter.

Chapter 8
Case study

8.1 Introduction

8.1.1 Overview

So far this thesis has described the history and identified the characteristics of the studio model; defined the key aims of contemporary design education; and discussed the relevance of Experiential Learning, Reflective Practice and particularly Action Research for implementing these changes. This chapter describes a case study that applies the above mentioned theory to actual teaching practice. This consisted of an attempt to modify both my own teaching practice and the format of my classes to respond to these aims, particularly the improvement of collaboration and critical thinking through peer dialogue.

The case study went through two distinct phases that are discussed in this chapter. The first of these consisted of a process of documenting and reflecting on my teaching practice throughout a semester, while testing special workshop-style classes, but after some time it became apparent that it was the format of the crit (presentation class) that had the most potential as a specific area for improvement, in which there was a real need to increase peer dialogue and collaborative learning. Once this goal was established, the case study entered a second phase, focussed directly on the objective of improving peer dialogue in the crit. This phase consisted of using an Action Research methodology throughout a second semester, slowly adapting and defining an approach to the crit until it could be defined as a learning format which I will refer to as a 'peer-crit'. This format was then assessed with the help of two focus groups and supported by conducing a literature review that provides the more detailed background material on the crit included in this chapter.

The process of conducting this cases study ultimately resulted in an article that summarises and shares my approach to the crit: *Navigator, Tour Guide, or Travel Companion: The Role of the Teacher in the Territory of the Crit* (Hardman, 2018). While that paper is restricted to arguing for a specific approach to improving peer dialogue in the crit, this chapter is concerned with covering the full process of the case study including both phases.

8.2 Background

8.2.1 Why focus on the crit?

The crit, also sometimes called design review, defence, presentation, or jury, is the essential cornerstone of the design studio model and is the moment when students should share their learning and insights, comparing notes on the problems they face and sharing approaches to overcoming them. In the traditional crit, the opinions and expertise is the focus but this is problematic for a variety of reasons, not least because the focus on the teacher inhibits the discussion between the students. The main issues associated with the crit include its hierarchical and stressful nature; heavy reliance on insight from teachers; and emphasis on the artefacts of design, rather than process. One of the most important aspects to address is the balance of dialogue in the crit which tend to be too teacher focused. This raises the question of how to facilitate peer dialogue in the crit. In contemporary design education there is a general aim to produce graduates who are autonomous, self-reflective, critical thinkers and are fluid collaborators (Bennett & Vulpinari 2011; Creative Review, 2017; Hardman, 2016) who can develop awareness and responsiveness to problems for themselves (Sadler, 2013) and of course, the development of these capacities should be at the forefront of planning entire curriculums and throughout entire courses.

The crit as an essential moment in which the development of these competencies are at stake, and when the setting, staging and running of the class is especially important. Crucial to the issue of how best to run crit classes is the behaviour of the teacher, which may have a definitive effect on the level and nature of the dialogue that occurs. The teacher-centred focus of the crit

is at odds with many of the aims of contemporary design education, and some have argued that it is in fact diametrically opposed to notions of user-centred and evidence-based design (Souleles, 2017) because of its subjectivist epistemologies. In order to realise the potential of the crit and to avoid the format's negative aspects, it is necessary to make the crit an area for ongoing investigation.

8.2.2 The purpose of the crit

The crit, is a crucial part of the traditional design studio model of teaching design. This model is used in some form across all art and design degree courses (Healy, 2016). Participants may have varying ideas about the purpose of the crit, but they are usually either formative (pedagogical) or summative (assessment) (Sara & Parnell, 2012). However, using crits for assessment is problematic (Blythman, et al., 2007; Blair, 2006) because focussing on assessment leads to an increasingly surface approach to learning (Davies, 2000 and 2002) and the link between the crit itself and the final grade can be opaque for students (Percy, 2004; Flynn, 2005). There are several problems with this learning format that need to be addressed, in particular the prevalence of the dominant view of the teacher (Souleles, 2017). Deconstruction of the crit is a priority for contemporary education (Taylor and McCormack, 2006), yet it is important to recognise the potential that the crit has to facilitate some of the key aims of contemporary design education, such as collaboration and critical thinking, ultimately facilitating the formation of communities of self-sustaining learners and designers.

8.2.3 Problems with the crit

The most commonly identified issue is the problem of stress. Students report feeling high levels of stress when they deliver their presentations (McCarthy, 2011) and stress and fear are the most consistent experiences of the majority of students (Sara & Parnell, 2012). The stresses of the crit often have the effect that students don't remember the feedback itself, only the feeling it gave them (Blythman, et al., 2007). Students often work late or through the night before the crit, which compounds this problem. Verbal feedback is ephemeral and

can easily be forgotten or misunderstood (McCarthy, 2011). Summative crits are particularly problematic because over emphasis on evaluation discourages experimentation and risk taking to the detriment of student learning (Sara & Parnell, 2012). These reports strongly suggest that crits should be planned as formative moments and that assessment should be undertaken separately.

8.2.4 Positive aspects of the crit

The crit is considered an valuable, even definitive, element of the studio model of education (McCarthy, 2011). It is a space in which critical design thinking can be explicitly valued and at best it can produce moments of enthusiasm and discovery (Sara & Parnell, 2012). The crit provides motivation: it brings student projects to a conclusion. An ordinary submission deadline would also achieve this to some extent, but the format of a presentation in front of teachers and peers implies a focus and refinement of student work that could otherwise be lacking. The crit is an excellent opportunity for students to learn from other people's work (Shreeve, 2008). In the context of contemporary design education, in which students spend less time in an actual physical studio and may not be provided with suitable working space by their university, the crit has a valuable role in allowing the students to see each other's work (Blythman, et al., 2017). Since so much design work is produced on laptops, even when students are working in the same room, the work itself may remain private, which makes moments for project presentations even more important. Crits help students to benchmark their work and to compare different strategies for dealing with similar problems. Crits bring up fundamental issues (Blythman, et al., 2007) and give the opportunity for hearing a variety of positions, especially if more than one teacher is present. Students learn and practice presentation skills that are applicable both in professional design practice and are transferable to other areas.

8.2.5 The role of the teacher

Typically, crits rely heavily on the ability of teachers to critique projects and to provide insightful feedback, but this makes consistent high quality feedback unlikely, especially if there is only a single teacher present. It has been claimed that theoretically or empirically informed discussions on design by

instructors are uncommon (Oh et al., 2012). There is a tendency among teachers to dominate dialogue (Souleles, 2013), give vague feedback (Souleles, 2013; Blythman, et al., 2007) and the language of teachers is often frustrating (Schön, 1985). We should recognise however, the difficulties that teachers face in discussing design with students, who may not have a sufficient understanding of the field. Further strain is put on teachers when they are under time pressure of when the number of students is increased. Strategies to ease this situation are clearly welcome.

In some cases students have reported feeling humiliated in crits (Davies, 1997) and that they received negative and abusive comments from teachers, a phenomenon which may be due in part to the hierarchy of the situation (Sara & Parnell, 2012); ego and lack of confidence may also impede the crit (Healy, 2016). The confrontational nature of some crits may also have a negative impact on future relationships between architects (or designers) and their clients and users (Wilkin, cited in Sara & Parnell, 2012). Female or BAME students may also suffer disproportionately due to the inherent power structures at play (Sara & Parnell, 2012). Some students do not focus on the design problems, taking a 'strategic approach' to do what pleases the teacher, rather than trying to make sense of a complex world (Davies, 1997). It is exigent for teachers to reflect on their role in the crit; the challenge is to facilitate a lively and productive discussion between the students and to share their own knowledge and insights without dominating the situation. Education consists of a continuum of dialogues between participants, rather than a mono-logical approach centred on the words, opinions and values of the teacher (Danvers, 2003): to achieve this it is essential that they create a 'safe environment', speaking constructively, not defensively (Israni, 2015).

8.2.6 The role of the student

Student behaviour within the crit naturally also has an effect on how productive the process is for student learning. Students also have a responsibility to make the process valuable (Goldstein, 2018) and receiving feedback is also a skill that must be learned (Cheng, 2013). It should be approached by asking the question, 'What is the next step I can take to make my work better?' (Ellison, 2016). In this sense, teacher and student should share the same goal: to improve the work through dialogue. The crucial problems of the typical crit as reported by students are stress, humiliation, nervousness and even fear, all of which may impede

the pedagogical utility of the crit. Students report being nervous, anxious, even terrified, and unable to listen to comments made about others' work as they wait their turn to explain and defend their own work (Shreeve, et al., 2008).

8.2.7 Peer feedback and the crit as the locus for a community of practice

The crit has potential as a forum for peer discussion, which could provide high quality feedback, this is of central importance (Carless. et al., 2011). Good feedback from teachers is essential, since it acts as a model for how students should talk about design (Blythman, et al., 2007). Students consistently emphasise the need for useful feedback and particularly value feedback from peers (Sara & Parnell, 2012), which they find easier to accept that from teachers (Juwah et al., 2014) and which may be more easily understood. Peer instruction and critique improves student performance (Nicol and Boyle, 2003). Students who have just learned something are often better able than teachers to explain it to their classmates in an accessible language (Juwah et al., 2004). When students give feedback they develop skills in objective judgement: critical skills developed in this way are then more easily applied to their own work. When students give feedback to their peers, it tends to be supportive and positive, which should provide motivation.

Constructive feedback, in a supportive environment, should have a positive impact on learning (Sara & Parnell, 2012). The term 'sustainable feedback' can be used to refer to feedback that helps students learn to be critical of their own work and the work of others (Carless. et al., 2011). High value feedback extends beyond the project in hand, enhancing the student role in interpreting, generating and engaging with feedback. Crucially, the feedback practices should facilitate self-regulation and reflection in students (Carless. et al., 2011). Feedback thus conceived should be aimed at enabling students to become independent learners and self-reflective designers. Instead of feedback being a side effect of looking at design projects, the design projects should be used as a stimulus for the main activity of the crit: enabling the students to produce their own feedback. The goal of critique should be to learn to talk about Design (Scagnetti, 2017), providing the student with clues as to what it means to speak like a designer (Dannels et al., 2008) which is necessary, because students need a vocabulary for expressing and communicating both what they find and how they judge (Sadler 2013).

Dialogue itself becomes the goal of the crit. This insight should have profound implications for how teachers conceive and run their crits.

Wenger has argued that learning is fundamentally a social phenomenon, reflecting our deeply social nature as human beings capable of knowing, and knowledge is a matter of competence with respect to valued enterprises (Wenger, 1998). These ideas resonate with Schön's concepts of knowing-in-action and knowing-on-action (Schön, 1983) but Wenger changes the emphasis by arguing that learning how to be able to do something (such as design) is also learning to contribute to, and engage with, a particular community. Seen in this light, the crit transcends its assessment function; it is a crucial moment for students to learn to become members of a community of practice (Scagnetti, 2017). This change in perspective should conceptualise the crit as a forum for debate on design issues with the ultimate aim of building a critical community of self-reflective designers.

8.3 Context

This case study was developed within the context of the classes I teach on the Design and Multimedia undergraduate degree at the University of Coimbra, Portugal. The course description itself highlights the need to endow students with the skill of 'multidisciplinary dialogue' (Bachelor Degree in Design and Multimedia, n.d.), which is an objective that aligns with these concerns identified in this thesis. The concise description of the courses learning objectives are summarised as:

> 'This proposed training prepares professionals to be able to assume the role of creator, talking in multidisciplinary teams, and translating the various languages involved in the design and implementation of innovative digital products and services' (Bachelor Degree in Design and Multimedia, n.d.).

With this description it is clear that a crucial focus of the course it to encourage collaboration, agency and verbal communication, therefore practice of these skills should be facilitated in the classroom as much as possible. My intention in planning this case study was to attempt to change the classroom dynamics in order to improve the development of these competencies, within a particular

context that not only provided an excellent opportunity to develop this research, but which was also constrained by the practicalities and necessities that come with day to day teaching at university level.

The context for phase one of this case study was the first year curricular unit *Theory of Design and Communication*. This module was as a practical choice for the case study for several reasons, but crucially, it allowed for a cyclical research structure, since it consisted of three design briefs and three groups of students, providing the possibility for repetition, refinement and comparison. Each week I taught 69 students divided into three classes, for two hours each. This gave me the opportunity to repeat each class three times, adapting the format each time to make improvements, allowing for the use of a tight feedback cycle in which I could plan an approach to the class or an activity for the students to perform, reflect on how successful it was, adapt it, and then repeat it with some changes. I should point out however, that each week two of the classes occurred one after another in the same afternoon, meaning that any changes had to be spontaneous, planned only in the time it took for one group of students to leave the room and another group to enter.

The table below (Table. 20) shows the structure of the semester. Each project lasted 5 weeks and included an introduction class, a workshop, studio classes and a crit, each of which went through three iterations, with the three groups of students.

Phase 1 *Theory of design and Communication*		
Project 1 — Pictograms	Project 2 — Poster	Project 3 — Flag
Introduction class	Introduction class	Introduction class
Workshop	Workshop	Workshop
Studio Classes	Studio Classes	Studio Classes
Crit	Crit	Crit

Table.18 Theory of design and communication semester structure

The second phase of the case study, which focussed specifically on the crit, was based on my classes in *Typography in Digial Media*, in the second year of the same degree. This unit also consited of three design briefs and three groups of students (59 in total), so it again allowed for running the teaching format through a sequence of iterations. At the end of this phase the peer-crit was tested with another teacher and their class (discussed in more detail in the focus group section of this chapter).

On the subject of class discussions, I should also highlight the challenges presented by language in this teaching context. I usually teach in English while all of the students on the course speak Portuguese as their first language. Most

of the students could express themselves in English without any difficulties, but there were also some individuals who were only comfortable speaking Portuguese. In those cases I would switch between English and Portuguese to make sure that we were able to understand each other. While communication did not appear to be problematic, language should obviously be taken into consideration when assessing how comfortable the students were with discussing their work or presenting their ideas.

8.4 Methodology

This case study is based on an Action Research methodology (although with some aspects of Reflective Practice, see Chapter 5), characterised by its cyclical structure, qualitative data gathering, and its focus on social interaction. It was based principally on observation and reflection in the first phase, moving on to focus groups and interviews as the case study became more specific. As mentioned above, each phase ran throughout a semester, the first phase being orientated towards testing special workshop-style classes and reflecting on my teaching practice in general, while the second phase was focussed on improving peer-dialogue in the crit classes. Both phases used a reflective research cycle that consisted of (a) **planning** an activity for the class, (b) **action**, observation and reflection-*in*-action (during the classes), (c) **reflection**-*on*-action (after the classes), then returning to (a) to plan the next activity based on any new insights or goals. See Table. 20 below.

Due to the fact that each activity or workshop went through three iterations, being repeated in three classes in a row, the research process was slightly more complex, since the possibility of adjusting the activity in each iteration meant that small changes were made from one class to the next, while more general conclusions could be drawn after all three classes were complete, influencing the next activity, as is shown in Table. 22. The case study used this research cycle at two scales. At the larger scale, by moving through three main projects, each of which included an introduction, a special workshop class, regular classes and a crit, then at a smaller scale by repeating each class three times, once for each of the three groups of students. In between each of the three main projects I considered how the previous project had run and made changes accordingly. The complete notes covering the planning, enactment, and evaluation of each class are included in **Appendix 02**.

A significant part of the process of producing this case study was to keep a reflective journal, consisting of writing before, during, and after classes as a way to consciously reflect 'on-action' and 'in-action', with the intent not only of improving my own teaching practice, but also to reflect on the format of the learning situation. The aim was not to only improve my own practice, but to produce research that is relevant for others.

8.5 Workshops

Throughout the semester of the case study I included one special class for each of the three project briefs, which I refer to as 'workshops' to distinguish from ordinary studio classes. Each of these special classes changed the usual dynamic of studio style working and involved some sort of hands on activity and collaboration, even though the design briefs were all for individual work. Each of these workshops are discussed in detail in **Appendix 02** while the basic outline of each workshop and my main observations are summarised in this chapter.

8.5.1 Workshop 1: Point, Line, Plane

This workshop followed a theory class (taught by another teacher) that introduced the basic elements of graphic communication: point, line and plane. It was intended to allow the students to experiment in making abstract compositions that express specific ideas while using only the most simple of graphic elements, directly linking the theory to practice. The activity had the secondary objective of providing an opportunity for informal discussion among the students on the ideas that were introduced in the theory class, thus allowing them to articulate the connection between theory and practice.

Activity
The students were given four different activities, each lasting for 20 minutes, these activities were followed by a guided discussion of the finished work. The activities consisted of using a limited medium to make a composition which should express a single abstract concept. Four tables were set up, each with a single medium which would allow for making a composition with dots (using

small round stamps / round stickers), line (using only black fine liner pens), and plane (using scissors to cut out shape from a black sheet and sticking them to the paper). The concepts were provided in the form of single words such as *tension*, *noise*, *calm*, *power* etc. The discussion part of the class was structured as a game, in which the students would have to guess the meaning of the finished work.

Result

The activity itself, which deals with the issue of teaching students to express ideas though abstract means seemed to be very productive, as is demonstrated by the work of the students (see Appendix 02) and is a subject that I have explored in other teaching exercises (Hardman & Boavida, 2019). An advantage of this type of activity is that the students enjoy experimenting with the analogue means of making images, especially the stamps which can be used in a variety of ways. The least successful part was drawing with the pens, since this is a familiar means of making images and is not so stimulating for the students.

The aspects of the activity that are more relevant to this thesis however are not the task itself but how it facilitated certain behaviours in the classroom. This type of exercise resulted in quiet individual working most of the time, but there were some fruitful discussions between the students about the connections between concepts such as noise and power; calm and freedom; noise and anxiety; power and hierarchy; and freedom and anxiety, which occurred because visual interpretations of seemingly contradictory concepts at times resulted in similar compositions. So the activity had some potential for creating valuable peer dialogue.

The guided group discussion part was entertaining and lively, and seemed to work well, due to the use of the playful format of the students guessing the meaning of their colleagues work rather than having to defend their own. Running this exercise suggested some possibilities for improving other crits: such as allowing time for the students to see all the work before discussing it, and making the discussion less about what is good or bad design but more about interpretation of meaning.

8.5.2 Workshop 2: Design Decoding

This workshop was directly connected to the second project brief of the semester which was to design an entry for Poster for Tomorrow, an international poster competition which in that year had the theme of 'Freedom

(A) PLAN
an activity or change in
the teaching format

(B) ACT & OBSERVE
involving reflection-*in*-action
during classes

**REFLECTIVE
RESEARCH
CYCLE**

(C) **REFLECT**
involving reflection-*on*-action
directly after the classes
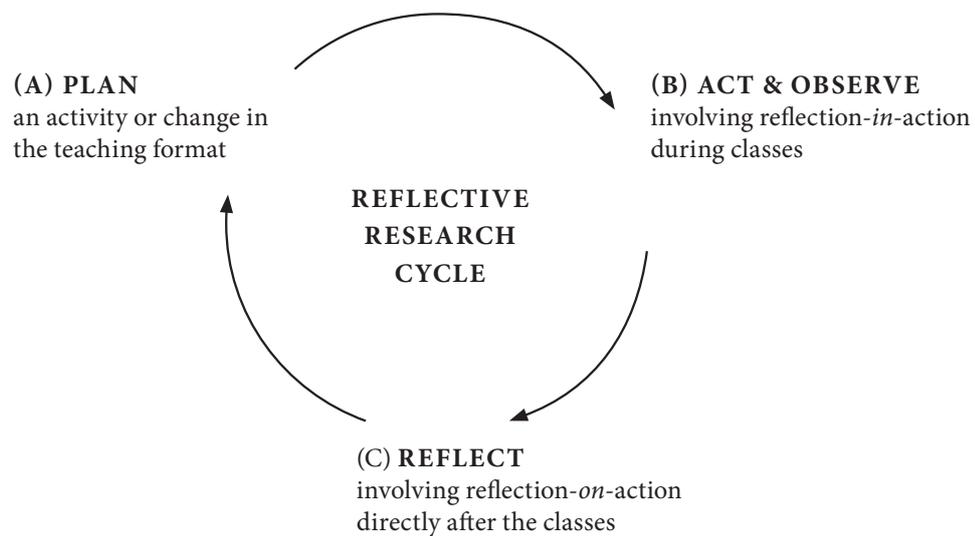
Figure.3 Research cycle used during the case study

of Movement'. The exercise was intended to help the students understand some conceptual principles of graphic communication. It followed a theory class that discussed a series of political and activist graphics that use visual ideas — especially visual puns, metaphors, and juxtapositions. The aim of the workshop is to assist the students in the process of analysing the elements that construct meaning in the examples, and to apply these principles to the conceptual process of constructing graphic messages in their poster designs. In particular, the process of generating ideas through systematic exploration. The workshop was intended to give the students a practical process to follow to generate ideas which would be generated in a collaborative process.

Activity

The students were provided with coloured pencils, crayons and paper, and given the task of drawing from memory any of the several posters that they had been shown in the preceding theory class. These drawings would then be used as the focus for a discussion about the messages being communicated by the posters, highlighting the essential visual elements and how they are combined to create a specific meaning. Through the discussion, basic principles of visual communication should be discussed. This activity should then be followed by a session of generating ideas for the project brief in groups.

Results

This workshop did not function as planned. The main problem was that the activity depended on the students having attended a specific theory class

(A1) PLAN
an activity or change in the
teaching format

(B1) ACT & OBSERVE
involving reflection-*in*-action
during the class

ITERATION 1
workshop or
class activity

(C1) REFLECT
involving reflection-*on*-action
directly after the class

(A2) ADJUSTMENTS
to the activity or change in
the teaching format

(B2) ACT & OBSERVE
involving reflection-*in*-action
during the class

ITERATION 2
workshop or
class activity

(C2) REFLECT
involving reflection-*on*-action
directly after the class

(A3) ADJUSTMENTS
to the activity or change
in the teaching format

(B3) ACT & OBSERVE
involving reflection-*in*-action
during the class

ITERATION 3
workshop or
class activity

(C3) REFLECT, EVALUATE & CONCLUDE
involving reflection-*on*-action directly after the classes,
reflection on the full cycle of activity, and
planning for the next activity or workshop.

Figure.4 Iterative research cycle

— which, as it turned out, too many students had missed for the exercise to work — and the students needed to have already read the brief, which again, not all of them had. There was also a need for an exercise that made it easier for the students to identify the conceptual principles at work in the poster design examples. In conclusion, this exercise should have been self-contained so that it did not depend on another class and it should have been better scaffolded, so that the students could more easily understand the conceptual content. Because of these structural problems, the workshop did not provide any clues for how to improve collaboration in the classroom.

8.5.3 Workshop 3: National Flag

This workshop was planned as an introduction to the final brief of the semester, which was to propose a new design for the national flag of Portugal. The aim of this workshop was to stimulate the students to think about symbols and their meaning when related to collective identity. It required them to look closely at the national flag of Portugal and to consider the significance of each aspect to the design. The exercise draws attention to the relation between design and ideology. Unlike the other two workshops, this activity was based on a pre-exising workshop not planned by myself.

Activity

The workshop consisted of two parts, the first of which was for the students to attempt to draw the Portuguese national flag from memory. They were given coloured drawing materials and paper for this task, which is dependent on the particularities of the Portuguese flag itself, being that it is composed of various elements including areas of colour and a relatively complex coat of arms. The students must try to remember all of these elements and also correctly combine them paying attention to position an proportion. Once the drawings are finished, they are discussed as a group to see if a consensus can be reached about which version is most accurate, after which they are shown the actual flag for comparison.

For the second part of the workshop the students are put into groups of three or four and given a set of 11 postcards. Each card has an image of a historical Portuguese flag from the first to the current flag. The students must work together to form a consensus about the chronological order of these flags. They can base this on their historical knowledge but there is also an visual logic

to the development that can be perceived to some extent. Once each group has finished the task, the teacher can reveal the actual order and opens a discussion about the changes in the flag and the significance of the changes related to political developments.

Results

This workshop worked well in terms of the actual tasks, and in each iteration it improved as I got more used to facilitating the activities and the subject matter and it certainly provided a constructive opportunity for students to articulate their knowledge and to engage in discussions in the classroom. However in terms of my own research, I made less notes than in the other workshops because I was so focussed on running the activities correctly and also perhaps because the activities were already clearly defined, so although this workshop worked well in the context of the project brief, it did not result in new insights for my research.

8.5.4 Reflection on the workshop classes

In my opinion, the inclusion of these special workshop classes throughout the semester enriched the learning experience of the students and provided valuable moments for collaboration and discussion. Although adding these activities to the standard studio projects is more demanding on the teacher, the students seemed to appreciate the change in pace and appeared to be stimulated by taking part in these activities. On reflection, there are three main principles that emerged from these workshops:

- The activities should be simple and self-contained so that it is easy to start the students working without depending either on previous knowledge or complex explanations;
- Unfamiliar techniques and mediums are more stimulating for the participants and make it more likely that they will enjoy taking part; and
- Discussions should be structured or organised in some way to ensure that they work fluidly, finding ways to articulate discussions through games is a good example of this.

There is certainly a place for special workshop style classes as a complement to studio teaching and these three examples of workshops merely give a brief suggestion of the possibilities, yet in terms of conducting research on how the studio model could be adapted to suit the requirements of contemporary

design education, I felt that it was necessary to focus on a specific aspect of the teaching format in order to make more carefully targeted improvements, namely to improve peer dialogue. For this reason the research of the case study became focussed on the crit, a process which is described and discussed in the next section.

8.6 Adapting the crit to encourage peer dialogue

8.6.1 The peer feedback crit format

The section above summarises a variety of sources that argue for improving the crit format to better facilitate peer dialogue and reduce the focus on the teacher. The second phases of the case study consists of the development of a method for running the crit that attempts to achieve this in practice. This format differs from an ordinary crit primarily by giving the students a written task that serves as the basis for the discussion and by taking a controlled approach to eliciting feedback from the students. The proposed format is as follows:

Setting
The furniture in the room should be organised so that all the tables are together as one island: the aim is for everyone, including the teacher, to be sat at the same level and in a position where everyone can be easily seen and heard. Each student is given several A5 sheets to fill in with the following fields:
- Identify a project that interests you.
- State what you think works in the idea and design.
- What would you change to improve it?

This provides some formality to proceedings, the students know they have a task to complete so they are occupied right from the beginning of the crit and are not so preoccupied with their own presentation. Questions can be adapted to suit the nature of the projects.

Phase 1: Viewing the work

It is useful to allow time for all of the students to view all of the projects before any presentations or discussion takes place. This gives the students time to begin forming their own opinions. The whole group should see each other's work before the discussion begins. This is useful for the discussion but also plays a role in reducing anxiety, since the general standard of work is established and the students are able to gauge the success of their work by the reaction of their colleagues.

Phase 2: Presentations (if necessary)

The students may be allowed a short amount of time to present their work to the class. In the case of very visual or simple projects, this may be unnecessary and may unduly influence the discussions later. Important: the teacher does not give feedback at this stage.

Phase 3: Writing phase

If the students have not already filled in their feedback sheets, give them five or ten minutes to do so. If some students have finished their sheets very quickly suggest they fill in a third.

Phase 4: Peer comments and discussion

One by one, the students are asked which projects they have commented on and they are invited to share their observations. This focus on the ideas and observations means that the students enter the discussion talking about someone else's work, rather than their own (unless of course they have presented their work in Phase 2). This has an impact on the tone of the discussion, making it more positive, since students generally want to make complementary comments about the projects that interest them. They are no longer in the position of defending their own work, nor are they making a 'critique' in a confrontational sense, they should be looking for constructive things to say that will be of interest to the author of the work and the group in general.

Once a student has commented on a project, the project author should be invited to respond and the rest of the group can be asked for their input. At some point this should start to happen automatically as the participants begin to realise how the format works. Once the students have exhausted their discussion, the teacher may then make further comments with an emphasis on general design principles, references, and useful actionable suggestions. Thus, much more time is provided for the teacher to prepare their own feedback,

meaning that it should be of a higher quality. The process is then repeated for the remaining students until all feedback has been exhausted.

Notes

It is quite likely that one or two projects are not selected by the students. In this case, the teacher should give feedback about those projects in a general summary and attempt to bring their authors into the discussion if they are not already involved.

In previous iterations of this crit I have kept the comment sheets, however it may be useful for the students to keep the comments their colleagues wrote about their own projects. This aspect of the crit requires further investigation.

8.6.2 Assessment of the crit format

In order to gather qualitative data about this crit format I have made several attempts to study its success or otherwise. My first approach was to run a focus group among the students. This resulted in a conversation that was insightful, but unfortunately only featured a small number of student participants. To investigate further, I then invited another teacher to test the crit format with their own students. I observed this crit in person, which was followed by a focus group involving the teacher and their students, in which the whole class participated.

Focus group 1

After the final crit of the semester I sent an email to the all of students from the module, inviting them to take part in a focus group. Three students responded positively, but on the day, only two took part. However, the conversation was productive, and the students made a series of insightful comments, many of which confirmed that the format had been successful in reducing the effects of the teacher-student hierarchy and increasing constructive peer-dialogue. They also made some unexpected comments which highlighted dimensions of the crit that I had not considered, such as the dynamics of body language and facial expressions. Relevant comments were as follows.

On learning from others:

'You get a grasp of everyone's projects which is nice […] during the course of [the work's] creation you're not as aware of other people's work and how they approach the subject, so that was good, you always learn a little bit, just from listening to other people' (Student 1).

'I didn't realise what I could do, the possibilities, so when I saw my colleagues' work that really improved my culture and knowing what to do and what's possible to do' (Student 2).

On writing down their feedback:

'It's a nice way to make sure that everyone is able to contribute to the conversation. Otherwise many people would just stay quiet and not really participate. If you write something down and you're told to talk about it, then it's much easier to communicate' (Student 1).

'I think people are getting used to analysing the work of others and that's good' (Student 2).

On the general atmosphere of the crit:

'People are much more relaxed when they're talking about their own projects […] this way it's a very chilled environment, you're all sitting around the same table, there are so many people, but if you make a mistake, it's alright, you're just conversing, you're just talking about it' (Student 1).

'We're more relaxed and we can talk more about the work of others and that can be really good for the person who is presenting, to hear the other's impressions' (Student 2).

On receiving comments from peers:

'It was really pleasing because they were good comments […] it can be illuminating to hear what others see in your work, not only what you see and what you think your work says' (Student 1).

It is encouraging that the student had recognised the difference between how he had intended his project to communicate and how others interpreted it. This student also realised that taking the emphasis away from evaluation made a positive difference to learning:

> 'It seems that in other presentations, the aim or the goal is to get the best grade possible through our presentation, so we have to really impress the teacher and have only them be the target audience of our presentation. Maybe it shouldn't be exactly like that, maybe the focus should be a little more on learning from our mistakes and [...] other people's' (Student 1).

Student 2 had also noticed that it was beneficial to shift the focus away from the teacher because it allowed for more subtle communication with the other students:

> 'I think that we usually tend to focus on the teacher and one thing I noticed that was curious was the expression on the faces of my colleagues when I was showing my project. That really gives feedback when you're showing your work. Focussing on the teacher instead of looking at the faces of the others, that can break that feedback line we can establish' (Student 2).

These comments confirm the benefits of peer feedback; the importance of reducing teacher focus; and flattening the hierarchy, both in terms of the arrangement of the physical space and the actual discussion. They also suggest that a structured approach to encouraging peer feedback resulted in a more open and supportive atmosphere, where discussion between the students was facilitated. There were no negative comments from these students, they had clearly agreed to participate in the focus group because they felt positive about the subject, for a more balanced perspective further research is required and is provided in the following section.

Focus group 2

The second focus group was conducted with the a class of students (18) from the discipline *Game Design* on the Master level course of Design and Multimedia at the University of Coimbra. I interviewed the teacher (Rui Craveirinha) before the class to discuss his aims. He told me that he hoped that the students would, 'expose their work, see what other people think, and be able to incorporate, analyse and reflect upon it' (Craveirinha, p. c., 2018). It is interesting to note what he went on to say about the barriers that may occur to self-reflection: 'From previous

years, my experience tells me that people are very defensive of they own work […] there is a certain degree of subjectivity in the evaluation of the work and so […] in play testing sessions it's not unusual to see people listening to what people are saying and then dismiss entirely all of the negative criticism' (Craveirinha, p. c., 2018). The problem is not only in understanding criticism, but accepting it. He went on to add: 'in my experience, the teacher giving them feedback, it's a hit and miss process because of the whole defensive posture they tend to have' (Craveirinha, p. c., 2018). The teacher showed that he agreed with the principles of improving the crit by stating his intentions in running the class: 'We'll let them discuss between themselves, let them have a feedback that doesn't have some sort of impact on them and let's see if that helps them more on their path towards improvement' (Craveirinha, p. c., 2018). He also showed that he understood the role he would need to take to make this possible, stating 'I hope that they discuss between themselves, and the less I intervene the better, ideally I wouldn't have to intervene. I want to see them discuss the project' (Craveirinha, p. c., 2018).

In the focus group itself, the students showed that they responded positively to the crit format. One student said that the 'round table' style discussion was useful because:

'When we build the game we see a lot of things and it is stressful. When other people play it and say criticisms about it, they say things we do not see and it's very helpful to improve the game' (Student 4).

Another student confirmed this point and expanded on it:

'Having these gatherings at certain points, it feels like the group is actually bigger, that there's more input from everyone and it feels like more work is being done. There is more work and more opinions, more issues come up where things have been noted, we realise more things we can do to make things better' (Student 5).

Several students noted that between peers working on similar projects feedback is more valuable:

'We're all working to build a game — so although it's a little bit different of a mind-set, at the same time there is some stuff that is equal in all of our mind-sets […] you get a different feeling than from when you show it to other people' (Student 6).

The students recognised the importance of skill sharing:

> 'Anything that's lacking from us, from our limitations, can probably
> be solved by someone else from this whole group' (Student 5).

The students also acknowledged that the writing part of the crit was useful because they could, 'remember more things' (Student 7) but it was clearly the level of dialogue that made the most impression. One of the students said that they felt that:

> 'Having these things more often would end up making us know each other
> better […] I feel like only today I've met most of these people' (Student 5).

The teacher also contributed several comments in the focus group discussion confirming that there was 'more of a dialogue' (Craveirinha, p. c., 2018) and that he was pleased that with the level of the discussion. He also revealed self-reflection on his role as a teacher:

> 'I realised this year that I had atomised you. You all got time with me, but
> you never had time with each other, unless you had to do work together
> in specific instances' (Craveirinha, p. c., 2018).

These comments strongly suggest that teaching strategies that encourage interaction and discussion between students can help to facilitate peer learning. In all, these comments show that the attempts that were made to improve the crit format had positive results, although there is no need to assume that this particular model for the crit format is definitive, it is merely one possible strategy to aid peer dialogue.

8.7 **Conclusion**

This case study suggests that it would be productive for design teachers to question their role in the crit and the effect it has on peer discussion. A teacher centred approach is counter-productive to the aims of contemporary design education and it is exigent for teachers to create new approaches to pedagogy that adapt the design studio model: a necessity if it is to remain relevant and usable. It is the potential for peer dialogue that is the main opportunity of the crit, so that ideas may be formed and tested by the students as they develop their ability to function as a critical community, maximising the potential to improve collaboration, critical thinking and self-sustaining learning. This change in perspective should reframe the crit and accordingly the role of the teacher, which should no longer be that of a dominant figure, but rather that of an informed companion, who facilitates discussion between the students.

The special workshop classes showed potential both for teaching specific principles of design and for improving collaboration and peer learning. However the workshop classes require more focussed research so that like the crit, specific formats and interventions can be tested and refined through various iterations and so that qualitative data can be gathered on the results.

In both the early and later phases of this case study, Action Research and Reflective Practice based methodologies have been shown to be appropriate and useful tools for both developing teaching practice and also adapting teaching formats that can be shared with other educators. Yet, there is room for improvement in the methodology that was used in this case study. On reflection, it would have been preferable to develop a more participative model, in which students could have been engaged in the planning of class activities, workshops, and the subject matter for the briefs, as well as more closely engaged in the investigative aspect of the process. This would have been challenging, but surely opportunities for a more participative structure could be found. Ideally, a more radical approach to designing an Action Research methodology would require involving the students even in the planning of the case study and the definition of its objectives so that they could become collaborators in the research process. There are clearly opportunities for conducting further research on the various key elements of the studio model and part of this process should involve the development of research methods that are able to examine, challenge, and improve the structures of design education, while including students in the research process to encouraging them to become active participants in their own learning and the learning of others.

Chapter 9

Conclusion

9.1 Key findings and general conclusions

9.1.1 So, how should we teach design?

The intention of this thesis is to ask the question, 'how should we teach design?', but the aim is not necessarily to provide an answer, nor would a definitive answer be possible. What is essential is to point out that the 'how' of design education should remain in focus, so that we do not ask ourselves only what we teach, but also how we teach it. Throughout the thesis I have attempted to put forward a case for a self-reflective approach to design education, to suggest that design must challenge structures and contexts as well as content — particularly in education. This seems crucial, because in the short period of time that we have with our students, precedents are set, and habits are adopted, that are likely to have a greater impact on a designers work than specific practical or historical knowledge we can pass on. Therefore the hidden curriculum of design pedagogy (Dutton, 1987) has a significant impact and is as worthy of our concern as educators as any other essential design knowledge. We should make ourselves (as much as is possible) aware of the implicit power structures, prejudices, values and assumptions that are embodied in our pedagogical practices, and make the challenging and reforming of these practices a central issue in our work as teachers. This is the root of what it means to conduct critical practice in education, and if this is not attempted, then it is useless to hope that our students will learn to be critical or reflective thinkers — why should they, if we as educators, remain satisfied with accepting and adopting whatever pedagogical forms we inherit.

9.1.2 The history of the studio model

The investigations and comparisons of the various phases of the development of the studio model (Chapters 3-4) reveal that the this has not been a continuous and progressive sequence, but has often consisted of complex and often contradictory changes that do not necessarily supersede each other but rather make it possible for several different approaches to pedagogy to coexist despite their differences. The section on the Bauhaus (Chapter 3) for example barely scratches the surface of the diversity of teaching at the institution during its various incarnations, but nevertheless it is clear that there was no such thing as Bauhaus pedagogy as such. Indeed different teachers such as Moholoy-Nagy, Itten and Gropius for example, can each be seen as representing significantly divergent education ideologies (see Chapter 7). Care should be taken therefore with statements of the type that are often encountered in the literature to the effect that the studio model 'originated in the Bauhaus' (Cennamo, 2011, p.13) because this has the double problem of over simplifying the definition of this form of teaching, and presenting an overly simple picture of design history. In this sense, analysis such as that conducted by Bellugi (2016), which identifies and discusses the potential construction of roles of both teachers and students within the studio model, is particularly valuable because it allows us to see more clearly how different interpretations of the studio model can coexist, even within the same classroom.

9.1.3 The future of the studio model

The theme of tradition plays a complex role throughout the discussion presented in these pages. For design education, tradition is both a source of integrity and pride, yet it can simultaneously make innovation difficult and restrict the possibilities we can see for our discipline. The studio model (in all its complexity) is the signature pedagogy of the design discipline (Crowther, 2013, Shreeve, 2015, Shulman, 2005), but it is becoming difficult to maintain particularly due to pressures on space and larger class sizes. These problems were mentioned in the interviews (Chapter 2) and in the literature view on contemporary design education (Chapter 5). It would of course be possible to gather quantitative information about this issue, requiring surveys over several years in order to build an accurate picture of exactly how these factors are

having an impact; this is beyond the scope of this research. Attempts to cope with these factors through technology are taking place (Bendar & Vredevoogd, 2006, Crowther, 2013) while others defend the importance of the materiality of the studio (Vyas, & Nijholt, 2012, Corazzo, 2019) and highlight the importance of informal interactions that this format provides (Svensson & Edstrom, 2011) although the working patterns in studio learning may often be unhealthy (Koch et al., 2002) and the dynamic between students and teachers, especially in tutorials and crits, are at times somewhat dysfunctional (Blythman et al., 2007).

What is certain is that the studio model has served design education in some form or other for over a century (see Chapter 3), so it should not be discarded lightly. One of the great strengths of the studio model is the workshop-like productive informality, which has the potential to facilitate much collaborative and tacit learning between teachers and students — but it is crucial that this learning is seen as happening horizontally, rather than top down. Students should learn from each other and teachers should collaborate with students in facilitating this learning. Statements such as these are easily made, but what is difficult is to bring these kind of learning situations into practice. It is hoped that the discussions of meta approaches to learning discussed in this thesis (Chapter 7) have shown that these kind of aims can only be achieved if there is a shift in the entire approach to education — such changes are only possible if the ontology, epistemology and methodology are called into question and reflected upon.

The investigations into the origins, variations and challenges to the studio model (Chapters 3-5) show that this teaching format is far from fixed, and although it consists of several key elements such as the space of the studio itself, project based learning, the crit and so on, there is both a strong motivation to develop and adapt this format for the contemporary paradigm of design education and an abundance of opportunities to adapt, test and experiment with ways of developing the signature pedagogy of design education.

9.1.4 The contemporary paradigm of design education

The synthesis of ideas presented in this thesis as the contemporary paradigm of design education (Chapter 5) seem to show that a consistent image can be seen in terms of the type of education that is being argued for in the literature. This

is an image of design as a discipline based not on the production of material things, so much as on communication and collaboration between disciplines. This supposed dematerialization of design should be considered carefully however and we should be wary of abandoning the aspect of design that is concerned with visual culture and making things in general It may be tempting to imagine an ecological and ethic form of design in which products and print are no longer made, but it is important to realise that many students are attracted to design exactly because of making and designing physical things, and that these objects allow us to exteriorise our thoughts and to communicate in ways that are not easily replaced by words. A possibility to explore here is the extent to which physical making and visual designing can contribute to more abstract intangible goals in design education and practice. Classes that are planned to improve skills in collaboration and community building though focussing on the construction of informal architecture or editing a publication, for example. These types of projects can emphasise the communicative potential of design rather than the perfection of finished forms.

9.1.5 Building an idea of design, or the 'design entity'

Perhaps one of the more surprising aspects of design education that I encountered in conducting the research for this thesis is that both students and teachers can hold a variety of conceptions of design and that these images of design may impede or support learning, both in the sense of the level of learning that students attain and the quality of teaching that teachers provide (Davies & Reid, 2000). This is a theme that certainly deserves further investigation since it suggests that a key aim of design education should be to enrich and give nuance to conceptions of design held by both students and staff and that this in itself would have beneficial effects on learning. It is an idea that connects to my conversation with Sofia Gonçalves (Chapter 2) who recounted her own experience of learning about design through the period of her undergraduate degree and how it was only towards the end of this time that she really felt she began to understand what design was. A brief that she described that involved the students having to design their own curriculum seems exemplary as an approach to building the 'design entity' (Davies & Reid, 2000), the conception of design, because this project demanded that the students investigate themselves what design education should involve, meaning of course

that they would have to investigate the meaning and purpose of design in the process. Providing students with these type of open ended challenges seems to be an approach with much potential for facilitating and improving learning in design education because of its critical character that suggests a kind of meta-learning, or learning about learning.

9.1.6 Paradigmatic and ideological discussion

The research question for the thesis is of course rather broad, and to ask such a question as 'how should we teach design' runs the risk of looking at subject matter in only a superficial way. It is hoped however, that this approach is balanced by the inclusion of direct and personal research such as the interviews and the case study, in which the minutiae of design pedagogy could be discussed. The general approach taken does provide certain advantages, since it allowed for the possibility of really stepping back and looking at the bigger picture of what design education is about and what it aims to achieve. The discussions of paradigms and ideologies of education (Chapter 7) should serve to put in context other more specific debates about design education, because ideally we should be able to position these arguments in a broader conceptual framework that allows us to see how particular aims or changes in design education have wider implications and may or may not be coherent or enter in conflict with other epistemological aspects. This type of analysis also shows how easily conflicts between teaching staff and management can arise or how the impetus to produce scientific knowledge may fit uncomfortably with the pragmatic epistemologies that are relevant to design practice. This discussion should of course be seen as open for further investigation and revision however, since the subject matter is complex and the potential for debate is significant.

9.1.7 The linking of Action Research and design education

Ultimately, this thesis presents the argument that methodologies based on critical forms of Action Research are a convincing possibility for how this process of continual reassessment and reform can be conducted. The case study described in Chapter 8 of this document — on how to improve peer dialogue in the crit — provides a modest example of how an approach of this

sort can work in practice. What is essential in the difference between an Action Research project (when fully realised), as opposed to Reflective Practice, is that it must go beyond the teaching practice itself and address the wider context and actors in the learning situation. It must challenge not only the teacher, but all those involved, to reflect upon their situation and to seek to improve it. The implication is that design students should also become critical participants in their own education, and for this reason, including them in research projects does not only satisfy ethical and participative concerns, but should also require students to become proactive creators of their education experience. A position, which, it should be emphasised, rejects the neoliberal notion of student as customer, and the banking metaphor of education (Freire, 2005). Proposing instead, that if the aim of design education is to produce graduates who are ethical, are autonomous, have agency, are motivated by social good, believe in the transformative potential of design, are able to self-organise into collaborative teams, and so on, (see Chapter 5), then design education must engage students in reforming design education themeselves. Strategies that have a participative, reflective, and critical character seem likely to be the only ones that are capable of achieving these goals.

References

Alvarez, I. & Kilbourn, B. (2002). Mapping the information society literature: topics, perspectives and root metaphors. *First Monday*. 7(1). Retrieved 3rd February 2019 from: https://firstmonday.org/ojs/index.php/fm/article/view/922/844

Bachelor Degree in Design and Multimedia. (n.d.) Retrieved August 7, 2017 from https://apps.uc.pt/courses/EN/course/462/2017-201

Bayer, H., Gropius, W. & Gropius, I. (1938). *Bauhaus 1919-1928*. New York: The Museum of Modern Art

Behrens, R. R. (1998). *Art, Design and Gestalt Theory*. Leonardo, Vol. 31, No. 4, p. 299-303, 1998.

Belluigi, D. (2016). "Constructions of Roles in Studio Teaching and Learning". *The International Journal of Art & Design Education*, Vol.35 No.1. DOI: 10.1111/jade.12042

Bendar, D.M., & Vredevoogd, J.D. (2006). Using online educational technologies to support studio instruction. *Educational Technology & Society*, 9(4), 114-122. Retrieved 7th December 2018 from: https://www.researchgate.net/publication/220374679_Using_Online_Education_Technologies_to_Support_Studio_Instruction

Bennett, A. & Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D. Retrieved March 2019 from: http://www.ico-d.org/database/files/library/IcogradaEducationManifesto_2011.pdf

Berenson, I. and Honeth, S. (2016, April 26). *Clearing the Haze: Prologue to Postmodern Graphic Design Education through Sheila de Bretteville*. Retrieved 11 December 2018 from: http://blogs.walkerart.org/design/2016/04/26/clearing-the-haze-prologue-to-postmodern-graphic-design-education-through-sheila-de-bretteville-2

Bergdoll, B. and Dickerman, L. (2009). *Bauhaus 1919-1933: Worskshop for modernity.* New York: The Museum of Modern Art. Retrieved 8 November 2018 from: https://faculty.risd.edu/bcampbel/dickerman-bauhaus.pdf

Berry, F.M. (1984). An introduction to Stephen C. Pepper's philosophical system via World Hypotheses: A Study in Evidence. *Bulletin of the Psychonomic Society 1984*. 22 (5), 446-448. Retrieved 29 January 2019 from: https://link.springer.com/content/pdf/10.3758%2FBF03333873.pdf

Blythman, M., Orr, S. and Blair, B. (2007). *Critiquing the Crit: Final Report*. Retrieved 19th September 2017 from: https://www.academia.edu/586074/Critiquing_the_Crit

Bonsiepe, G. (1968). *Ulm 21: Quarterly bulletin of the Hochschule fürGestaltung*, Gui Bonsiepe (ed.). Ulm: April, 1968.

Brave New Alps (2015). Precarity Pilot: Making Space for Socially and Politically-engaged Design. *Modes of Criticism*, 1, 49-58.

de Bretteville, S. L. (1973). Some Aspects of Design from the Perspective of a Woman Designer. In Burke, W. B. (Ed.). *Icographic*. No 6, 1973. Retrieved 11 December 2018 from: http://dash.ico-d.org/files/icographic/ICOD_Icographic_06_full.pdf

Bruner, J. (1982). *On Knowing: Essays for the Left Hand*. Cambridge, Mass.: Harvard University Press.

Capeto, R. (2011). The new public sphere and the design field. (54-57). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Callahan, B. (2007). *From The Rivers To The Ocean*, Bill Callahan. Drag City. (CD)

Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education*, 36(4), 395–407.

Carman, A. (2016, July 5). *This student-made gadget can detect fonts and capture colors*. Retrieved 20 November 2018 from: http://www.theverge.com/circuitbreaker/2016/7/5/12100524/font-detector-tool-color-eyedropper-spector

Carr, W. and Kemmis, S. (1986). *Becoming Critical: Education, Knowledge and Action Research*. Deakin University Press, Geelong, Victoria.

Cennamo, K., Brandt, C. , Scott, B., Douglas, S., McGrath, M., Reimer, Y., & Vernon, M. (2011). Managing the Complexity of Design Problems through Studio-based Learning. *Interdisciplinary Journal of Problem-Based Learning*, 5(2). Available at: https://doi.org/10.7771/1541-5015.1253

Chandler, D. (2002). *Semiotics: The Basics*. London: Routledge.

Cheng, K. (2013, 4th March). *How to Survive a Critique: A Guide to Giving and Receiving Feedback*. Retrieved 13th September 2018 from: https://www.aiga.org/how-to-survive-a-critique

Choueiry, H. (2011). The little shark who wanted to become a designer: a fable on design education. (58-61). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Coles, W. A. & Reed, H. H. (Eds.) (1961). *Architecture in America: A Battle of Styles*. New York: Appleton.

Coleman, R. (1988). *The Art of Work: An Epitaph to Skill*. London: Pluto.

Colucci, K. (2011). What role will technology play in the future of design education? (62-67). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

'"Commodity, firmness, and delight": the ultimate synthesis'. *Encyclopedia Britannica*. (2019). Retrieved 24 June 2019 from: https://www.britannica.com/topic/guild-trade-association

Conrads, U. (1971). *Programs and manifestoes on 20th Century Architecture*. M. Bullock, Trans. Cambridge, Mass: MIT Press.

Corazzo, J. (2019). *Materialising the Studio; a systematic review of the role of the material space of the studio in Art, Design and Architecture Education.* Paper presented at: Running with Scissors, 13th EAD Conference University of Dundee, 10-12 April 2019.

Corso, J. (2014). What Does Greimas's Semiotic Square Really Do? In *Mosiac: a journal for the interdisciplinary study of literature*. 47 (1). p. 69-89.

Cross, N. (2001). Design cognition: results from protocol and other empirical studies of design activity. In: Eastman, C.; Newstatter, W. and McCracken, M. eds. *Design knowing and learning: cognition in design education*. Oxford, UK: Elsevier, p. 79–103. Retrieved 31 July 2018 http://oro.open.ac.uk/3285/

Cross, N. (2001). Designerly Ways of Knowing: Design Discipline Versus Design Science. In Design Issues: Volume 17, Number 3 Summer 2001.

Crowther, P. (2013). Understanding the signature pedagogy of the design studio and the opportunities for its technological enhancement. *Journal of Learning Design.* Special Issue: Design Education. Vol. 6 No. 3. pp18-28.

Curdes, G. (2012). The social relevance of the Ulm model. In Spitz, R. (Ed.), *HfG IUP IFG. Ulm 1968–2008* (p. 64-69). Ulm: Stiftung HfG Ulm.

Dannels, D, Gaffney, A. H.; & Martin, K. N. (2008) Beyond Content, Deeper than Delivery: What Critique Feedback Reveals about Communication Expectations in Design Education. In *International Journal for the Scholarship of Teaching and Learning*: Vol. 2: No. 2, Article 12. Retrieved 13th September 2018 from: https://doi.org/10.20429/ijsotl.2008.020212

Davies, A. (1997) Assessment and Transferable Skills in Art and Design (online). Retrieved 28 Sept 2017 from: artsonline2.tki.org.nz/documents/AssessmentandTransferableSkillsinArtandDesign.doc

Davies, A. (2000). Exploration of evaluation and research methods for improving student learning in art and design. Project Report. Allan Davies. Retrieved 16 October 2017 from: http://ualresearchonline.arts.ac.uk/627/

Davies, A. (2002). Enhancing the design curriculum through pedagogic research. In: Proceedings of 1st International conference. London: Centre for Learning and Teaching in Art & Design : Enhancing Curricula; exploring effective curriculum practices in design and communication in Higher Education. CLTAD, University of the Arts London, London.

Davies, A. & Reid, A. (2000). Uncovering problematics in design education — learning and the design entity. Proceedings of International Conference Re-inventing Design Education in the University . p. 178-184. (Unpublished) Retrieved 15 March 2015 from: http://ualresearchonline.arts.ac.uk/620/

Davis, M. (2011). Relevance in a complex world — Icograda Design Education Manifesto. (72-75). In Bennett, A. and Vulpinari, O. (Eds.) (2011) *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Deleuze, G. & Guattari, F. (1988). *A thousand plateaus: capitalism and schizophrenia*. London: Athlone Press.

Design and Communication (n.d.). Retrieved July 25, 2017 from: https://infordocente.uc.pt/nonio/ensino/detalhes.do?args=1558042229721282

Deutscher Werkbund. (n.d.). Retrieved March 2019 from: https://www.britannica.com/topic/Deutscher-Werkbund#ref173050

Dewey, J. (1998). *Experience and education: the 60th anniversary edition.* West Lafayette: Kappa Delta Pi.

Dorst, K. (2010). The Nature of Design Thinking. DTRS8 Interpreting Design Thinking: Design Thinking Research Symposium Proceedings, 2010, p. 131 — 139. DAB Documents. Retrieved 31 July 2018 http://hdl.handle.net/10453/16590

Dubberly, H. (2011). Input for updating the Icograda Design Education Manifesto. (76-81). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Dutton, T. (1987). Design and Studio Pedagogy. *Journal of Architectural Education*. 1984-. Vol. 41, No. 1. p. 16-25.

Ellison, C. (2016, 7th July). How to Take Criticism. Retrieved 13th September 2018 from: http://chappellellison.com/giving-and-taking-criticism/

Figueiredo, A. D. and Cunha, P. R. (2007). Action Research and Design in Information Systems: Two Faces of a Single Coin. Ned Kock (Ed.), *Information Systems Action Research: An Applied View of Emerging Concepts and Methods* (p. 61-96), Springer. (preliminary version). Retrieved 12 January 2019 from: https://www.researchgate.net/publication/215575474_Action_Research_and_Design_in_Information_Systems_Two_Faces_of_a_Single_Coin

Findeli, A. (2001) Rethinking Design Education for the 21st Century: Theoretical, Methodological, and Ethical Discussion. In *Design Issues*: Vol. 17, No.1 Winter 2001.

Flusser, V. (1999). *The Shape of Things: A Philosophy of Design*. London: Reaktion Books.

Flynn, P. (2005). Criting the 'Crit' in the education of architects: from Bauhaus to Bolton Street. Dissertation. Dublin, Dublin Institute of Technology, 2005. Retrieved 19 October 2017 from http://arrow.dit.ie/cgi/viewcontent.cgi?article=1007&context=ltcdis.

Fry, R. & Kolb, D. (1979). Experiential Learning Theory and Learning Experiences in Liberal Arts Education. (79-92). In *New Directions for Experiential Learning*. no.6.

Freire, P. (2005). *Pedagogy of the Oppressed*. Trans. Myra. Bergman Ramos. New York: The Continuum International Publishing Group.

Fuad-Luke, A. (2008) Slow Design. In: Erlhoff M., Marshall T. (eds) *Design Dictionary*. Board of International Research in Design. Birkhäuser Basel.

Furniss, L. (2015). *Beyond Discipline: Design Practice and Design Education in the 21st Century*. Retrieved 20 November 2018 from: http://files.cargocollective.com/649648/BeyondDiscipline_web.pdf

Gaulke, C., Wolverton, T. Maberry, S., & Cotton, C. (December 11, 2018). The Woman's Building: Animating the Archives Discussion Panel at the LA Art Book Fair. Retrieved 11 December 2018 from: https://www.metabolicstudio.org/posts/pdf/197_the-womans-building-animating-the-archives-discussion-panel-at-the-la-art-book-fair.pdf

Goldstein, M. (2018). The Art of Critique. Retrieved Monday 10th September from: http://howtocrit.com/

Gropius, W. (1922). The Viability of the Bauhaus Idea. Retrieved 11th November 2018 from: https://www.academia.edu/28732287/Gropius_The_Viability_of_the_Bauhaus_Idea_Mallgrave_?auto=download

'Guild'. Encyclopedia Britannica. (2018). Retrieved, 17 October 2018 from: https://www.britannica.com/topic/guild-trade-association

Hardman, P. (2015). What is a design experience: thinking, doing, learning. Paper presented at the International Seminar in Work and Education: Saberes em Trabalho. CES, Universidade de Coimbra. Portugal. Available from: https://www.researchgate.net/publication/332058354_What_is_a_design_experience_thinking_doing_learning

Hardman, P. (2017). Framing design education within the contemporary paradigm. Paper presented at EIMAD — Meeting of Research in Music, Arts and Design. Escola Superior de Artes Aplicadas (ESART). Instituto Politécnico de Castelo Branco. Portugal. https://www.researchgate.net/publication/316991566_Framing_design_education_within_the_contemporary_paradigm

Hardman, P. (2018) Navigator, Tour Guide, or Travel Companion: The Role of the Teacher in the Territory of the Crit. Paper presented at Design 2018: Territory. International Conference On Design Research. Universidade de Beira Interior, Covilhã (UBI). Instituto Politécnico de Castelo Branco. Portugal. LABCOM.IFP, colecção/collection ARS. ISBN: 978-989-654-493-5 (papel) / 978-989-654-494-2 (ePub) / 978-989-654-495-9 (PDF) https://www.researchgate.net/

publication/331024216_Navigator_Tour_Guide_or_Travel_Companion_The_Role_of_the_Teacher_
in_the_Territory_of_the_Crit

Hardman, P. & Boavida, A. (2019). Three little pigs: Circle, Triangle, Square. Proceedings of CONFIA.
International Conference on Ilustration & Animation. Viana do Castelo, Portugal.

Harpaz, Y. (2010) Conflicting Logics in Education to Critical Thinking. Published in *Inquiry: Critical
Thinking Across the Disciplines* in Vol. 25 No. 2 (Summer 2010), p. 5-17. Retrieved 18 December 2018
from: https://yoramharpaz.com//pubs/en_thinking/conflicting-logics-in-teaching-critical-thinking.pdf

Hauser, A. (1999). *The Social History of Art. Vol. II.* London: Routledge.

Haxthausen, C. (2009) Lyonel Feininger/Walter Gropius: Bauhaus Manifesto, 1919. In: *Bauhaus
1919-1933: Workshops for Modernity.* Exhibition catalogue. Barry Bergdoll & Leah Dickerman
(eds.). MoMA, 2009, 64-67. Retrieved September 2019 from: https://www.academia.edu/5392236/
Walter_Gropius_and_Lyonel_Feininger_Bauhaus_Manifesto._1919

Healy, J. (2016) The Components of the 'Crit' in Art and Design Education. *Irish Journal of Academic
Practice:* Vol. 5: Iss. 1, Article 7. Retrieved March 2018 from: http://arrow.dit.ie/ijap/vol5/iss1/7

Heller, S. (November 26, 2012). The Genius that was Ulm. Interview with René Spitz. Retrieved 16
November 2018: https://archive.is/IUmEI#selection-1025.171-1025.304

Heller, S. & Talarico, L. (2011). An education manifesto for Icograda. (82-85). In Bennett, A. and
Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Hester, R. & Williamson, B. (2015). William Johnstone: International and Interdisciplinary Art
Education. (pp25-36) in Llewellyn, N., & Williamson, B. (Eds.) *The London Art Schools: Reforming
the Art World, 1960 to Now.* London: Tate Publishing.

Howard, A. (1994). There is such a thing as society. *Eye Magazine,* Issue 13, Vol. 4, 1994. Retrieved June
2019 from: http://www.eyemagazine.com/feature/article/there-is-such-a-thing-as-society

Howard, A. (2011). Close Up / Essay. Retrieved 21 June 2019 from: http://www.studioandrewhoward.
com/reading-writing/close-up-essay/

Hunt, J. (2011). Icograda Design Education Manifesto. (86-89). In Bennett, A. and Vulpinari, O. (Eds.)
(2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Israni, V. (2015, January 27). The Art of Critique. Retrieved Monday 10th September from URL https://
design.cmu.edu/content/art-critique

Illich, I. (1983). *Deschooling society.* New York: Harper Colophon.

Jaeggi, A. (2009). Bauhaus: A Conceptual Model. Berlin: Hatje Cantz. Retrieved Nov 2018 from:
https://artasprocessfa2011.files.wordpress.com/2011/09/bauhaus-a_conceptual_model.pdf

Jen, N. (2018, February 23). Why Design Thinking is Bullshit. Retrieved 27 March 2019 from: https://
www.itsnicethat.com/articles/natasha-jen-pentagram-graphicdesign-230218

Jenkins, H. (2009). *Confronting the Challenges of Participatory Culture.* Cambridge, Mass.: The
MIT Press. Retrieved May 2015 from: URL: https://mitpress.mit.edu/sites/default/files/titles/
free_download/9780262513623_Confronting_the_Challenges.pdf

Jewison, D. (2015). Policy and practice: Design education in England from 1837-1992, with particular
reference to furniture courses at Birmingham, Leicester and the Royal College of Art. PhD Thesis.
Retrieved 16th October 2018 from: https://www.dora.dmu.ac.uk/bitstream/handle/2086/11390/

Policy%20and%20practice-%20Design%20Education%20in%20England%20from%201837%20 etc.%2C.pdf?sequence=1&isAllowed=y

Jury, D. (2018). *Reinventing Print: Technology and Craft in Typography.* London: Bloomsbury.

Juwah, C., Macfarlane-Dick, D., Matthew, B., Nicol, D., Ross, D., & Smith, B. (2004). Enhancing student learning through effective formative feedback. Higher Education Academy. Retrieved 2 October 2017 from http://ctlt.illinoisstate.edu/downloads/modules/design/enhancing_learningthrough_ formative_feedback.pdf

Kapos, P. (2016). *The Ulm Model.* Exhibition catalogue. London: Raven Row. Retrieved 12 November 2018 from: http://dasprogramm.co.uk/files/4.pdf

Keirl, S. (2017). Critiquing as Design and Technology Curriculum Journey: History, Theory, Politics and Potential. 109-133. 10.1007/978-981-10-3106-9_7.

Kesting, H. (1958). *Ulm 1.* Quarterly bulletin of the Horschule für Gestaltung, Ulm. October 1958. Retrieved 12 Nov 2018 from: https://monoskop. org/images/a/a2/Ulm_1.pdf

Kinross, R. (1989). The Rhetoric of Neutrality. In Victor Margolin (Ed.), *Design discourse: History/ theory/criticism.* Chicago: University of Chicago Press. 373-385.

Koch, A., Schwennsen, K., Dutton, T. A. & Smith, D. (2002). *The redesign of studio culture. A report of the AIAS Studio Culture Task Force.* Retrieved 21 September 2017 from http://archdesign.vt.edu/ students/images/Studio_Culture_Report_2002.pdf

Kolb, D.A. (1984). Experiential Learning: experience as the source of learning and development. Englewood Cliffs, NJ: Prentice Hall.

Kostelanetz, R. (1970). *Moholy-Nagy: An Anthology.* New York: De Capo.

Krippendorff, K. (2008). Designing in Ulm and off Ulm. In K.-A. Czemper (Ed.), *HfG, Ulm; Die Abteilung Produktgestaltung*; 39 Rückblicke (p. 55-72). Dortmund, Germany: Verlag Dorothea Rohn. Retrieved September 2018 from: http://repository.upenn.edu/asc_papers/138

Kvan, T. (2001). The problem in Studio Teaching — Revisiting the Pedagogy of Studio Teaching. In Tan, M. (Ed.). Proceedings of the 1st ACAE Conference on Architectural Education. pp95-105.

Lackey, J. A. (1999). *A History of the Studio-based Learning Model.* School of Design, University of Wisconsin, Madison. Retrieved 9 March 2015 from http://www.edi.msstate.edu/work/pdf/ history_studio_based_learning.pdf

Lakoff, G & Johnson, M. (2003). *Metaphors We Live By.* Chicago: University of Chicago Press.

Lamm, Z. (1986). Ideologies and Educational Thought. D. Bar-Tal (ed.) *Psychology and Counseling in Education.* Jerusalem: Ministry of Education, 1986 (in Hebrew). Translated. Retrieved April 2019 from: http://zvilamm-archive.org/articles_eng.html

Lange, J. (2011). The change we seek: an African perspective. (90-95). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Laranjo, F. (2018). A brief history of the design summer school. (190-195). In Lindgren, J. (Ed.) *Extra-curricular.* Eindhoven: Onomatopee.

LaRossa, B. (15 February 2017). Graphic Design is a Literary Discipline. http://designobserver.com/ feature/graphic-design-is-a-literary-discipline/39508/

Lawson, B. (2005). How Designers Think: The Design Process Demystified. Oxford: Architectural Press. Elsevier.

Leitch, R. & Day, C. (2000). Action Research and Reflective Practice: towards a holistic view. *Educational Action Research*. Vol 8, Issue 1. p179-193. Retrieved Nov 2015 from: http://www.tandfonline.com/doi/abs/10.1080/09650790000200108

Lethaby, W. R. (1911). Design. Retrieved 13 Feb 2018 from: https://en.wikisource.org/wiki/1911_Encyclop%C3%A6dia_Britannica/Design

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, 2(1): p34–46.

Llewellyn, N., & Williamson, B. (Eds.). (2015). *The London Art Schools: Reforming the Art World, 1960 to Now.* London: Tate Publishing.

Lupton, E. (1993). Reputations: Sheila Levrant de Bretteville. [interview with de Bretteville, S. L.]. Retrieved 11 December 2018 from: http://www.eyemagazine.com/feature/article/reputations-sheila-levrant-de-bretteville

Malouf, D. (2011). Design education of the future. (98-103). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Maser, S. (2012). Design, environmental planning and experimentation. In Spitz, R. (Ed.), *HfG IUP IFG. Ulm 1968–2008* (p. 74-76). Ulm: Stiftung HfG Ulm.

Maldonado, T. (1958). New Developments in Industry and the Training of the Designer. In *Quarterly bulletin of the Horschule für Gestaltung, Ulm*. No.2 October 1958. Retrieved 15 November 2018 from: https://monoskop. org/images/5/50/Ulm_2.pdf

Maurer, M. & Githens, R. P. (2010). Toward a reframing of action research for human resource and organization development. Moving beyond problem solving and toward dialogue. *Action Research*. 8(3), 267–292. DOI: 10.1177/1476750309351361. http://scholarlycommons.pacific.edu/ed-facarticles/119

McCarthy, C. (2011). *Redesigning the design crit.* Wellington: Ako Aotearoa. Retrieved September 2017 from: https://akoaotearoa.ac.nz/ako-hub/ako-aotearoa-centralhub/resources/pages/design-crit

McGregor, J. (2004) Spatiality and the place of the material in schools. *Pedagogy, Culture & Society.* 12(3). p. 347-372, DOI: 10.1080/14681360400200207

McHarg, I. (1969). *Design with nature.* New York: Natural History Press.

Min, W. (2011). Design education manifesto. (140-143). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto. 2011.* Montreal: Ico-D.

Moholy-Nagy, L. (1947). *The New Vision and Abstract of an Artist.* D. Hoffman (trans.). New York: Wittenborn, Schultz, Inc.

Muthesius, H. (1994). *Style-Architecture and Building-Art.* (Trans. Stanford Anderson). Santa Monica: The Getty Center for the History of Art and the Humanities.

Myers, N. (2011, April 4). The visual interface is now your brand. Retrieved 20 November 2018 from: http://www.cooper.com/journal/2011/04/visual_interface_brand

Neves, I. C., Rocha, J. & Duarte, J. P. (2013). The legacy of the hochschule für gestaltung of ULM for computational design research in Architecture. In R. Stouffs, P. Janssen, S. Roudavski, B. Tunçer (eds.), *Open Systems: Proceedings of the 18th International Conference on Computer-Aided Architectural Design Research in Asia* (CAADRIA 2013). p. 293–302.

Nicol, D.J. & Boyle, J.T. (2003). Peer Instruction versus Class-wide Discussion in large classes: a comparison of two interaction methods in the wired classroom. In *Studies in Higher Education* 28 (4). p. 457–473. Retrieved October 2017 from: http://www.psy.gla.ac.uk/~steve/evs/papers/nicol2.pdf

Oh, Y. et al. (2012). A theoretical framework of design critiquing in architecture studios. In *Design Studies*. 34(3). p. 302-325. May 2013.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2009). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*. 9. p. 105-119. Retrieved Nov 2015 from: https://www.psychologicalscience.org/journals/pspi/PSPI_9_3.pdf

Pepper, S. C. (1961). *World hypotheses; a study in evidence*. Berkley: University of California press.

Pevsner, N. (1975). *Pioneers of modern design, from William Morris to Walter Gropius*. London: Penguin.

Polanyi, M. (2009). *The Tacit Dimension*. Chicago: The University of Chicago Press.

Potter, N. (2009). *What is a designer: things. places. messages.* Fourth Edition. London: Hyphen Press.

Ranjan, M. P. (2005). Lessons from Bauhaus, Ulm and NID: Role of Basic Design in PG Education. Paper submitted for the DETM Conference at the National Institute of Design, Ahmedabad in March 2005. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.429.7046&rep=rep1&type=pdf

Reichenstein, O. (2006, October 19). Web Design is 95% Typography. Retrieved 20 November 2018 from: https://ia.net/know-how/the-web-is-all-about-typography-period

Rittel, H. & Webber, M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*. 4(2) June 1973. p. 155-169. Springer.

Rogal, M. (2011). Positioning communication design. (116-119). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Ruskin, J. (1854). *The Nature of Gothic*. London: George Allen.

Ryle, G. (1945). Knowing how and knowing that: the presidential address. *Proceedings of the Aristotelian Society, New Series*. 46 (1945-1946). p. 1-16. London: Wiley.

Sara, R. & Parnell, R. (2012) Fear and Learning in the Architectural Crit. In *Field*. 5(1) November 2013. Retrieved 19 October 2017 from: http://field-journal.org/wp-content/uploads/2016/07/Field-51-Sara-Parnell.pdf

Sadler, D. R. (2013) Opening up feedback: Teaching learners to see. In Merry, S., Price, M., Carless, D., & Taras, M. (eds.) *Reconceptualising Feedback in Higher Education: developing dialogue with students*. (Ch. 5, p. 54-63). London: Routledge. Retrieved 10th October 2017 from: http://www.innovativeconservatoire.com/wp-content/uploads/2013/12/Sadler-%E2%80%93-Opening-up-feedback-Teaching-learners-to-see-%E2%80%93-Publication-2013.pdf

Sang-Soo, A. (Ed.). (2000). *Icograda design education manifesto*. Retrieved March 27 from: https://www.ico-d.org/database/files/library/IcogradaEducationManifesto.pdf

Scagnetti, G. (2017). A dialogical model for studio critiques. In *The Design Journal,* 20: sup1, S781-S791. DOI: 10.1080/14606925.201. Retrieved from: http://dx.doi.org/10.1080/14606925.2017.1353024

Schnaidt, C. (1967). Architecture and Political Commitment. (p26-34) in *Ulm 19/20: Quarterly bulletin of the Hochschule fürGestaltung*. Gui Bonsiepe (ed.). Ulm: August, 1967. Retrieved 26 November 2018 from: https://monoskop. org/images/3/39/Ulm_19-20.pdf

Schön, D. (1983). *The reflective practitioner: How professionals think in action.* New York: Basic Books.

Schön, D. (1985). *The design studio: An exploration of its traditions and potentials.* London: RIBA Publications for RIBA Building Industry Trust.

Schön, D. (1987). *Educating the reflective practitioner.* San Francisco: Jossey-Bass Publishers.

Shreeve, A. (2015). Signature Pedagogies in Design. In M. Tovey (ed.). *Design Pedagogy: Developments in Art and Design Education.* p. 83-92. Farnham, Surrey: Gower Publishing Limited.

Shreeve, A., Sims, E., Trowler, P. (2010). A kind of exchange: learning from art and design teaching. *Higher Education Research & Development.* 29 (2) p. 125-138. Retrieved 3 October from: https://www.academia.edu/10293309/A_Kind_of_Exchange_Learning_from_Art_and_Design_Teaching

Shreeve, A., Wareing, S., & Drew, L. (2008). Key Aspects of Teaching and Learning in the Visual Arts. In *A Handbook for Learning and Teaching in Higher Education.* Fry, H., Ketteridge, S. & Marshall, S. (eds.). London: KoganPage. Retrieved 11 October 2017 from: https://www.sun.ac.za/english/faculty/arts/Documents/HandbookTeachingLearningHigheEd.pdf

Shulman, S. (2005). Signature pedagogies in the professions. *Deadalus.* Summer 2005. 134 (3). p. 52-59. ProQuest Direct Complete.

Siang, T. (2016, July 27). How to Change Your Career from Graphic Design to UX Design. Retrieved 20 November 2018 from: https://www.interaction-design.org/literature/article/how-to-change-your-career-from-graphic-design-to-ux-design?utm_source=facebook&utm_medium=sm&utm_content=how_to_change_your_career_from_graphic_design_to_ux_design&utm_campaign=post

Simon, H. A. (1996). *The Sciences of the Artificial.* Mass.: MIT Press.

Sless, D. (2011). Critical reflections on a manifesto. (120-123). In Bennett, A. and Vulpinari, O. (Eds.) (2011). I*cograda Design Education Manifesto 2011.* Montreal: Ico-D.

Smith, N. K. (Ed.). (2018). *Creative Collaboration: A report from Creative Review and Dropbox.* London: Creative Review. Retrieved 4 July 2018 from: https://www.creativereview.co.uk/importance-creative-collaboration-special-report/

Souleles, N. (2006). *Nellie may be dead but her sister is alive — just about.* Retrieved 18 October 2017 from https://www.academia.edu/3683331/Nellie_may_be_dead_but_her_sister_is_alive_-_just_about

Souleles, N. (2013). The Evolution of Art and Design Pedagogies in England: Influences of the Past, Challenges for the Future. In *International Journal of Art & Design Education.* 32. p. 243–255. doi:10.1111/j.1476-8070.2013.01753.x

Souleles, N. (2017). Design for social change and design education: Social challenges versus teacher-centred pedagogies. Paper presented at the Proceedings of the 12th EAD Conference. Sapienza University of Rome. Retrieved 16th October 2018 from: https://www.researchgate.net/publication/318280459_Design_for_social_change_and_design_education_Social_challenges_versus_teacher-centred_pedagogies/citations

Spendlove, D., & Jachna, T. (Ed.) (2015). Locating the Contributions to Critical Design Education (CDE). In T. Jachna (ed.). *Critical Theory, Critical Thinking and Critical Pedagogy.* p. 247-254). Hong Kong: DesignEd Asia Conference Secretariat. Retrieved Monday 3rd September: http://www.designedasia.com/2015/Full_Papers/2015/C1_Locating%20the%20Contributions%20to%20Critical%20Design%20Education.pdf

Spitz, R. (2002). HfG Ulm. The view behind the foreground. *The political history of the Ulm School of Design (1953-1968).* Stuttgart / London: Edition Axel Menges. Retrieved 23 November 2018

from: https://www.researchgate.net/publication/309202095_HfG_Ulm_The_view_behind_the_foreground_The_political_history_of_the_Ulm_School_of_Design_1953-1968

Spitz, R. (2012). *HfG IUP IFG. Ulm 1968–2008.* Ulm: Stiftung HfG Ulm.

Steinitz, C. (1995). Design is a Verb; Design is a Noun. *Landscape Journal.* Vol. 14, No. 2 (Fall 1995), p. 188-200.

Sullivan, L. H. (1896). The tall office building artistically considered. *Lippincott's Magazine.* March 1896. Retrieved 22nd October 2018 from: https://ocw.mit.edu/courses/architecture/4-205-analysis-of-contemporary-architecture-fall-2009/readings/MIT4_205F09_Sullivan.pdf

Swann, C. (2002). Action Research and the Practice of Design. *Design Issues.* 18 (1). 2002. p49-61. Retrieved 26 Nov 2015 from: https://www.academia.edu/1397027/Action_research_and_the_practice_of_design

Swann, C. (1986). Nellie is Dead. *Designer.* 1 (1). p. 18–20. Retrieved 18 October 2017 from: http://www.academia.edu/1397034/Nellie_is_dead

Swanson, G. (2005). Graphic Design Education as a Liberal Art: Design and Knowledge in the University and the 'Real World'. Heller, S (ed.) *The Education of a Graphic Designer.* New York: Allworth Press.

Svensk (n.d.). Form: History. Retrieved March 2019 from: http://svenskform.se/en/about-svensk-form/history/

Svensson, L. & Edstrom, A. (2011) The Function of Art Students' Use of Studio Conversations in Relation to their Artwork. *International Journal of Education & the Arts.* 12 (5) p. 1-29. Retrieved 9 July 2019 from: https://files.eric.ed.gov/fulltext/EJ937066.pdf

Takayasu, K. (2017). Criticism of the Bauhaus Concept in the Ulm School of Design. In *The Asian Conference of Design History and Theory Journal.* 2. Retrieved 15 November 2018 from: https://www.saylor.org/site/wp-content/uploads/2011/06/Bauhaus.pdf

Taylor, M.J. and McCormack C (2006). Creative Critique in Visual Communication: Effective Feedback in Design Projects Through Voice- Centred Studio-Based Communication and Online Delivery. A paper to The Australian Council of University Art and Design Schools Annual Conference, 27-29 Septembe 2006, Melbourne, Victoria. Retrieved 19 October 2017 from: http://acuads.com.au/wp-content/uploads/2014/12/taylor_mccormack1.pdf

Teaching at the Bauhaus. (n.d.) Bauhaus Archiv. Retrieved 8th Nov 2018 from: https://www.bauhaus.de/en/das_bauhaus/45_unterricht/

Terry, P. R. (1997). Habermas and Education: knowledge, communication, discourse. *Curriculum Studies.* 5 (3). Retrieved 3rd February 2019 from: https://pdfs.semanticscholar.org/6aca/e98bca36db2aec27aa6e4562dddb4d52a191.pdf

Thackara, J. (1988). *Design after modernism.* New York: Thames and Hudson.

The Ulm Model. (n.d.). HfG-Archiv Ulm. Retrieved 23 November 2018 from: http://www.hfg-archiv.ulm.de/english/the_hfg_ulm/history_5.html

Thomas, A. (1993). Max Bill: The Early Years, An Interview. In *The Journal of Decorative and Propaganda Arts.* 19. p. 98-119.

Triggs, T. (2011). The future of design education — Graphic design and critical practices: informing curricula. (124-127). In Bennett, A. and Vulpinari, O. (eds.) (2011). *Icograda Design Education Manifesto 2011.* Montreal: Ico-D.

Tripp, D. (2005). Action research: a methodological introduction. *Educação e Pesquisa*. 31 (3): p. 444-467 (University of São Paulo-USP). Retrieve Aug 22, 2017 from: https://www.researchgate.net/publication/237316452_Action_research_a_methodological_introduction

Trivedi, K. (2011). Revisiting the Icograda Design Education Manifesto. (128-136). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Tunstall, E. (2011). Respectful design: a proposed journey of design education. (132–135). In Bennett, A. and Vulpinari, O. (Eds.) (2011). *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Vukić, F. (2011). Design for tomorrow? (136-139). In Bennett, A. and Vulpinari, O. (eds.). 2011. *Icograda Design Education Manifesto 2011*. Montreal: Ico-D.

Vukić, F. (2013). Science in education for design. *Periodicum Biologorum*. 115 (1). p. 15–25. 2013. Retrieved 16 November 2018 from: https://hrcak.srce.hr/101211

Vyas, D. & Nijholt, A. (2012). Artful surfaces: an ethnographic study exploring the use of space in design studio. *Digital Creativity*. 23 (3-4). p. 176–195.

Wagner, O. (1902). *Modern Architecture*. Santa Monica: The Getty Center for the History of Art and the Humanities.

Walkup, K. (2011). Books in a New Language. In *From Site to Vision: the Woman's Building in Contemporary Culture*. p. 267–299. Retrieved 11 December 2018 from: http://thewomansbuilding. org/images/FSTV%20PDFs/Walkup. pdf

Walzel, F. (2012). The moral of the Ulm story. In Spitz, R. (ed.). *HfG IUP IFG. Ulm 1968–2008*. p. 301-305. Ulm: Stiftung HfG Ulm.

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

Wick, R. (2000). *Teaching at the Bauhaus*. Ostfildern-Ruit: Hatje Cantz.

Wild, L. and Karwan, D. (2016). Agency and Urgency: The Medium and Its Message. In Blaufelt, A. (ed.). *Hippie Modernism*. p. 44-57. Minneapolis: The Walker Art Centre.

Williams, P. J. & Stables, K. (2017). Critique in Design and Technology Education: About the Book. In *Critique in Design and Technology Education*. Retreived May 2019 from: https://www.researchgate. net/publication/313885146_Critique_in_Design_and_Technology_Education_About_the_Book

Wingler, H. (1993). *Bauhaus*. (W. Jabs and B. Glilbert, trans.). Cambridge: MIT Press.

Winter, E. F. (2015). 'Textiles teaching portfolio'. Retrieved 11th December 2018 from: https:// risdcollegiateteaching.files.wordpress.com/2015/05/emily-winter-teaching-portfolio-2015.pdf

Wotton, H. (1624). *The Elements of Architecture*. London: John Bill. Retrieved June 2019 from: https://archive.org/details/architectureelem00wott/page/2

Wright, F. L. (1930). The Art and Craft of the Machine. In *Modern Architecture: Being the Kahn Lectures for 1930*. Princeton: Princeton Architectural Press. p. 7-23.

Zuber-Skerritt, O. (2001). Action Learning and Action Research: Paradigm, Praxis and Programs. Published as Chapter One in: Sankara, S., Dick, B. and Passfield, R. (eds.). *Effective Change Management through Action Research and Action Learning: Concepts, Perspectives, Processes and Applications*. Southern Cross University Press, Lismore, Australia, p. 1-20. Retrieved Nov 2015 from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.464.5871&rep=rep1&type=pdf

Appendix 1
Interview Transcriptions

Susana Lobo

PH *Do you teach architecture the same way that you learned it?*

SL Yes, I think so, that's the main influence. Especially because I don't have that much experience as an architect. I don't have that much work built. So, I really think —and I tell my students — the way I teach, the people who taught me, are with me when I teach. I'm continuing that tradition. I probably have my personal take on it because I'm more relaxed probably because I'm younger, I'm not so much now, but I was younger when I started teaching, so I was closer to the students… but also my teachers were not that formal because it's a practical teaching so you have closeness and a proximity to the students that normally you don't have in theoretical classes. You have a drawing table, and you have to draw with them and explain by drawing.

PH *Okay so you sit with your students and you draw, do you draw onto their drawings that they're doing?*

SL Yes. I try not to, but normally I get distracted and draw over their designs. I use tracing paper and draw on top. One thing I do differently from my colleagues, and I think I got this from the first teacher I taught with, [Raul Hestnes Ferreira] is that I don't go around the classroom, I sit at my desk.

PH *So students come to you?*

SL Yes, I have a big table that I improvised in the classroom, I don't like going around. I like them coming to me. I like having my space, and my pencils, and everything around me, and they come to me. I think nobody else does this, all my colleagues go from one student to the other. So I just talk with them and I say, 'next'. Like a doctor or something.

PH *When you teach a project do you do any classes that have a different style or is it always like that.*

SL No. The normal thing is you present the work in group, with all the teachers, because it's not an individual class, I'm working with other teachers.

PH *How many?*

SL Every year it's Bandeirinha[1] — he is the head teacher — and then four assistant professors.

PH *So five teachers for one project, and how long will that project last?*

SL In the first year, I think ther are 16 new students every year. You also have the ones that fall behind, but they're not that many. More or less, we have 80 students. So, before this year — this was the first year that this happened — Bandeirinha has a class of his own, because before this year, he was only the head teacher. He gave the two-hour theory class, but then he would help us, he would be present when we launch a new exercise, and in giving grades and evaluating the works. But this year he decided to have a class of his own, so we have a smaller group of students each one of us. And we are divided in two rooms, separate rooms. So I am with Joaquim De Almeida and Desirée Pedro and in the other room is Luís Miguel Correia and Bandeirinha. So it's an open space, but there are two or three classes inside of it.

PH *Do you criticise and discuss the work of the other students who are not in your direct group?*

SL No. Normally we don't do that because we don't have that much time. We have five exercises each year. So they are very time restricted, but I do that kind of thing with my own students — and I think the other teachers don't do this — I try to teach my students how to criticise, how to look at their work with a critical eye. Normally, once at the beginning of each exercise, I give them about 10 minutes to half an hour, to put on paper the ideas they have… the main idea. And I ask them to be very synthetic about it. Then we put the ideas on the wall and discuss them. We go from one end to the other, and they all have to present their ideas and I criticise and some times I ask other students to say what they think about the work. Because I like to get them engaged in looking at other

people's work and even in looking at their own work from the outside or from another perspective.

PH *Trying to see it from an objective point of view.*

SL I think it's a good exercise for them and they like it. It's good practice for the final presentations we have each semester. They have to present their work normally. We have an invited professor or an invited architect who comes and then a professor from the school and they have to present their work. It's also important to note that we're talking about the first year students. It's a very particular year, I think that my way of teaching is also influenced because of that. I think I'm best fitted for the first year because of the way I teach and the way I speak. I'm very direct and I'm not very eloquent and theoretical when I speak with them. I keep things quite simple. I try to challenge them to think about certain things but mostly in a quite simple and very direct way. I've noticed — and this is something I've been noticing for some years, I started teaching when I was still a student, With Raul Hestnes Ferreira for four years and then I was invited back to replace a colleague of mine in March 2009 — I've seen this difference between me and the other teachers, generally students prefer me because of this. In the beginning of the classes we have to organise the students, they normally want to be in my class or Miguel's class, and the others, Desirée also, but students from the second year say, 'you have to have Susana or Miguel, they're good'.

I've heard students from the other classes say, 'I can't understand what my teacher is saying'. And I always say, 'well, you have to be patient, be aware, listen carefully to what they're saying, try to listen'. With me, it's easier.

PH *When they're learning to be architects, they're also learning the discourse of architecture. Learning how to speak as an architect.*

SL I had an experience in 2009 teaching the fourth year, and it was more challenging for me because I had to think harder about what I was saying, build a discourse.

PH *Would they challenge you?*

SL No I think it was me challenging myself, thinking 'these guys are older so I have to be more interesting'. But then, it was strange because it wasn't 'projecto',

it was 'project urbano', it was a 'side-kick' of projecto. Also I am a girl so there is a big difference and I felt it when I started teaching. My students prefer listening to the guys than me.

PH *Oh, really?*

SL Yes. Not listening, they gave more credit to the guys than to what I said. Sometimes I did this exercise, that I will tell them something, and then go and listen to what the other teachers said — it was Pedro Maurício Borges and it's very hard to compete with Pedro Maurício Borges — and it was funny because for two or three times I said something to the students and then they went and spoke with Pedro, and Pedro would like the things they did, that I told them to do. So I was like, 'yes! I'm in the good way, on the good path, so what I'm saying is not wrong'. In the beginning I had to have this confirmation that I was doing it right. This experience in the fourth year, I didn't like it because students in the fourth year think the teachers don't do anything there. They normally don't listen to you, they just do what they want.

PH *By that time they've started to get cynical?*

SL They're very independent. It was very strange because this particular class is about designing what is outside of the building. The public space. I never had any class about public space and all that I knew about public space was taught to me by my teachers, who are still the teachers they have in the fourth and the fifth year. This experience was very interesting for me because — so I was teaching without other teachers, in a separate class — and what I noticed was, the same teachers that taught me, twenty years ago, that the negative of architecture is also architecture, it seemed they had forgotten about it. So I was like 'no. this is the same teacher I had, so why doesn't he tell his students to design the space around the building, the public space?'. So it was very strange for me to think, 'maybe twenty years from now, I will be the same'. Also, there was a big change, because I had twelve hours of project a week and now they only have eight. So probably my teacher had more time to open my eyes to some different things than we have with our students. We are very time constrained with the work.

PH *What about the class sizes, are there more students now?*

SL No, because now we have five teachers with Bandeirinha so I have 16 or 17 students. Last year I started with 25, 24 and then it ended at 20, I think.

PH *What about the dialogue between students themselves, do you think they learn a lot from each other, do you notice a lot of interaction between them?*

SL Yes there is, especially with students from the second year. The first year is very relaxed I think and there is a big connection, that's why I like teaching the first year. After that experience in the fourth year, at the first opportunity I asked to go back to the first year. The teacher makes more impact with the first year students.

PH *I was asking about the interaction between the students.*

SL We're like a big family. My students call themselves the 'Lobitos'[2].

PH *They see themselves as a team?*

SL Yes.

PH *You're the leader.*

SL I'm not sure if they see me as the leader. There is, I don't know, closeness between the students, and when they move to the second year they still come back to my classroom. Only at the end of the second or the first and second semester when they have more work, they disappear for a while, but they always come back. Not only because of work… no I should say, not only because of the new girls… They are all excited to know the new girls. But mainly, and I think this is very funny, they like to teach. Sometimes I catch them playing the role of the teacher. And I say to them, 'don't listen to this guy, he's no good'. But its very interesting, they like to play that role with the first year students. And then, between them, during classes and I think between classes, because they work in the school — that's another different aspect that Coimbra has — they can work in the school at night. This is extremely important, it was an important factor when I was studying.

PH *Is it open all night?*

SL   Yeah, the school is open the whole night so they can work there. To do models and sometimes even work because not every student has a drawing board or drawing table in their room.

PH   *But they all have in the university?*

SL   They have their own table, there is a group, I don't know if it's all of them, probably not because there are a lot of students from Coimbra and around Coimbra so they go home. But even when I was studying (I'm from Coimbra) I worked at school because of the ambient that was created, I liked being with my colleagues and working. Because we worked normally at night, we spent the whole night working, until four or five o'clock in the morning. So instead of being alone at home I would be with my colleagues and it would also be important to understand at which point we were in our work. So, 'he's more advanced, I should move on'. It's important, and also it's a good time to discuss the work and to go to the other rooms and see what the others are doing.

PH   *Do they tend to display the works in progress?*

SL   No we don't, because there's not enough room for students, that's the problem. Only when I do that exercise of putting the drawings on the wall. Normally I tell them to leave them on the wall because I want them to do another one.

PH   *But they're all drawing and making models?*

SL   They see the models, but for example, in the design rooms the student work is displayed on the wall, and I like that[3]. Even for the whole atmosphere it's very interesting for the room. We don't have enough space to do that, and I think it's a pity. We should do it more often. But because the school is open and the classrooms are open there might be drawings that went missing. Even some travel books go missing and models get wrecked also. My students are always complaining because the first year room is the room everybody goes to get materials because it's all manual, in the second year they also do the drawings by hand and make models but in the first year, because it's five different exercises, you need lots of material and so everybody goes there.

PH   *The people from the later years are going there to scavenge?*

SL Even the fifth year students go there. We also have a big recycle bag in each classroom. We got it two years ago I think because we went to the school in Évora and the students were amazed with the big recycle bags they had there, 'what the hell, we can get some recycle bags too'. So we asked for the department to buy them so now they're in the classroom and everyone puts what they don't want there and so everybody can take what they want. It's an open classroom.

PH *Do you teach a design process for them, do you give them a method for working through a project or do you just give them the brief and say 'get on with it' and then coach them along the way?*

SL I have to give them coaching on the way because we give them the brief in a collective class when all the teachers are there. Normally the next class or in the site visit...

PH *It's always a real site?*

SL No, not always, you are right. The second and third exercises are not in a real site, it's an imaginary mass they have to excavate so it's different. For the last two exercises, we have a site. Not only the first class but in the second and third exercise, it's a very difficult exercise because it's about the void. You have to design the void, 'o Vazio'. For the students, and even for me, this was very difficult to understand at the beginning. Because it's not an exercise of addition, you don't add walls and partitions, you have a mass and you have to excavate it and everything you take out you have to put somewhere else. It's all about designing the void and designing the light. It's very hard for them to understand this. You have to think like you are inside. It's not like a video game, we always talk to them about the chambers, of the Egyptian pyramids. The pyramids don't have light inside, but they have to work with this. Every week, this year almost every class, I try to speak with all of them. I have to explain to them what the idea is of the exercise, what they have to do and you waste a lot of classes explaining to them exactly what it is, it's about the emptiness not about the construction. So it's the opposite, and even now with the new exercises they're doing, now they're doing houses, and I'm always talking about the void and the light. Reporting back to the second exercise, and so on. They always do the same, they start drawing the houses from the outside, because they have all these images from...

PH   *What a house looks like...*

SL   They always say, 'I want to have a house that looks like this, with these windows...', so I tell them, 'no, no, no, first you start inside'. There is a process I try to teach them. A process of thinking. Because there are different stages and it's important for them to take those steps. There are some students — and those are the good students — that can take those steps almost alone, that I don't worry that much because I know that if I don't talk to them today, or if I criticize them today, the next class he will have it straightened out or have solved the problem they had. With others you have to insist. I always tell them that there's no one good solution. Because in a class of 80 students you have 80 different projects: there's no solution. That's probably the most difficult thing for them to grasp in the first year because they come from high school with this idea that they study 'this' and the solution is 'that'.

PH   *A plus B equals C.*

SL   When they get into the university, in architecture, they find out that it's normally not that linear. It's very evident with students that are good working students, but are not brilliant in their ideas. They work very hard but in the end their grade isn't that good. I have one of those students this year, she spent most of the year, not angry with me, but I got this impression she was thinking, 'I don't like you' or 'I work a lot and I always have 12, 13'[4].

PH   *She's frustrated.*

SL   I even thought once of talking to her and trying to explain, but I thought no, she will find out by herself. Because it's not like 'I did all the drawings you told me to do, all the plans, all the sections, all the perspectives, the model, and still I got a low grade'. So now, she gets it. There is also some work you have to do to get them to do things by themselves. Because even if I had explained to her, 'it's like this...' I don't think it would have any effect in the long term. She started to understand that she had to see more things and have different references. I also started telling her 'see this', 'go and see that architect', to stimulate her into seeing other things, and now she came to me with a plan of her house, the first floor... I normally start with a plan only, the inside, and only after that I go to the outside. I don't know if this is a problem or a specificity I have, and I think it is because my teachers always told me that I'm

good at solving the problems in the plan. I'm good at solving the program. So I normally insist on them designing in plan and then they do sections and the outside. The volumes. The volumetric composition. So now she had this very good plan on the first floor, the second floor was... shit. But the first floor wasn't one hundred percent done, but I told her, 'this is very good', and it was immediate, she had a smile on her face.

PH *She knew it.*

SL Yeah. And now, she come to classes and she's smiling. Finally she got there. She's still not brilliant but with hard work she'll get to a good level. To be a genius, you are either born a genius or you are not born a genius, but to be a hard worker — not everyone is a hard worker but they can become one. Hard workers can get to genius through their hard work. But geniuses won't become hard workers from one day to the other. Normally students who think they are good don't work that much. They think, 'oh no, I'm very good'. So, I prefer the hardworking students to the students that think they're a geniuses.

PH *But then with the hard working students, you have to teach them how to have ideas.*

SL It's more challenging, also geniuses are challenging because they get different ideas. But normally I prefer hardworking students because I was a hardworking student.

PH *You can relate to them. Do you ever try to teach them how to generate ideas?*

SL I try not to interfere too much in the beginning of the creative process, because I don't want it to be my project, I want it to be theirs. Their most common problem is that they think about the isolated object and not about the whole. So I always ask them to look at the big picture. After that, I try to get that element in their work that is interesting or might be potentially interesting and try to give them examples that are close to it and tell them, 'go and see this, you should try this'. But I always tell them not to copy, because it's not about copying, and even if they tried, they couldn't. They wouldn't be able to, because the program would be completely different — or the site. I try to guide them through examples. After I feel that they are in a more or less stable place, I think, 'now I can grab the pencil and draw'.

PH *What you're saying is that when you can see what they're trying to do, or the function of what they're doing...*

SL What they're aiming at. That's when I grab my pencil and start drawing on their designs.

PH *And then it's about opening the possibilities and showing how it could work?*

SL Yes. Trying to cross reference between different projects. But I also try to challenge, to put across my view, because when they show me their designs, I build a picture in my mind and it's very interesting because in the end, the final model of the work is nothing like the picture I have (laughs). Sometimes that's very bad, because I'm designing, I'm drawing and I'm imagining something and in the end they do everything at the last minute, so I don't have time to see every stage and when we get to the final presentation, when they show the models and the final designs, and I think, 'no, this should be like this…'.

PH *They've gone on a tangent.*

SL Yes. So now I know, and I give extra classes after the last class. Between the last class and the presentation of the work I always tell them, 'you should come here, the next day, and I'll try and see everybody', and to 'tune' those little things. Because there isn't enough time. The problem is with this Bologna scheme, the quality of teaching… With design, you need time. Creativity needs time.

PH *So what's changed because of the Bologna Process?*

SL What changed is that you don't have the 12 hours you used to have with the students, now you have eight. Also, they have other classes. The work they do in those classes is the same as they do in the main desgin class.

PH *Because of the points system?*

SL For example, here in Coimbra in the architecture department, the students have five exercises of geometry during the first year. They also have the same five exercises in project and they need almost the same amount of time to do each one of these exercises in geometry as they need for project. We're trying to

negotiate this with the geometry teachers, because geometry is also necessary. Now in the second semester, where they start making perspective sections. It's good, because the communication of the projects is also important. I always tell them, 'the eye is the first thing you have to engage'. So the models must be — not pristine, I have had the luck to have students that were very messy and dirty, and their models were fantastic because they are very expressive, and I like that — but, that's the thing, the models should be expressive, or very 'nice'.

When we are giving grades in the end of each semester, five teachers get together and we compare notes because the grades are given by comparison. You define which is the best and the worst, and you go from there. So I always tell them, that they should have content — that's important, that's the main thing — but that they should never forget the presentation of the work. I also teach this in the theory classes I give, they have to hand in some reports and I always talk to them about typography, design, the layout of the work. They should think a little bit about it because they are not just any students, they are architecture students, so composition should be an important aspect of their work. Especially because in the end they will be making a portfolio, and their portfolio should stand out from a pile of portfolios on the desk of an architect. So the design is very important, the presentation of the work. That is a thing that I was good at when I was a student, my teachers would always say, 'her layout was very good', because I took time thinking about those things.

PH *In the end it's the designs and drawings that communicate the ideas so they have to work and they have to engage people.*

SL Of course. It's the first thing anyone sees, the expression of the presentation, of the design. So, if it's good...

PH *You'll stop, you want to read it.*

SL I always tell them — it's a joke I tell every year — the design should be good enough that you'd give it as a present to your parents at Christmas. You should be proud enough of your design, it should be good enough, to hang on the wall over the fireplace. Another exercise I give them is to turn the design or the drawing upside down so they can see it differently, because we are so focussed on drawing something one way and sometimes if you just put it upside down, you can see what's wrong with the composition.

PH *Yes, I remember reading somewhere that an exercise you can do when designing a page is to put a mirror next to it. You see the whole thing reflected and you can't read it so easily.*

SL That's the problem with design, because when we are designing we are so inside the design that we are not able to look at it from a different angle. Sometimes just looking at it upside down can give you a completely different way at looking at the project and sometimes you solve problems by doing it like that. Not only composition but sometimes...

PH *Design problems...*

SL Problems of the architecture project.

Notes and references

1. José António Bandeirinha.
2. This is a play on words. Susana's surname 'Lobo' is the Portuguese word for 'wolf', so 'Lobitos' means 'little wolves'.
3. Here Susana is referring to work from some of the first year exercises on the Design and Multimedia course that were left on the wall in a classroom in the architecture department. It is one of the few classrooms used by both the Architecture and the Design and Multimedia students.
4. 12 or 13 out of 20. This is an under average grade.

Artur Rebelo

PH *Let's talk about your experience as a student first. You were a student here in Portugal?*

AR Yes, I was studying graphic design[1], in the fine art department, so my experience is quite interesting because we were sharing the same building with painters and sculptors and other artists, even some classes were the same. Theory, drawing and some workshops were the same. We shared the same spaces, the same ideas and the same materials.

PH *Can you tell me what your work space was like, the classroom where you were most of the time? Did you have a studio set-up?*

AR At the time we had a big room, where we worked together and then we had a computer room, just with a few computers. Like eight to ten computers for everybody. They were prioritised for the final year students: the graphic design students. We shared classes, figure drawing was one room, drawing was another room, we didn't get used to having a space to work. We produced most of the work at home, for graphic design I mean. Because we [the course] didn't have so many computers we bought a computer — I had a computer so Lizá and I worked at home. We got a computer, that's why we started to work together.

PH *To share the computer.*

AR Then her parents bought a Macintosh and a scanner so we shared this computer at home.

PH *So you would do the work at home and then only come into university when there was a particular class or a crit or something?*

AR No there were crits, but there was also lots to do outside of the computer, we were working in the classes like mounting stuff, illustrating, taking notes, discussing with colleagues and teachers, and then we worked at home.

PH *Did you have a letterpress there?*

AR No, at that time it was the end of the New Wave, everyone was excited about doing typography without grids, pixel typography, blurred typography, distorting typography, photocopying...

PH *What year was this?*

AR Between '93 and '98. Our contact with typography was really amateur and naïve. Our contact with typography was mostly experimental and without rules at the university. I don't call that breaking the rules because we didn't have the rules. [Laughs]. And then at the end of university we we started working for clients and because we had to create systems.

PH *Suddenly you realise...*

AR Suddenly you realise it would be great to have rules, to have grids, to have columns, and choose the right typography to write text. That type of learning was mostly outside the school. Outside the university.

PH *You taught yourselves. You had to go and discover that yourselves. So your teachers, would they give you some coaching in terms of typography?*

AR They gave us… what to do, what not to do, what is a serif, a sans-serif, condensed, expanded and of course what is the best font for text what is the best font for titles, but not… Those notions but without going...

PH *Just the basics.*

AR Just the basics.

PH *Did you study for a masters as well?*

AR At that time the course was really long, it was five years and because we started working and when we finished the course we had the studio going on, but we felt the need to study more. We were candidates for a PhD programme, fine art in Barcelona[2]. We just did the first part, like a master thesis.

PH *Are there any experiences that stand out from that time? You had the collaboration with Lizá — that was the important thing that came out of it — but was there anything else that stayed with you?*

AR We had lots of talented colleagues, mostly in illustration, and even in graphic design. We had teachers that designed mascots for brands[3] and there were some events, like Público came out with a new design and there were some events that were important for us like Icograda'95[4].

PH *So nothing to do with the university, just things that happened in design really.*

AR Yes, in design and then we would discuss them at university. In the faculty it was a really naive period you know?

PH *You were saying that you learnt some basics at university but really to teach yourselves about typography properly you had to do that yourselves afterwards. I think that's similar to my experience as well, it's only when I started to really feel a need for it that I started to try to find out.*

AR Yes. Our teachers were more concerned about illustration and that period on our course was really based on illustration projects, like a poster was an illustration with tiny typography at the end, you know? Like a caption.

PH *Just a caption to give information rather than to be part of the image?*

AR We were more informed by that culture — that was in the university, but outside — there was an explosion in books: new wave, April Greiman, Neville Brody, grunge, David Carson. We discovered Eye Magazine, for the critique and How Magazine, it's an American magazine that was a little bit more commercial. It was two different poles in terms of editorial concept. One is more theory driven, Eye Magazine, and the other is more commercial and portfolio driven. I think it was really important for us, those two things going

on at the same time. It was through those ideas [from Eye], really focussed on theory, that we discovered the impact of history on design. New authors, old pop and sub cultures. The other one [How] was more commercial, how to be aggressive in terms of commerce, how to be aggressive in terms of portfolio, how to deal with clients, those things were great.

PH *Lets talk about your experience of teaching then. How does your teaching relate to your experience as a student?*

AR Not at all. I was invited in the beginning because I was a graphic design professional: for practice. I'm more about sharing, opening my experience and giving professional experience, sharing episodes that I've had since I started working, maybe 20 years ago.

PH *A lot of your teaching then is to tell stories of real things that have happened?*

AR I think that is important, but I also try to share how they can experience the concepts and how they can build form through a process, I think that process is great for learning. I really push them to explore and think about the way they design and the way the process is and how they relate ideas, influences and theory.

PH *You're trying to expand the process they have so that they can learn how to explore and develop their own graphic language?*

AR Yes, not just visually, but the thinking process. That's it.

PH *Do you ever give classes that are aimed at developing a particular thing, like a class to show how to do brainstorming? Or to teach a specific skill in that sense, or is it always holistic?*

AR I'm more holistic. For example, last week I showed some process of our work, just to explain. And at that moment I shared the process, methodologies, way of finding forms and history, the way we go to history. The way we drink from history and the references we have to do that process. It's a really holistic way. I'm quite postmodern, I don't think, 'today we're going to talk about...', I don't...

PH *It's not a step by step...*

AR No. Everything is welcome. I can talk in terms of history, process, influences, the relation between form and theory, results and theory. Everything is mixed.

PH *What do you think is a healthy dynamic for a classroom?*

AR I think there are different moments. I think there are moments when it's nice to have tension and the quiet is sometimes nice, when we feel that they are concentrating, working. But of course the class is an opportunity to discuss things, to share ideas.

PH *There needs to be dialogue.*

AR And I think, in the past, I think there was the figure of the teacher, and sometimes — I tell this to the students — I think that before it was the teacher and the students, the teacher would give them information, and they reproduce the information. Now it's completely different, the dialogue is more… With the internet, they learn lots of stuff with Google, with blogs. The information is moving so fast. I think that we are just mediators, we can discuss things that are not really on our plan because something happened on that day and we have to discuss it. It's not just that the owner of truth is the teacher but now it's a little bit more divided and we have to be a little bit more democratic.

PH *Yes. How about we talk a little bit about workshops.*

AR I love workshops. I had so much great experience giving workshops. It's an opportunity to give really — not big — but heavy assignments for them to do within the time limit. They have to work intensely, it's hard. They discover new things. A way of working in different countries, different schools. It's nice, an opportunity to discover lots of things in terms of cultural aspects. Organisation aspects, political, sociological. We have been in France, the U.S., Switzerland, Morocco, and each was so, so, different. The people and the way they work. The way they think about the work — it's great. And finally, we learn a lot. Of course.

PH *How do you set up the briefs for workshops?*

AR Sometimes there is a big theme, in the festivals, and they ask us to join the theme and we are leaders. We are working with the students on a theme. And sometimes we give them the theme. Because we work a lot with architects we have to explore that relation between graphic design and architecture. Identity and building, space and graphics, posters and space. Those relations interest us a lot.

PH *I wanted to ask you a bit about your experience of running a studio, you have your studio culture and so when hire someone new you have to introduce them into that culture. In a way you have a similar role to being a teacher, you're guiding them in their work. How do you see the difference, does one quite naturally flow to the other? Do you consciously step into different roles?*

AR You mean my students and my collaborators?

PH *Yes, your collaborators.*

AR It's different. It's a little bit different because it's like — if in school I push them to explore their own way of doing things — in the studio that topic is a bit limited.

PH *There's not as much freedom?*

AR We try to give it to them and now we're thinking that it's really important to give it to them. Some space, or more space. But we construct our studio based on our authorship. So they're just really qualified executors, you know? They are more focussed on implementation.

PH *In the studio you create a project and the collaborators have to take it and develop it, but there's a limit to how far they can go?*

AR Yes. And most of the time, we do the project and give it to them almost done, and they take it from there. But now, we try to have some projects for them. To play, to think, to discuss. But in the past it was less.

PH *You and Lizá are mentors to each other, but did you also have some...*

AR No, we were mentors to each other.

PH *And does she have a different way of teaching to you?*

AR Yes. She's a little bit more straightforward. A little bit more disciplined than I am. I'm more freestyle. Because she likes very much to discuss the concept, the strategy, and I'm… I like it also very much, but I also like the tiny things, you know the form and the tiny typographic tricks.

PH *You like to get stuck in to the matter of the thing.*

AR And she does too, but she's more holistic and she's really conceptual. Her background is from cinema and I think she…

PH *She sees the grand plan?*

AR Yes. Both of us are on that sphere, we very much like the big thing, but she's more about the big thing and I'm more about the… She's really clever and fresh…

PH *It's great when you can collaborate with someone and they have a different angle…*

AR Yes.

PH *Okay, we can leave it there. Thanks Artur.*

Notes and references

1. Communication design at the Faculty of Fine Art, University of Porto.
2. Faculty of Fine Art, University of Barcelona.
3. Painter António Modesto and sculptor Artur Moreiro who designed 'Gil', the mascot of Lisbon Expo'98.
4. The 16th Icograda Congress and General Assembly took place in Lisbon in 1995.

Andrew Howard

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Location:   Espaço Quadra, Incubadora
            Mercado Municipal de Matosinhos
            Porto, Portugal
Time:       12pm, Wednesday 1st June, 2016
Method:     Audio recording
Duration:   39"10
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Paul Hardman *Maybe we can start by talking about what's going on here at the fish market?*

Andrew Howard The MA is designed to have some 'parallel journeys', if you like. It's a cross between intensive projects and short bursts. So the workshops are short bursts, they are what I call 'gateways' because there's not that much you can do in two days, but they're introductions to further ideas. It's very much about making things and thinking through making. I can talk about that in a lot of detail later. And then, they have a series of longer term projects which are deeper, in a way — more time. Some of those projects are what we call 'live projects', which means that they take place with a real audience in a real situation. That also, in terms of psychology, makes a real difference to how the students approach the work. What else, I mean, I'm not sure the range of things you want to talk about really.

I did a series of conferences starting in 2003 called *Personal Views*[1], the ideas behind those, it was basically asking a question about design education and its based on the idea that technology has changed the way in which designers work. Whereas, certainly when I started, professionals were divided in terms of tasks and skills and people.

PH *More specialisations.*

AH Within... You didn't do the typography, you sent things off to be typeset, sent of for film work, etcetera. What the computer did, it's a tool, we call it a tool, but it's not a tool in the same way a pencil is a tool. What it did, it brought together all these disparate things, different parts of the process together in one place. And with that change of technology, when the way in which you make things begins to change, you think differently about what your role is. And

you start to question more what your role is. So Personal Views was asking a question which was, have the traditional orthodoxies of design education been substituted by a series of personal views? Which is where the title comes from. It's very difficult to get a response about that, but certainly in my own view, it's changed over the years and if I had to sum it up, I'd have to say that the history of graphic design is the history of form, not content, and that's what students need to learn about: form.

PH *This thing about graphic design being about everything inside the computer and graphic designers doing everything themselves, it also means that in a classroom situation, you have a very different dynamic, work tends to be contained within the computer, unless you proactively do something about it. So it's much less easy to have a natural friction between ideas, because if we have our work large in front of us on the table and we're having to photocopy it, go to different areas of the specialists to generate the thing, everything is much more open, the process is transparent.*

AH Yes and no. In the old days things didn't always come back as you wanted, and it would be much more expensive to remake things. One of the things I used to say is that, when I used to do posters for instance, they used to be done by hand, all the maquettes, right? And it was actually different, it wasn't easy to create that many variations, you had to make decisions as you were going, and what the computer does is it allows students to make fifteen different variations of the same thing, but then there's no criteria of how to choose between them. So the computer as a tool is great, and they need it, but I think it's probably the same with most places, trying to get students to take things off the screen, and printing them out on paper. Because one of the things they lose is that they lose the perception of scale and that's the main thing is when you're working with real physical things and paper and photocopying. It's true isn't it? You're working with real sizes. Or at least you see the real relationships and then, when you're working on screen, unless you're experienced, you know I see students working with 15pt type, and they don't understand, and then they print it out and they go, 'oh my God that's really big isn't it?'. It's getting students to work like that, print things out all the time.

PH *Do you proactively do that in the classroom?*

AH Wherever we can.

PH *In a structured way? In a given moment you will say, okay, now we're going to see all the work everyone is doing on the wall, or just encouraging them?*

AH No, because they work at different stages, the moment when all they're individual projects... they're not running parallel. But at every point, in every work, I'll say, right, you need to start printing this out now, you need to start seeing what this looks like on paper. If the work is going to be a print work, of course. If it's screen work then no. It is, it's a lot about... because you're working with real physical things you need to have an idea of what these things look like because they will then influence you back. They start to see things printed, how they work, making decisions about that. I think the computer takes that away from them. Don't you think?

They inhabit a world which is one pixel thick. The real piece has real dimensions and layers and colour. Intensity and density. So, like anything, you have to be able to simulate what the real things going to be at some point. So there are points through every process, for each individual student, in which they are asked to start producing real things that they can look at.

PH *Can we talk a bit about the workshops you run, Porto Summer School? Was that your idea, to start doing that?*

AH That's an independent thing, that myself and Ian Noble thought about and sadly of course, Ian passed away, but I decided to go ahead with it anyway. So that's a two-week intensive course, mostly for foreign students. And you know, that's a different process, it's about taking... One thing about the university is that you get a group of young people that are pretty much the same age, same sort of experience, come from the same sort of place, even though there are variations between them, their exit point is common. One thing about the summer school that is very different is that people come from different backgrounds, all sorts of different places. I don't just mean geographically, but in terms of career and experience. So their entry points are all different. Their exit points are also different. The only things we aim for are that their exit points are slightly higher or different from when they came in. But that's a mixture of things, it involves a series of talks, of lectures, of exercises, so there's always this sort of induction period where we're stimulating the intellectual juices if you like, by introducing people to different sorts of material, so it's the same on a course like this, is that you introduce different elements from different areas and then there comes a point where there has to be an output.

There's input and there's output. The input needs to be as variable as possible and the output needs to be much more controlled. There can be short exercises or there can be longer ones but on the Summer School for instance, the objective is that at the end of the two weeks, they have all made something. A small publication of some sort.

PH *Collaborative?*

AH Individual. There is a collaborative project in the first week when they work in groups together but in the end they will produce their own individual pieces.

PH *How is the atmosphere in those workshops, is it similar to what you'd have in a normal class here?*

AH It's always different, it's much more cathartic.

PH *Cathartic?*

AH Yes, it is.

PH *Cathartic for who?*

AH [Laughs]

PH *They're having fun...*

AH Because in all workshop situations — it's slightly different in school becasue they all know each other — you get a group of people that don't know each other, that come from all sorts of different places, they have one common thing which is this shared experience. They get to know each other and it's the combination of the place, the location, the experience and there's a bonding that takes place, a natural bonding. In all the courses I've done which are separate from school, by the end of it people have met knew people, they've had new experiences to take back with them. Lots of those sort of courses that I've had in the past... When I first came to Portugal I was invited to do some workshops at the Gulbenkian Foundation, you know, you'd have people crying at the end of the two weeks. It's true because you get quite... in that short intense moment... but that's just about group experience, that's nothing to do with design.

PH *Nothing particular to design.*

AH No.

PH *Although through having that group experience you may then build links with people, you might be more stimulated creatively because you're going through something unusual.*

AH But that's to do with general learning as a process.

PH *Learning anything.*

AH I think so.

PH *It's interesting that you said when you came to Portugal you started teaching workshops in the Gulbenkian, were they graphic design workshops?*

AH Nothing to do with graphic design, I was working for a group in London, which was a sort of a community arts group, in North London, in Islington. A really unusual group, it doesn't exist anymore. Part of a community arts network in the UK. We did a lot of work with local communities, all of our work was with local communities and we did a lot of work with kids as well. The course was about creative work with children and communities. And that's why I was invited to go there. It was about the visual arts in general but working with people. How to set up links...

PH *Teaching students how to go out and work with a community group?*

AH Yes.

PH *How would you would you teach them to do something practical like that, how would a typical workshop be?*

AH Well...

PH *Sorry, it's asking a lot, I suppose this was quite a long time ago...*

AH I don't know how much you need or want to know about that, but it's like... the community arts movement in the UK stems from the 1960's, so it's part of a political movement in which professionals from different walks of life, from architecture, from all sorts of areas, wanted to demystify certain activities. It was part of a self help movement in the UK as well. Which was about — it was very politicised — it was about working with working class communities. But the motto was 'we won't do things for you but we'll teach you how to do things for yourself'. So we worked, we had lots of equipment and resources, screen printing, photography, video and we had a bus, a double decker bus, which was fully equipped, which drove around London. It was called *The Islington Bus Company*. It was about teaching people how to take control of certain things and fight for what they needed for themselves. So we'd be invited in for instance, to an estate somewhere in North London and we'd work with the people, and say, 'So what's the problem here then?', 'There are no facilities for our children', 'So why don't we campaign for this then?', and we would work with people to try and campaign. But it was also, it was very much about invitation. It wasn't about professionals going in and saying, 'Oh you know, we're going to bring the opera to you because it's culturally interesting for you...'.

PH *Sure, you try and facilitate, not just go there and do a 'top-down', 'this is what you're supposed to be doing'...*

AH So those workshops... it was of course for teachers, they were already qualified teachers in the Gulbenkian. It was showing them the sorts of projects we did with local communities. They were about the environment, they were about history and education, how to mount projects with kids to keep their interest. But also they were workshops that started in very traditional Gestalt methods of bonding at the beginning, group games, all that sort of psychology.

PH *It's interesting because ideas that are quite current now about participatory design and trying to involve the audience in the design process... I imagine the sort of things you were saying, getting people to come in and do screen printing, to make their own posters...*

AH Yes.

PH *If you think design — or making at least — is a tool for political change or...*

AH Yes. And there are some interesting lessons to be learnt from that, in lots of ways, because I think that we did lots of interesting things, lots of interesting ideas, but we made lots of mistakes as well, political and ideological mistakes in my opinion. In that, in an attempt to demystify skills, the danger is you inadvertently abolish them. In that you say, 'anyone can do anything'. Can they? I'm not so sure about that now. I don't think so. It's interesting, on one occasion I remember working with a youth group, and the guy was saying to me, 'well...', and he challenged the ethos of the company which was a bit of a shock for us. He was saying, 'I don't want to learn how to be a screen printer, to be honest, because I've got other things to do. I'm happy to be involved in the process but I don't want to be... I don't want to learn... I don't want to become a screen printer'.

PH *Yes, I see what you mean.*

AH And so, it's a negotiation, it's never fully resolved.

PH *To look at this the other way around, when you're teaching design, I know from reading some of your comments in* Slanted Magazine[2] *recently, you just said something about how design is always political and sometimes people think that they can choose to be political or not but even if they choose not to they're making a political decision. So it seems like it's the inverse of what we're talking about now, to get students to see the political side of their work. I don't know what you think about that.*

AH I don't know if you can build that into a curriculum. But most teachers probably talk about it. You know, I don't pretend with my students that I'm somehow neutral. Obviously I'm not. I think I'm objective but I'm not neutral. So I'll say that I have very particular ideas about our dominant form of economic organisation and what it means for us, and I'm going to talk about those things. I remember, Ian [Noble] once said to me that he was thinking about starting a course at LCC about Social Design and I said, 'don't do that, for God's sake don't do that'. That's really separating the waters, as if there is a social design and a non-social design: there fucking isn't! The point is design — and this is the paradox, or maybe this is the richness — is that it's a huge area that covers such a vast discipline from train timetables to exhibition catalogues, from posters to cornflakes packaging. I mean, it's massive. So fact or fiction, as I said in the *Slanted* thing, information or propaganda, choose: which is it you're

going to be involved in? The choice is probably not that clear, you probably get involved in lots of those different things but it's a very difficult conversation to have. Which is another conversation about the First Things First manifesto. And after I wrote the piece in Eye Magazine in '94, that piece called, There is such a thing as society[3]. Do you know that piece?.

PH *No.*

AH You should know that piece. Rick Poynor talked about doing a follow-up. Which I started to do — I've wrote other things since — but I never wrote that other piece because I realised that it was a conversation that most designers really didn't want to have. I've just been speaking in Barcelona about this, and I'm not sure if I want to... but it was about Social Design... it's quite complex and it's never been resolved and it won't be resolved as such, but at what point do you separate it? Because you could apply it to every profession couldn't you really? I mean, every profession works with a certain cultural framework, you can't work outside of it. In what way does it influence what you do as a professional? Whether it's medicine or architecture or engineering work. The thing about design is that we designers don't simply live in a world of information we inhabit the world of perceptions and that's what makes it particularly relevant. A lot of the time we are moulding perceptions through what we do. And at that point you have to ask yourself a question and the question is that... it's never a question of whether you want to create a message in your work, it's simply a question of how much can you control it. And a lot of the time people don't. There's something about western culture in particular. In which specialisation is — you know, since the Renaissance — is very particular. We are encouraged to compartmentalise what we do, in every profession. We're encouraged to separate it from a global vision of how everything fits together. So within the internal logic of a profession, it makes as much sense to spend all your time designing packaging for dog biscuits as it does to do a theatre poster. And this is the thing about Michael Bierut[4], do you know that quote? In any profession you need to have a proximity to what you're doing, there are moments when you need to be so close in order to develop depth in what you're doing, but there are moments in which you need to stand back, and see how this fits in general. And that's the point... people don't do that in most professions, and you're not encouraged to do it because, hey you're an architect, just fucking make buildings. OK. You're a designer, just do that. Politics is considered like, something else. It isn't. And how much that discussion takes...

is actually internalised in a profession... There was a piece I wrote for Adbusters years ago, well something Rick Poynor wrote[5]. He said that I... he put me at one end of the spectrum and he suggested that my ambition was to politicise all design. And I said, 'no, what I want to do is I want people to understand the context in which they produce things'. It's not controversial, it's not... it just is, it's the way things are. How do you teach that? What part does that play in design education? I don't think it's part of a specialist... it's not a discipline of design. You know, illustration, packaging...

PH *It's something implicit to all areas of design so it's a mistake to separate it.*

AH Yeah.

PH *But then perhaps there also has to be a way to draw attention to it, or draw out that aspect of it.*

AH Yes, I do. I think there has to be something separate that talks about it in a way and maybe it's a contextual studies, a general frameworking of things. I'm not sure quite what the best way of doing it is. And it's strange because, when I first started, I went to art school, I wasn't in design, I had no training in design. And I've said many times before, if somebody had told me years ago that I'd end up being a graphic designer I'd say, 'fuck off, are you kidding me? Graphic design? Bollocks'. And that's because at the time I was obsessed with content, like the Left is in general. Obsessed with content and fearful of ambiguity. But I've come to realise that — it's not that content doesn't matter — but as a designer content is not what you should be concerned about, it's form, because that's what carries it. It's a more complex debate than that but...

PH *Well there's one way of looking at design which is to say that when you design something you are trying to bring about a future. You're trying to change the current state of affairs to a desired state of affairs. So in that sense it's always political because even if you're trying to reproduce more of a perceived 'now', you're still trying to influence wider events, which is different to say, making shoes to sell, because you always want people to do the same thing.*

AH Yes. I actually think most of the time you're reinventing things. It's not even about creating new narratives, but it's about relating old narratives in different

sorts of ways which are more current, I suppose. But the design profession has no way of judging it's output has it really?

PH *It's very ephemeral.*

AH Well some of it is, some of it isn't. Some of it's more long-lasting. If you look across the range of graphic design, you know, signage maybe isn't quite as ephemeral. There are some things that last longer. Maybe because they're more functional. Maybe because they are... they have less ideological content? I don't know, is that the equation, that things that have less content last longer? Is it content that changes the nature of things? I don't know.

PH *Maybe, yeah. Maybe if something has a lot of content then it's difficult for it to work in lots of contexts. Since we're been talking about political aspects of design, we could talk about political aspects of teaching... In a conventional design style of teaching, which is based on a studio idea, a 'master / apprentice' idea. Where a studio master spreads their idea to the apprentice, the student who then go on to reproduce their work. That would be a very conservative view.*

AH I'm not sure that exists any more, does it? I mean sometimes it does. You know what? It depends on the teachers and it depends on the strength of the character, because it varies so much. What I know is that the reputations of different schools depend completely on the people who are there at that time. I went to Stourbridge for instance, which at the time was a very good school, I don't think it's anything now because the people aren't there anymore. I don't know what the model is, you know, what is the model? Doesn't it depend? Doesn't the personality of the teacher depend? I mean it's so crucial isn't it?

PH *Personality matters of course, but do teachers... do different people consciously decide that they're going to have a particular style of teaching or a particular type of classroom?*

AH I don't know — I do. I can't speak about other people. It's weird that despite my particular political views I don't actually cover those things in my class, what I'm interested in is forms. What I call the cognitive processes of design. So the projects that we do are based around elements that exist in almost every design job. Things like navigation, things like juxtaposition, things like narrative. So it's looking at component parts that in theory could be applied

to everything. They could be applied to packaging, they could be applied to catalogues. That's the idea. You know, it's like your taking the process to pieces and seeing why this format and these colours and this disposition produces this sort of effect. So you can take it to pieces and you can apply it to what you want. So there's never any talk about, 'advertising is bad' or 'this is good'. It's not about that.

PH *No, I meant things like teaching design in such a way that you exemplify things and expect the students to try and do what you're doing. Or you could imagine a class which is more orientated on trying to develop personal approaches. That's what I meant by introducing a political aspect to it, just in the sense of how you set up hierarchies in the classroom — or don't — or deliberately try to take them away. But we don't have to go back to that. Just to clarify what I was trying to ask about. But this thing about the processes, these component parts that you work through, are they always the same, or do they evolve each time you teach a course?*

AH The processes tend to stay the same, but the way in which they explore them might be different. That will change. In general you know, a project, if it's successful, I'll maintain it for a few years. Until I think it's time to move on or change it in some way. Also reevaluating each one, every time, to try and think, 'OK, what didn't work about that?', 'what didn't they understand?' and it's based on, to a large extent it's based on results. How easy they find the progression through a project. What are the stumbling blocks? At what point? It's a continuous search in terms of design education, it's trying to find, 'at what point are the students stumbling?', 'what is it that's the problem here?', 'what is it they don't understand?' and trying to find a way around it. For that to be a useful conversation we'd have to be talking about specific things wouldn't we? Which maybe we can't do now but...

PH *It would be interesting to have that conversation, to look at those different elements you have in mind. Narrative, for instance. And say 'well how do you teach narrative and how do get students aware of narrative'. Particularly that one, that's of interest to me and it's one of those that I feel there is material to draw on from other subjects. It's one of the things that seems to be characteristic of design, that you quite often have to go to other areas to find the things we need to talk about what we're doing when we do design, because design has a limited*

obvious area of discussion because we discuss the semiotics and the colours and the choice of typeface and things like that.

AH   I think it's the nature of design probably. I was giving a talk yesterday to the third year students about the MA and I was saying that design is not a puzzle, it's not a piece of the puzzle, it's a way of putting the puzzle together. And so that means drawing — it's an editorial process in a lot of ways — it means drawing on lots of things and what is the design? Design is the combination of all those things. That's what makes interesting design isn't it. That you draw from the visual arts, you draw from storytelling from literature, film making has it's own history of storytelling doesn't it? So you can draw from all of those and bring them together and try and get students to understand that is what design is about, it's a pulling of those things together, it's not simply about what's on the page — flat on the page — it's about 'what's the size of this page? how does it work? how do they relate to each other? what's the structure? The intellectual structure as well as the visual structure of things. That's probably the most interesting thing about design, it's drawing from all those different things and pulling them together. Do you know Andrew Haslam? He used teach at LCC and then at Central, the he went to Brighton, now he's at Kingston, he's moved all over the place. He's written quite a few books[6] with Phil Baines. He wrote quite an interesting text sometime ago, in which he was saying that if you studied geography and you were looking at map-making, map-making is actually geography made visible, you'd study it in the same department, but if you look at typography, typography is actually language made visible, but language is studied somewhere else in another university, which is a bit weird in a way. That's one of the points about... in a traditional sense we only focus on a small aspect, but I think it's that holistic approach which is about bringing things together which is quite interesting.

PH   *I wonder if that's something that design education should consciously include, which is to have this interdisciplinarity, because design by nature needs that, it needs to draw upon other areas. I mean, if you're doing fine art, you can also have collaborations and draw from other areas, or you can do it in a more hermetic way, but with design... hermetic design wouldn't make sense, it's a contradiction.*

AH   Yes, but at the same time there are lots of technical things you need to learn as well. I mean, you can study colour, or typography. I mean you could spend

years just focussing on that couldn't you? It's a difficult balance of the things that you need to learn to be a designer, but I suppose my question is, if you're teaching design, at MA level, or any level I suppose, you have to ask yourself a question at the beginning, which is what sort of skills and knowledge do you need to be a graphic designer? You have to be able to answer that question, otherwise...

PH *Sure.*

AH And they're not just... there are technical skills, of course there are technical skills, because those inform the intellectual skills, don't they? Ideas by themselves are worthless, everyone has an idea — unless they're good — but the point is how does that transform into something visual. And that's certainly something we can talk about if we talk about very specific projects...

PH *Maybe we could close the interview there and arrange another time to do that.*

AH Yes, okay.

PH *Thank you Andrew.*

Notes and references

1. *Personal Views* was a series of conferences at ESAD, Matosinhos, coordinated by Andrew Howard that ran between 2003-20013.
2. The question in *Slanted* that I refer to is: 'In your opinion, is it important to incorporate cultural, social, or political topics in design?' to which AH responded: 'The perversity of this question, which to be honest makes it a little depressing, is the implication (intended or not) that professional activity is somehow independent from the production of cultural, social, or political value or choice. All professional activity is a form of social production and the values that it generates are not voluntary or optional, they are something from which people can be excluded, or from which they can exclude themselves. Politics, culture, and economic organisation are not separate or containable activities, they are the defining characteristics of social activity and relationships. Perhaps then the question should be, "in what ways in your design practice are you able to, or care to manage the embodiment of cultural, social and political narratives?"' Harmsen, Lars. Ed. (Spring/Summer 2016). *Slanted #27 Portugal*.
3. Howard, Andrew. (Summer 1994). There is no such thing as society. *Eye vol. 4*, (No. 13). Retrieved from: http://www.eyemagazine.com/feature/article/there-is-such-a-thing-as-society
4. The quote was, 'What makes dog biscuit packaging an unworthy object of our attention, as opposed to, say, a museum catalogue or some other cultural project?' Bierut, Michael. (2007). Ten Footnotes to a Manifesto in *Seventy-nine Short Essays on Design*. Princeton Architectural Press. (p56)
5. Andrew Howard has previously discussed these ideas in his article, *A New Kind of Dialogue*. Retrieved from: http://www.studioandrewhoward.com/reading-writing/a-new-kind-of-dialogue-article/
6. Baines, P., & Haslam, A. (2005). *Type & typography*. New York: Watson-Guptill Publications.

Francisco Laranjo

P *The first thing I'd like you to do is to speak a bit about your experience as a student, where you studied, what the classes were like, what you thought about it.*

FL I studied at ESAD, in Matosinhos and I had a fairly Modernist education, in a sense very anachronistic, because there was a complete gap between theory and practice, and theory was very rarely or almost never talked about in the studio. I felt that greatly affected me in the future as a designer as I had to 'deschool', enter in the process of deschooling during my MA and during the PhD. On the one hand it was quite good that there were modules of semiotics, theory of design, contemporary design discourse and trends that were able to introduce me to authors that then I came back to in the future — Derrick de Kerckhove and Paul Virilio — but I still find it surprising that when I was doing my BA, which was between 2000 and 2004, during the last years of Emigré, and Emigré was never debated or talked about in the studio, neither by Emanuel Barbosa, Andrew Howard, João Martino or Margarida Azevedo. There was not that debate and that complete overlap between discourse and practice and how you think in action. That for me was the biggest gap in my education. There was still the very traditional Modernist way of learning the rules, so in a sense you were... the studio practice didn't bring, at the centre of our practice, the political issues that... we existed in a bit of a vacuum within the design disciplines. Just doing typography and learning grid systems. Fairly rigorously, I would say, from the second year onwards, but it was in a vacuum, we were not engaging with the surrounding political, social or cultural circumstances. I think that the school was our world. In that sense it was a very depoliticised education. That I think has a corresponding superficiality in the way you deal with form, both for me, and I would say, for the vast majority of my colleagues.

PH *So even the briefs, they wouldn't push you to connect with a wider...*

FL   No. The briefs were again very traditional. Even trying to connect with the business world. So there would be some visual identity competitions for something like a port wine association or the Chaumont Festival but things were always dealt at the superficial level. Focused on form and how form was articulated and how balanced it was. Trying to give all the design principles, but they were principles deprived of a more substantial context. That for me was problematic, the lack of connection between the theory and practice. When I did my MA, already at the Royal College of Art, that distinction was much more collapsed and I think I was dissatisfied with all the trends and with all the acritical or the uncritical positioning, even of my colleagues. Even in the mid-2000's there was a big trend of being flirtatious with fine art. The department under Dan Fern was called Communication Art and Design, where Åbäke and Daniel Eatock were being extremely popular in design practice, and so, all those trends transferred to the design curriculum which forced graphic design's natural habitat to be the art gallery. So I think that my practice developed, not only from this dissatisfaction with the critical state of graphic design but also with my undergraduate education, and this coincided with the 2008 financial crisis, which was the year that I graduated from the MA. And so, the work that I developed during the MA was all strategies to develop my critical approach to my practice, even though it was fairly intuitive. I think that the economic and political conditions only maximised that, because it forced me to make the connections between the political context and how the state of uncritical design was related to the state of the post-political situation in democracy. And so it was really British politics and EU politics that made me aware of that so my MA started to be a response to these conditions. And then after, working — I started teaching immediately after I graduated — and so all my teaching started to be directed into making these relations evident and to provoke confrontation and to build upon earlier attempts by designers to make these confrontations a productive space of debate and of production.

PH   *Can I just ask you to clarify what you mean by confrontation in this context?*

FL   The Dutch designer Jan Van Toorn says — in the 1997 book by Jorge Frascara[1] — that the student, 'should not avoid the tension between personal, disciplinary and public dimensions'. I would add another dimension, which is the private dimension of the client, when there is a commission. He already tried at the Jan Van Eyck academy to make all these different interests in any

project visible. And put them on the table either when the designer is editing images or researching essays or visual material to articulate or to document either through ethnography or any other research method and I try to build upon this, to make visual mapping, for example to map the political affiliations of different students and how that could be confronted with the political affiliations of the client or the commission. And the aspirations of the public or what could be more productive. And so I try to provoke situations. Those kind of mappings would be a compass throughout the project and the semester and would always be present in the design studio. A map of the ideologies more prominent in the classrooms, sex, race, gender, and how that provoked immediately tensions between colleagues, they would normally not have talked about it.

PH *Have you got an example of that?*

FL One tool that we used frequently was the political compass. You cannot really call it accurate because it's merely indicative of your position in an axis — libertarian, conservative — and it's based on a set of questions on your position on economics, on public sector, on abortion and many key issues in society, the answer to those questions give a specific position and just the fact that all the students were doing it at the same time — the questionnaire to generate their position — you start seeing immediately the tensions appearing. Someone saying 'why did you reply that?', 'are you against this?', 'why are you against this?'...

PH *So it would cause debates.*

FL Yes. Some distanciation and some surprises that are made visible and they are made accountable for those decisions and it encourages them to be self-aware of how their decisions matter and are replicated through the way they design and what they design. Therefore that is exposed. The studio is the specific place where I push this the most. The most sustained period was at the University of Westminster. All this starts to gather a productive space in which they start comparing this and applying it as a working process. So for example, if they are researching a project they would identify what is the logical dominant position of the client and they decide that they want to adopt a radical approach, what would a radical approach mean in relation to their own political beliefs and the client's? If they are gathering images, what

images and graphic design history, or which design work could actually be considered radical and why? Was it radical 60 years ago, is it still radical in 2013 or 2014? How can I use this in a way that makes their ideology visible? And so, it creates a lot of confrontations between their aspirations and what is possible. It allows them — and this is what is central in the end — to find opportunities for criticality and identify when they appear, because every project has its own context and its own time. Nothing of this is universal. It is an approach that promotes this mind set, more than anything. All the methods that I started developing, already in the context of my PhD, were to give a more structured, or more coherent, survey of criticism in practice, during the design process. Not just simply seeing criticism as a reflection-on-action after something is completed. Therefore the work of Donald Schön, *The Reflective Practitioner*, became important for creating a theoretical, methodological framework, in which I could build upon these ideas of criticism. The PhD was about developing methods for a critical graphic design practice. It argues that in order to develop a critical practice you have to approach design as criticism, so the thesis makes a survey of criticism, of the discipline of criticism, stemming from literary theory to critical theory, in order to understand what is meant by criticism and its tradition so then it can deal with the terms 'critical' and 'criticality' and try to understand what is the heritage so that it can be applied to graphic design. It traces the tradition of criticality in graphic design, if we count the early 1920's as the birth of the discipline, when the term graphic design was first coined by Dwiggins and integrates all these different methods that often happen as workshops, as labs, that are complementary to developing a critical practice. So it consists of academic workshops, self-initiated research — which I've been calling *The Parallel Lab* — so in a way, how can you keep developing your practice and promote a kind of a critical distance? There is a constant overlap with design education because I use often academia as a productive space for conflict and to explore these ideas and see how they can be built into the curriculum. Also professional practice that can test these strategies in a more oppressed context that has many more hierarchies influencing the work and critical writing and interaction with the public sphere through talks and the publishing of the magazine, *Modes of Criticism*.

PH *Can you tell me more about* The Parallel Lab *and what that entails?*

FL *The Parallel Lab* aims to promote a space to question your own practice and to be self-critical and to continuously make you aware of how you can use graphic design to question society and your surroundings.

PH *But is it something you do or something that you're inviting others to be involved with? I'm not quite sure how it functions.*

FL Yes, it's something that I do. I take a lot of phenomena... it started really in the UK, the interest in betting shops and how it was thriving business after the economic collapse and how it manifested itself visually and how it's related to the… how design played an important role in the architecture of gambling, both in physical terms, in a more digital dimension, but also in terms of behaviour and the buildings it occupied and how it occupied them. *The Parallel Lab* would engage with issues that surround us and uses graphic design to dissect, to examine those phenomena and allows you to cultivate a methodological research lab attitude to your practice because you're producing speculative work that is questioning what you are doing. It promotes a critical distance and cultivates the idea that you don't detach yourself from the political conditions surrounding your work.

PH *This interest in the design of betting shops, have you made some projects that feed back into it in some way? Made some interventions in the actual space or tried to in some way connect to the real situation?*

FL *The Parallel Lab* is mainly self-directed research, the reason why it becomes relevant is precisely because it cultivates the identification of moments to be critical when they happen. I have also been developing different ways of trying to visualise what the news kept saying which was that the markets are going to respond and the markets… as if it had an identity of its own, but of course, in the end, the markets are man made activities.

PH *In a way it's a really big betting shop.*

FL Yes. So I tried to give form to the markets, from collecting all the identities of the institutions that were found guilty after the *Lehman Brothers* collapse and also to identify the different people and CEO's that were accused. It allowed me to develop different kinds of visualisations of how this could be dealt with visually in a way that didn't put me in an authoritarian, kind of paternalistic

position of saying, I know where the bad guys are and I'm going to point them out to you, but more in trying to expose all these different overlapping institutions and people and systems that were being replicated, that would allow a future audience to make up their own minds about all these issues. And so, when *The Occupied Times* approached me to design the cover[2] for the issue on the politics of madness and how to debate the fact that when people are talking about mental illness, normally it's the patient's own fault, because he or she hasn't dealt with something the right way, or family, and rarely society at large is brought into the equation, and so, this kind of project and the way I approached the cover was only possible because I was developing and dealing with issues and trying to, in my own self-directed research trying to deal with these politics, through the use of graphic design as an investigative tool. And so, when it happened, I had already been taking thousands of photographs in Canary Wharf, of the news ticker of Thomson Reuters, and I could use that research and all these different visual tactics that I've been developing, in a kind of self-directed research, to what could be considered a more commercial commission, given that you cannot compare doing a cover for *The Occupied Times* with an annual report for *Goldman Sachs*. It's a more constrained environment. It has the designers and the editors and there has to be some debate about your approach. Especially because my cover completely parted from anything that they had done before. So I think that *The Parallel Lab* is relevant, exactly to develop, not only the critical distance to your own practice — and I produced work after the project was finished that criticised my own work. After the book was published I still did several alternatives that could have been much more critical and so it allowed me to produce work that completely overshadowed the work that was actually done, so I think this critical distance, this self-reflexivity are two elements and the third one is really to cultivate and always exercise this specific mind-set so that when opportunities for criticality emerge you are able to tackle them and define them.

PH *Just to return to education a bit more directly, when you've been doing the classes that you were describing with the students that are very focussed on political orientation — reflecting on it, and debates around it — was that accepted by the rest of the faculty? Was it broadly visible and accepted or was is something that caused ruptures outside of this contained context of a particular class?*

FL It did cause some disruption because the degree was still fairly conventional.

PH *This was degree level?*

FL This was BA Graphic Communication Design. Then I did the workshops at the RCA and the Sandberg Institute which are MA level. It did cause a disruption because there was still the old mentality — and obviously this is my opinion — that you have to learn the rules first and the basics and then you can break them and the root of everything is typography, and I think that it is, and we can debate some of those issues, and there were modules that were teaching students to design their CV's or...

PH *Just purely practical things?*

FL ...and very focused on the industry, but perhaps an industry that's slightly gone already. Sometimes there was some tension — not necessarily for the faculty, which was fairly supportive, or just divided in the sense of each one doing their own work, but more for the students who had to, in the course of one day, go from forcing — or not forcing but encouraging — them to reflect on, 'it's impossible not to be political', to just focusing on the ligatures in their CV. Which they'd already been working on for weeks. I think that amplitude of focus sometimes cannot be productive. The idea of keeping a sketchbook and how it needs to be structured, that idea of, in a sense applying a universal formula to students and saying, 'this is how I learned, I felt it was quite good for me, and therefore I'm going to, for the next thirty years, repeat the same thing until I retire, because this is the way it was done and those were the good times and so it has worked for me so far so I'm going to replicate it and I'm sure that the results are good, if they're not then they're not doing it properly, if they're not using the sketchbook as I did in my times and I still use it today so therefore...'. I think the tension was in this, that I challenged this attitude and this approach. I think in general that this kind of tension and anonymous debate is useful to the students. There are occasionally students who struggle and lack commitment, asking for very directed guidance, but in general for the majority this tension was productive.

PH *How many hours would you teach per week?*

FL This particular studio module was 5 hours (2 in the morning, 3 in the afternoon), so a full day.

PH *And was this the main design module?*

FL Yes, the design module and then there was also the research methods module, *Research and Development*.

PH *When you did the workshops at the MA level was there a difference in how you set the thing up?*

FL Yes it's different. There are significant differences. It can't just be a slightly more difficult BA, I think it has to be substantially different. I think the idea of research needs to be much more structured and much more coherent, the RCA and the Sandberg students are already a privileged audience because they are in general very well-informed and well-read in terms of politics and design. The level of difficulty of bibliographies doesn't have a specific boundary. It's also much more open because they should be in a great part responsible for their own education and for what they want to investigate. So in a sense it's not just solely or predominantly focused on how to research and how to investigate but on effectively becoming co-researcher with them, to invite them to engage in that kind of environment and commitment to the culture of research and commitment to the public space and other researchers. That is central. Perhaps as important, is to allow them to develop their own methods and to become autonomous as investigators and designers. So I think that in that sense, it is fundamentally different and it cannot be, absolutely not, a slightly more difficult BA, or a slightly more difficult continuation of a BA. So the methods, some of them can still be useful, the political compass can still be useful. I've rarely repeated the methods, I encourage often, just to provide either a theoretical or practical framework that then allows the students to develop their own methods and their own tools, so this is something that particularly interested me because it didn't put me in the position of this kind of all-knowing person that already devised a miraculous A-Z, step-by-step method that will lead them to success — it's impossible and it's very imperialistic — but instead create a terrain that allows them to develop this attitude and allows them to develop their own methods.

For me then it was useful to document what and how they decided on the most useful or productive approach or strategy for their own practice and

their peer's practice. That is very important. Especially since the project was called *Exercises in Democracy* which had continuity from October to May. That for me was productive, that they donated that time to their peers work and that they developed methods for their colleagues' projects. Behaving like co-researchers who would provide some sort of consultancy. That approach, which again develops a critical parallel lab and then feeds back into their own projects and influences their own work. That kind of attitude for the students was quite productive because they formed a range of different approaches and more than that, they developed a specific way of thinking and approaching design that is politicised. Not just in the way you deal with form, but on how to establish the conditions for that form to exist and come to life. I think this was the most important aspect of the difference between BA and MA.

PH *Now I would like to ask you about* Modes of Criticism, *how the project developed and how it relates to the research for your thesis.*

FL The project started when I was developing my literature and practice review. In which I was literally compiling a variety of modes of criticism, both in writing and in practice, and identifying practitioners who had an overlap between those practices. So I started the website to compile not only my own writings but also some projects. This was at the same time that I started to talk with different people who were engaging in graphic design criticism and trying to deal with the terms 'critical practice' and 'critical graphic design' for quite some time, such as David Cabianca, Michelle Champagne, Jan Van Toorn, Els Kuijpers. Many of them had — and still have — pertinent issues to discuss in relation to this terminology, and when I started my research in 2010 there was and still is today a big absence of criticism. The design press exists basically for cheerleading and PR, and exists to service the profession. For a long time graphic designers have let the market place regulate their own discipline. Emigré had finished six years before the research started, *Dot Dot Dot* finished in 2010 if I'm not mistaken, even though a bit after, the bulletins of *The Serving Library* started, from Dexter Sinister. There was only the occasional essay either in *Print Magazine* or *Eye*, which also started to retreat into a more conservative review approach and not be so adversarial as it was some years — or even decades — before. So, since I was dealing with the terms 'designer as author' and 'designer as editor' particularly, I found that it was productive that I could expose academic research to a broader audience, first, and second, if I could publish my own concerns and engage with the public throughout the research,

not just after I finished, looking for a publisher to publish a thesis, in which I still have very little interest. It was much more productive to be in public debate and on *Design Observer*, on *Eye* or *Grafik*[4] and then through self-publishing to create a platform to use all these ideas, which were timely when I started the research and there would be different concerns four of five years after I finished it, and so I think it would be anachronistic to engage with those concerns publicly only after I finished the research.

The work for the first publication started in 2012, to invite authors, some who I already knew personally, others that I met at symposia where they were debating and with shared interests, others online, and in that way, social media was also relevant to my research because it allowed me to have direct engagement with different researchers who would otherwise be very difficult to trace in universities spread throughout the world. So I was able to have access, and to enter in debate, in this case with Brazilian researchers, with Luíza Prado and Pedro Oliveira, to engage with other researchers who were also dealing with similar research interests, in this case critical design. Also, because all this existed in the context of the literature and practice review, to have exposure to researchers who were specialists in fields other than mine, I could have key insight from researchers in curating, product design, architecture. These were not key fields in my own thesis, but it was invaluable to have that expertise as they were becoming authorities in their own disciplines.

So that position of the designer/editor/researcher became very productive because it allowed me not only to map the predominance of discourse not only in terms of region, as the first issue sold out very quickly, and also to engage and see who was interested in this kind of debate, and therefore have access to even more researchers whose research connected to my own and so it allowed me to create a network of new knowledge in terms of design discourse, instead of doing a practice based thesis. While engaging the public domain and young professionals interested in criticism, to really try to encourage discourse, even if it's academic to try to edit in a way that becomes accessible to both BA, MA and PhD students while generating new knowledge and engaging with all these issues. From an interview that I did with James Langdon[5], to more informal writing or fiction, the goal was always to try to expose this research while it's being developed and to try to offer it to the public, in that kind of continuous commitment, especially because my research was funded by FTC[6] and the EU, and I felt that there was that commitment and that accountability and in a way almost transparency and that was pertinent and needed throughout the journey and not just sheltered in a library after it was completed.

The first issue focused on providing a survey of the terms and a critique, which didn't exist until that date, neither in graphic or product design, apart from some interventions online on forums, published on *Medium*[7] that were then extended. The second issue focused on method and provides a critique of methodology in design, and the politics attached to the strategies we define and how we design. Originally it was thought always to have three issues. In a sense to start from the end. Zooming in from the terms, zooming out to method, and the third one already focused on democracy and society at large. The third one will already exist outside of my thesis although the first and second were published before the thesis was completed. The goal was to explore writing as research 'in-action', not 'on-action', which is the way it is normally viewed by designers, design history and academia. In design education writing is normally something you do 'on-action'[8]. The writing here, the editing process, the debate with the contributors, the essays that I've published online and in print, and the reviews I've done, they're all considered writing in-action, because it's writing that informs my own practice, and it's writing that informs the writing of the thesis. It's really seeing writing as practice — as part of graphic design practice. It's just another method.

PH *So after the three issues, that will be the end?*

FL I would like to continue with it. Now there's an interested audience, that is generally very supportive. I think that… obviously as you progress you start building up a bigger network and for me that has been quite interesting, not only from social media, but actually through people who buy the publication and who engage in debate. To be able to work in London or Porto and to be editing and talking several times a week with people who are working in Australia or New Zealand or Hawaii… this allows me to keep a useful platform to contribute to public debate and to keep developing my own practice and to keep challenging other practices. Trying to contribute to the design discipline in a broader sense. As a more sustained… as a lifetime project. I think criticality is a process as much as project and this is a method that I could — and want — to continue and explore. Not only as a reflective critical practice but also possibly as future research, even as future academic research, either in a research centre or maybe post-doctoral research. That is not something that is investigated in my thesis, the idea of writing as practice opens a whole new field of research.

PH *It's also interesting that you've managed to, in a way, pull off a nice trick — which is difficult — to have a publication which is about theory and has its academic aspects but, as you say, has been successful, and there's an interest from people outside academia, from designers as well. One of the challenges I suppose you will face is to maintain that dynamic, because there is a danger that if you start to attract people who are mainly really on the academic side and as a consequence it becomes too academic, then you may lose the interest from designers and it would become another academic journal.*

FL Yes, I understand. I'm aware that some of this discourse might alienate very young BA students and it will challenge others, of course. I always make an effort to make the language accessible to others — I'm not saying it's always possible — to introduce authors, to not assume that everyone knows the authors that we're dealing with. I am sure there will always be a fluctuation. This one [Modes of Criticism 2] is much more formal that the first issue. For the third issue I'm going to break away from that again. It could be considered a middle ground between *Emigré* and *Visual Language*. Sometimes it can be more towards one or the other but it is the reflex of my research, all of them contributed to my thesis. In that sense, it's kind of an indulgence with a public commitment, but a necessary platform to engage with key disciplinary and societal issues.

PH *Everything is quite personal in the end — it has that personality about it.*

FL It has that idea of being my interest connected to other interests that are common, some that I might not necessarily agree with, but that I find that I'm offering those confrontations or those contradictions to the public so as to not just offer a one-sided authoritarian perspective. It's trying to develop that idea of the open work[9], which is also debated in my thesis. So I think that, as all these terms fade and also all the ideas of the terms I've been dealing with mature, I think that hopefully the publication will evolve with it. It may mean that some future issues might be one essay from just one person or be purely visual, might not have any writing. I think it's… from now onwards, from the third issue I think there's no specific established plan, I think it's a matter of seeing what — in relation with all the other contributors — what we think is pertinent and what we think are the most pressing struggles of our time and how we think design can contribute to those debates.

PH *You're using writing and design to engage with a community but also to create a community in a sense as well, by being a focal point within a network and stimulating that network. You're kind of facilitating a discourse to some extent. This is an aspect of design that can be very valuable but can be hard to pin down, which is that design can create a community and engage in that way.*

FL Yes.

Notes and references

1. Frascara, J., Meurer, B., Toorn, J., & Winkler, D (Eds.). (1997). *User-centred graphic design: Mass communication and social change*. CRC Press.
2. *The Occupied Times,* N.24 (March, 2014).
3. The last issue of *Dot Dot Dot* was indeed published in 2010 and it now continues as *Bulletins of The Serving Library*, articles published online as PDFs: www.servinglibrary.org.
4. Laranjo has published in *Eye Magazine*, on the *Eye* blog, as well as on the *Design Observer* and *Grafik* blogs, e.g.:
    Laranjo, F. (Winter 2014). 'Nostalgia for the Carnation Revolution', Review, *Eye Magazine*, volume 23 (89).
    Laranjo, F. (October 2014). *Five strategies tabled in Eindhoven*. Retrieved from: http://www.eyemagazine.com/blog/post/Five-strategies
    Laranjo, F. (April 2014). *Critical Graphic Design: Critical of What?* Retrieved from: http://designobserver.com/feature/critical-graphic-design-critical-of-what/38416
    Laranjo, F. (August 2015). *Critical Everything*. Retrieved from: https://www.grafik.net/category/feature/critical-everything
5. Langdon, J. (March 2015). A School for Design Fiction (F. Laranjo, Interviewer) *Modes of Criticism,* (1), pp 77-86.
6. Fundação para a Ciência e a Tecnologia.
7. For example: Prado, L. (February 2014), *Questioning the "critical" in Speculative & Critical Design*. Retrieved from: https://medium.com/a-parede/questioning-the-critical-in-speculative-critical-design-5a355cac2ca4#.v6llncsos
8. These terms refer to concepts developed by Donald Schön in *The Reflective Practitioner*:
    Schön, D. A. (1991). *The reflective practitioner: How professionals think in action*. Aldershot: Avebury.
9. For example, in developing the theme of the 'open work', Eco writes, '*"Informal art" is open in that it proposes a wider range of interpretive possibilities, a configuration of stimuli whose substantial indeterminacy allows for a number of possible readings, a "constellation" of elements that lend themselves to all sorts of reciprocal relationships.*' Eco, U. (1989). *The Open Work*. (A. Cancogni, Trans.). Cambridge, Mass.: Harvard University Press. pp 84.

Sofia Gonçalves

SG As I was saying, it became clear in my mind when I was doing both of the models simultaneously: the workshops — as part of an informal practice of teaching — and the formal classes in the university. I teach at the Fine Arts Faculty of Lisbon (FBAUL), which was the first school in Portugal that brought design courses to the public. It's a school where the experimental part of learning design is always present. We try to bring to our students the kind of critical competence that we think is very useful to design practice. Every teacher has a kind of teaching that is particular in the end, so there are no guidelines — I mean strong guidelines — of course there are some, but not the ones that oblige you to follow a syllabus that was previously written by somebody else. Every year we can build up a syllabus that comes up from a theme and that's it. In the Fine Arts Faculty of Lisbon I teach practice based disciplines, in particular, a discipline called Design de Comunicação V, which is the nuclear discipline in the third and final year of the bachelor degree. From that discipline, every year, we build up a students' final exhibition. I also teach Projecto I, which is also the central discipline of the first semester of the master in Communication Design and New Media. In the meantime I developed several workshops, previously with Marco Balesteros, who nowadays is teaching at ESAD Caldas da Rainha. The first workshops were about self-publishing. Then we just split up and after that I did some workshops that were more broadly based in editorial practices. That's it. Probably it's best to...

PH *Yes, lets talk about the examples.*

SG Yes, because with the examples I can remember some stuff.

PH *So these are examples of work that came out of the workshops?*

SG I brought you some of the workshop outcomes and also the final exhibition catalogues of the students[1]. For instance this one, I think, is very relevant. The theme was education, so the students had to think about what it means to build up an education in general terms and in particular in our discipline.

Ponto Final Parágrafo: elogio crítico à Universidade pelos alunos finalistas de Design de Comunicação (Critical eulogy to the University by Communication Design undergraduate students). Images of the final year publication 2013-14.

PH *Did you leave it quite open, or did you set them a problem, 'What should design education be about'?*

SG No, we talked about it, a lot. In one of the briefings that I think was more relevant in this discussion, we asked the students to build up an alternative curricula for the course. So they developed some ideas based on their experiences as students or they just decided to build a completely fictional curricula. But to do that kind of exercise, we had to discuss a lot, what does it mean to enrol in a curricula basically, a curricula in design. So for me it was a very gratifying project. Because the theme was education, we decided to put every briefing in the catalogue. Well, it's not a catalogue, it's more like a publication.

PH *This is the brief you gave to them?*

SG It's a synthesis, it's a summary. We have a huge tradition in FBAUL regarding briefings. I didn't bring any but I can send some examples, they are

very reference based, well, we invest a lot in the writing of these briefings. In the publication we just have a brief description, and not the references we gave to the students. The design of the publication allows that the briefings (loose leafs) and the outcomes (in the bound volume) can be read side-by-side.

Afterwards there was also a group of students that picked up all the imagined curricula proposed by their colleagues of the two classes, which they analysed and made a project that gathers all the ideas.

PH *Did they come up with that idea themselves?*

SG No, in this case it was proposed by the teachers.

PH *So first the project happened, then you suggested it to a group…*

SG Because the outcomes were really interesting and it would have been a pity if they just lay down.

PH *Yes, that would have been a shame.*

SG They worked very hard and produced a very good outcome. So most of the contents in the book are related to education.

PH *The students had to produce a written curriculum then, so it was also an exercise in writing, and then they turned it into a publication in the end. So we are looking at a page of covers of each of the publications that the students produced?*

SG In terms of formal outcomes it was very simple: a 16 page booklet produced on a Xerox. We were trying to emphasise the relevance of the contents as much as possible, but of course they had to deliver printed matter, and based on those — well I don't know, they are 60 students more or less — so based on those outcomes, the other group developed another publication[2]. It picked up some of the contents, trying to reveal a kind of relational system and some conclusions about what the students want for their education in design. That was very relevant. The group of students also organised a meeting that brought together several teachers and students and we ended up having a very good discussion around the topic, 'What should we think about the future of design education?'.

PH *So on the one hand you've got a very open ended question, and on the other, a quite controlled format. Forcing them to really explore the ideas side and then to work with these restrictions.*

SG Yes.

PH *How did you manage to do the discussions? You were saying there were 60 students so did you split them into smaller groups, how does that work?*

SG We have 60 students split into two classes, but in my opinion it's a lot; and this is a huge problem we face in our faculty. We have too many students to do the kind of work that we want to do. We have very good students, they enroll in the course with a high average grade, so most of the time they want to be there.

PH *Did some of the students design this book [the catalogue of the project] as well?*

SG In the final exhibition — which will have its sixth edition this year — all of the work, the exhibition, the publication, is done by the students. Of course, with the coordination of the teachers, every year we select a team. All the work is done with the students and by the students. In this case, the theme was education, and this one is about youth[3]. As I was saying in the beginning, there are several themes, every year we try to change the theme and to explore...

PH *Is this a project for a semester or a year?*

SG It's the work of one semester. It's not the whole semester — we have a semester that's based on four months as you know — well we can say they have two months two months and a half with the group that is chosen, we establish a compromise and they work until the opening of the exhibition in October. But most of the discussions and most of the outcomes that are collected in the exhibition come from the third year so they take us two semesters.

Agora, irrepetível. A juventude, o design e a sua prática is about youth, but first semester was about education as well, so those briefings, they are related to education. In their first briefing, the students from the third year had to explore one particular subject that they wanted to pass on to a student from the first year. They had to develop a relational system with the contents they gathered (regarding the subject and the conversation that arised from the micro class).

As I was saying, the theme of this year was youth, but there are clues of my interests in design education in some of the briefs. But this is part of, well, this is part of the formal education that I'm involved with.

PH *It strikes me that it's quite coordinated. It's your project as a teacher but then there are other teachers involved and it seems you have the whole department on board because it has to run for a long time and then there's the exhibition and the conference and so on. Is it difficult to make all that work?*

SG It's difficult because you have to coordinate the wills of a lot of people. But every teacher in the third year knows that they have to show the outcomes of the work of the students, so people get used to it. Of course there are difficult parts.

PH *It follows in a the tradition of having a final year show. In Coimbra on our course, Design and Multimedia, there is no final year show. It's one of the things that I wonder about — although the idea of an exhibition may be too art orientated since we're in the Informatics Engineering Department — if there are some things that we could benefit from. By having a 'big bang' at the end of the course there is a focus, everyone is working towards one common goal, maybe it has some value for that.*

SG We have the support of the coordinators so it's part of the program. It's not just something that a teacher decides to do, it has nothing to do with that. It's a common goal of the Communication Design area at FBAUL. Year by year I think it's getting stronger, that kind of mission and compromise between everybody. I think that it only works if it's like that, because otherwise people have other things to do and to think about. But it's a very exhausting project. Something that the students get very enthusiastic about, this 'moment'. That helps too. Most of the teams that are involved in this project really feel responsible for it and they do the work with a strong motivation, so that helps a lot. When you have that kind of situation of a common goal, and students follow that common goal it's a little bit easier. It's a lot of work also.

PH *Sure.*

SG I'm not denying it.

PH *And the book is designed by a team of students?*

SG You can see that in the credits. In Ponto Final Parágrafo we divided the working group in two: one was responsible for the exhibition and the other for the publication. In the publication, the teachers do the editing and the students do the design, so all these names are from the students that were chosen to do that and as you can see, the students responsible for the publication were not the same as those responsible for the exhibition. It's a lot of work and so that's what we decided.

PH *I see that the website was the same team as the exhibition [looking at the colophon of the book].*

SG In this case there was only an exhibition team and a publication team.

PH *Okay yes, this one has a smaller team for the web, two students.*

SG But they make part of...

PH *Ah yes the main team.*

SG Since 2014 we decided to split them. Well, they were different teams, but they worked together as well because they have to find a common ground, as for instance, the title — the students decide the title. They have the team that compiles all the work, they have to decide on the title and they have to decide on the visual identity and they have to of course decide on the strategy of the display, the exhibition and also the layout of the publication and the layout of the website. So they have to find ways to work together, but in the end when you do the part of the process that is more detailed, they are separated in different teams. One for the publication, one for the exhibition and one for the website.

PH *Are they used to working in groups or is it only at this stage that they start?*

SG Well, we have explored different formulas, in the first editions, teachers selected the students based on former groups.

PH *Ah, so if you realise there are nice combinations of people...*

SG The strategy behind this idea was: they work together very well, so let's maintain the team. In the last three years we have decided to choose by student. So, this student has a very strong competence in web, for instance, this one is a very good thinker...

PH *It's more like building a creative team...*

SG Yes, that's it.

PH *I've noticed that the students are often used to working in little teams and they like to immediately go together, but sometimes it can be more stimulating for them... Because it's natural, they want to be with their friends, but sometimes they fall into a habit they already have, it's a bit...*

SG And it's good also to test a little bit 'real life', in the end, because most of the time you don't... Sometimes you don't decide the team that you belong to. You have to learn how to work with others.

As for the rest [refering to some other publications], that was the formal and this is the informal. It's informal, but it has bridges with institutions somehow. Somehow? Well, most of the time.

So this was the first workshop that I did with Marco Balesteros, *Samizdat: self-publishing workshop*. He's a designer that did the same course as me, we studied at FBAUL, and then he went to Werkplaats Typografie. I knew Marco at that time, I invited him to do a workshop around self-publishing in FBAUL, and then we decided that it was better to work as a team. This was the first workshop we did together. It was very curious because some of the students were from my formal education so they were my students from the third year, and then we were in a completely different context, but in the same space, and for me it was very curious to see the differences that arose immediately. Students who just decided to enroll in a different model and it's very strange, people start to behave differently in different formats — including me. It was in the same time in the same space, it was really a confrontational situation in the end. But we decided that even though we were based in the institution, with all the characteristics of that kind of institution, we tried as much as we could to take a different approach to it. This was a very long course, it was four months, it was for students and non-students, everybody could apply. So we had people who work in their own studios, people who work in marketing agencies and so on, we had people who didn't come from design but came from the arts, there

was one curator. It was a very heterogeneous group. It was a post-laboral course, and in the end we decided that every evening we would have dinner together, so these kind of circumstances made a lot of difference I think.

It was a kind of self-referential course. The theme was *Samizat*, the self-publishing tradition based in Russia, and we just decided to do a workshop that was based on this topic. We worked in two scales: a collective scale and an individual scale. There is also this kind of difference, we say 'participants' in the workshops and 'students' in the formal education. The participants enroll in groups, each group follows up one theme, they do a presentation…

PH *They choose their theme?*

SG They choose from a list: *ideology(ies)*; *art and publication*; *editing/content*, *print/digital culture*; *meta-media*; or *distribution/public/reader*.

PH *And the participants join the group they want to be in?*

SG Yes, And then they had to do a presentation (revealing a particular approach), translate into graphic means the presentation into twelve pages that were inserted in the publication. For instance, this group enrolled in ideologies. So they had these pages in the publication, to develop their ideas around the relation between ideology and publication. This was one of the scales. Then there was another scale, where every student had to do a self-publication. In the final publication (the one that gathers the outcomes of the workshop) we decided to find a strategy to collide the two scales, the individual and the collective. This book[4] is the one that shows the collective outcomes and it works as a vehicle or a transport for the individual publications. Every book had different individual outcomes. From the 23 individual outcomes, we chose 4 to 5 and inserted them into the main publication (a different set in each publication).

PH *So each of these inserts is the work of one participant?*

SG In this case, in the main publication you find something that is more objective, individual ones are more subjective. But the themes are the same, so every outcome has to somehow reflect or take a critical position around the topic. It's not something personal, about personal habits…

Samizdat

PH *It's subjective but it's still relevant to the theme.*

SG We did as much as we could to build up the conditions for the participants to choose the technical processes to do their work.

PH *Deciding the format, deciding how to print it...*

SG We really worked as in a workshop, a very practical one. That was a particularity about this workshop, it's one that made me work in the same space and at the same time, making me behave differently than as a formal educator.

PH *Can you tell me about the time you were in the classroom, how did it work, what was the schedule, how big was the group?*

SG Well, we had to open two schedules, we thought it was just going to be one schedule of twelve students, then there were a lot of people that were interested in the course so I think there were 24.

PH *Divided into two groups?*

SG Yes, then we found ways to make the groups get together.

PH *Did you take them on visits so that they would understand different ways of printing?*

SG Sometimes we did. For instance, to print with Riso we tried to develop a partnership with a representative of the company in Portugal. They were very enthusiastic about it and they lent us one of the machines. The machine was in the university and students could work with that. Then we started using screen printing in the faculty's printing studio. We went there and we just gave the main hints to the participants, then with our help they did all the work.

PH *You were saying that it was quite a mixed group, with some of the students coming from outside art or design, so were these things would be completely new to them?*

SG Yes. For instance, for the person that came from the arts, the design process was new, but of course there are things in common. The use of some printing techniques, but not the ways of planning a process that has to have a publication as the outcome. That was new, but for instance, Marta Mestre, who is now a curator in Brasil, was the one who was furthest from these kinds of processes, so I think that yes, in her case it was completely new.

PH *But she was already involved in curation?*

SG Yes.

PH *Then she must have had some kind of contact with production, of catalogues and so on...*

SG That was the motivation for Marta, to enrol in a kind of a workshop like this. To learn the practical side. But the rest, well, somehow they have connections. Then something very interesting happened, we were invited to do another workshop and then several others. *Hard Edit: Self-Publishing in Times of Freedom and Repression* was in Bucharest, and it was about the relation between self-publishing and censorship. It was a very small workshop in comparison with *Samizdat*; just one week. It was very curious because in *Hard Edit* there were people who were specialists in Samizdat. In the first workshop, *Samizdat* was like a creative input, we didn't understand it in historical depth. In *Hard Edit*, we had the pleasure to meet Olga Zaslavskaya, who was one of the

mentors of one of the most important Samizdat archives and we invited her to write a text for *Samizdat, — I publish myself. — I do the Publishing Myself.* (the *Samizdat* workshop publication), describing exactly what Samizdat was as a dissident approach to publishing.

We were invited to be the mentors of a workshop in Bucharest. This workshop had two dimensions, there were participants who enrolled in the workshop, each of these participants developed a spread in the publication, then there is an editorial, of course. So each of the participants had a spread and the discussions were developed in the workshop. In that intensive workshop. Then there were conferences at the end of each day that were programmed by the Centre for Visual Introspection, which was the hosting institution. It's a very open based institution, run by four people, artists Anca Benera, Arnold Estefan, Catalin Rulea and art historian Alina Serban. Anca and Arnold build up the program, so our role was just to develop the workshop that was going to lead to this publication. But as an organisation, they invited
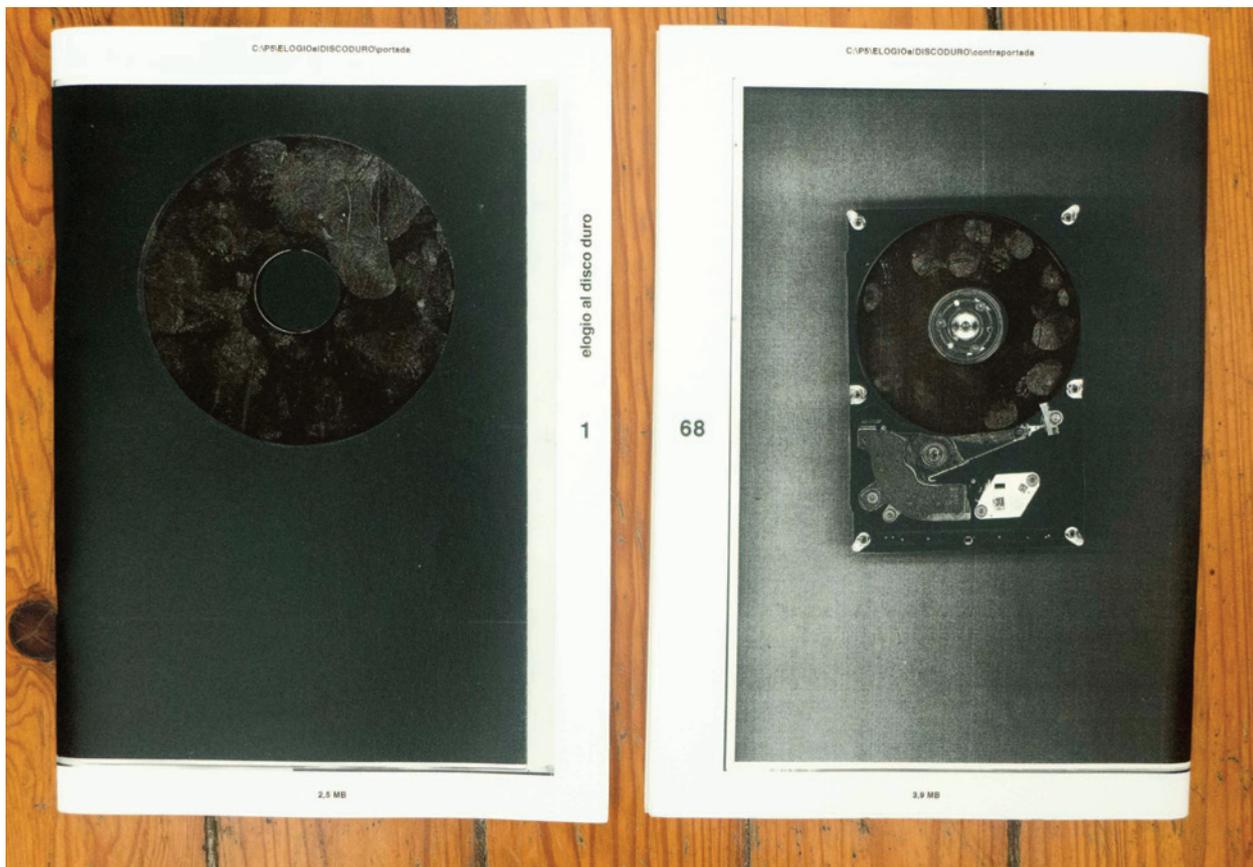
Elogio al disco duro, publication

all these theoretical participants, and it was very engaging, it was a very good mixture. During the day, it was completely orientated towards discussion, work, and to design the publication. Then, at the end of the day we listened to specialists who really study those kinds of models.

PH *So it was important to spend that intensity of time together, working in the day and then having that social period.*

SG Yes, it was really gratifying.

PH *I notice that in all the projects you're showing to me, there's always — apart from these individual books here — there's always quite a strict control on the format they have, the space that they're allowed to work in. Is that something that you think is necessary?*

SG Sometimes it is, sometimes it isn't. For instance, *Second Circulation*'s[5] publication, it's just a compilation of the workshop (an invitation that came after *Samizdat* and that happened in Darmstadt), but the student outcomes don't belong to this format. The publication just reveals the abstracts and the process, and then you have completely different publications. In this case it was different because the hosting institution knew that they just had a small budget to present the outcomes so we had decided to do a very strict format.

PH *This is different to the others really.*

SG And that was based on a different idea, Second Circulation (a similar historical phenomena of Samizdat, which happened in Poland). So the briefing was there. We try to put in the briefings — well it depends, but in this case, we included the briefing. In the *Samizdat* publication we did't have a briefing, just the topics.

I can show you another example, from a workshop that I developed last year, in the Fine Arts University of Granada, *Elogio al disco duro*[6]. I was invited to develop a workshop completely designed by me, so it was a very open invitation as with all of those I've mentioned before, and the idea was to, yes, well it was less than a week, it was three days, so it was very quick and the students were very engaged in the process. So the idea was to pick up contents from every students' hard drive. To think about that situation, what does it mean to recover something from the hard drive.

PH *From their own hard drives?*

SG Yes. They knew they had a spread, and that's it. The publication is more like a fanzine. And then, *Sala Polivalente*[7] is a completely different format, based on these experiences we were invited to build an installation in one gallery, Vera Cortês, in Lisbon. We took part in the exhibition *Que sais-je?*[8], which was about the relation between arts and education. We were invited because of the outcomes of the other workshops. That was completely different. We had an installation that was renovated week after week. Having in mind different models of education — models and spaces most of the time. As for the publication, at first you just have a poster. The first moment was a reading room, and we picked up several books about education and the installation revolved around those readings. And then there was a round table, we invited several people to talk about this relation between arts and knowledge, arts and education, and then there was a workshop that was called 'Trial and Error', based on the idea that the method of teaching can be a digression too. And then we had the final moment that was called 'Sala de Aula' [Classroom], where we presented all the outcomes and the conclusions that we took. The publication was just a small printed matter that somehow tries to reveal the evolution of the installation but in this space the outcome was the installation mostly. The poster evolved week after week by printing additional layers.

Based in the experiences of teaching in these different model, we were invited to do something completely different, to work on a different model, to work on an installation that was part of an arts exhibition, and that was… it made me think also about these places. The place of the exhibition and the place of the classroom and how they can collapse. Collapse or cooperate. Well, there are several things that I can say, but probably I prefer, after all these explanations, to answer some questions.

PH *These experiences of doing the workshops in these different formats, has that changed the way you think of the university work, the more formal work?*

SG Yes for sure.

PH *In what way?*

SG First of all, I've become a little bit sceptical about that, but it's very difficult to change, I think in Portugal it's very difficult to change. At first, when I

Sala polivalente — Teste Piloto (polyvalent room) for actions during exhibition period, 2011. Documentation of the workshop.
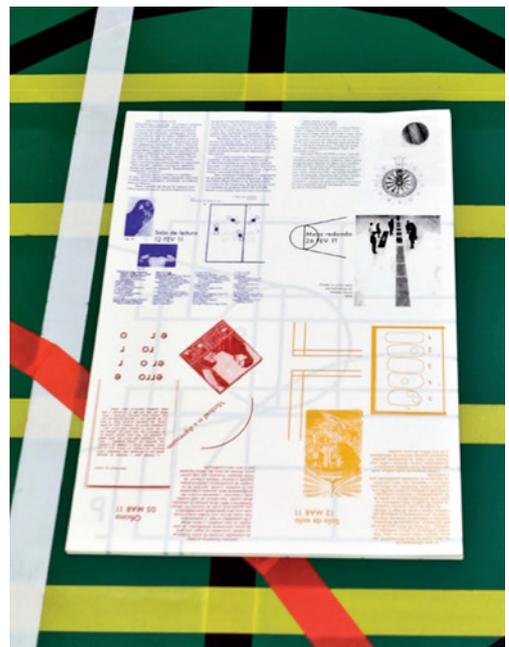
Sala polivalente, the publication took the form of poster

began to give classes, it was 2004 — because I was younger, of course — the connection with the students was more open. And then, with the passing of years, I think you get to be a little bit influenced by the way your colleagues interact with students, and I think, without having being conscious of it, you start to begin to be part of a specific way of teaching, which is based in a very hierarchical model, as you know. You try to be open in the briefings, but the way you communicate with the students, it's very strict, with a very strict sense in the end. The workshops showed me that if you change the environment, the outcomes change too. And they can be as deep, or as strong, or as relevant as… So I was saying that, well, I don't know how to explain it in a more objective way, but it's just a matter of changing the behaviour. The behaviour and the positions that students and the teachers have to have. To see how the discussions can be more relevant. But it's something that's very difficult to impose, because I think there is a previous layer, that you know that you have to perform when you are in a classroom and that layer, that behaviour layer happens not only with the teachers but also with the students. The students enter in a classroom in a different way than they enter in a workshop. I try to see how can we build bridges between formal and informal models of education but it's not that easy to implement.

PH *Of course the students are coming to university from schools, so they're already coming into a different format, so maybe in the beginning there's an opportunity right at the first moment to do things differently, but then once they're on the course for a week or two then they'll expect a certain style of things so then it will be harder to break it.*

SG But it can be broken, because I had that kind of idea and in *Samizdat* it was very very strange, because as I said, I was in the same place, at the same time, with some of the same students, and of course during some of the first moments, it was for me and for them very strange to change the behaviour, but with slight changes of behaviour they become different and I became different also. I think this is very relevant in education and in design education, because it's a practice and creative based education, so the behaviours, they are very relevant and they can really change the outcomes, that's for sure. I'm not saying that some outcomes are more relevant than others, because I don't think that's the case. But the level of exploration and experimentation becomes very wide in the workshops and follows expectations in the other case.

PH *I think it's also… It's also to do with expectations of how the class is going to be, but I imagine it's also a little bit to do with how in the university situation, when people are doing a degree, they're used to this idea that you're acquiring knowledge to go towards a certain level of competence and then you graduate and have your degree and now you kind of become a professional or something. They can be expecting that there is essential stuff they have to 'get' from it. Whereas, if you're going to a workshop, then you assume that it's something extra, something different, so there's an idea that you're meant to be exploring, you're meant to be learning something new, or on a slight tangent…*

SG There is also something very relevant, that is evaluation, in the end.

PH *Yes.*

SG I think that changes things a lot. In the case of the workshops, there is no evaluation, there is no grade. So people enrol in workshops because they really want to be there. They know that they have to follow a briefing somehow, but they are not going to have a grade. That frees you up a lot. But it doesn't take away responsibility because you are there. You want to be there and there's no obligation.

PH *And they want the outcome to be good.*

SG Yes.

PH *Just the same.*

SG Just the same.

PH *In terms of the standard of the work, they work just as well, they have the same amount of motivation?*

SG And there is also something that I've tried to implement in formal education during these years, that in part comes from these experiences, there are moments where there are no evaluations. They know that they have an outcome, but they also know that they are not going to be evaluated for that. That could be a round table discussion, it could be a poster, it could be a small booklet. I just want to see the differences between the motivations when they

know that and I don't see any difference. Most of the time, after those sessions they openly say, 'I really enjoyed this class', so I think that it's a pity, but the evaluation motive, restrains you a lot, as a teacher and as a student. It's the way it has to be, it's our system, I'm not going to say that it's a system to avoid. I like a lot to give classes as I do, so there's no nihilist motivation in my words, but I think it's a fact, that things change a lot when you know you are going to be evaluated or you know you are not going to be.

PH *I wonder if we stop here, it's getting quite noisy in here and we've been talking for nearly an hour. There's just one last thing I would like to ask, when you were a student yourself, you went to FBAUL as well?*

SG Yes.

PH *Is there a difference, or is there anything you think has changed, about how it was for you as a student and how it is now?*

SG It has changed a lot. First of all, we had five years, now they have three. So we had more time to explore and to do things with a goal that was completely open.

PH *Less pressure.*

SG Less pressure. A lot less. But the students are... When they begin in the first year, they have more confidence than we had. They can use the tools of research, online research for instance, and it helps them a lot. In the end it gives you another constraint, but it can be a very powerful tool. I believe that. I remember when I was in the third year, I really recognised the potential of design, precisely in that year, and sometimes I ask people if they feel the same, and they say 'well, that was it, it was the third grade that brought to my mind that this has potential', 'I can explore different dimensions and now I recognise the field'. Back then we had two more years to develop that kind of recognition of the territory. These students, in the third year they finish the degree. That was something very interesting in the briefing of the imagined curriculum, all of them said that they wanted more time, at least four years, because they recognise this constraint, this situation.

PH *I know what they mean, because it's a lot to understand. I remember before I started studying, I didn't really understand what design was, it took a few years to really be exposed to enough stuff to say, 'this is what it is'.*

SG Yes, it takes time. And the teachers, they have a lot of pressure also because they know that they just have three years to build up the pillars of this kind of knowledge... Well I think they we are a little bit rushed. That's the main difference. Time can make a lot of difference I think.

PH *Yes. I suppose now they have a chance to do a masters and that would be the five years. But that's already a different thing. You have to make the decision to do it.*

SG Of course in Portugal there are also economic constraints. Most of the time for instance, I know students finish the third year and they prefer to go to a studio and to work and to earn money, because to enrol in a master, it's not that easy.

PH *Sure.*

SG And in Portugal to invest in an MA it costs a lot, even in public schools, so there are these kind of situations also. They can do it, but it's different I think.

PH *I think it's going to change things a lot in the UK as well because the students pay huge fees now, whereas before, it wasn't anything because education was free. So if you're interested — it would cost you time and money of course — but if you were interested you could keep going as long as you maintained the interest, but now people are squeezed and under pressure. They have to finish the thing and then they have to get a job and they're kind of rushing through it, but then...*

SG And universities are squeezed too.

PH *Yes, everything is squeezed.*

SG It's a system of cause and effect.

PH *Yes.*

SG It's not something that people just decided to do.

PH *No. Okay I think we can stop there.*

Notes and references

1. *Ponto Final Parágrafo: elogio crítico à Universidade pelos alunos finalistas de Design de Comunicação [Full stop new paragraph: Critical eulogy to the University by Communication Design undergraduate students]* 2014.
2. Pôr as ideias em ordem — reflexão sobre o plano de estudos de design de comunicação [Put ideas in order — reflection around the communication design study plan]. 2014.
3. Gonçalves, S. (ed.) 2015. *Agora, irrepetível. A juventude, o design e a sua prática [Now, unrepeatable. Youth, design and its practice]*. Belas-Artes da Universidade de Lisboa. More info: http://agorairrepetivel.belasartes.ulisboa.pt/
4. *Samizdat — Eu publico-me. — Eu mesmo publico / Samizdat — I publish myself. — I do the Publishing myself.* 2010.
5. Workshop at Hochschule Darmstadt: UAS, Germany.
6. Elogio al disco duro: edición con objetos vagamente olvidados.
7. *Sala polivalente — Teste Piloto (polyvalent room) for actions during exhibition period*, 2011.
8. *Que sais-je?* Galeria Vera Cortês, Lisbon, Portugal, 22 Jan—25 March 2011, curated by Ricardo Nicolau.

Pedro Miguel Cruz

Location: A café, Coimbra, Portugal
Time: 3.30pm, Thursday 6th October, 2016
Method: Audio recording
Duration: 1'10"30

PH *What made you change from Physics to Informatics?*

PC It was too theoretical for me, too abstract, lots of mathematics, and I wanted to do something more concrete where you build something and you see the results on a more tight timeline. Shorter periods, doing something and getting your work done, building stuff basically. So I came here [Department of Informatics Engineering] and then… Well you have better job perspectives as a computer science guy than a physics engineer, because I would be in academia or maybe doing consulting.

PH *I suppose design is always open to inventing your own career path.*

PC Yes, I wanted to do that. You know, I had a perspective of just joining a company and maybe doing my own work after hours — never going to happen you know. So yes, I came here and actually when I started I really had no background at all in design. Even before the university, all the classes that I took were science based.

PH *Not even art?*

PC No art history, no history.

PH *No humanities even?*

PC No humanities. Maths, physics, chemistry. A bit of Portuguese but Portuguese for science students.

PH *So how did you find the change?*

PC   Back in Lisbon, at the Instituto Superior Técnico, there was this physics student association there that needed some posters done and also some covers for the student magazine. So I started doing something there, very ugly posters you know, very bad.

PH   *The ones you did yourself?*

PC   The ones I did myself were better than what they had at the time but...

PH   *You weren't satisfied?*

PC   At that time I was very satisfied...

PH   *But now looking back?*

PC   ...of course no, they're very bad. Even before that, when I was a kid I was trying to mess around with 3D Studio Max doing some stuff in 3D and doing some wallpapers, I always wanted to do something visual but I never had the stimuli to do it. Stimuli in terms of a classroom. I also never programmed before going to university. I started programming in Lisbon. I wasn't very good. I'm alright nowadays, I'm not a top programmer but I get my things done. It was a kind of a barrier, but then I got quite good at it, for me anyway. I discovered I could do something visual with it. Since I don't have any drawing skills for example and at arts and crafts I'm very bad. So I found a medium where I could do beautiful things. So that's the visual part. And then, I arrived here in Coimbra, it's a very long story, I have so much to say. It's a path you know?

When I arrived here I took two design electives. Actually I didn't start in informatics engineering here, I started in communications and multimedia — it's an old degree in the department, communications refers to networks, it was a shorter version of informatics engineering — I took that because I had already lost two years in Lisbon so I wanted to do it quickly. But then they got rid of that degree so I transitioned to informatics engineering. When I arrived here I took two design courses in the other department, electrotechnics, because they had another old degree it was design mixed with image processing. The had two of three courses in design and the rest was lots of maths, very hardcore. It was technology for visual information or something like that. So I took visual communication and graphic design. I never finished those courses, they were extra curricular courses, I was taking seven courses at that time and then a

course on rhetoric, of which I only took some classes, but nevertheless I learnt some important stuff there, mainly about typography.

I remember a very simple exercise that you always have when you start with graphic design students. You ask your students to use a single word typographically in a way that illustrates the concept of the word, in black and white. I had two words. The first was 'scream', so what did I do? I started with scream you know and I stretched it. And then I did 'clown', 'palhaço'. I made it look like the words were juggling. So basically, in the crit, my two works were classified as one of the worst and one of the best. The scream was one of the worst because I stretched the letters.

PH *The teacher didn't like that?*

PC No, of course! Because I stretched the type! I didn't geometrically stretch them, keeping the form, I distorted them. Of course she didn't like it, and I understood it. But she enjoyed the clown thing.

PH *So how did you find the format of the crit? In other subjects you don't normally have your work dissected by your classmates. What did you think about it?*

PC I never liked that kind of public judgement you know. I was never very comfortable with it.

PH *But it made you remember it.*

PC Yes, but since I had a balanced result and I had never done any design before I thought well, I might go somewhere with this.

While I was in Coimbra I started looking more at posters, I started noticing some posters that FBA did and something struck me because everything seemed so simple, technically. I thought, well, I could do this — but I can't! What is it that's missing? It seemed so beautiful and elegant, and I could do it, I know the tools — but I can't. So I started reading about it [typography]. I read, I read, I read. Then I started doing some posters, I did a poster for a week of arts here in the humanities faculty, I did a poster for a book fair for the student's association and I did a poster for a play at the theatre.

PH *You were quite a proactive student then.*

PC I didn't care a lot about my classes at the department you know, for me everything was very boring. For some of them I was a top student, for others I just did it. So I tried to do stuff [outside of classes] that I really enjoyed. But I started learning small stuff. For example, I discovered about Gil Sans, so I did a poster with Gil Sans for the play, and it was a very dark play and very minimal in terms of lighting and outfits, it even had people naked. So, black background, just lighting, lots of monologues, there was blood etc. So what I did for that poster was I wrote parts of the text of the play using my own calligraphy and I overlaid it several times and created this mesh of very dense and dark text and then I put the title on in Gil Sans in something like a wine red. So I did those things and then I had a class — because I was in Communication and Multimedia — we had one course that was called Multimedia Design, that was taught by João Bicker, and it was very interesting because his strategy was like, I'm teaching design to a informatics engineer, to engineers you know, I'm not going to ask them to try to do something from scratch, I'm just going to ask them to try to replicate good design. That was his strategy.

PH *Can you give me an example of an exercise?*

PC Some of the exercises were about changing the medium. So you have a movie, you have several graphic materials for the movie, design a website for it. Or he would give you a brand identity and ask you to do something with that. You would have the brand norms or the manual. One exercise was based on the identity for RTP2 [public TV channel in Portugal]. It was a '2' on a grid with green squares. He asked us to make three second stings for 'entertainment', 'debates' and 'sport'. So I did that, I used the information and the grid in the norms and just made it basically.

It was pretty straightforward, but instead of putting an image on the background showing some people talking or something like that, I actually used the logo and animated the 2 logo in order to illustrate the concept. For example, for debate I put two 2's facing each other, but in the background, very faded you know. He just told me that I did something he didn't ask for — because I was trying to do something new with that brand — and that things could have gone very very wrong, but they were alright. So I was quite happy with that.

PH *Did you enjoy those classes with João Bicker?*

PC Yes. There were some classes that were lecture based. Typical design things like, where did design come from, some things about typography. Marvellous lectures. I didn't attend all the lecture classes but I had to go to the studio ones, to present the exercises etc. Those I enjoyed a lot because I'd often spend some time there to talk with him, you know how things are here, the classroom was just empty and I could talk to him you know.

PH *Then you went onto the masters?*

PC This is a long story. [Laughs.] After that class with João Bicker I actually applied to collaborate with FBA. [Bicker's studio]. I made a portfolio, printed on an inkjet.

PH *It's a portfolio of shame now is it?*

PC Yes. Because it was… now I'm remembering the cover… It had a blue background, and an orange stripe. The printing quality was very bad, that's the first point. The second part is that I did a kind of an identity for myself which was awful, it was like 'PPPP' with a modern typeface like an Akzidenz or something and then I had an 'O' around the first P because I thought it was cool and it meant 'Pequeno Portfolio Pessoal do Pedro'. Pedro's little portfolio.

Nevertheless, I send it through email to FBA., 'I would like to collaborate with you, just give me something to do, you don't have to pay me' etc. They took one month to answer so I wasn't even thinking about it anymore. So yes, I got an email asking me to go there to talk to them. So I went for the interview and I had all these designers in front of me you know, with big architectural cases of posters you know, and I was there with my little portfolio. So basically I met with Bicker and Alexandre, of course, not with me designing, but me applying their designs to new media because I had already designed websites and so on. So we started doing some experiments which went good. The experiments were book trailers for Almedina [publisher and book shop], for Edições 70 and Almedina. So just doing animated after effects things you know. Typographic based with some soundtrack, just conveying the key points of the book, but keeping the identity that they designed for the cover. It took some work doing those, but they went alright, they went good.

I also did two TV spots. The studio usually designs the identity for a Jazz Festival in Gouveia. So I did the TV spots for those, and I learned a lot because I had to talk to designers, and for the first time I was exposed to the design

sensibility. In the sense that they had this concept, this identity, and then I tried to do things, and I learned what I could do and what I couldn't do. I got pretty good at knowing what they were doing in terms of design and then just changing the medium. I couldn't design it from scratch but I could do the translation, and that's pretty valuable in a design studio. I remember that they tried to give me something to design once and it was terrible. It was a website and I did the proposal and they said thanks, but no, this doesn't work. So I spent one year working with them and then I went to Brazil. To Belo Horizonte in Minas Gerais state, in the south east, in the interior. So I was there doing some courses in computer science because I wanted to do a period abroad and Brazil was cheap for my budget. When I arrived there I also tried to do some courses at some design universities there, but it wasn't easy because they were very far away. So, I started doing my courses there, I was there one year. By my second semester, I was looking for a job. I only had three classes to do so I was looking for a job and I was very lucky because I didn't have to get an internship, so it was my first paid job (well at FBA. they paid me too, but as a freelancer) at a 'creative studio' as they called themselves, called 3Bits. They did interactive installations, but their main, how do I say it, breadwinner?

PH *'Bread and butter' work?*

PC Yes. Was web development and design. Most of the time I was doing web development for them. Getting the designers layout and doing the CSS and the web design for it. But then I did two very interesting projects. The first was an installation that showed the history of electronic music. It was my first Information Design work in the sense that I had this big graph of which genres of electronic music was the origin of which. From the top to bottom you had the history of electronic music. At the point in time the Wii was very popular, so we used the Wii so that you could have a sample of the music to listen to and it was very animated.

PH *So this was the first time you had to deal with information that had some complexity? I suppose it wasn't really linear, the genres would be interconnecting in different ways.*

PC Yes. It was an interconnected graph, which had maybe five categories of electronic music and I had to lay them out in terms of appearance in history. So I had to think about colour and also typography you know. I remember that

I used Officina by Erik Spiekermann, I was already selecting good typefaces. [Laughs.] And I designed the icons, every node in the graph had a small play button and it had multi users, up to three users at the same time.

PH *But this was an app for the Wii?*

PC No, it was an installation. It was projected on the wall and then you had the Wii for selecting the musical genres and then you started playing. So you could see the history and select the samples, and then when you selected the samples you could see information about it like the artist and a bit about that specific genre. After that I also did an app called Typomove. My bosses idea was that you'd have an app. where you could photograph a letter in every city that you saw outside — stuff that you'd see on the buildings — then you'd tag it with a location, then you could go to their website and you could send a postcard from a certain city. So you could write a sentence, then it would write a sentence using letters that were photographed in that city. I made that website, basically it queries a random letter from that city then you can send an image to someone. That was their idea, it was great.

In their studio they reserved some time for creative exploration which was great. So that was my experience there, it made me grow a bit. A lot. Then I came back [to Coimbra]. I had already transitioned to informatics engineering so I already had my four years that I needed to do my masters, I just had to do the thesis, but that's another story.

PH *Okay. So lets talk about teaching. After the thesis did you start teaching?*

PC Design, yes. While I was doing my thesis I was a teaching assistant in operating systems and then in computer graphics. Computer graphics was the first course that I taught to design students because the design degree here was just starting and the computer graphics course was not yet structured for designers. So they taught computer graphics in C [programming language]. So I restructured the course in order for us to teach Processing. I think this is going to be important for you because, again, the exercises that existed from previous years were done without thinking about designers at all. I planned the exercises so that in each assignment they had to produce something visual — in a way that was visually structured. I'll give you some examples, we could have something in typography but in computer graphics, a sphere with some light around it, some squares arranged on a grid, composing things.

Using everything you can do in computer graphics but something more visual, something using the language that they are used to using, that they were learning. It was very stimulating for them, it worked you know.

After I did my thesis, I was invited to teach here. I was responsible for two courses which were Technology for the Social Web and Digital Production. The first time that they were taught actually. Then I taught two studios, more as a teaching assistant. I was like the computer science guy.

PH *Who were you teaching with?*

PC Artur Rebelo and Lizá Ramalo [R2]. In digital production I had a lot to teach them [the students] about digital typography, because you ask them to do something and everything would come with those errors that third year students shouldn't do anymore you know. Again, stretching letters or even using colour. Some of them seemed like they had never had an introductory class in design. So you had to — even in a more advanced and specific course — you had to remind them about basic things. They had to do a short a short animation. Then, technology for the social web was much more technical. They had to design something that was based on information visualisation. Designing some graphs for the web. As I was teaching with Artur and Lizá, they were responsible for the assignments, I was just there to guarantee that the students' process was going in the right direction, providing the technical assistance that they needed. Also saying to them what wasn't the right path. Trying to exemplify what the professor wanted from those assignments you know. Guiding them in the right direction.

PH *Tell me about the teaching you're doing now in the states, how is that different to here in Portugal?*

PC I only taught two courses, both of them studios.

PH *What kind of projects are you doing?*

PC In Visualisation Technologies I provided them access to a database called the Crunchbase which is about venture investments in Silicon Valley. So they had all the main investors and investments in each company and how much money since 2007 and they had to show it in an interactive application. Usually it's a graph, but it doesn't have to be. You can design things where you have

balloons going up in the air or metaphorical stuff but the answer that is most straight forward is a graph. The first half of the course was about technology and the rest of the course was about interactive prototyping. They first had to present a sketch of what they wanted to do and then implement it.

PH *An actual sketch on paper?*

PC Yes, I always asked that. The other course was more symbiotic with the design process. It was called Information Design Studio and they had to make an infographic that showed all the great wars since the 19th century.

PH *Do you leave it up to them to find out the information?*

PC I give them the databases because it saves a lot of time.

PH *Otherwise it becomes a research project, which could also be interesting, although it moves the emphasis away from design.*

PC You always lose a lot of time because sometimes you have the ideas but you don't have the data, sometimes you have the data but you don't have the ideas.

PH *Right. (Laughs)*

PC For me that's actually the most complicated part of my process. On these two first courses that I taught, I gave them the data. But I have other professors that asked them to get the data for themselves, they kept an open scope. In terms of data sometimes it's important to narrow the scope. Mainly for first year students in our masters, I try to level them, even while grading, you are sure that they all had the same assignment, the same data, the same problems.

PH *And how is the class dynamic, is it the kind of class where everyone is there just tapping away, programming? How do you set it up?*

PC The Visualisation Technologies one was very workshop based, I made sure that something happened visually, I programmed with them and made sure they were all on the same page and that they all understood what they were programming.

PH *So you bring them all up to a level technically.*

PC Yes. The next class again, building blocks you know. Then I gave them an assignment that uses those blocks. I had three assignments for them, evenly spaced in time.

PH *So, all the assignments are like that, build the knowledge, then the project?*

PC Just like that. They had this big project then I taught them techniques that they could use to build it. They were free to use other techniques or other visual strategies but basically I was providing a safe path for students who had never programmed in their lives, because even if I give them one answer for a way to answer the problem in question — a graph that self-organises, then I had to teach them how to do screens, how to do particles — even after they have that, they have to solve a lot other details that are very important in a visualisation: where do I put the labels, when do the labels appear, where do I click, what are the clicking cues, highlights etc., what are the colours, what are the thicknesses of the lines, am I putting lines there, am I not, you know? Am I using transparency… Basically you have the wire frame and then you have to do it, because you can have a wireframe that is a good answer but then it doesn't work because it's cluttered and the communication isn't as effective as it could be. So let's start them using the right typefaces and etc. So you could say that my courses usually have a large scope, I can talk to them about typography…

PH *When you realise that you need to give them that kind of information, that say, several of the students have a problem with typography, do you deal with that spontaneously in the class?*

PC Yes. To give you an example from the Information Design studio. I wanted them to go through the design process. They had one assignment with three phases where they had deadlines and deliveries and with each deadline they had to do a presentation. For the first one they had to show me their sketchbook — which could be digital — and present it with all the ideas they had been developing. Drafts and drafts. Then you have the first iterations, what have you programmed, what are you challenges, where are you right now. Then you have the final iteration where you present your results and your final designed application, your answer. Since I had this structure and it was a studio, the assignments were individual, in the other class the work was always individual.

I can do that because I had 8 to 14 students top. For each course I had three and a half classroom hours with them and then I had office hours. For most of the time I was just sat with them you know, asking them to show me what they had done. Then I could talk with that student for half an hour and anyone could get involved in the conversation.

PH *So you are giving feedback, but publicly, so that any other students can take part in the discussion?*

PC Yes, and they very much enjoy this. They really do because there is a also a good class dynamic, they share work and ideas…. but, they are also competing but it's healthy. Then they do their presentations and I give my critiques you know. Ah, and sometimes, to put some pressure up, in the final presentations I ask some other professors to come. I tell them that it's going to be something serious. I remember that in their first presentations for Information Design I appeared in a bow tie. What I want to say them is that, this is not our usual interaction, you are selling your idea to me and your colleagues and everything should be good, even your presentation. They took the message I think.

PH *They raised their game a bit.*

PC They raised their game. There was one student, her first prototype had Arial in there. Arial, which I hate more than Comic Sans. A first year student. We had some typography classes, but she didn't pass, I guess. I'm not ready to answer questions like, why can't I use Arial? Sometimes you can't just say, don't use that.

PH *You need a justification. So, what did you say — or did you just let an eerie silence ring out?*

PC Yeah. [Laughs.] I was pretty reactive about it but I explained to her — I don't recall the expressions, but it was a very harsh speech — I obviously talked about the unbalanced forms of a typeface that tries to be what it isn't, Arial is disguised you know. At least Comic Sans, it is what it is, it's not trying to lie to the world. I talked about some details in the typeface that don't make any sense. Then we had a break and I went to my office and I took some typography books to the classroom and then I explained to her, and them, because the others were also interested in this subject, okay, if you don't what to

use, you have these typefaces to start with. Just bring them Ellen Lupon's book[1], or bring them Bringhurst[2]. He actually recommends some typefaces at the end you know, 'you have these to start with'. Small things, some times I have to explain the difference between a hyphen and a dash.

PH *It can be a wrong typographic decision or a punctuation error. The things that the students do that bug me more are things like setting a line that's just ridiculously long and ridiculously close to the one below. Things that don't display any kind of sensitivity to what they're doing at all. I guess it takes a little while to just get conscious of it. That's the trick. They're not conscious of it so they don't see it.*

PC But someone has to talk to them about it. When I was a student I felt wasn't receiving what I should. In my classroom they have all the feedback that they should, all the feedback I can give them, in the sense that I alert them about the whole general skill and about the details as well, 'does this work in terms of an information design perspective?', 'does this makes sense?', 'typeface, colours, grid, layout, even motion?'.

PH *Can I ask you about something which I know that is important in your work, which is metaphor. It's actually something quite outside of everything we're been talking about. It's not programming, it's not data, it's not the gestalt thing of form and line and it's not the technical typographic things either.*

PC It isn't. Okay, I don't push them for metaphors. Actually metaphors are a very effective device to push information, but you want it as salt in food, right? They are, I would say, a more figurative way to show information. I feel that information visualisation right now is already establishing it's language and it's a very abstract language. It's a language that is disconnected with the specific knowledge domain that the particular [information] architect is showing. Of course you can design something that addresses that specific domain and that's a very complicated challenge because it has to be designed on top of the abstract model or language that you have already established for that information visualisation and then just in setting some cues that work well with that language but that add something to the message.

PH *There's one particular project of yours that I'm thinking of which is the one about politicians and the politicians are represented as bugs.*

PC They could be bugs… molluscs... [Laughs.] But it's a graph. I'm animating the edges, I'm displaying the direction of the edges through movement, and I'm just putting a mark there which is a bug which is connected to my message about the whole thing. Naturally it's also connecting to your role as an author of your own design. Nevertheless, sometimes I have some students that reach that. It's much more easy to do it in infographics. For example I had one student who did the casualties of war since the nineteenth century and she used blood drops that symbolised how much blood each war caused, it's a metaphor and it's her message. I had another student that regarding the investments status did some balloons going up in the air.

PH *A common metaphor when talking about finance.*

PC Yes, and there were some students that did things that were more obvious or figurative. Figurative is what I use to describe how much the metaphor is already absorbed into ones culture. One student did a project where when you click on a company you have a particle made of coins that goes into that company. I like them to start with something that is from themselves. I don't require that from them but I'm thinking of doing a course about alternative ways to display information, to experiment with other [visual] languages. Even if they don't work as well, just experiment with them. When they reach that point.

PH *Once they get their heads above water.*

PC Yes. But nevertheless they have to be good at doing the classic information design strategies. I've done this, I know how do this, it's done, it works… it's working and well done. Then we can try to build something on top of it. That's my main message to them actually. Sometimes in Information Design Studio 3, in the introductory class I talk to them about my work. You know, who was this guy who was teaching them, what does this guy do, what am I expecting. In Visualisation Technologies I didn't because it was… I had already given them a lot of strategies to solve. It was a specific problem and I just wanted them to use the right technology to solve it. The other one was more about design, about creating their own problem and designing it because even the war data, it's a much more incisive data set in the ways you can address it metaphorically. It's more humane you know?

PH *Some subjects are more emotive.*

PC …and that gives you more perspectives. That's interesting.

PH *Okay, thank you Pedro.*

Notes and references

1. Lupton, E. (2004). *Thinking With Type.* New York: Princeton Architectural Press.
2. Bringhurst, R. (1992). *The Elements of Typographic Style*. Point Roberts, WA: Hartley & Marks.

Appendix 2
Case Study Notes

Introduction

The following notes and images are the raw material that was generated as part of the case study that makes up **Chapter 8** of this thesis. The case study conducted as part of the Design and Communication module in the first year of the Design and Multimedia undergraduate degree at the University of Coimbra, 2017. The official description of this module is included in this appendix. It also contains the notes that I wrote for each class of the semester, taken before, during and after the classes. Since their were three classes made up of 20-25 students, each class was repeated three times, once with each class in the year group. The notes in the following pages reflect this by referring to three iterations.

The semester consisted of three design briefs, which I refer to as exercises. They were written by Nuno Coelho, they are also collected here with his permission.

Relating to these briefs were some special classes which I refer to as *workshops*; 'Point, Line Plane', 'Design Decoding', and 'National Flag'. For each of these, I include a summary that sets out the main aims and ideas behind the workshop and a description of how the workshop was staged and run. This is followed by my notes on the running and results of each workshop.

The material in this appendix is presented in chronological order.

Terminology

This chapter uses the following terminology to refer to the different types of learning activity:

Exercise — main project brief.

Workshop — special workshop like classes.

Activity — units of action within a workshop class.

Crit — the presentation and defence of work at the end of each exercise.

Bachelor Degree in Design and Multimedia

Department of Informatics Engineering

General Objectives of the Course
The objectives recommended for the Bachelor Degree in Design and Multimedia favour a solid foundation in Communication Design, Multimedia and Information Technology, seeking to develop a broad range of skills primarily designed to pursue further study in the 2nd cycle (Master's Degree), complementing the professional education in Design and Multimedia, specializing the student and endowing him/her with the skills of design and multidisciplinary dialogue, essential to the existing understanding of the profession.

Learning Objectives and Intended Skills
This proposed training prepares professionals to be able to assume the role of creator, talking in multidisciplinary teams, and translating the various languages involved in the design and implementation of innovative digital products and services.

(Bachelor Degree in Design and Multimedia, n.d.)

Design and Communication

2016/17 Second Semester
6 ECTS Credits

Program
- The design process;
- Visual structure of verbal messages;
- The role of images in communication;
- Interpretation of text and image;
- Assessment and reporting of project design;
- Professional practice - organization and contexts.

Teaching methods
The cognitive method of learning is valued through:
- Lectures supported by analysis of case studies;
- Classes devoted for project developing;
- Linking theory and practice — theoretical knowledge through project developing.

Classes devoted to presentation and discussion of reference design projects in specialised literature. Development of practical work aimed at solving real problems in a simulated environment. Presentation of projects and discussion with colleagues. Study and evaluation.

Each student shall prepare a process of investigation, research and exploration of references, content, types, structures, actions and supports that will lead him/her to the construction of a project-oriented discourse. Experimentation, language and relevance of the projects submitted will be valued.

(Design and Communication, n.d.)

DESIGN E COMUNICAÇÃO

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EXERCÍCIO #1 – PICTOGRAMAS

INTRODUÇÃO

Pictografia é a forma de escrita pela qual idéias são transmitidas através de desenhos. Um pictograma é um símbolo que representa um determinado conceito por meio de desenhos figurativos. As suas origens na antiguidade foram a escrita cuneiforme e dos hieróglifos, mas a sua principal origem na modernidade foi o sistema internacional de representação pictórica desenvolvido em Viena por Otto Neurath e Gerd Arntz através do movimento Isotype. Actualmente, o uso de pictogramas tem sido muito frequente na sinalização de locais públicos, na infografia e em várias representações esquemáticas de diversas peças de design gráfico. Embora os pictogramas pareçam ser absolutamente auto-explicativos e universais, na realidade, eles podem possuir certas limitações culturais.

PROJECTO

Partindo de princípios semióticos apresentados nas aulas teóricas, pretende-se que, individualmente, cada estudante desenvolva um sistema (família) de cinco pictogramas que identifiquem os seguintes cinco estados: Kosovo, Palestina, Saara Ocidental, Taiwan e Tibete.

Cada estudante deverá investigar factores culturais de cada um dos estados, procurando representações visuais gráficas que os identifiquem e que os diferenciem dos restantes.

Os pictogramas deverão ser desenvolvidos a partir de um tema previamente identificado; construídos sobre uma grelha; desenhados de forma a funcionarem a uma cor; elaborados em alto contraste (sem escala de cinzentos); legíveis com cerca de 15 mm (capacidade de redução); e manterem a coerência concetual e gráfica entre eles.

PALAVRAS-CHAVE

Sinédoque, metáfora, metonímia, ironia, representação, diferença, estereótipo, vernáculo, singular, identificação, ícones.

MATERIAL AVALIATIVO

Para a entrega final, cada estudante deverá elaborar um breve manual de projecto, em tamanho A4 de orientação horizontal, com capa, incluindo: identificação da autoria e do tema escolhido na capa (nome e número de estudante; tema escolhido); breve sinopse explicativa do trabalho (máximo 600 caracteres com espaços); selecção de referências e de conceitos (tópicos, palavras-chave, imagens de pesquisa); estudos (rascunhos, esquissos, testes); construção geométrica (apresentação da grelha desenvolvida); os cinco pictogramas em tamanho grande; e os cinco pictogramas em tamanho reduzido.

O manual deverá ser submetido no InforEstudante num ficheiro digital .pdf.

Deverão ser entregues presencialmente cópias em papel das últimas duas páginas (os cinco pictogramas em tamanho grande; e os cinco pictogramas em tamanho reduzido). Estas cópias deverão estar identificadas com a respetiva autoria (nome e número de estudante) e do tema escolhido.

Para as aulas de apresentação e defesa dos trabalhos, cada estudante deverá preparar uma apresentação oral com uma duração máxima de dois minutos.

CRITÉRIOS DE AVALIAÇÃO

Cada um dos seguintes quatro parâmetros equivale a 25% da avaliação final do exercício:
a) Conceito (pertinência do tema, interpretação, investigação, proposta concetual, coerência concetual entre elementos);
b) Formalização (tradução do conceito numa imagem, volume de trabalho, complexidade de execução, inteligibilidade, coerência gráfica entre elementos);
c) Qualidade (qualidade plástica e tecnológica, afinação gráfica, resolução, acabamento);
d) Apresentação (capacidade de síntese, articulação oral, expressividade, defesa).

PRAZOS

8 de fevereiro (quarta):
Apresentação da proposta de trabalho.

19 de março (domingo), 23h59:
Submissão do material avaliativo (ficheiro digital) no InforEstudante.

21 e 22 de março (terça e quarta):
Entrega das cópias em papel até ao início da aula PL.

21 e 22 de março (terça e quarta):
Aulas de apresentação e defesa dos trabalhos (aulas PL).

Class 1: **Plan**

Description
The students will be invited to work together to amass as much information as possible about the five states that are the subject of Exercise #1 (Kosovo, Palestine, Western Sahara, Taiwan and Tibet). Information will be shared through discussion and compiled by writing key information on the white board in such a way that connections are discovered. Research methods will also be discussed and shared. In this activity it will be made clear that the information gathered should be as wide and diverse as possible — at this stage we are not making design decisions, only gathering source material.

Staging
The activity will work by going through the following stages:

- Group discussion of what the students already knows about each country (30 minutes).
  Use questions such as:
  "How can we find out more about these countries?"
  "How can we check factual information?"
- Individual research phase (30 minutes)
- Sharing of results and comparison of information using the white board (30 minutes)
- Continued individual research phase (30 minutes)

Possible variation
If the discussion is particularly productive it may be allowed to run on longer. Likewise, if there is a poor response to the discussion parts it may be necessary to allow more time for the students to spend researching. Some students may already have ideas they want to discuss about the project, if this is the case guidance will be given but with the intention of opening up the possibilities of the project rather than allowing them to become too fixed at this early stage.

Class 1: **Results**

ITERATION 1

Activity
After some introductory remarks I asked the class to begin to share some of the information that they have found out through a group discussion.

Result
Although some students had already understood the connection between the five countries — that they are all disputed states — few had much to say about them. Some students knew basic things about the political history of Kosovo, that it is within Serbia and aims to become independent, some knew that the territory of Palestine is shrinking.
A couple of students contributed comments about themes (mythology, musical instruments, religious buildings).

Reflection: Possible alternate approach
Perhaps it would be better to make a more structured activity by splitting them into groups to research collaboratively, giving each group a country to focus on.
Explain we are going to do a research activity.
Split the class into 5 groups.
Each group will have 30 minutes to focus on one country, they try to find information on:

- Traditional imagery (clothing, art, architecture)
- Food
- History
- People
- Landscape
- Language
- Natural resources
- Products

Activity

Since the discussion part of the previous class was not very productive I decided to simply make some opening remarks and allow the students to work on their projects. When individual students approached me to explain their ideas I made my comments in such a way that they were audible to the room so that I could make general points about the project.

Result

The students worked quietly and apparently productively, only towards the end of the class I noticed that some of them were becoming distracted. At this point I invited individuals to discuss their work with me directly.

Reflection

It is necessary to have some classes in which the students can work steadily on their projects and be supported by individual feedback. To really test different styles of teaching it will be necessary to plan classes more thoroughly and introduce activities that the students can engage in more easily. Classes based on group discussions can work (as I have done before) but this requires more careful management and involvement from the teacher and also may not be ideal for the first class of a semester.

For future activities it would be best to make a point of planning special 'workshop' like classes. If possible these classes could run for a different amount of time. Elements that could be used in a more active classroom activity:

- Group working
- Time constraints
- Drawing with given materials
- Structured phases (active/passive, verbal/visual)

Activity

Opening remarks to check that the students have the brief, understand it and are ready to work, which they are with only one exception.

I make a circuit of the room and ask the name of each student and then discuss the project with the individually. When a subject comes up that is relevant to the project as a whole I address the class as a group — for example, I made a point about making the research broad at the beginning of the project, finding out information in general without getting caught up on whether it will be useful to the project or not.

Result

This approach works quite well in that I have now talked to each student directly so I have begun to get to know them and their approach to their work. This approach also means that each student has had a chance to verbalise some ideas about their project. In some cases all they have to say is that they are still reading, but a lot of them have already identified several possible themes and are able to discuss the potential of each one.

Class 2: **Workshop 1:**

Point, Line, Plane

Project: Ex#1 — Pictogramas
Duration: 2 hours

Aims

This workshop followed a theory class that introduced the basic elements of graphic communication, point, line and plane. It is intended to allow the students to experiment in making abstract composistions that express specific ideas while using only the most simple of graphic elements, directly linking the theory to practice. Ideally, the activity would also provide an opportunity for informal discussion among the students themselves on the ideas that were introduced in the theory class.

Description

- Four separate activities, 20 minutes each.
- A 'game' in which the students had to interpret the results of the activities. I guided the game by selecting drawings, asking who the author was and then encouraging the participants to guess the relevant word.
- Four work stations in the space made by creating two islands of tables in each of the two rooms that were available.
- Each station had enough material for 5-6 students to work at a time.

At each station there was a short written instruction on the table for the students to refer to (this is to make it easier to get all four groups of students working at once). Along with these instructions there was also a list of words that were chosen because they do not have an obvious visual reference:

Tension	Delicate	Noise
Rhythm	Flexible	Freedom
Flow	Contrast	Anxiety
Structure	Drama	Calm

Materials

Each activity used different materials and instructions:

Activity #1 Point (1)
- Black and red stamp pads
- 6 pencils with erasers
- White paper
- Instruction: *Use the erasers as stamps, do not draw.*

Activity #2: Point (2)
- Small round red stickers
- 12 stickers per student
- White paper
- Instruction: *Use 12 stickers to make a composition.*

Activity #3: Line
- 6 black fine line pens
- White paper
- Instruction: *Draw a single continuous line, as long as you want, without removing the pen from the paper.*

Activity #4: Plane
- 6 pairs of scissors
- 3 sticks of glue and black paper or
- Black adhesive paper
- White paper
- Instruction: *Cut out shapes from the black paper to make your composition.*

The participants were asked to create a composition that expressed the meaning of one of the words from the list. They were asked to choose a word before they start working, and to write the the word on the back of their paper.

I made it clear express the concept of their word through an abstract composition and that the workshop was not for evaluation.

1ST ITERATION

Observations

- One student questioned whether we had to do this exercise, and could we not spend the time working on the ongoing project. All the other students seemed happy to do the activities.
- Another student took the initiative of writing the list of words on the whiteboard.
- In this iteration, *Point (1)* (stamping dots) and *Point (2)* (sticker dots) were in the same room. On reflection this wasn't ideal because it meant that the people stamping dots went straight on to sticker dots, which was like doing the same thing but less fun since the sticker dots have less possibility for variation of mark and are slower to make. In following iterations I moved *Point (2)* to the other room.
- It was curious that in at first one room was completely silent while the other was chatting.
- Some students in the second room started to draw pictures of objects (a bird, a loudspeaker). I verbally clarified that the images they make should be abstract.
- In the *Line* and *Plane* activities some of the students still hadn't started even after 5 minutes had gone past. I advised them to start making some kind of image and not to worry about the result, reminding them that the work was an exercise and not for evaluation.
- For *Plane*, some students started drawing on the back of the paper before cutting out the shapes. I intervened here asked them to cut directly without planning beforehand.
- It became apparent that there was a problem with timing — some tables only need 8-10 minutes.
- Most of the students did not write the words on the back of the drawings, only deciding on the theme after finishing the composition.
- About half way through the exercises the students seemed to become more concentrated.
- The tables got messy because of the large numbers of drawings produced.

Game

- This went well — the participants could usually guess the word and this was an entertaining part of the class. It also allowed for some communication between the whole group at the same time.

2ND ITERATION

Changes

- I moved the dot stickers to the other room making it *Point/Line* in one room and *Point/Plane* in the other.
- I no longer limited the number of stickers.
- I swap the groups within the rooms instead of moving them linearly along the tasks.
- I put more emphasis on the restriction of not drawing pictures.
- More emphasis on choosing a word before starting the drawing.
- After each exercise I asked the students to put all the drawings together in a single pile.
- Running the activity
- I paid closer attention to monitoring the activities and looking for problems or misunderstandings and resolving them.
- I attempted to encourage them to work by pointing out things that looked interesting and making positive remarks.

Observations

- There is slight chat and discussion but mostly working quietly.
- In one group I notice them discussing the possible interpretations of the drawings.
- One student spontaneously told me that he thought it was a good exercise because it was interesting to try to use abstract graphics to communicate the ideas, that he was enjoying this challenge.
- This group generally worked faster, often finishing the activities before the end of the allowed time. Several of the students made more than one composition within the same task.

- Side note: one student asked for guidance on drawing the pictograms in the main project, specifically asking how to simplify a complex image to the level required.

Game

- In this part I run the game as before, selecting the images that stand out, asking for the author and encouraging the students to guess the word — but in this iteration something strange happens, I continue to select as many varied drawings as possible but the majority belong to the same few students. I decide to do this differently next time.
- This point aside, this activity works well again and it seems to be a good way to conclude the class.

ITERATION 3

Changes

- No great changes to the main exercises.
- I focus on clearly explaining the tasks and again I put extra emphasis on choosing and writing the word first and on mot making pictures.
- I shorted the timing slightly this time by counting each 15 minutes without time in between — as soon as one 15 finishes I start the next. This way they only have 12 or thirteen minutes to do the task once they have finished up and swapped tasks.

Observations

- One insightful comment from a participant, in discussing the line drawing, the student pointed out that it is harder to get started with the line exercise because it was the only activity in which they were confronted with something familiar — a blank page and a pen. "We're used to this". The impetus to experiment and play with a new or at least less common medium in itself give some motivation to engage with the task.

Game

- This time I ran the game part differently to involve the students in the process further. Each time a student interpreted the image to get the correct word they were then asked to choose the next drawing to be used. This worked well, although it still needed some small interventions by myself to keep things moving smoothly and to maintain the energy. Curiously, a similar phenomena happened to before, the same few students' work kept being selected. Their work was apparently consistently more interesting than that of the others. In this case, it was also telling that the students who could interpret the drawings correctly were mostly the ones who were having their work chosen as well.
- To involve the other students in the process I made an intervention after this pattern had emerged and made sure that each student was able to select at least one drawing.

GENERAL OBSERVATIONS

Discussions

- There were several quite productive discussion about the connections between the words. When it becomes apparent that the drawings were often open to several interpretations, this led to discussions about the connections between things such as noise and power; calm and freedom; noise and anxiety; power and hierarchy; and freedom and anxiety.

Outcomes

- My plan was to have the students make monotone work. However the materials I had available meant that I included red and black stamp pads, many students exploited this opportunity by using black and red in the same composition.
- There are many innovative approaches to the task and a good variety of designs.
- It is also interesting to note that similar solutions occurred repeatedly, a single dot on the page for

'calm', an undulating line for 'calm', a swirly line for 'flow', a dense scribble for 'anxiety', a block or circle of dots with one dot out of place for 'freedom', a line of dots with one small difference every four dots (usually though placing the dot higher on the page) for 'rhythm'.

- A variation on these that I appreciated was a single dot placed half off the edge of the sheet of paper for 'freedom'. The same student produced another image using a single dot that was almost ripped in half, placed in the centre of the sheet, this was for 'drama'.

- One of the most significant discussions between the students was around an image made for 'plane', that consisted of several large irregular black shapes almost filling the sheet with only a few amorphous white spaces in between. This discussion consisted of lots of argument about possible interpretations and some laughter as the student argued for the merits of her work.

- The most experimentation with the available media occurred with the stamps, which enable a great variety of quality of mark, depending on the amount of ink used and the force and angle of the impact on the paper, some students subverted the stamping process by pushing the ink around on the page to draw or paint with it.

- Some students made line drawings of good quality, some experimented by drawing images with a single line (a figure from one student, and a face from another) these, although diverging from the task showed signs of the student's will to experiment as in both cases the students did understand that they were not supposed to draw pictures, but they still wanted to try it with a single line.

- Another student found an innovative way to approach the drawing task by moving the paper while keeping the pen still.

- The was one participant who innovated by using the possibilities of the sheet of paper itself. He folded the paper so that it was necessary to unfold it to reveal a single small line inside. This was to express 'delicate'.

Opportunities for improvement
- Plane always took longer than the other exercises and the students were often not able to finish what they had in mind. However the results here were varied and some students made highly structured, well planned compositions.

- The sticker exercise was very fast but produced only a few interesting results. Consider dropping this altogether.

- Line drawing produced some good results but was also the exercise that often stalled people. In this exercise it was common for the participants to delay starting or to finish very quickly. Stamping produced results very quickly, the students seemed to enjoy it the most and it also allowed for more expressive mark making.

- An alternative for line would be an improvement, it should be something unfamiliar. Possibilities include black thread to be stuck to or sown through the page, cutting and tearing card to make an edge that produces a line. Note that it has to be something relatively slow, using a brush to make lines with ink would be much to fast and produce too many wet drawings causing logistical problems.

- The fourth table could allow for making a combination of the elements, although this could pose new problems. Perhaps this could go to a fourth dimension — plasticine? Or building a structure from the paper itself?

- After the workshop, one of the students told me that he would have preferred a more difficult challenge.

- Another possibility would be to have the whole class use the same material but change the word.

Workshop 1: **Student work examples**

The following pages collect a representative collection of the student work from this workshop. There is not enough space to show all of the work here, nor is it necessary, since many of the solutions were quite similar. This selection includes examples of the most typical compositions along with some of the more innovative work. There are also some examples of were the students deviated from the intended constraints of the project.

Students are not credited since this was an exercise rather than an assessed project. Each composition is captioned with the word of which that the image is intended to communicate the concept.

Anxiety

Activity #1: Point (1)
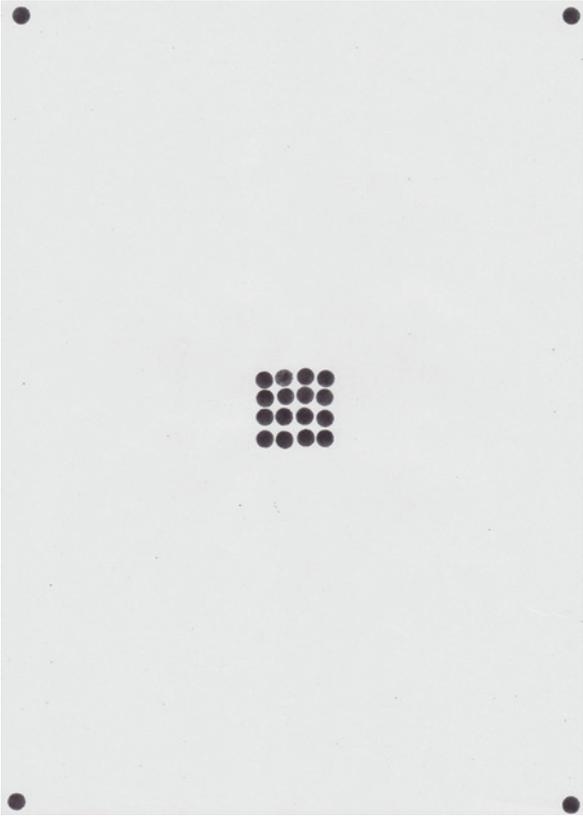
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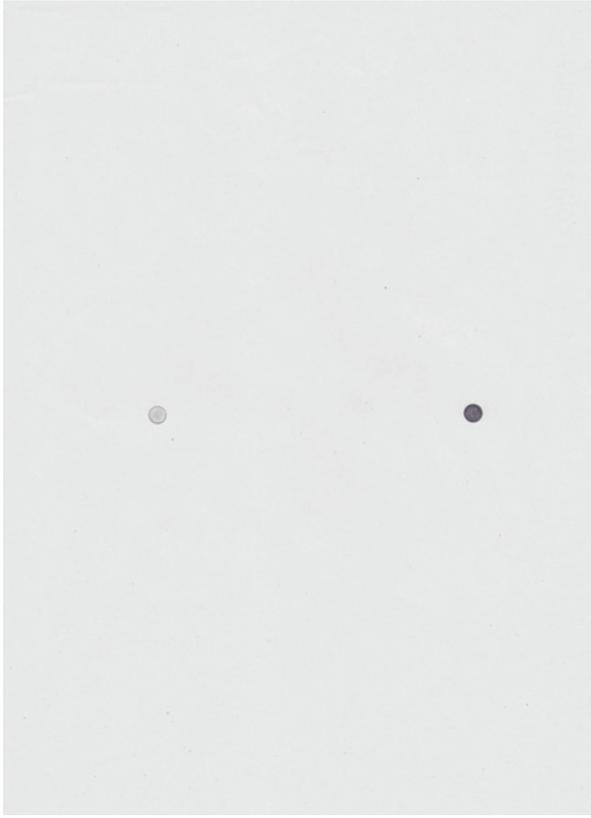
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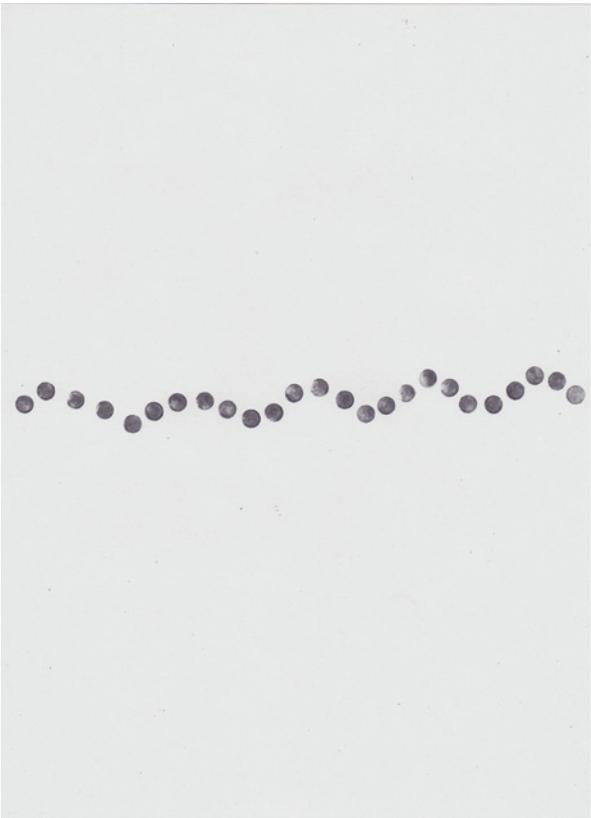
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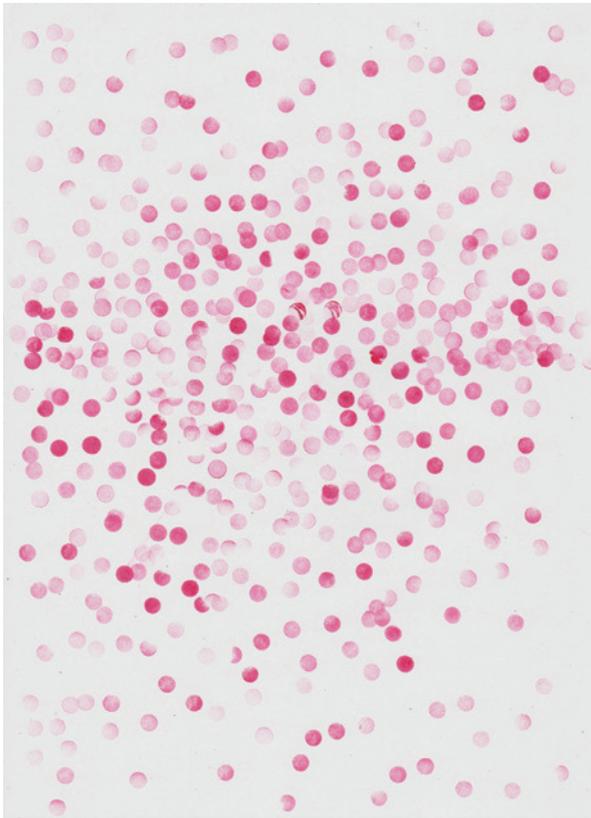
Noise

Delicate
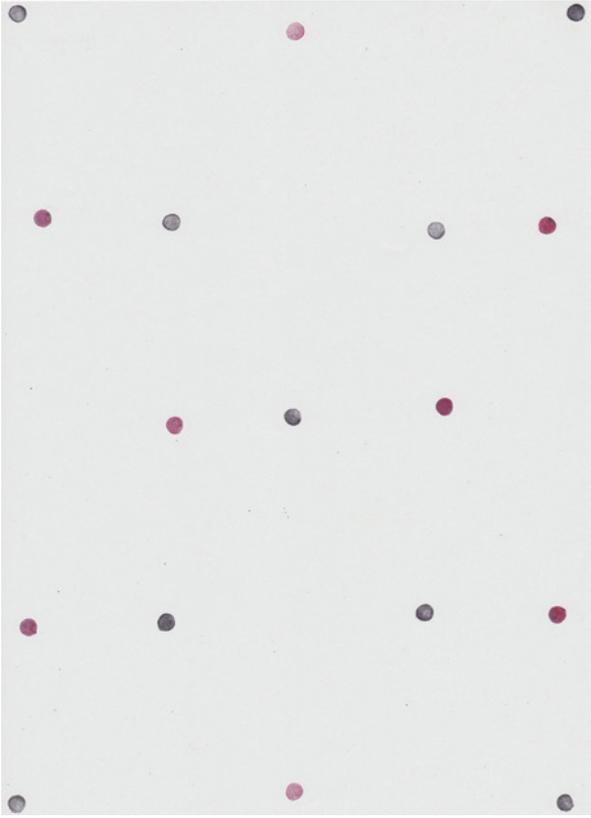
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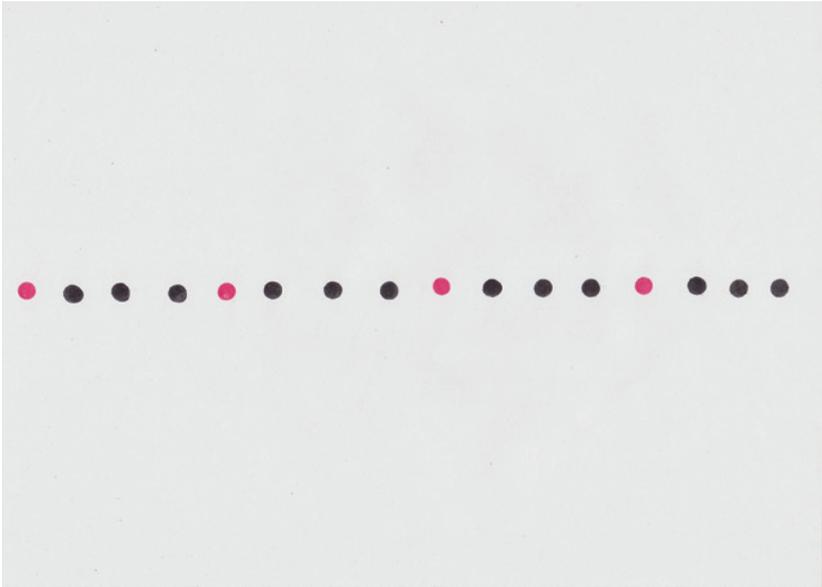
Rhythm

Power
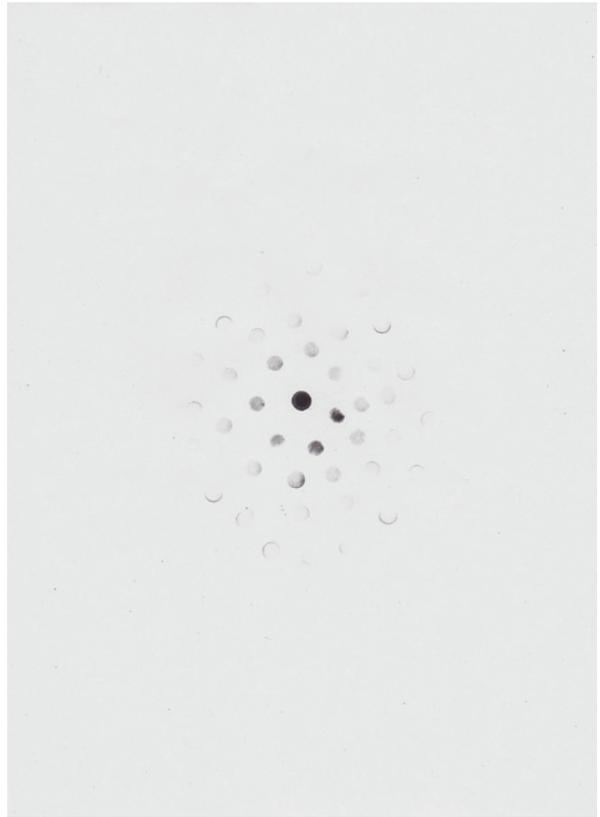
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Power
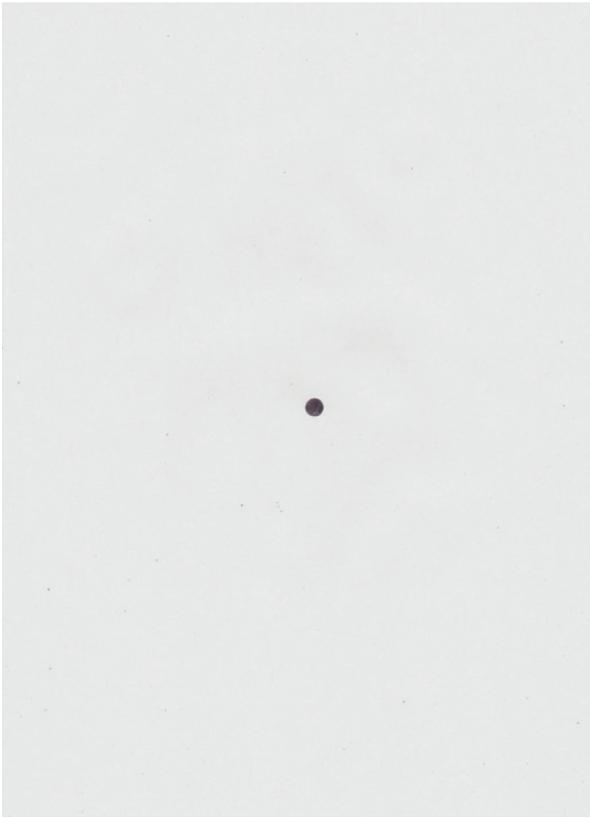
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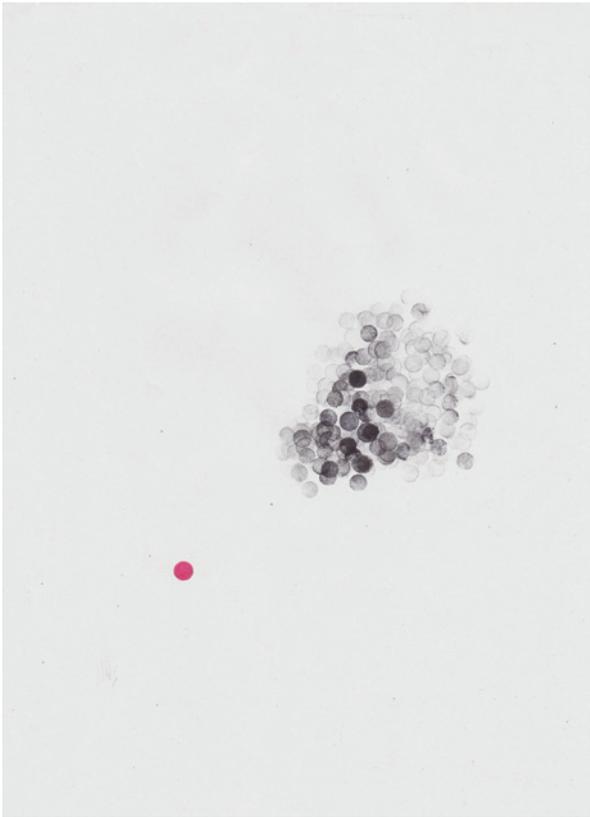
Freedom

Tension
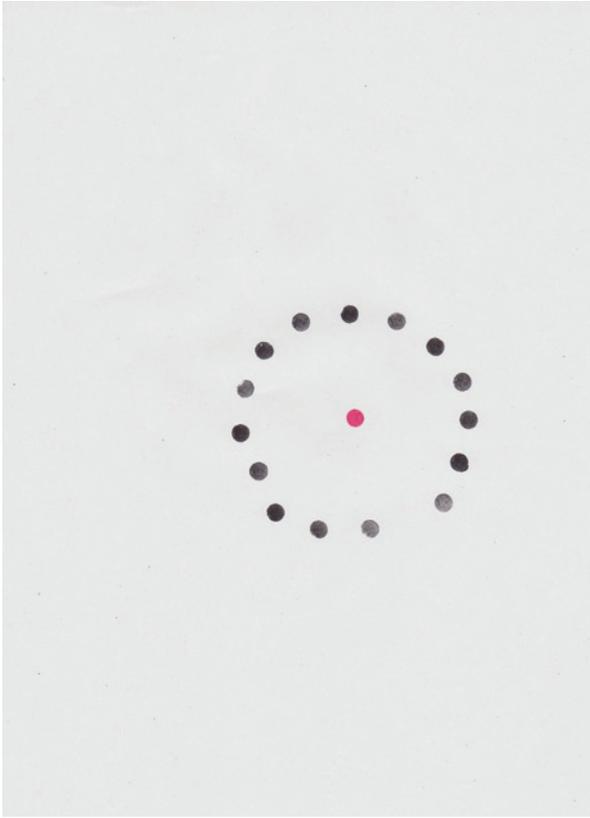
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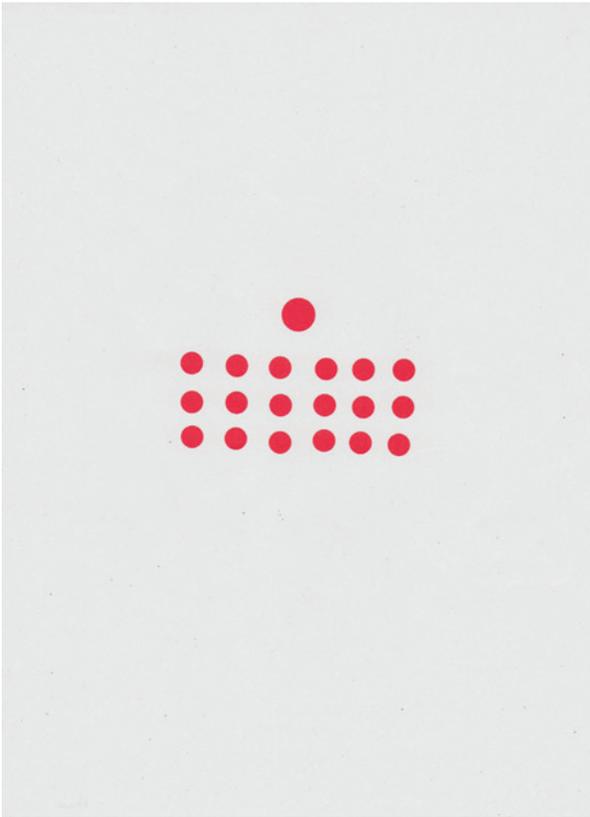
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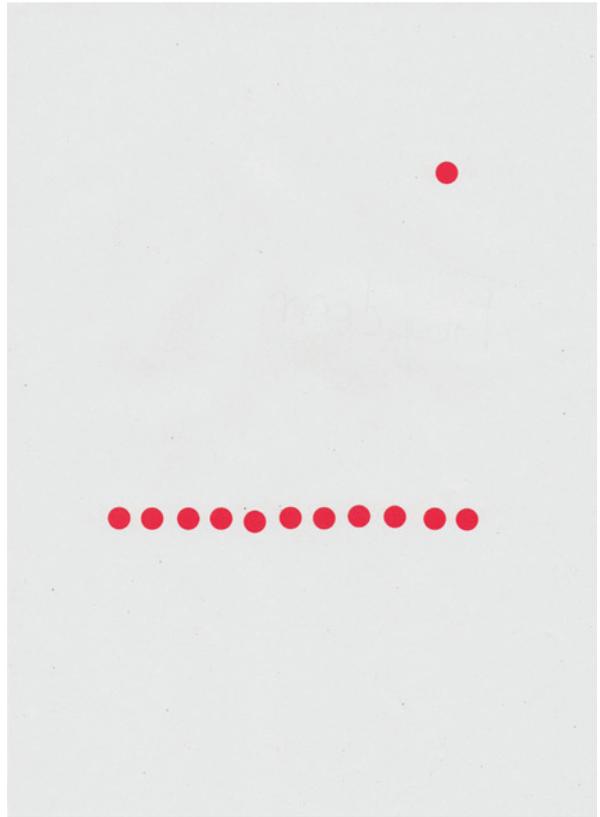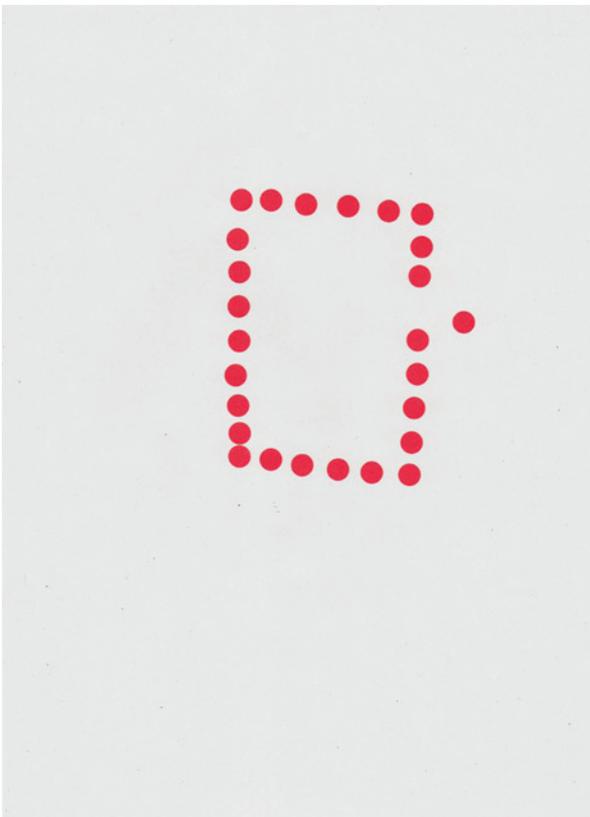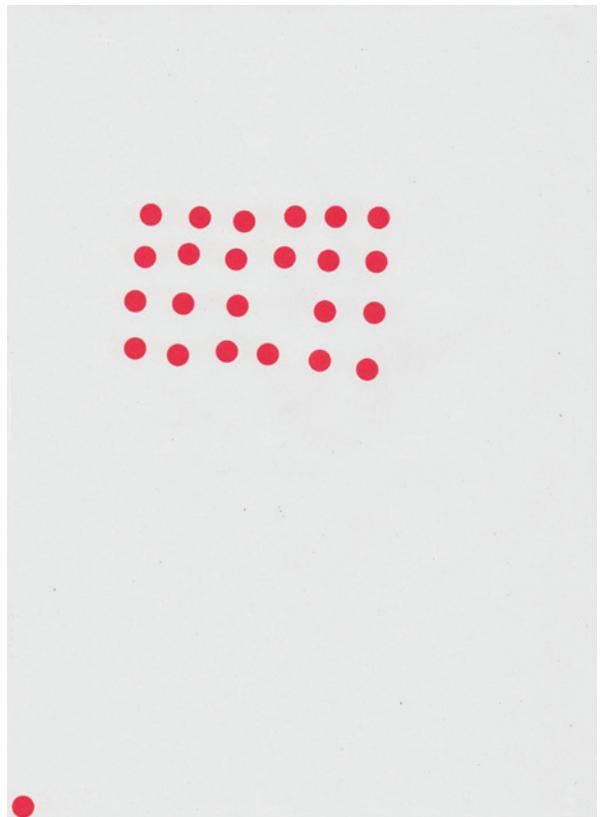
Freedom

Freedom

Freedom
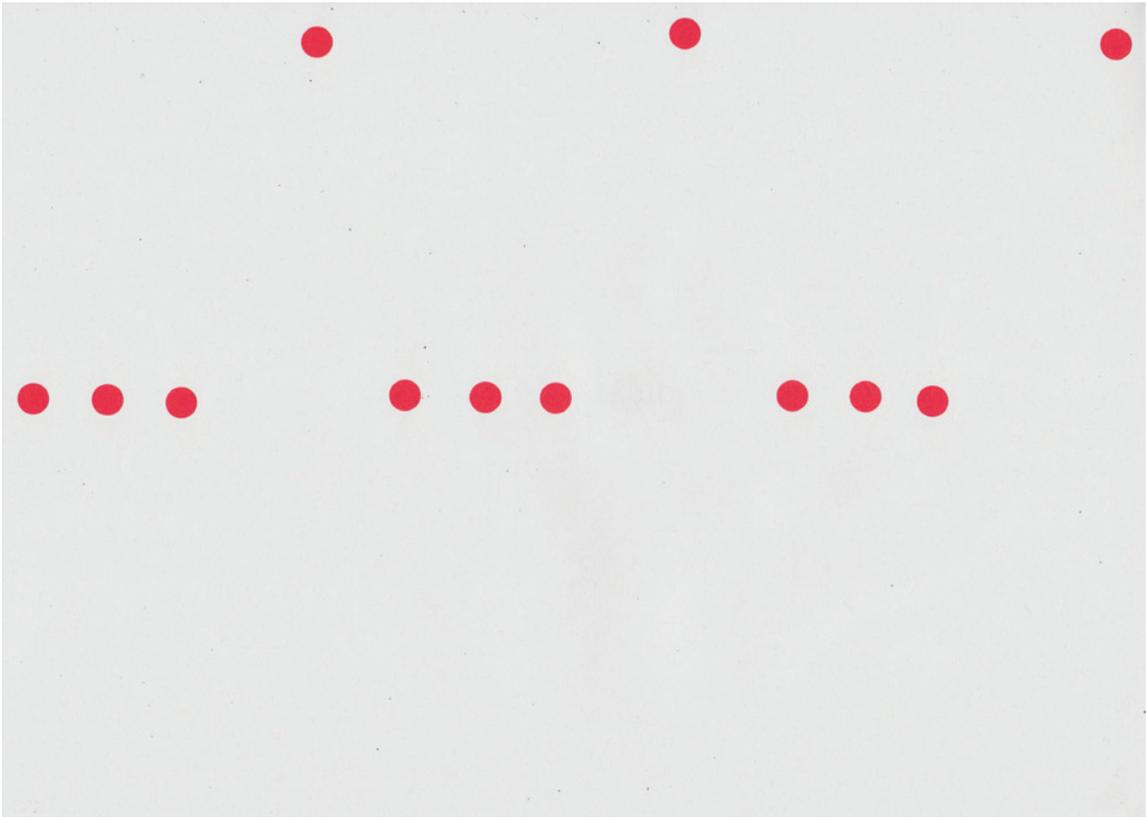
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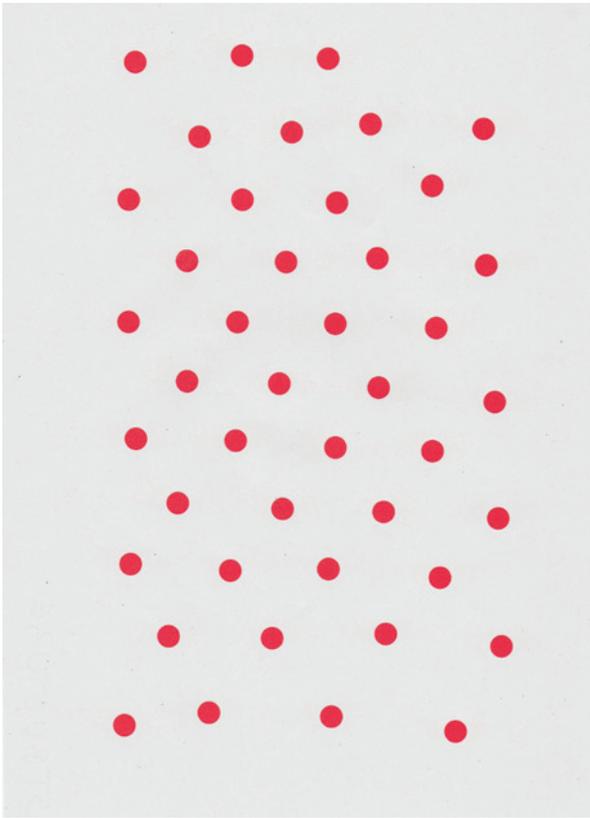
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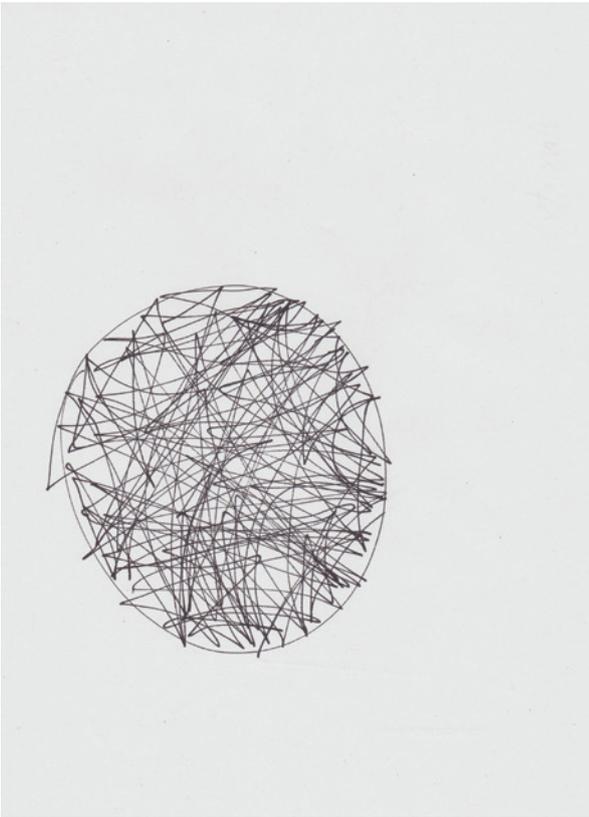
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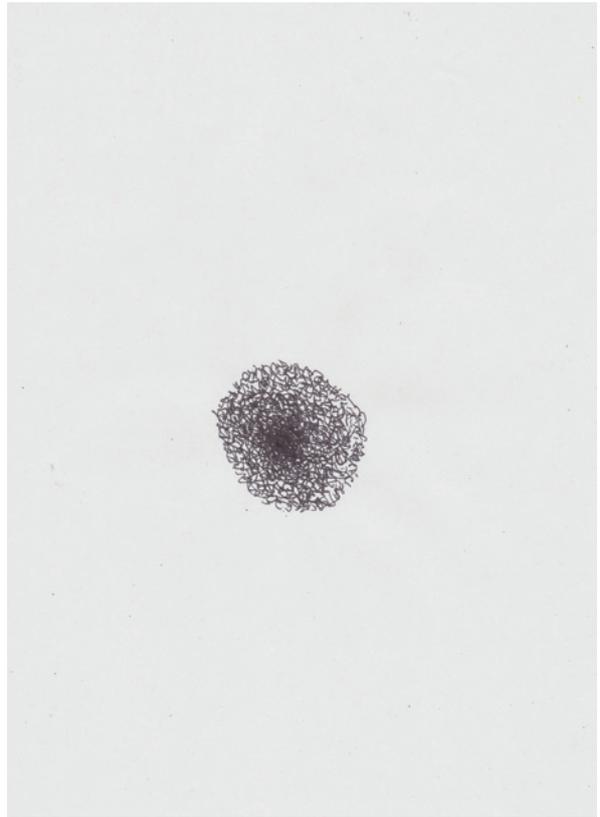
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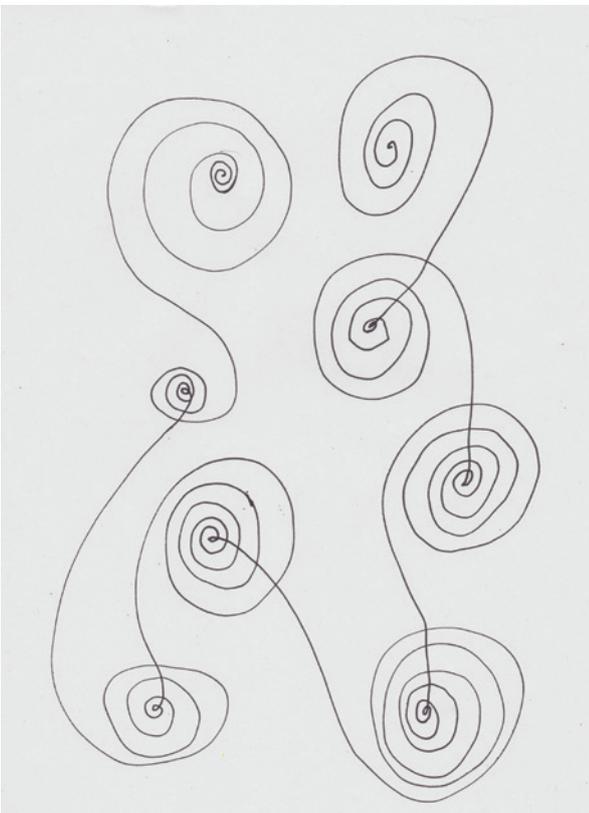
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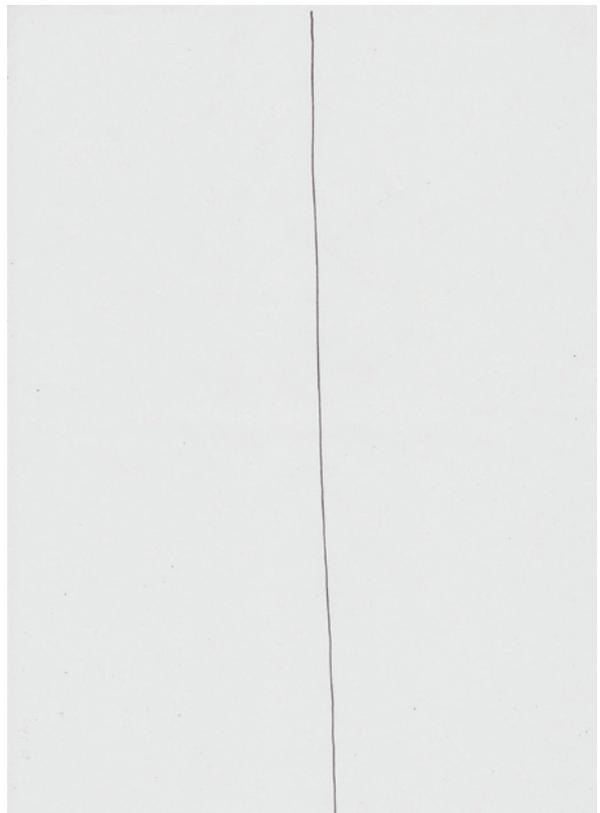
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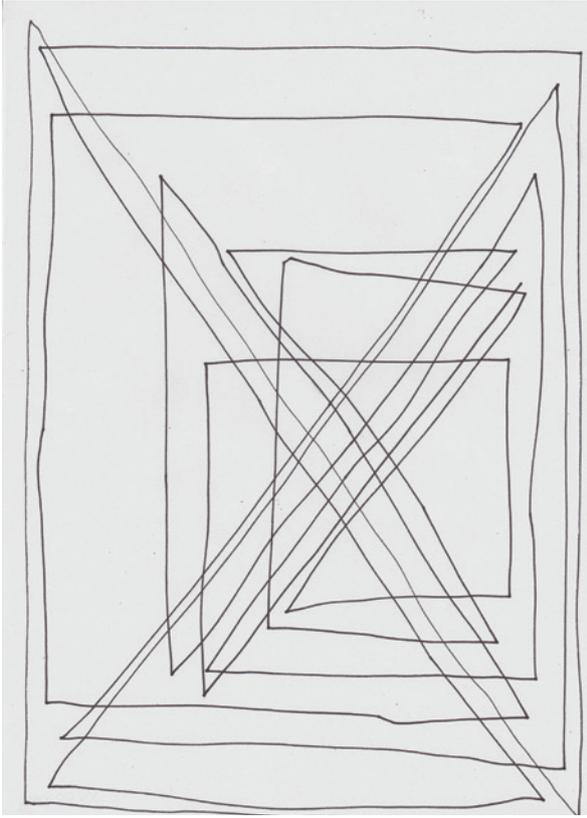
Freedom

Flow

Flow

Flow

337
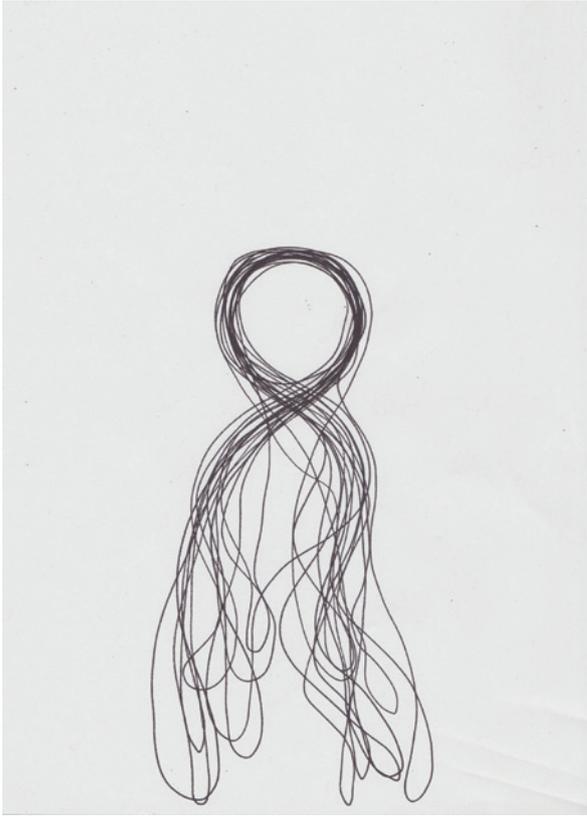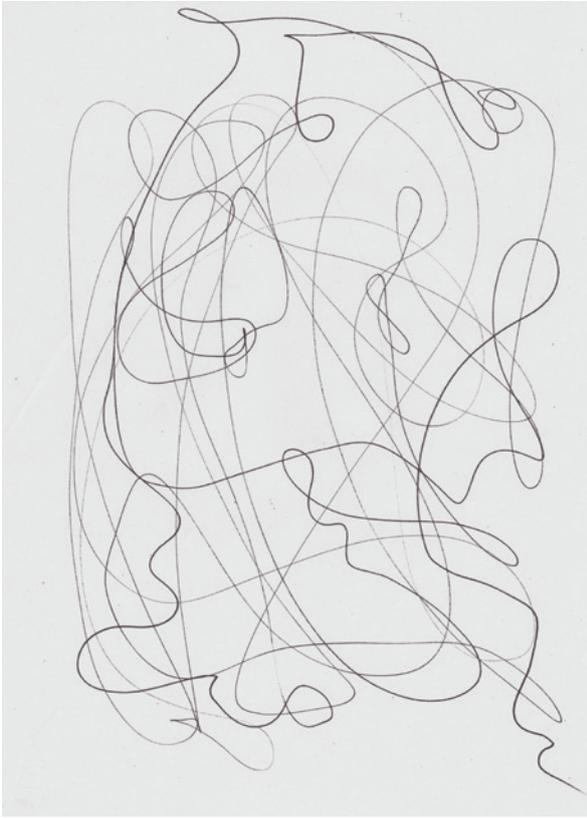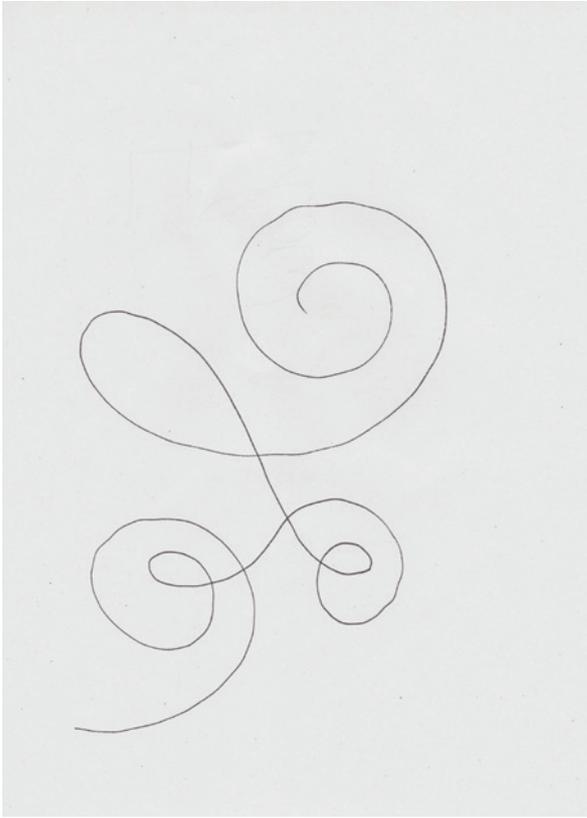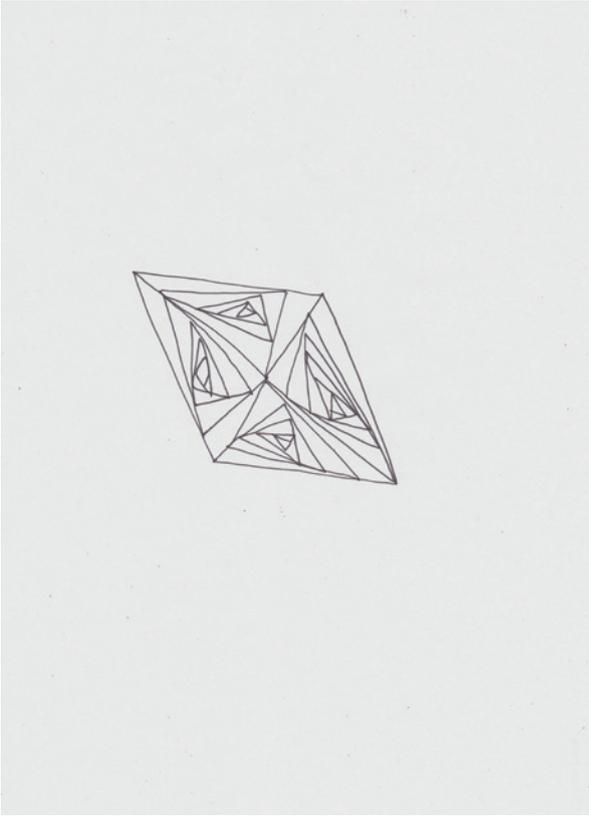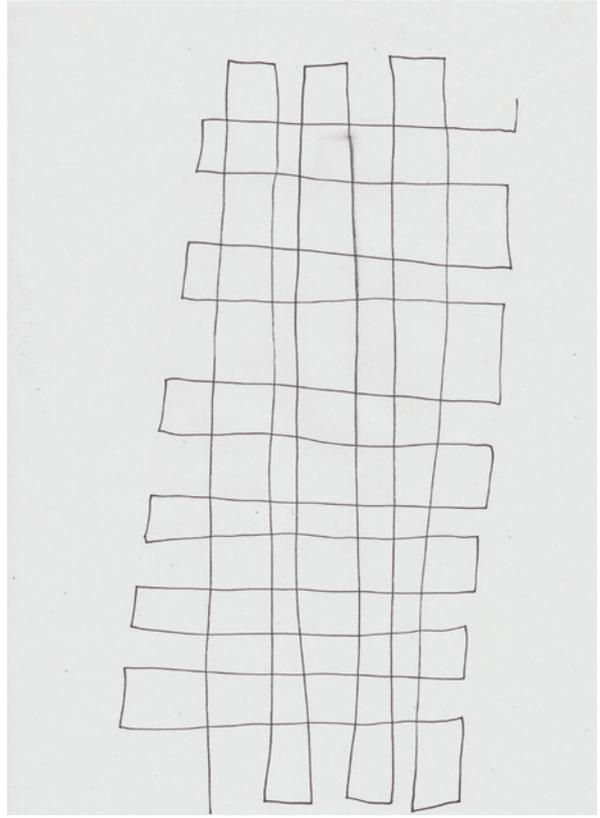
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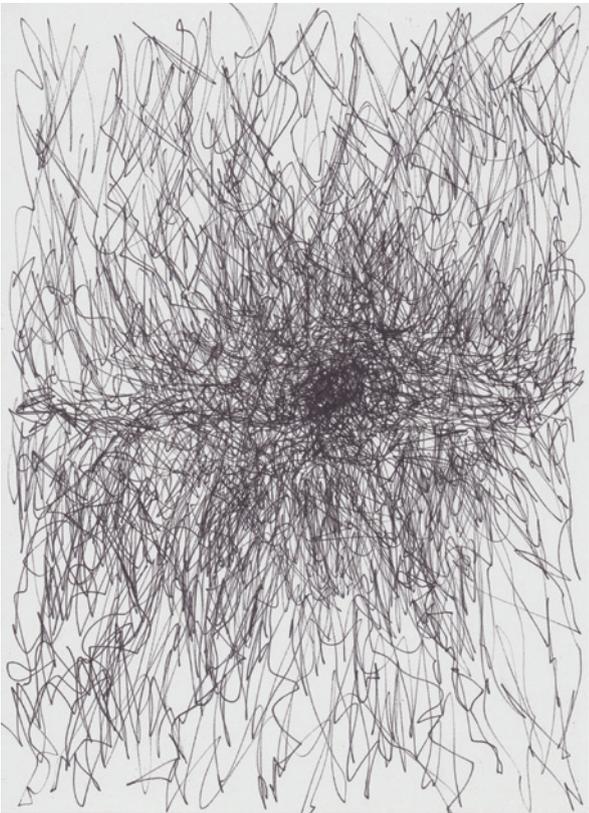
Tension

Activity #4: Plane
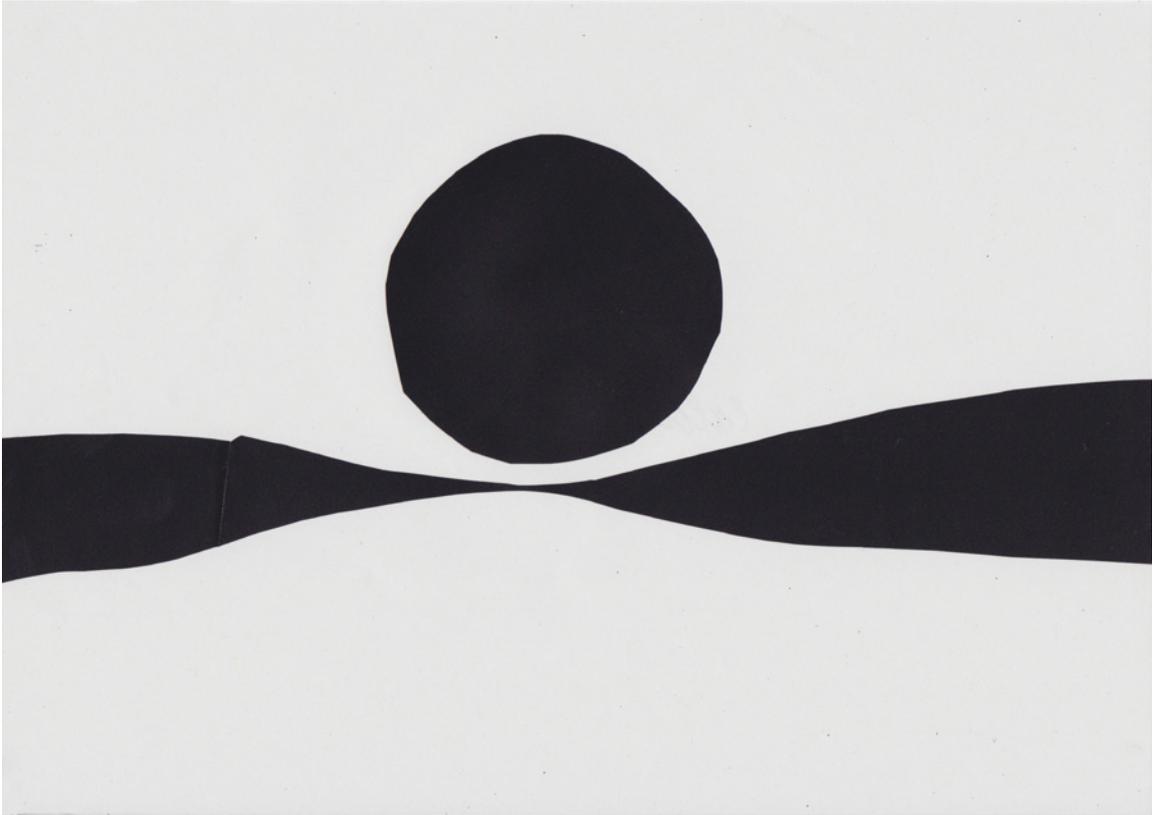
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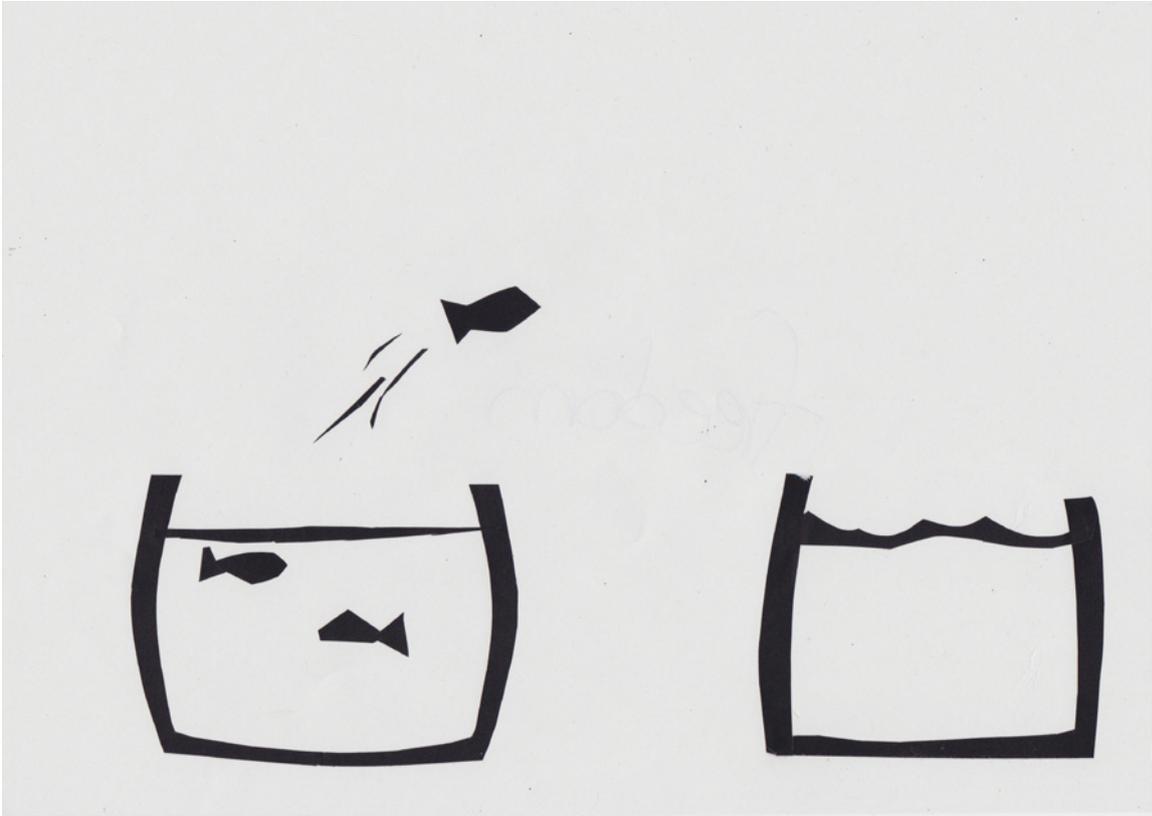
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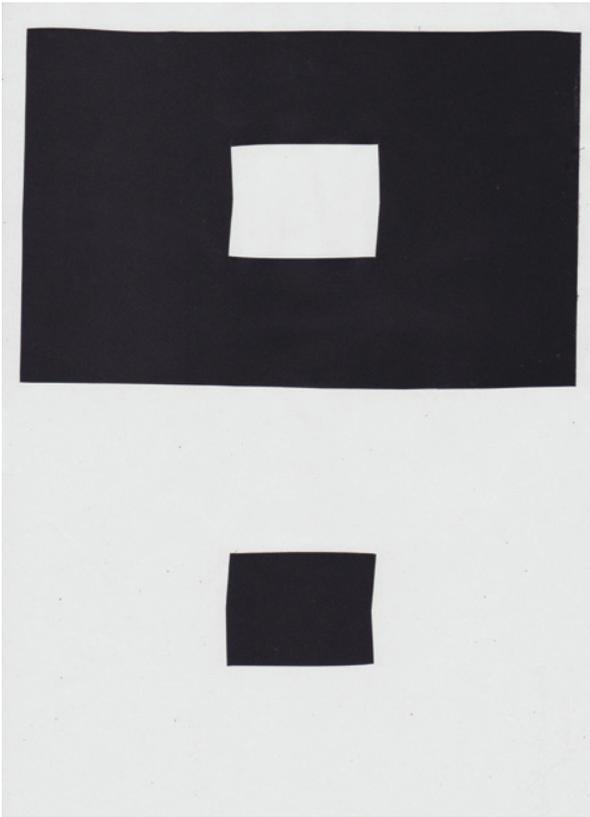
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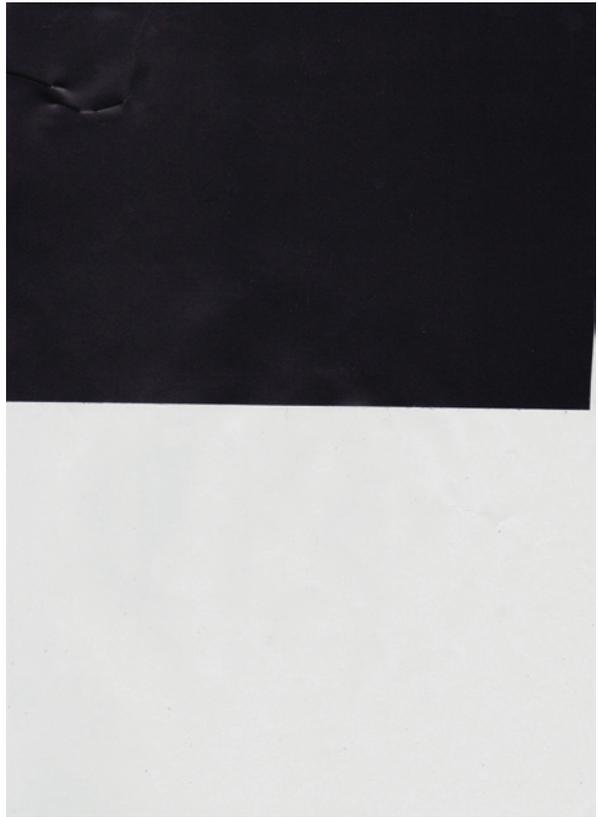
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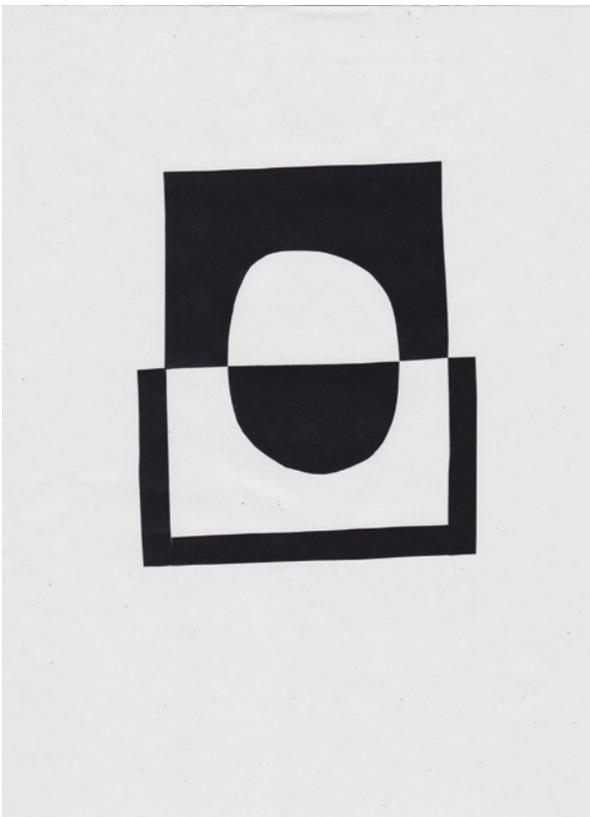
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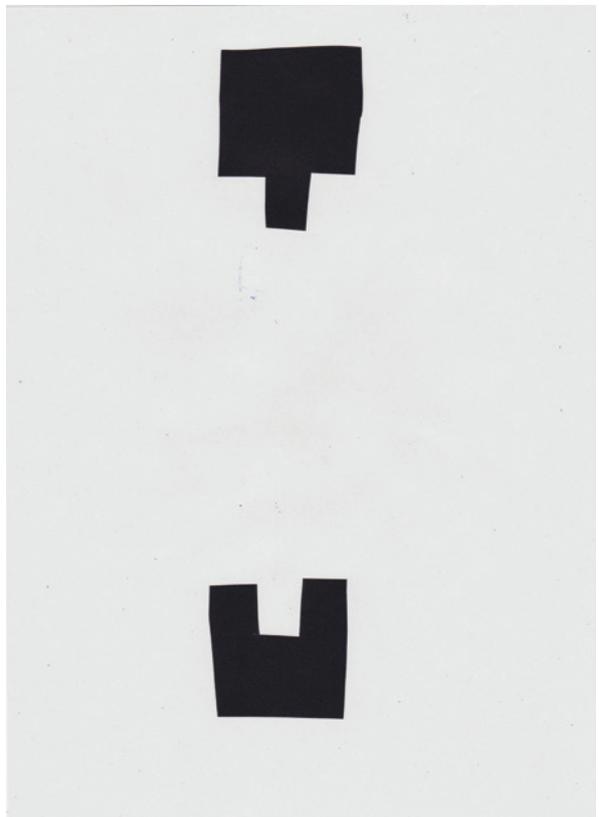
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Activity #4: Plane
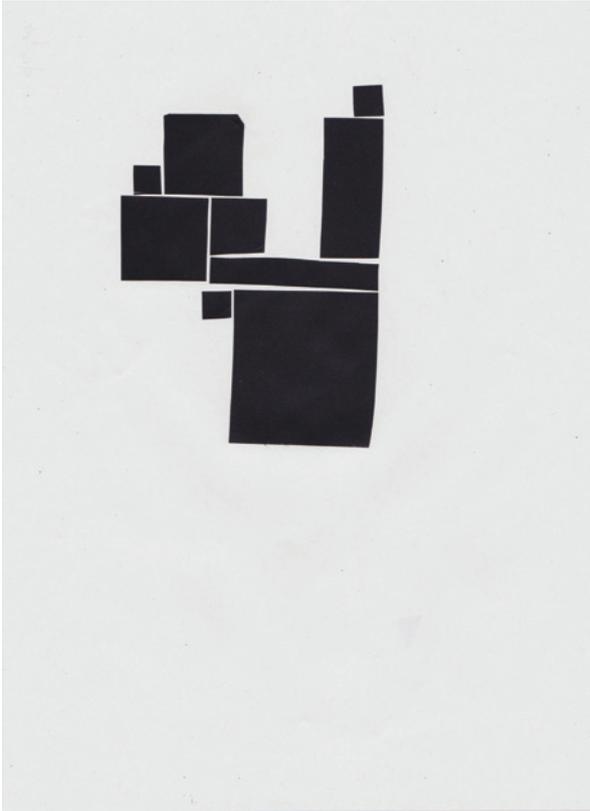
Structure

Rhythm

Class 3: **Notes**

- Only one practical class this week. Straightforward tutorials and students working on their projects.
- The other students were seen only if they came to the office time.
- The students are drawing thumbnails. Only a couple of students have drawn their roughs full page size.
- Some of the drawing that is being done is perhaps influenced by their methods of using the drawing software rather that really deciding on the shapes.
- Some students are still not at the stage of designing the pictograms. None are really using a grid. Only the student who is working with the stitching identified a modular system.

Class 4: **Ideas**

- There seems to be a need to give coaching on drawing techniques — how to create an approach to the design of the pictograms and also how to work and refine them.

Possible activities

- Freehand draw the images from memory.
- Different drawing materials and supports including limitations such as very small paper, using the left hand, drawing very large.
- Maybe there could be a workshop that focuses on working onto grids of different sizes. Drawing by hand and then digitising in illustrator. I could take the scanner and we could do an intensive drawing session.

Class 4: **Plan**

I give the students the following activities:

Activity #1: Memory drawing
The students must draw the five pictograms they are working on from memory. Then we compare with their digital designs to see if we can identify the most important elements of the design.
Materials: Blank paper and pencils / pens.

Activity #2: Using the grid
The students must draw at least one of their pictograms at a large size (A4) on a grid, using the whole page. This should help them to define the size of repeated elements and spaces.
Materials: A4 Grid paper and pencils / pens.

Class 4: **Notes**

- I start the memory drawing exercise as soon as students start arriving in the class room. I ask them to draw the pictograms they have been working on from memory.
- Some of them spend up to 30 minutes drawing.
- Most of the students can remember their designs in quite accurate detail.
- This exercise also reveals one or two students who still have not defined their project.
- Having the drawings on a single sheet also reveals some formal problems such as the balance between proportions.
- I suggest that the students show their work to one of their colleagues to get a fresh opinion, but they do not want to do this and only a couple talk to each other.
- I make some comments about reference books showing different uses of grids in pictogram design and typography.
- None of the students go to look at the books or magazines I have brought, but I use them in some of the individual tutorials.
- Some students are now quite far along on their projects and we are able to discuss many details such of their drawings — this is immediately productive as the students make developments in their work within the class.
- Other students are still working on ideas but some interesting ones come up:
  – superstitions
  – structure of music
  – methods of protest
  – relations between dominated and dominating forces on the countries.

Class 5: **Notes**

- The last class before the end of the project. I gave the students guidance on their projects.

Class 6: **The Crit**

ITERATION 1

- The students have brought their pictograms to the crit printed in two sizes.
- Each presents the work for 2 minutes.
- At first I try out an idea of how to give feedback, which was to allow 4 students to present, then to give feedback on the 4 sets of work all together. I want the students to comment as well, so I try reminding them of the four evaluation criteria: concept, form, quality, and presentation. This approach doesn't work well and the students don't make any comments.
- I make a couple of comments myself then allow the rest of the students to present their work.
- At the end of this process I make sure all the work is visible on the table, then give the students 5 minutes to choose a piece of work to make a positive comment about. I ask them all to stand.
- There are a couple of low level groans, but all of the students begin to circulate around the table, look at and discuss the work with some laughs.
- In the feedback session I then invite each student to make a positive criticism of one of their colleagues work.
- In each case I summarise the point that the student is making, then add additional comments of my own, always trying to look for general principles and positive points.
- Almost all the students find useful things to say although there are one or two who simply say that they like things because they are very well done.
- At the end of the discussion, which last about 30 minutes, I discuss the student's work that I find interesting but no-one else talked about.

- I summarise the class and this is the end.

ITERATION 2

- I repeat essentially the same class, but this time several of the students have not printed the work so there is some waiting at the beginning of the class while they resolve this. Eventually we give up and start the class. This breaks the flow of things somewhat — also this class is later (18-20h) and perhaps everyone is a bit tired — but this class is less energetic than the previous one.
- I notice that it is problematic that the first time we see each students work we are only looking at an A4 sheet from a distance and so I decide to change things in the next iteration.
- The discussion at the end of this class also works well, although again there is the problem that some of the comments only consist of saying "I like that one", and some of the students choose the same projects that have already been talked about.

ITERATION 3

This time I do things differently:
- I check if there is anyone that needs to print and send them off to do it (just one student).
- Then, I have all the students put their work out on the table at once, and encourage the students to walk around the table looking at it all. This way, once the students present the work there is no need to pass around the drawings as everyone has already seen them.
- The students each talk for 2 minutes about their work as before.
- This activity starts with everyone standing up, but after a couple of presentations I suggest that everyone should sit down.
- I just make a few comments to clarify that I have understood or to summarise what they say.

A couple of students run over the time and I have to remind them to speed up.

- Again I give the students the task of choosing av colleague's work to talk about, but this time I put more emphasis on giving constructive criticism rather than just saying which ones they like.
- In this iteration the discussion works better than in the previous classes. I build on, clarify or summarise the comments of the students and in some cases take the opportunity to note general principles and common problems that occur. Several students are able to do this themselves and point out general principles at work in the projects.
- Some discussions occur between students at this point and I notice there are a lot of positive comments and there is a supportive atmosphere in the dialogue. In addition, some students make comments that I was intending to state but didn't need to in the end.
- I also notice that after having their work chosen and discussed in positive terms by their colleagues, some of the students talk more freely and naturally about what they would like to change or do differently in their projects.
- I decide I should base the next crit on this method.

GENERAL REFLECTION

- This is one of the most successful crits I have been part of in terms of student dialogue. I attribute this to giving the students time to form their ideas for comment, and the system of making sure that each student is asked to comment.
- Also, because they must make constructive criticisms about their colleagues work, choosing from a whole group, it is easy for them to find something they can talk about, and the pressure is reduced because this all happens in a 'round table' style dialogue.

UNIVERSIDADE DE COIMBRA
FACULDADE DE CIÊNCIAS E TECNOLOGIA
LICENCIATURA EM DESIGN E MULTIMÉDIA 2016/17

DESIGN E COMUNICAÇÃO

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EXERCÍCIO #2 – CARTAZ

INTRODUÇÃO

"No decorrer da história, imigrantes enriqueceram seus novos países com seu conhecimento, tradições e cultura. Não há nenhum campo do conhecimento humano que não tenha sido beneficiado por influências externas. Se continuarmos olhando apenas dentro de nossas fronteiras e nos fecharmos para os outros países, iremos retroceder e não avançar. (…) Pessoas de diferentes nacionalidades trazem cor, diversidade e vida para o mundo. Se fecharmos fronteiras e construirmos muros para 'deixá-los' de fora, só conseguiremos afundar na escuridão."

(Excerto do regulamento do concurso Poster for Tomorrow 2017)

PROJECTO

Pretende-se que, individualmente, cada estudante desenvolva um cartaz com o intuito de promover e de consciencializar sobre a necessidade de livre circulação. O resultado final deverá ser submetido ao concurso internacional de cartazes "Poster for Tomorrow 2017" cujo tema é "Freedom of Movement".

Cada estudante deverá, portanto, responder ao briefing e ao regulamento do concurso "Poster for Tomorrow 2017". Consideram-se o briefing e o regulamento deste concurso como anexos e partes integrantes deste enunciado, ao qual os alunos deverão responder na íntegra e em absoluto.

PALAVRAS-CHAVE

Comunicação visual, mensagem, slogan, conceito, transmissão, signo, significado, significante, sinédoque, símile, metáfora, metonímia, representação, identificação, intertextualidade, perspectiva, objectividade, compreensão.

MATERIAL AVALIATIVO

Para a entrega final cada estudante deverá desenvolver um cartaz e uma breve sinopse explicativa.

O trabalho deverá ser submetido das duas seguintes formas:
1. Submeter através do InforEstudante os seguintes dois ficheiros:
    a) cartaz de orientação vertical num ficheiro .jpg com o tamanho de 2953x4134 pixels na resolução de 150dpi (o que corresponde às dimensões 50x70cm) em color mode RGB;
    b) sinopse num ficheiro de texto no máximo de 600 caracteres incluindo espaços.
2. Entregar pessoalmente uma cópia do cartaz em papel no formato A3.

Para as aulas de apresentação e defesa dos trabalhos, cada estudante deverá preparar uma apresentação oral com uma duração máxima de dois minutos.

CRITÉRIOS DE AVALIAÇÃO

Cada um dos seguintes quatro parâmetros equivale a 25% da avaliação final do exercício:
a) Conceito (pertinência do tema, interpretação, investigação, proposta conceptual);
b) Formalização (tradução do conceito numa imagem, volume de trabalho, complexidade de execução, inteligibilidade);
c) Qualidade (qualidade plástica e tecnológica, afinação gráfica, resolução, acabamento);
d) Apresentação (capacidade de síntese, articulação oral, expressividade, defesa).

PRAZOS

22 de março (quarta):
Apresentação da proposta de trabalho.

29 de abril (sábado), 23h59:
Prazo limite para submissão do material avaliativo (ficheiros digitais) no InforEstudante.

2 e 3 de maio (terça e quarta) – aulas PL1, PL2 e PL3:
Entrega da cópia em papel.
Aulas de apresentação e defesa dos trabalhos.

Nota: A submissão do cartaz ao concurso poderá ser efetuada posteriormente à avaliação.

10 de julho (segunda):
Prazo limite para submissão do cartaz ao concurso.

Class 7: **Workshop 2:**

Design Decoding

Project: Ex#2 — Posters for Tomorrow
Duration: 2 hours

Aims

This workshop followed a theory class that discussed a series of political and activist graphics that use visual ideas — especially visual puns, metaphors, and juxtapositions. The aim of the workshop is to assist the students in the process of analysing the elements that construct meaning in the example posters, and to apply these principles to the to the conceptual process of constructing graphic messages in their poster designs. Particularly the process of generating ideas through systematic exploration. This workshop should give the students a practical process to follow to generate ideas. A secondary aim is to get the students to generate ideas through team working — by discussing with their colleagues.

Description

Ask the students which to make a sketch of the graphics that they can remember from the preceding theory class. Using these drawings as source material make a class discussion. Highlight the essential elements of the posters and how they are constructed to make an image. Analyse what function each element has, what it represents, how it effects the meaning of the other elements.

Luba Kukova
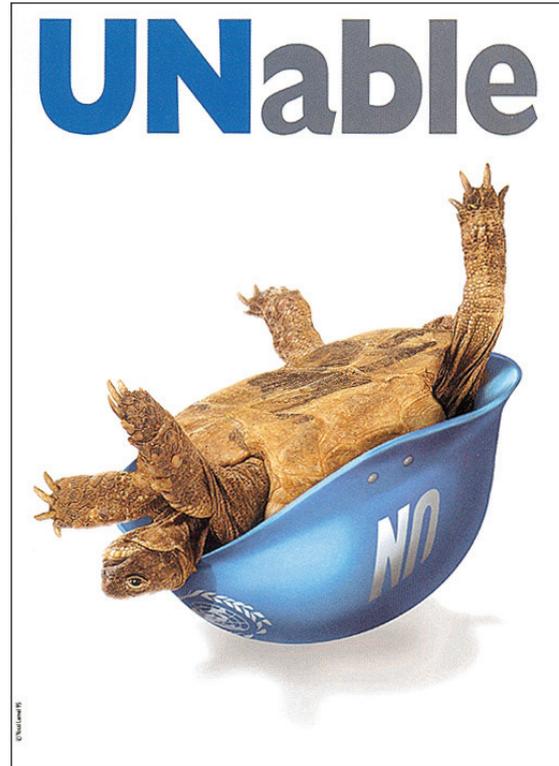
Yossi Lemel

Banksy mural, Bethlehem.

Example questions to stimulate the discussion using Banksy's 'Flower Thrower' mural as an example:

- What do flowers represent?
- What do we do with them?
- What sort of occasions?
- What is the man doing?
- What sort of person is he?
- How do we know?
- What clues are there in the image?

Put the students in small groups and ask them to list possible symbols and objects that are related to the Posters for Tomorrow brief. Compile these symbols and images on the white board. Lead a discussion about applying the principles of metaphor, visual puns and juxtaposition could be used to combine these symbols.

Materials

Blank paper, pencils, crayons.

Workshop 2: **Student work examples**

In this workshop, the drawings produced were intended as tool to aid the discussion. The students were asked to draw some of the posters and other graphics that they had been shown in the preceding theory class. Their sketches are shown here next to the original graphic works. There was a six day gap between the theory and the practical classes.



Student's sketch
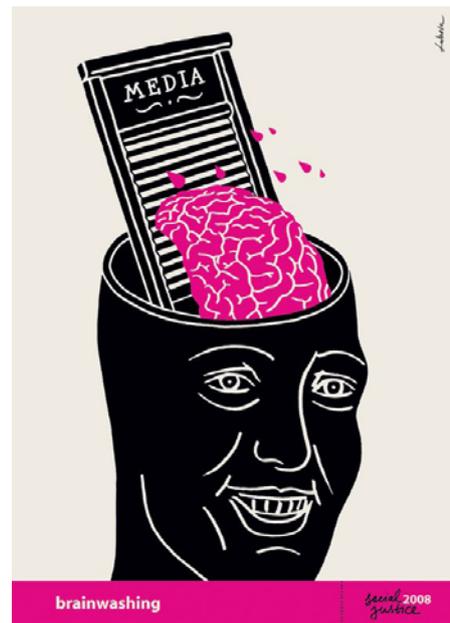
Luba Lukova

Workshop #2 Student Work
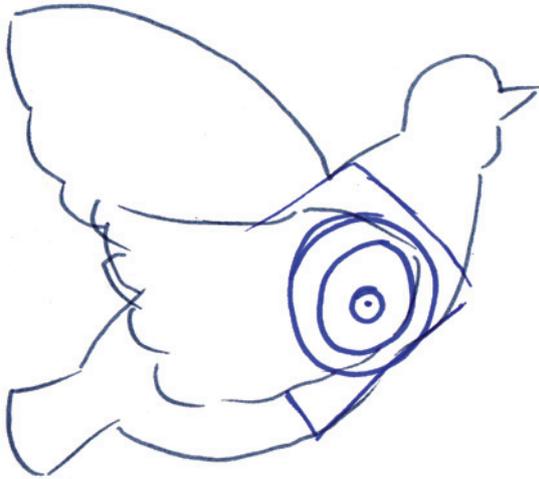
Student's sketch

Banksy
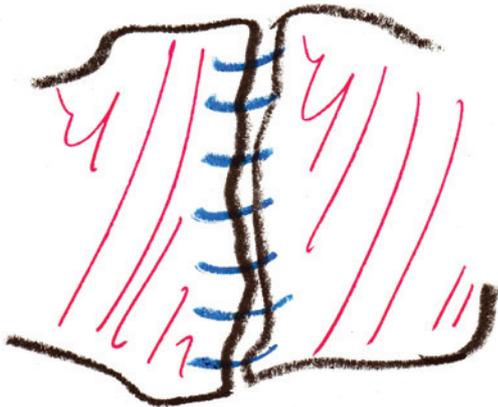
Student's sketch
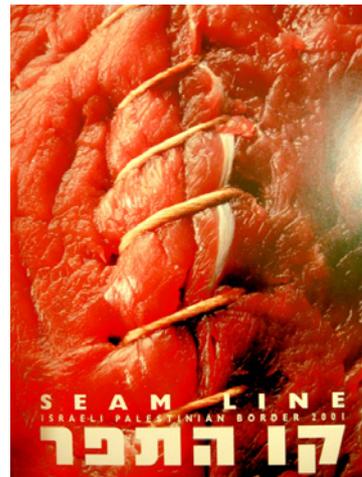
Yossi Lemel
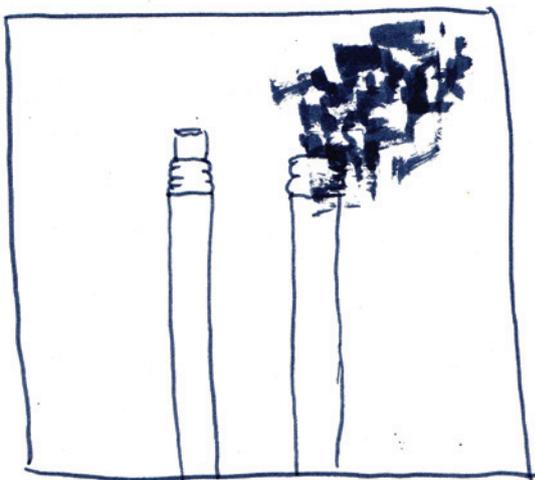
Student's sketch

Yossi Lemel

FIRST ITERATION

- There were two main problems with the idea of making a long activity for this class:
  - Some of the students hadn't been to the theory class so they didn't know what they were supposed to be remembering.
  - Some of the students hadn't read the brief or said they hadn't decided what they thought about it.

  To adapt to the first problem, I told those students they could draw any political poster they could remember.
- The second problem however meant that it was necessary to abandon the idea of spending the class generating ideas as a group. Since the students still needed to read the brief for the exercise from the course and the information and brief on the *Posters for Tomorrow* website, this meant that it was necessary to give them time to read and think about the subject instead.
- One of the students said that a friend of hers had told her about the theory class, so she was able to draw the poster from what her friend told her.
- The initial exercise of analysing the posters that they could remember worked reasonably well. The students remembered:
  - Banksy: policemen kissing, flower throwing protester and the girl with balloons from Palestine.
  - Yossi Lemel: Make Poverty History poster of a child in a bell jar and the Israel and Palestine themed posters of two severed hands in a handshake and two pieces of meat sewn together aomgst others.
  - Luba Lukova: Media Brainwashing poster.
  - A photomontage of politicians bodies with starving children's legs
- Writing on the board, I established several principles such as:
  - Using common sayings such as 'brainwashing' — which had to be treated literally to work.
  - Using symbols to represent ideas: such as police for authority, doves for peace, targets for war.
- We discussed the way the posters worked by using juxtaposition or similarites in form to create shock and humour.

SECOND ITERATION

- In the second class, many of the students take out their work straight away and already have some ideas that they are starting to develop.
- One thing that I notice is that several of the students pick up the paper, coloured pens and crayons that were left from the previous class and begin drawing with them straight away. I decide to run the class more like usual and let them start working, I spend my time talking to them individually or in small groups, but publicly — talking in such a way that others can hear the conversation and I make points that can be heard by the rest of the room.

ITERATION THREE

- I start the class by asking the students if they have read the brief, again, some have but many haven't. None have read the full competition details on posters for tomorrow.
- I suggest that they read it in detail.
- I give them references for some designers including Jean Jullien.
- I tell them the story of Jullien's peace for Paris logo.

Reflection
- This workshop had to be practically abandoned and turned into a normal class. Designing the workshop in such a way that it would only work if the students had attended the theory class and read the brief in detail did not pay off. It would be better to find a way to make the workshop more self-contained.
- The workshop also lacked some activities that would help the students identify the conceptual principles at work in the example graphics. This should have been the focus of the workshop.

Class 8: **Notes**

- This class was used to tutor the students on their projects.
- Many of them had ideas already at the stage of thumbnail sketches. Some had several ideas.
- Typically the students were combining too many ideas in one poster, trying to combine several symbols, such as the wall, the world, various people, rainbows, bird cages and so on.
- One student had downloaded a drawing of a birdcage and was going to copy it, I had to give a clear warning that this was not acceptable.
- Another student had an idea of a poster about the death penalty. I advised her that this was too indirect and that she should reconnect to the theme.
- With several students I had conversations about idea generation and the importance of sketches and making mind maps and lists.
- With other students the conversations focussed more on refining and clarifying ideas by redrawing the elements in the posters in different combinations or relations to really make the visual message as clear and coherent as possible.

Class 9: **Notes**

- This week there is only one class, the Wednesday morning one, the others were cancelled due to the 25 Abril holiday.
- I send a message to the students telling them that they can go to have extra tutorial sessions on Friday morning.
- So the only full class is the PL2. I bring in a copy of Eye magazine with a feature on political posters and a book of gig poster design. I point some of the more interesting material.

Class 10: **Notes**

- This was the final class before the submission of the poster project. Therefore it consisted mainly of guidance on individual's projects.

Posters for Tomorrow Crit

Project: Ex#2 — Posters for Tomorrow
Duration: 2 hours

Aim

This crit format is intended to encourage critical thinking and facilitate discussion between the students. The process is also intended to give the students the opportunity to reflect on their own work when seen alongside their colleagues and to find out what their colleagues think about it.

Description

All students must print their posters at A3 size. Place all posters on table. Give the students a sheet to fill in that consists of the following fields:

- Select a poster that interests you.
- State what you think works in the idea and design.
- What would you change to improve it?

The students should be given time to look at and discuss the posters, making their observations. Once all the students have done this, ask each student in turn which poster they chose, and what their observations are. The teacher contributes any insights of their own after the students comment.

Choose a poster that interests you:

Carolina's

State what you think works in the idea and design:

I like the idea of the drawing imminent. I also favoured the textures she used. It turned out to be very different and I ~~expressive it~~ ~~feel~~. feel it is very expressive. *I would do a more natural position ~~bottom~~ – body facing down

What would you change to improve it?

*

Choose a poster that interests you:

Liberty statue without the torch

State what you think works in the idea and design:

The idea that with those walls we're building the states are no longer ~~illuminated~~, they are swarming in the darkness the constitution is reckless

What would you change to improve it?

only would put the statue also with the ~~site~~ torch blown (not unlighted) because they're no longer aiming for enlightenment and the arm could be drawn a little more better because I don't get the feel that it comes from the same body

→ **Choose a poster that interests you:**

The "forbidden" poster

→ **State what you think works in the idea and design:**

the way that the sign can be changed into a plus. It's a metaphora. Turn negative to positive

→ **What would you change to improve it?**

The background. Maybe add some shadows

Choose a poster that interests you:

1 - Turn minus into plus
2 - You're not in the light if you have no shadow

State what you think works in the idea and design:

1 -
- Good combination between words and image
- Strong idea, works very well as a poster.

2. - Nice image and composition
- The paper airplane with chairs is a clever metaphor.

What would you change to improve it?

1. I would take off the sentence turn a minus into a plus, it's too much redundant, you already have the image to tell you that.

2. I would change the sentence to a more meaningfull one, that has more relation to the image.

The one with the books representing steps.

State what you think works in the idea and design:

I think this poster is an excellent idea that people should break all those walls and agree some terms and conditions so no one has to suffer from the inhability of movement to move.

What would you change to improve it?

Nothing.

Choose a poster that interests you:

The one with the "We are sorry for the inconvenience this construction may cause you"

State what you think works in the idea and design:

I think it was a clever idea, considering that the constructions cause trouble for people to walk around, etc, and in this case the problem has to do with the freedom of movement between countries and political issues.

What would you change to improve it?

The wall itself should probably have been done more carefully and the placement of the forbidden sign as well.

Choose a poster that interests you:

Wells won't bring you peace

State what you think works in the idea and design:

Simplicity simple and clear, everyone can reach the message. The sarcasm of using the peace sign on the wall is really intriguing and it tells the message using really simple and few elements.

What would you change to improve it?

Can't think of something I would change. Just make me think if it would be enough powerfull eventhough it's really smart

Choose a poster that interests you:

the one that interests me the most is the one with a 2 billboards.

State what you think works in the idea and design:

After some time thinking we can reach the idea that the poster tried to send.

What would you change to improve it?

Actually, it's really hard to understand the message on the instant you need it, because it's to complex and you have to think some time to reach its goal. I would try to change the graphics. (the design of it).

Choose a poster that interests you:

"Can't Scream"

State what you think works in the idea and design:

I think a metaphor (visual) is always a good idea. High context also gives it a impactful feeling as well as the font.

What would you change to improve it?

I'd maybe change the typography (structural) organization, but I think it's good is as well.

Choose a poster that interests you:

① "Open mind can change lives"

② "Turn a minus into a plus"

State what you think works in the idea and design:

① I like the idea ant the sentence, it's simple and complete. It shows that close our minds is the same that close barriers and it will have a consequence on other people's lives.

② The poster is very clean and attractive at the same time. It's a simple and strong idea. It's impactant and makes me want to look at it.

What would you change to improve it?

① Maybe I would use the word "minds", on plural, to represent the idea of the union and group, saying that we can't do anything alone.

② Maybe I would give more emphasis to the text, to call for the attention of who is reading it. It's a little small and soft.

- Some conversation as the students made their choices and started writing.
- With one particular student a small and interesting discussion started because he had decided to make a poster that was not wholeheartedly pro freedom of movement and he wanted to explain that position. This was received positively by the other students and led to some agreement and constructive comments.

ITERATION 2

- One of the students made the observation that it best to choose work to comment on that has some problems so that they have more to say. I could have made this more clear as it obviously helps.
- In this second class the students were surprisingly quiet and concentrated when they made their selection and written comments. Even though the classroom was full there was very little conversation at this stage.

GENERAL OBSERVATIONS

- Some students seem to prefer not to accept the problems with their work. However the format of having the students commenting worked here because the student who chose to comment on this work confirmed that he did not interpret the image in the way the author had intended. This happened without the need for my intervention but unfortunately the author of the work did not appear to accept the point.
- A potential problem with the students choosing which posters to comment on could have meant that all of them chose to talk about the same poster but in fact the spread is fairly even. Some of the posters ended up with two or three students commenting on them but this was rare.
- When no students commented on a poster I had to go straight to the comments but because the posters

were out on the table from the start of the class it gave enough time to have another look at them all so this gave me more time to make observations.
- Some additional discussion occurred while I was making my observation and suggestions. This was a positive response since the students had more to add to the things that I was saying.

REFLECTION

- This format for the crit resulted in a more active and open atmoshpere and encouraged the students to contribute more to the discussion. They also received richer feedback since most students received comments from their peers.
- One hopes that the fact the students had to consciously look for problems and analyse the projects contributed to their ability to look at their own work — would it be possible to test this somehow?
- The written comment sheets also have the advantage of creating a record of the students' ideas, perhpas this could be used as source material for further research.

DESIGN E COMUNICAÇÃO

DOCENTES: NUNO COELHO (REGENTE) <NCOELHO@DEI.UC.PT>, PAUL HARDMAN <PHARDMAN@DEI.UC.PT>

EXERCÍCIO #3 – BANDEIRA

INTRODUÇÃO

Uma bandeira nacional é uma representação gráfica do respetivo país através do uso de cores e/ou de símbolos, sendo a representação gráfica mais expressiva e a mais internacionalmente reconhecível de cada um dos países do mundo. A maior parte das bandeiras nacionais têm formato retangular (proporção 2:3), embora também existam bandeiras de outras formas. Desde a sua fundação em 1139 (apenas reconhecida em 1143), Portugal já teve cerca de vinte bandeiras nacionais diferentes. A atual bandeira foi adotada a 30 de Junho de 1911 em consequência de um concurso promovido pelo governo republicano após a abolição da monarquia no ano anterior.

PROJECTO

Partindo de princípios semióticos apresentados na aula, pretende-se que, individualmente, cada estudante desenvolva uma nova proposta para a bandeira de Portugal recorrendo ao uso de cores e/ou de símbolos.

Cada estudante poderá apresentar a sua proposta numa das seguintes três perspetivas:
a) manter rigorosamente a bandeira nacional atual, justificando para isso a sua escolha;
b) alterar pormenores (pela subtração e/ou adição e/ou alteração de elementos gráficos) da bandeira nacional atual, justificando para isso a sua escolha;
c) conceber uma bandeira completamente nova, justificando para isso a sua escolha.

Cada estudante deverá produzir duas imagens de orientação horizontal, de acordo com o modelo exemplificativo em anexo a este enunciado:
Primeira imagem – bandeira a ocupar a superfície total da imagem;
Segunda imagem – identificação do/a estudante e explicação da proposta.

PALAVRAS-CHAVE

Semiótica, cor, símbolo, memória, identidade coletiva.

MATERIAL AVALIATIVO

O trabalho deverá ser submetido das duas seguintes formas:
1. Submeter através do InforEstudante duas imagens A4 de orientação horizontal em formato .jpg na resolução de 300dpi;
2. Entregar pessoalmente as duas imagens A4 impressas em papel.

Nota importante: a avaliação incidirá essencialmente na produção de sentido, na justificação das escolhas relativas à proposta apresentada e na argumentação oral ao longo do processo deste exercício.

CRITÉRIOS DE AVALIAÇÃO

Cada um dos seguintes quatro parâmetros equivale a 25% da avaliação final do exercício:
a) Conceito (pertinência do tema, interpretação, investigação, proposta concetual);
b) Formalização (tradução do conceito numa imagem, volume de trabalho, complexidade de execução, inteligibilidade);
c) Qualidade (qualidade plástica e tecnológica, afinação gráfica, resolução, acabamento);
d) Apresentação (capacidade de síntese, articulação oral, expressividade, defesa).

Para as aulas de apresentação e defesa dos trabalhos, cada estudante deverá preparar uma apresentação oral com uma duração máxima de um minuto.

PRAZOS

17 de maio (quarta):
Apresentação da proposta de trabalho.

3 de junho (sábado), 23h59:
Submissão do material avaliativo (ficheiros digitais) no InforEstudante.

6 de junho (terça):
Entrega das cópias em papel.
Aula de apresentação e defesa dos trabalhos.
Debate coletivo sobre os trabalhos.

ANEXO – MODELO EXEMPLIFICATIVO DAS IMAGENS

Primeira imagem – bandeira a ocupar a superfície total da imagem.
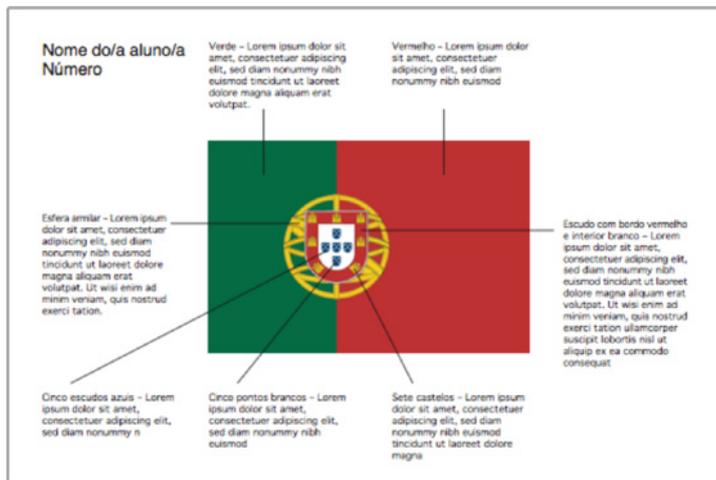
Segunda imagem – identificação do/a estudante e explicação da proposta.

National Flag

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Project:    Ex#2 — The Flag
Duration:   2 hours
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Note

This workshop was conceived by Nuno Coelho who had already run it in previous years. It is important that the students have not seen the brief for the flag project when they participate in this workshop.

Aims

The aim of this workshop is to stimulate the students to think about symbols and their meaning when related to national identity. It requires them to look closely at the national flag of Portugal and to consider the significance of each aspect to the design. The exercise draws attention to the relation between design and ideology.

Description

Part 1

1. Without any preparation or the chance to look at a reference, the students are given the task of drawing the Portuguese national flag from memory. The are given coloured drawing materials and paper for this task.
2. Since the flag is composed of various elements including areas of colour and a relatively complex coat of arms, the students must try to remember all of these elements and also correctly combine them paying attention to position an proportion.
3. Once the drawings are finished, they are discussed as a group and compared to see if a concensus can be reached about which is the correct version.
4. The real version is then shown to the students and they are asked about all the elements on the flag.

Flag construction

The correct construction of the Portuguese flag has several elements and rules, the most important of these are the following:

- The proportion of the flag is 2:3
- The background is divided into two coloured fields, green on the left (2/5 of the width) and red on the right filling the rest of the space.
- These colours appeared on the flag in 1910 and have their origins in the republican flags used in periods of revolutionary conflict.
- The grouping of several symbols in the middle of the flag consists of a yellow circle (the armillary sphere) that represents a navigators globe, made of six embossed bands: the ecliptic, the equator, and the two meridians and the two tropics.
- The tropic of capricorn is incomplete in the official drawing of the flag.
- In front of the sphere is the national shield consisting of:
- A red border displaying seven castles.
- A white centre shield displaying five blue shields arranged in the form of a cross. Each blue shield has 5 white dots which are known as bezants in heraldic terminology. A bezant is a gold coin, but in this case the dots are white (argent). They represent the 30 pieces of silver given to Judas but also the 5 wounds of Christ.

Part 2

1. The students are then put into groups of three or four and given a set of 11 postcards. Each card has an image of a historical Portuguese flag from the first to the current flag.
2. The students must work together to form a consensus about the correct order of the historical flags. They can base this on their historical knowledge but there is also an visual logic to the development that can be perceived to some extent.
3. Once each group has decided on the correct order, the teacher can reveal the actual order and opens a discussion about the changes in the flag and the significance of the changes related to history and politics.

Materials
- White A4 paper
- Coloured pencils
- 7 sets of the full sequence of Portuguese flags on cards

Workshop 3: **Student work examples**

These pages show some of the drawings that the students made of the Portuguese flag, drawing from memory. There were many students who could draw all the details of the flag with the correct colours and proportions while others made mistakes such as reversing the green and red areas, or left the amillary sphere and coat of arms vacant. However the point of the workshop was not to draw a perfect flag but to open a descusson about the iconography of the flag and draw wider conclusions about the political and ideological nature of design.
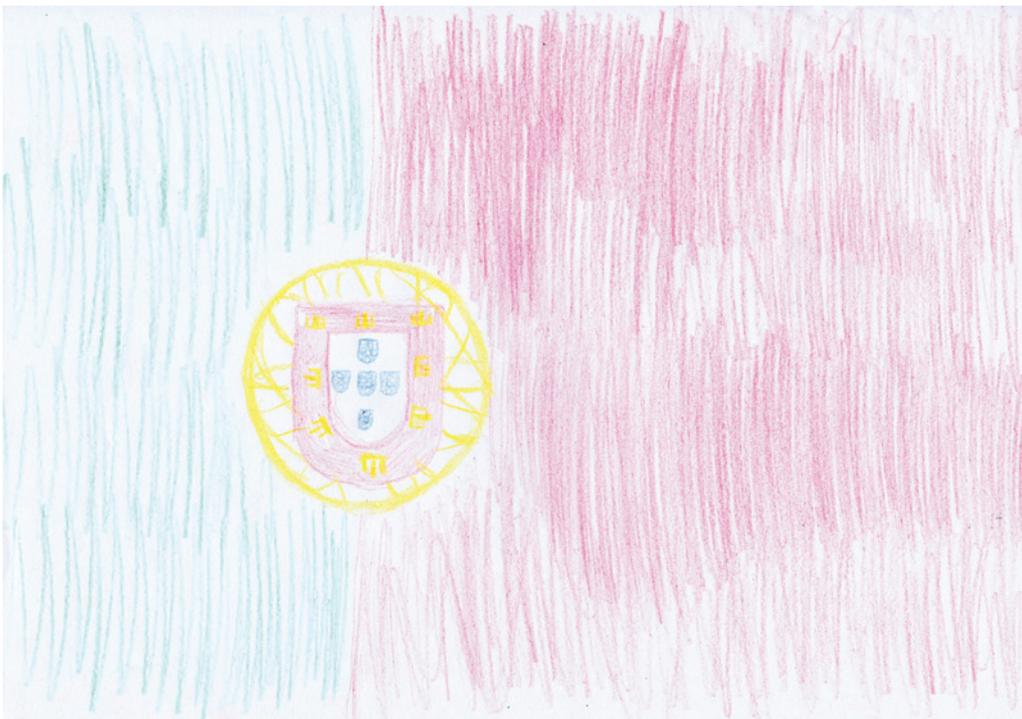

Student's sketch

Workshop #2 Student Work
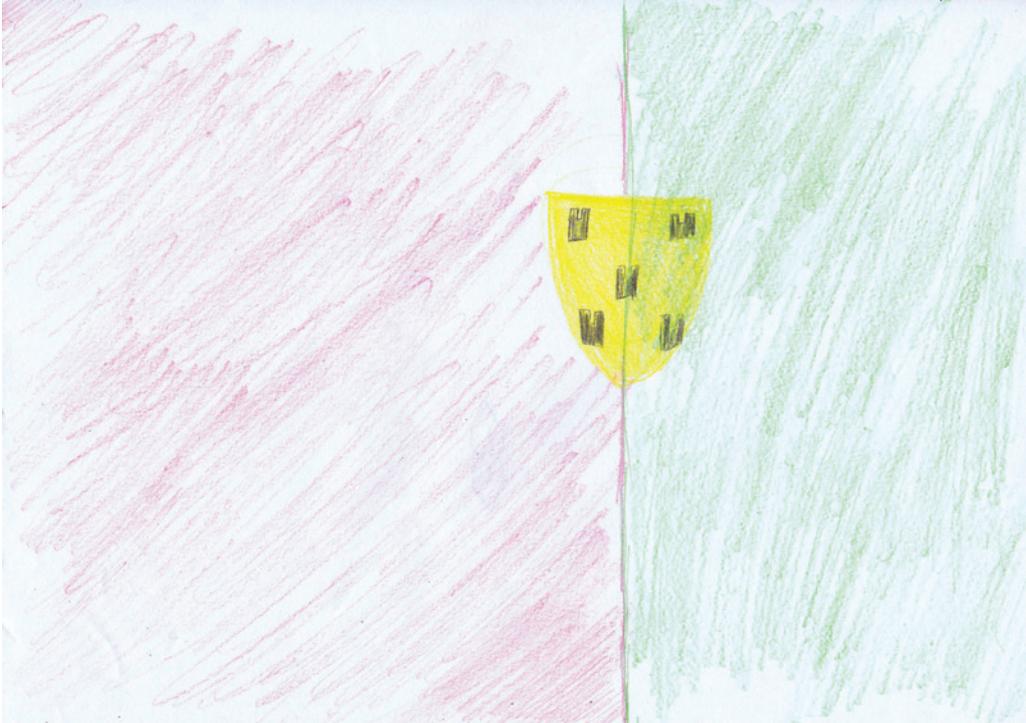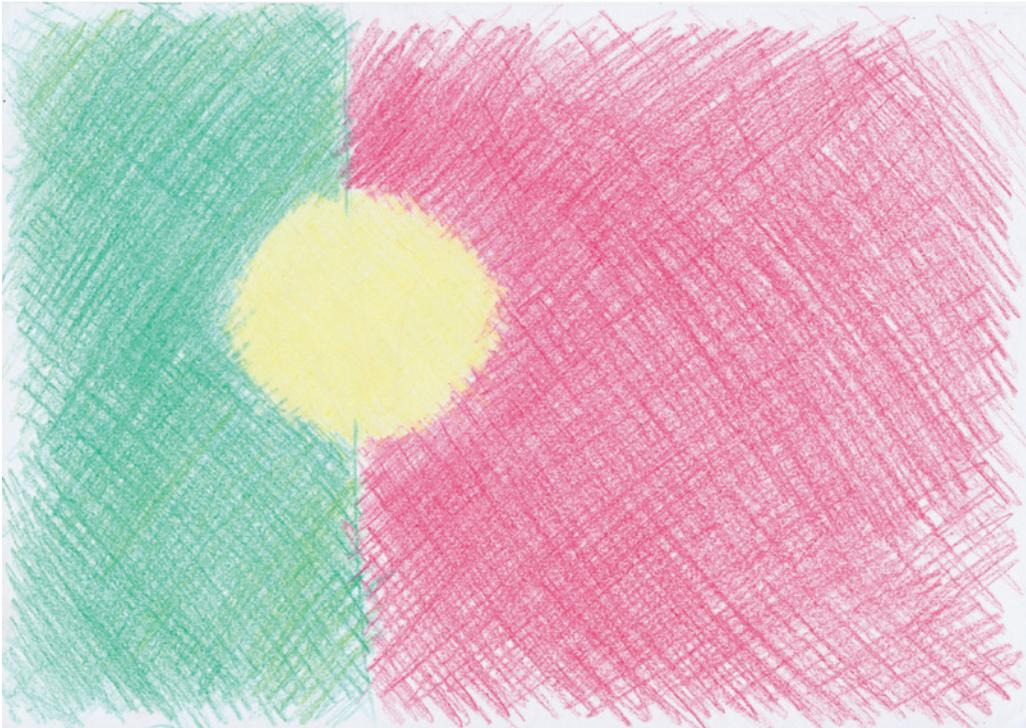
Student's sketch

Student's sketch

Part 1
- Students work quietly on the exercise
- Variation in results but many manage a fairly accurate representation.

Part 2
- All students find it fairly easy to get the flags in order, apart from those flags which do not follow a visual logic.

General
- The part that does not work very well is the part after the students have drawn the flag. In this iteration I asked them to choose the one out of all of their work that looked most accurate, and only then show them the official flag. However, they were reluctant to identify which student had drawn the most accurate flag.
- I then tried to compare all of the groups drawings to the official flag which was difficult because I could not see the details of the drawing without looking closely.
- In the next version I intend to structure the feedback part by going through each element one by one and discussing the meaning and the accuracy in the process.

ITERATIONS 2 & 3

- The feedback part where we discuss each element on the flag gets better each time I do it since I collect anecdotes and information each time.
- This part also works better when I start going through each element sequentially from working inwards into the flag and checking how many of the students got it right.

Flag Crit

Project: Ex#2 — The Flag
Duration: 2 hours

Aim

The crit for the flag project was devised by Nuno Coelho and is intended to emphasise the importance of reaching consensus in the design process. It facilitates discussion between the students and requires skills in verbal persuasion.

Description

- Each student presents their flag to the whole class, speaking for one minute.
- Then the class is divided into groups of four or five students. Each group must discuss their flags until they have reached a consensus about which is their preferred option.
- They must now choose a spokesperson who will argue for their flag to the class as a whole.
- Each spokesperson presents the flag that their group chosen to the class and responds to questions and criticism.
- Once the selected flags have been presented, the class votes to select the winner using a voting system which works with preferences. They must state their first three choices, each choice has a different value (first = 3, second = 2, third = 1).
- Once the winner is determined, there is a brief discussion and summary.

Materials

The students must bring a printed version of their flag to the class.

ITERATION 1

- 1 minute presentations without comments
- The students are put into groups of four
- They choose 1 option after 10 minutes discussion
- Spokesperson explains why
- Some just relate the benefits of the chosen flag
- The second or third group goes through each one in turn then the other groups follow this format.
- The last group chooses the current Portuguese flag.
- Nuno attaches the chosen flags to the white board.
- Then it is possible to see which flag wins by first choice and which by consensus
- Nuno gives a short summary of the project

ITERATION 2

- We decided to give more focus on the end discussion, which was missing slightly in the first version. Particular attention given to drawing general conclusions.

ITERATION 03

- One of the students has written an essay instead of redesigning the flag. He explains that because of his background as an anthropology student, he finds it excessively problematic to complete an exercise that requires conceiving a new national symbol. We briefly look at his essay and decide to defer judgement until after the class. We ask him to participate in the workshop process anyway which he agrees to do. His essay argues the point of view that a national symbol always excludes some groups and is always a distortion of reality. He explains that the closest he could get to choosing a theme was that of the national characteristic of saudade (the untranslatable word that means something like a nostalgic homesickness or melancholy), but that it is still unacceptable since, even if it could be represented by a symbol in the design of the flag, it would still exclude some of the population's identity. It is interesting that this student, who was not part of the design and multimedia degree and only taking this module, had a critical response to the brief which he was able to formulate, while the design students accepted it without challenge. The only exception being those who said they wouldn't change the flag. Which is not quite a critical response but rather a conservative reaction to the problem.

GENERAL OBSERVATIONS

- Although this format made for a dynamic end to the semester and facilitated constructive discussion amongst the students, perhaps this format lacked the element of comments from the teachers. We did not have that much chance to share our own opinions of the work. However the students were able to debate compare their work closely with that of their peers and this seemed to function well.

References

Bachelor Degree in Design and Multimedia. (n.d.) Retrieved August 7, 2017 from https://apps.uc.pt/courses/EN/course/462/2017-201

Design and Communication (n.d.). Retrieved July 25, 2017 from https://infordocente.uc.pt/nonio/ensino/detalhes.do?args=1558042229721282