

University of Brighton

Sources of Inspiration

How do design students learn from museum collections and other sources of inspiration.

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Abstract

We need a better understanding of the design student's experience of learning from museum collections and other sources of inspiration so that we can set learning objectives and outcomes that take those experiences into account. This report is built on a research project funded by CETLD and carried out at the University of Brighton and the V&A in 2008 exploring students sources of inspiration in their creative processes, with particular focus on their learning from sources of inspiration related to museum collections. It claims that there are four ways of improving how design students learn from these sources; firstly by encouraging a strong self of self-authorship and equipping students with the skills to work independently, secondly by ensuring that students understand the relevance of contextual sources, including museum collections to developing their creative practice thirdly by ensuring that students understand the process of professional inquiry and research in art and design. Fourthly, by HE and museums working together to enable students to develop the confidence and skills to work effectively with museum collections.



Introduction

What do we mean by sources of inspiration and are museum collections used in this way by design students? In this research, we are using the term sources of inspiration to refer to all those things students make use of, consciously or unconsciously, to create work. For instance, how important are the books that they read, the museum collections and exhibitions they visit, the things they notice or observe and the activities they participate in? How significant is the culture that surrounds them or that has gone before them? Is it possible to discover; what the creative and imaginative strategies are which they bring to bear on these sources to make work that is their own?

Traditionally, the learning that takes place in the creative process is largely viewed through the prism of the individual creative work that students present. Similarly, design tutors seem to have relied on their own experience of making and presenting work to guide a student's progress. Recently however, researchers (Dallow, P 2003, Refsum, G 2002) have begun to ask whether it might be feasible to unveil this process and in doing so whether it might be possible to use what we learn to improve the way design students learn. Researchers into museum education (Speight, C 2006) have also called for a better understanding of how Higher Education design students make use of museum collections in the development of creative work. Although educational theorists have suggested a number of models for understanding the way students learn, their applicability to the experience of practice based design students within HE still needs to be explored (Davies, A 2007).

This research strives to understand more about how HE design students learn. How they learn from the sources that motivate them and inspire them and how they turn that learning into something that is creative and which is their own. In particular it is interested in how students learn from museum collections. We hope that this understanding will enable us to develop learning objectives and methods of facilitation that stem from the student experience.

This report presents the findings of research into experience of design students from the University of Brighton and the Royal College of Art learning from museum collections and sources of inspiration. The experience of these students is examined within the context of their normal learning environment. The paper is divided into four parts. The first provides the context for the research, the second gives the methodology, the third reports on the student experience and the final section suggests ways to improve the facilitation of learning.

This research suggests that there are three strands of discussion that may help to inform our inquiry. Firstly, debates about the student's experience of learning within higher education and the extent to which these models are relevant to practice based higher education design students. Secondly, debates about the interpretative strategies used by visitors to museums. Thirdly, debates about what designers learn by working with their influences in the making process, including museum collections.

1. Student experience of learning

The research is located within a broad perspective or paradigm that investigates the experience of learning from the student's point of view. Entwistle (1984, p14) has described this perspective as:

‘investigating a variety of educational perspectives from within.’

This approach aims to gather evidence of the experience of learning from the perspective of what learning means to the student. Under this overarching perspective, a range of research methodologies have evolved, one of which is phenomenography. Phenomenography, as a research method, has its

roots in phenomenology, although they are not the same. Briefly, phenomenology is a philosophical method informed by writers such as by Heidegger (1927),: using this method the researcher offers a description of their own experiences according to the meaning those experiences have for them. The focus in this method is on the subjective description and elucidation of particular aspects of the researcher's experiences. Phenomenography extends this by allowing for the empirical analysis of the experience of others by the researcher. Typically data is gathered using close and extended interview techniques. Data is usually collected from subjects within their normal working or living context. The advantage of methodologies using this approach is that they offer valuable insights for higher education lecturers into the student experience within the normal teaching environment, in particular their motivations and interests. (Entwistle 19 84)

Theories that explain approaches to learning from the perspective of the student, include deep and surface learning theory, constructivism and threshold concepts. Deep and surface learning theory developed out of the work of Marton and Saljo (1976) In the original study by Marton and Saljo (1976), students were asked to read a text and then questioned on it. The researchers found two things, firstly, that students comprehended the content of the text at different levels i.e. there was a qualitative difference in the levels of learning outcomes achieved by students and secondly, that there were qualitative differences between students' learning processes. They found two levels of processing learning which they called deep-level and surface level. The approach the students adopted depended on what the students chose to focus on. In the case of surface level processing, the student directs their attention towards learning the test itself (the sign), as a result of which they tend to have a more reproductive conception of learning. In the case of deep level processing the student is directed towards the intentional content of the learning material, (what is signified), as a result of which they are likely to develop a deeper more relational approach to learning. Most significantly they found a correlation between a student's approach to learning, their levels of processing and learning outcomes. As Marton and Saljo (1976, p10) assert;

'It was found that in each study a number of outcomes containing basically different conceptions of the content of the learning task could be identified. The corresponding differences in level of processing are described in terms of whether the learner engaged in surface –level or deep –level learning.'

Strategic learning emerged out of deep and surface learning developed by Trigwell and Prosser (1999) In strategic learning students identifies the outcomes of assessment, what needs to be learned to pass and works strategically to learn or acquire the necessary knowledge to pass. They are not focused on understanding and learning for its own sake, only for the necessary outcomes .The concepts of deep and surface learning is useful to our inquiry is so far as it helps us to understand that the conceptions and approaches students bring to their learning affect the outcome of their learning. This is important for the facilitation of learning for it helps us to understand that planned learning outcomes or learning objectives need to take account of the student learning approaches and experience to be meaningful.

Another strand of theoretical explanations of students approaches to learning stems from constructivism: constructivists such as Biggs J. (2003) argues that students learn to understand by observing, engaging and interpreting the world and that they construct their own meanings of the world from these interpretations and interactions. From this view point students don't just take in knowledge but actively construct it on the basis of prior knowledge and experience. From this perspective students learn to understand by observing, engaging and interpreting the world and constructing their own meanings of the world from these interpretations and interactions. In other

words students don't just take in knowledge but actively construct it on the basis of prior knowledge and experience.

'Knowledge then is constructed by the students learning activities, their approaches to learning. What people construct from a learning encounter depends on their motives and intentions, on what they know already and how they use prior knowledge. Meaning is therefore personal -what the learner has to do is the important thing' (Biggs, J 2003,p13)

Biggs, J (2003, p49) also developed a model referred to as the SOLO (Structure of Observed Learning Outcomes) taxonomy which describes levels of increasing complexity in a student's understanding of a subject. The model describes five different levels of levels of performance observable at undergraduate level. They are described as:

*pre structural: students are simply acquiring bits of unconnected information which have no organisation and make no sense.

*unistructural: students are making simple and obvious connections are made but there significance is not grasped.. Students might focus on one aspect in a complex case.'

* multistructural; a number of connections may be made but the connections between them are missed as is the significance for the whole. 'Students tend to focus on knowledge telling and listing strategies.'

*relational: the student is now able to appreciate the significance of the parts in relation to the whole. A student uses a concept to integrate the declarative and procedural knowledge.

*extended abstract: the student is not only making connections within the given subject but also beyond it able to generalize and transfer principles and ideas underlying the specific instance. The student goes beyond existing principles-

Using this model, Biggs, J (2003) argues that when students learn a new subject, they progress through a quantitative phase which involves the student acquiring more facts. These facts are the building blocks which provide the working structure for the qualitative phase when a student focuses more on the analysis of information. Biggs (2003) also argues that knowledge comes in different kinds; Declarative knowledge refers to knowing about things, is independent of the experience of the learner and at the higher levels is about understanding theory in the abstract. Functional knowledge includes this academic base of declarative knowledge but also involves the procedural skills and the conditions and circumstances for using them. Biggs's (2002) model is useful in so far as it helps us to understand that not all students learn in the same way and that there is a variation in the way that depend in part on the way they construct knowledge. This in turn depends on the beliefs, behaviours and experiences they bring to the task of learning.

An interesting contribution to understanding the students experience has more recently come from the work of Meyer &Land (2006) and their work on threshold concepts. They argue that each discipline has one or more threshold concepts which underpins the learning in that discipline and that understanding the essential threshold concepts is essential for moving on with learning in that subject and constructing knowledge. As Wisker, G(2008) describes;

'Beginning to understand them is often perceived as troublesome, transformational, challenging, and once they have been perceived and understood, you cannot see the subject or its issues quite so straightforwardly again – they encourage often a standing

back, a sense of the abstract, and in art or literature or related subjects one key threshold concept is thought to be 'representation'.

Threshold concepts help us to understand that students may encounter 'troublesome moments' in their learning. Learning may present troublesome moments for students because they have transverse this space of not understanding and arrive at the other side of understanding in which learning has been understood. This transverse across troublesome moments can result argues Meyer, E (2008) in an ontological shift for the student enabling the student to think like a practitioner in the field and enabling them to reach their potential.

However very little work has been done to establish whether any of these generic models and concepts are helpful for understanding the experience of practice based design students. As Davis, A (2006, pX) argues ;

' whilst these concepts might resonate in contexts which do not rely heavily on text as the principle medium of learning , nevertheless, little comparative research has been undertaken in practice based subjects to ascertain whether these constructs are equally valid'

In his work with Graphic Design and Fine Art students, Davies (2006) identifies variations in students' conceptions of design; He identified four categories which he suggests are related hierarchically. The first category is called skills acquisition in which students sees the purpose of design education as learning the skills required for the workplace. The second category sees the students focus on the aesthesis and functionality of design in which they focus procedures, principals and skills. In the third category skills are seen as important but not sufficient. In the fourth category students focus on design as a personal activity, which they use to interpret the world. Davies. A (2006) established a relationship between conceptions of design and approaches to learning

Another study by Bailey, Drew L, Shreeve. A (2002) investigated the approaches to learning adopted by fashion and textile students from across four UK universities: they suggested that the term deep learning is associated with degrees of creativity, commitment, talent and originality whist surface learning is equated with lack of effort, ability and/or inquiry.

In conclusion we can say that further work is needed develop our understanding of the complexities of the particular experiences of practice based design students. This research aims to contribute to the development of that understanding.

2. The interpretation of museum objects

Museum collections have historically been an important resource for design students showcasing designed objects of historical and cultural interest but there is still very little understanding of the interpretative strategies that design students bring to bear on the experiences provided by museums .In particular we know very little about how these experiences affect the development of creative work and furthers their understanding of design. Recent research by Speight. C (2007), Cook. B (2007) and Fisher S. (2007) highlighted the need for a better understanding of how practice based design students learn from the use of collections and how it contributes to learning throughout students courses . Cook B. (Dec 2006 p X) in her report on accompanied visits to the V&A found that;

'students' have progressively sophisticated approaches to learning from objects in museums from general information gathering to working with a favoured object. '.

Museum theorists such as Eileen Hooper Green Hill (2002) and Smith (2007) suggest that the way visitors construct meaning from their experiences of museums depends on a combination of backgrounds, memories and current interests. From this perspective students bring their own experiences to the interpretation of museum objects; so that the meaning that these objects have for individuals varies according to the experiences that they bring to them.

‘Visitors construct meaning within museums using a range of interpretative strategies. The meaning made is personal, related to existing mental constructs and to the pattern of ideas on which the individual bases his or her other interpretations of the world.’
(Hooper- Green Hill, E, 2002,pX)

Further work needs to be done to explore the interpretative strategies that design students bring to these experiences and how they combine the inspiration from these contexts with other influences to make work that is their own.

3. Uncovering learning in the making process.

Historically, the processes of inquiry that practice based design students use in their making process have rarely been made explicit and tutors also tended to rely on their personal experience of these processes to guide students. However, more recently there has been a drive to reveal or make explicit the skills and knowledge that students acquire through these processes (Refsum, G 2002) so that tutors can improve the support they offer to students. New forums, such as those run by the University of Hertfordshire, encourage debate and inquiry into the making process and exploring what types of learning are take place in the making process. He suggests that;

‘practitioners gain two types of knowledge in the making process theoretical knowledge including an understanding of aesthetics, art and design history, representational theory and theory for practice including understanding intentions, ideas and artistic processes.’ (Refsum, G, 2002,p X)

Acknowledging that it is possible to articulate this process and use this understanding to support students is a controversial point for some scholars and practitioners working in art and design. The implication that improvements in students’ performance could be related to a better understanding of the processes of inquiry and improvements in teaching and learning rather than resting on the individual and innate qualities of the artist/designer may be an emotional adjustment for the discipline. It also raises the question whether knowing more about the processes of inquiry will help us improve student performance. There is an increasing emphasis on being able to articulate the skills and knowledge learned in the design process to employers. Evidencing the learning that has taken place may be important for design student’s transition into work.

In conclusion we can say that there is a gap in our understanding of the way practice based design students learn from museum collections and other sources of inspiration which their research seeks to address

Methodology

Students from across design courses at the University of Brighton courses were interviewed using the Phenomenographic research method pioneered by Marton & Saljo(1978). Phenomenography provides a method for eliciting the qualitatively different categories of student approaches to learning that goes beyond deep and surface and allow us to look at the data gathered through interviews in a way that

relates to the broad structure of the student experience. Using this method, the key to the research is the variation between individual students and the qualitatively different ways in which they learn from their museum's collections and other sources of inspiration. The method will allow us to find out what students say and do as a result of their beliefs about the museums and other sources of inspiration and how these beliefs determine their intentions toward learning in design. The method provides us with a tool to finding out what more successful learners say and do in relation to their learning from museum collections and other sources so that we can help those students who are less successful at benefiting from their engagement with museums.

The research population

Students from across all three year on undergraduate design courses at the University of Brighton, Graphics and Illustration, Interior Architecture and Fashion and Textiles and postgraduate design students at the Royal College of Art were invited to take part in the research. The researcher presented the project to all year groups and help follow up seminars for those interested in taking part in the research. Twenty four students took part in depth individual interviews and 12 students took part in focus groups and the researcher accompanied four student groups visits to the V&A. The project was presented to each student group where the aims and objectives of the project were explained and the voluntary nature of their involvement was made clear. Each student gave their express consent for the data gathered during the interview to be used by the researcher for the purposes of the investigation. After piloting different research methods it was decided to use individual interviews as the principal tool for the investigation. The interviews were guided by a set of questions which focused on exploring their experiences of learning from their sources of inspiration and from museum collections and how this learning transmuted into their creative practice. The interviews were conducted with students within their normal learning environment (the University of Brighton) and sought to gather data on the normal experiences of students rather than responses to learning interventions. The aim of the interviews was to gather data on the student experience -we hoped to enable the students to fully articulate their views on how they learn from sources of inspiration and museum collections. This involves using a series of questions and follow up prompts that explore not what a student thinks or a student does, but look for explanations for why they think and do things in a particular way.

As Bowden (2000, p65) describes;

'Phenomenographic interviewing we are trying to elicit underlying meaning and intentional attitudes towards the phenomena being investigated '

The data was then transcribed by the researcher and closely read and analysed to generate categories of experience. The resulting categories are the amalgam of the collective experience rather than individual experience. As Bowden (2000, p83) describes;

'Categories don't correspond to the perception of any particular individual – rather they are composites formed out of an aggregate of smaller perceptions' In this way one transcript may contribute to a number of categories '

Challenges of the methodology

Firstly, recruiting students to the project was initially difficult as access to the student population was negotiated through course leaders and access had to fit into busy academic timetables. The process of securing the agreement of course leaders to work with students can be quite a lengthy one involving initial discussions with course leaders and follow up discussions with class tutors about recruiting students to projects. The delayed start date (Nov

2008) for the project also meant that timetables and resources has already been fixed, making it more difficult to incorporate research activity into student timetables. In future project it would be helpful if research activity could be planned alongside academic programming. Secondly Phenomenographic interviews can be rewarding but do take experience to conduct well. To be useful the process in part makes students aware of those aspects of their own thinking and feelings As Santilo, L (2008) describes;

‘the interview is its less about specific events but about the meaning those experiences held for them ... it’s to do with memory not what’s true.....It’s not just data – it’s very personal’

Because of the personal nature of the interview, it was sometimes a difficult keeping the discussion focused on the issues raised by the research. The transcription process was also very time consuming and took up valuable time that could have been better spent analyzing the data. The project may have also benefited from the data being analyzed over a longer period of time, with a more collaborative approach to its interpretation. This may have resulted in categories of experience that were more internally robust- which discussion and debate helping to reinforce the characteristics of each category nature to focus in each discipline.

Findings:

The research found that three facets of a student’s experience impacted on the way that they learnt from museum collections and other sources of inspiration They were firstly students memory and prior association of museum collections and other sources of inspiration, Secondly, students current intrinsic approach to learning of which four categories of experience were identified. Thirdly the practical and psychological factors influencing students experience of workings museum collections. These findings are discussed below.

1. Memory and prior association

The research found that most students had positive memories of working with museum collections that stem from childhood and early educational experiences. These memories and associations seemed to continue to influence students’ levels of engagement and appreciation of museum collections and other sources of inspiration.

“My mum was very arty, she was an artist herself. I have always been brought up going on a Sunday to see some gallery or museum much to my sisters’ dismay, but I quite enjoyed it. I always have done really.”

“My family always go to museums – to national trust properties – I would never change it for the world- I love it. At the time I probably moaned about it but we used to come up to London and do the Natural History Museum and the V&A , the Science museum, lots and lots of places- we always used to go – the Design museum and always did trips out to different places. Was that from a young age? Yes Ever since I can remember really.”
(Transcript 5)

“It is something that I have always done quite regularly because my parents pushed on that- we used to do a trip every two weeks to London and she would always take us to

museums – they were never design museums such as the Natural History Museum and that’s something that my parents always pushed us to do .I think that had a knock on effect on my passion for going. I would always go to anything regards less of whether it was to do with design or not. I think museum are in general fascinating places.”(Transcript 6)

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“The nice thing about my childhood is that my childhood is that my parents liked museums, they have a kind of academic leaning which I don’t have- they were quite comfortable taking me to museums and galleries and very keen that I developed and enjoyed my childhood’)..... my mum took me to lots- the Court auld gallery and seeing Cezanne- that was like a real inspiration for me and the Bethnal Green museum of childhood.”(Transcript 7)

“I started going when I was about 12. Because we were just outside London it was easy for us on school trips, so I have been going since then- we used to go to the ones at South Kensington quite a lot like the V&A, the science museums and the natural history museum, we always went to those ones” (transcript 10)

“I really enjoy it. When I have been younger and stuff my parents have always taken us and stuff and obviously hated it a little bit when we were younger That’s way I chose Brighton as well because its closer to London – there’s things going on . I am from Devon and did my foundation in Falmouth – obviously you have got Tate St Ives and Hepworth but there is not a great deal else.”(Transcript 10)

The research suggest the overwhelming majority of design students have positive association and memories of engaging with museum collections which they bring with them into their HE experience. Across all categories students reported positive childhood memories of visiting museums .These visits were usually organised by family members, by school or foundation courses The importance of memory and prior association seems to be important for learning from other sources of inspiration as well;

“Well its just one of those things – it stirs something up in your mind – it might be something you saw in a book ages ago and you go and track down a book”(Transcript 16)

2. Categories of experience: Design students’ current conceptions of approaches to learning from museum collections and other sources of inspiration.

The research identified four categories of student experience; they are described as Isolated, Introduced, Integrated and Immersed the characteristics of which are identified below. The research found that students demonstrated an increasingly sophisticated and powerful approach to the way that they learned from museum collections and other sources of inspiration

Isolated (Level 1)

1.1 Capacity for self-authorship and skills for independent learning

In this category students demonstrate little awareness of the interests and motivations that drive their engagement with the discipline and their attachment to the course is often fragile. For instance;

“I’ll definitely stick this for three years, but I don’t know after that My dream would be to do a large canvas Before I came to this course I wasn’t sure whether to do fine art or illustration.” (transcript 11) ,

“I don’t see myself doing it for my main career.”(transcript 9)

“I didn’t know whether I should be here, what I am doing and whether I was any good”(transcript 9).

Students in this category also demonstrate little awareness of or the skills needed to work independently. In particular they tend to regard it as tutors responsibility to motivate and structure their learning.

“I have just come out of my tutorial. I guess I didn't really understand the project at first and what wasit came to a point where I don't know what I am doing now and I am stuck and I had a talk with my tutor and she said you need to go there and research, put yourself in there ... ' the good thing about my tutor is that she breaks things down, in terms of look at this, look at that.' they always make us look at the website first”(transcript 15)

“I’ve just had my tutorial so I know where I am going “(transcript 10)

“I need constant egging on – it’s in my nature " I need something new to stimulate me “ (transcript 14)

They rarely make use of processes of reflection and review central to independent approaches.

Interviewer: “Do you ever reflect on your work and what you are getting out of the course?”

“No. I just go from one thing to the next. Even in holidays you have all this work to do. Sometimes after the critic you get time, after you have handed it all in. Usually I’m thinking I should have done this, I should have done that” (transcript 15)

“I just can’t face going back. I consider the crit the end and I am not going to go back and reface it because that’s done “(transcript 13)

Interviewer: Do you ever spend any time reflecting on your work?

“No not really” (transcript 10)

The research found that students with little capacity to self- author their work or to learn independently did not seem to be motivated to arrange visits for themselves whilst at HE ,often citing barriers of time and cost as reasons for accessing them . However they did participate in visits to museum collections organised by tutors.

"It's quite nice that they have taken us on trips – we had a trip with critical studies which was paid for which was good and we had a trip with Graphics one day. When they actually tell us it often feels a bit forced because often I can't afford it to get to London."(transcript 13)

Interviewer *'Have you been to the V&A recently?*

"We had the project last term and we went to the V&A quite a lot but it was more to look at the space and the way that it was built rather than what was actually in there. We did that more at foundation than anywhere else."(transcript 10)

"We don't get to museums much .No I haven't had a chance. We did have a talk about it but I haven't had the opportunity. They do tell us but being here in Brighton is not easy for to travel to London unless it vital to your project off your own steam its difficult"(transcript 15)

"being in Brighton it was much harder to go- its expensive to go up. I do miss going to Museums and galleries. I try and go when I am at home in the holidays. I don't really go in term time because we don't really have a lot of spare time." (Transcript 10)

At this level students' capacity to learn independently and self author their work seems to be extremely limited .They have yet to identify their interests in relation to the discipline they have chosen to study and they still need to develop the skills to work independently. Students with these approaches often appeal for more direct support from tutors and they can find the transition to independent learning challenging.

"last term was quite an adjustment because tutors aren't around all of the time – it did feel scary"(transcript 11)

1.2 Engaging in dialogue with the other thinkers and practitioners.

At this level students rely on tutors to suggest and direct discussions about the broader context for their work, including engaging with museum collections.

"Sometimes if I am given a reference to look up, I try and look them up. Like I was given Eileen Gray to look up and I am going to try and go to the library and do that. If I am given an artist to look up I do try."(Transcript 10)

They also express less interest in broader contextual studies, including museum collections.

"I'm not very interested in the historical content." (transcript 15)

"What I find with a lot of museums is that unless they say they are doing something specifically with community or people a lot of the time it's just objects in a glass box. It doesn't go further than that. It's just objects in a glass box it looks nice and then you move onto the next."(Transcript 15)

1.3 Understanding and skills used in the research/inquiry process.

At this level students approach to research in art and design is dominated by the collection of materials and by the experimentation with materials and processes. This is a phase that they seem to find enjoyable and inspiring but they often find it choose between competing aspects presented through this initial phase of research and consequently find it difficult to progress their work..

"I find the beginning fine- research and stuff I get to obsessive about – like last year I used to do way to much. I would spend weeks doing research because I like doing it."(Transcript 2)

"Firstly, probably go to the library do some brainstorm and make some notes on ideas- because all the projects set so far have been quite specific in what they are asking in the brief and the final outcome has to be a set- I'm not used to this so you have to be a lot more methodical in the way that you work with it ' So yeh, go to the library, get the books out and try and generate a whole load of visual things that might be helpful and from that write some more about want you want to do and get your own ideas and then I guess getting hands on and start getting involved.... just like the experimenting and the playing, finding out new things and a lot of the time stuff just happens and you are like oh that's quite nice '(transcript 9)

"I think it is this idea of shifting through with what is relevant and what's not. When I was on foundation you would go to somebody and say I have got this idea and they would say look at this- look at that- and then you come to uni and you don't have somebody telling you look at this – look at that or not on a regular basis. It's been a learning curve in that I have had to sort of..... The hardest thing I find- I will research to the cows come home and I'll come up with sheets and sheets of stuff and you look back and you don't know how much of that was needed or relevant to what I am actually looking at." (Transcript 4)

Another facet of this level is that students also focus on developing the practical skills that are associated with the discipline.

"To expand on what I have already learnt. I can get so far, but now I have to figure out the colour and the pacing of the pictures and to push it to the next level. Maybe to learn more in Photoshop that would help me do that."(Transcript 8)

This approach is mirrored in the way that they collect inspiration from museum collections. Typically they gather resources on shapes, textures and colours.

"It's usually quite hit and miss. I just stroll and see what I find. If I have a particular exhibition in mind I'll go and make a bee line for there – if not I'll have a wander and see what I findI am not very interested in the historical content, although I am interested in how I relate to it – if I like it or if I don't like it – it sounds very shallow."(Transcript 13)

"But when I go its different objects and an open mind really – you never know what you will find., something might trigger from something that you have seen- I keep the pictures , the drawings- it's like a little archive or information base that you can always go back to- and think I have this idea and I think I've seen it somewhere before and I think somebody's done something similar to that – you might go back to that piece and do ore research about it or visit it again. I just keep it as an information piece."(Transcript 14)

" I tend to just sort of wander and let it all soak up and stuff."(Transcript 4)

At this level students usually use photography and text to record the information that interest them

"I often really want to take photographs but I never do because you always get told off. I used to draw them when I was on foundation. But I am not very good at drawing so it's not really that rewarding. I buy postcards but they don't usually have postcards of what I want. It's just in memory really although I would like to take pictures more."(Transcript 13)

What is significant is that at this level students' often express feeling self conscious working in museums whilst the public are present and that they rarely use drawing as a means for recording. They describe feeling that they lack or have lost or lack the skills that would enable them to do that.

"Sometimes I feel a bit awkward going in them, the people sitting round they have nothing to do except look at you - that's what they are there for – that can be awkward but other than that I like them, although I hate trying to draw or do stuff in them sometimes because guaranteed you'll get a school party at the point at which you are doing something really badly and you are kind of, don't look go away!"(Transcript 7)

In summary students at this level have limited capacity to self-author their work and have little awareness of the benefits and skills needed to self direct their own learning. This seems to be related to an uncertainty about the ideas and practices that inspire them and an uncertainty about how personal interests might relate to the discipline they have chosen to study. This means that at this level students rely heavily on tutors to motivate and direct their learning, including suggesting visits to museum collections. They make frequent appeals for more contact time with tutors and fellow students and can feel frustrated with current levels of provision. They also find it difficult to appreciate the relevance of examining the work of other theoretical, cultural and historical thinkers and practitioners, including looking at museum objects. In their inquiry process they focus on collecting and experimenting with materials and processes and the acquisition of practical skills. They often find it difficult to make decisions about how to choose between competing possibilities presented in their work to enable them to progress. At this level students feel that they lack the confidence and skills, especially drawing in public, to work comfortably in museums.

Introduced (Level 2):

2.1 Capacity for self author-ship and skills for independent learning

At this level students begin to identify which particular aspects of design interest them and explore how these relate to their emerging understanding of their discipline.

"I was just really interested in what they were doing socially with what they were making as well as the designs.... How visually and spatially things can have a lot of influence on society... I wouldn't want to channel myself into something corporate and soulless."(Transcript 9)

"I really like looking at light- the way natural light falls into a room. In the last project on the V7A I studied sun paths – the direction and angle of the light that came in . I think is useful to all projects." (Transcript 9)

"I got this book by.... I think it's for children- it's called imaginary things----- its juts pages of descriptions of them,. I thought it would be really cool to illustrate them. Just for me really, when I have some spare time "(Transcript 12)

However students can find reconciling these emerging interests with the requirements of academic briefs challenging:

"I guess it's the brief really- because we have to produce five images in sequence and I don't know – I guess – I suppose it's to do with me wanting to do something and me wanting it to fit into that – I like that it what it is"(Transcript 12)

"Also whether It's going to fit the brief. I was taking to my tutor earlier I find it hard to get an idea or if I do get an idea I end up going off the brief. I have to try and hone myself in – does what I am doing fit the brief at the end of the day. Otherwise I am just drawing for myself and it wouldn't be anything to do with anything. So what did you do? We had two briefs and one was just your experiences of the metropolis. I just didn't do the day in the life of..... I did my own experience of the city: bits that I liked and bits that stood out for me."(Transcript 8)

"A problem that I was having with Graphics was the rigidity of the briefs but I fully appreciate the reasons for that because they are trying to teach you like technical; but I just found it a bit frustrating. I guess also that you are working for a client and its less based on an emotional response to something as it is whether it conveys their message not your message if that makes sense,"(transcript 9)

At this level students remain reliant on tutors for directing and supporting learning but there is a greater awareness of the need to be more independent .They begin to use processes of reflection, review and evaluation but these remain tied to course related activities.

Interviewer *'How much time do you spend reflecting on the process?*

"Tutorials are a good time for that – we have a couple of tutorials a week- 30 min tutorials with our tutor- that's a really good way of realizing whether you are just doing one thing over and over again." (Transcript 3)

Similarly students at this level are aware of the importance of visiting museum collections but can find it challenging organising these visits for themselves. They tend to continue to rely on tutors and parents to organize these

Interviewer: *Do you manage to sustain that for yourself now (visits to museum collections)?*

"Not as much as I would like. I really want to get into it. I think the thing with Uni I have quite struggle with going I had a very comfortable home life, had all these things , my dad – if he was at home he would say there is the exhibition do you fancy going to it together? I have been to some of the RCA degree shows with them – I do miss that because it's a lot harder on your own to push yourself. I have been up to London quite a few times recently but I would defiantly like to become more aware and for it to become more routine. For me to look up what's on and for me to take that extra step myself to do it."(Transcript 6)

"No it was just as a visit. The tutor have researched some exhibitions and said right here you go. It was quite useful really – for it just to be handed to you- to be told."(Transcript 4)

However, at this level the cost of visiting the collections and time away from academic studies seems to prevent some students making more frequent to collections.

“On the last project I did it on the Life of Pie then I got the book out and read it- then I researched bits about that and found.. its bout animals – basically there are loads of animals in it so I wanted to go to the natural history museum and draw the animals but I couldn’t afford it and my friend in London told me that don’t actually have any of the animals that I need so I just didn’t do that”(Transcript 10)

*“I used to go (to museums) a lot more than I do now .. that’s to do with time”
(Transcript 11)*

“I try and go when I am at home in the holidays but I don’t really go in term time because we don’t have a lot of spare time.”(transcript 10).

At this level students’ capacity for self authorship is improving, they demonstrate a greater awareness of the interest that guide their engagement with the discipline. They are also more aware of the benefits of independent learning, but their efforts still tend to be directed by tutors. Equally students also express an interest in visiting museum collections but, regard time and cost as barriers to making frequent visits.

2.2Engaging in dialogue with other thinkers and practitioners

At this level students still find it challenge to appreciate the relevance of engaging in a dialogue with cultural, theoretical and historical practitioners and thinkers, including museum collections.

“I just gaze\and droop ‘ We had to do an essay on the retrospective of the Turner Prize – not really illustration type work- it’s all very fine art, that was a struggle for me.”(Transcript 7)

“sometimes it’s easy to take what I think is the kind of instant resistance to it – why are we doing this – it doesn’t relate to us. But because art & design and things artists are not so different from each other I try not to go down that.”(Transcript 7)

However, there is an exception to this. Students at this level are often very keen to learn about the work of contemporary practitioners.

“Michael Parry, I went to see him, this is his tape here. It just pattern and texture work which I really do like a lot and he does a lot of that. He is mainly a graphic designer, but his work is really quite illustrative, speaking to him really helpedHe gave advice and said that you got to get onto Photoshop and things – I have taken that on board and have attempted to do some photo shop work.” (Transcript 8)

“I have always been interested in book illustration and influenced by editorial illustration and I think what made me first consider doing illustration. I went to a Shirley Hughes exhibition and I read books when I was a child and I saw all of her sketch books there and I though wow I really what to be able to do that.”(Transcript 10)

And make requests for more emphasis on learning about these in contextual studies courses.

“I find the Hats classes that we have really interesting but they are not overly tailored to either graphics or illustration, They are really interesting in a broad sense and I think

it's important to have that but also maybe if there was that as well as something that was more focused and more current as well. I find it's an areas that a lot of us aren't well involved in as we should be. The tutors are always saying you need to be looking at all these things so if we had lectures on it and well as doing further reading it would be."(Transcript 3)

"Just like people who are currently working. The last HATS lesson we had was about the suffragettes and that sort of propaganda which is obviously really interesting, but it's not overly current or relevant."(Transcript 7)

2.3 Understanding of the professional inquiry and research processes in art and design.

At this level the research suggest that students continue to concentrate on the process of collection and experimentation in their research but, these processes begin to reflect students' personal interest and concerns and there is more awareness of the need to progress beyond this phase.

"I think that's something I need to work on – I think a lot of the time that I over research – I go past the point of it being necessary or relevant. I think that the best thing is to get as much as you can and then I am quite good at shifting through – you have to go back to the brief, reread the question and really focus on what exactly it is that you need to communicate because Graphics is communication and if you are communicating a wrong idea or a bit of a warped idea it's not going to be good enough." (Transcript 6)

"I took loads of photographs of the statues heads when they had fallen off- I'm not sure why I did that – I just liked it. I might come back to that in the future."(Transcript 10)

"What I have is a collection of coronation things 19th century – I've got loads of stuff I just collect them and collect them – O thought about it the other day I think I have been influenced by my mum because she also collects things – except that I have more now. I have coronation books and stuff- I don't collect then thinking that I will use them for a project- I just like them aesthetically – I don't think they are anything that you could draw or reproduce in any way because they wouldn't be as satisfying as the actual thing. The colours are really unrealistic really. - That's what I like about them." (Transcript 10)

"My first instinct is to panic- whether to work 2D/3D collage or painting or drawing. When I get stuck I do simple things to get me going.. I wouldn't want to spend more than a couple of days doing that In past projects I have got carried away with doing that and haven't answered the brief." (Transcript 11)

"At the minute I enjoy the exploring and finding – accidentally coming across things that happen. I keep churning it out until something good comes from it. You then have to cut from those various bits to the next bit. Our foundation tutor was like – its levels, you'll beat this level and you have to take something from this level to get to the next level."(Transcript 8)

At this level, the inquiry process is still driven by earning the practical skills associated with their discipline and the process of acquiring these skills often occupies a significant proportion of the student's time. For some students this can involve a certain amount of back tracking-, learning new technical skills, bringing these under their control before they reintroduce conceptual approaches.

“the concept itself was rally strong but after the crit I had to work a bit stronger on the actual design so that people look at it and think that is really nice but that it still has that message. It’s quite hard...’ I have never really had to do briefs that have been that technical- they kind of want us to learn the skill. So I kind of found that the way I work and my concepts had to take a back seat.” (Transcript 4)

“I specifically choose here because it was Graphic Design- a lot of other places are like Visual Communication or it is literally Graphics and Illustration. At Bath their course is Graphics, Illustration and Visual media. I preferred this more traditional course to learn the skills- learn the process- learn how to use materials- learn how to use machines and then also get developed and really pushed into thinking of new ideas- new ways of thinking.”(Transcript 4)

“I feel that I am a bit technically inept so I am just toying with the idea of taking film further.” (transcript 2)

At this level students, learning through the making process is important.

“The last project I had I had a really clear vision in my mind what I wanted it to look like really pretty pictures. Really detailed and it just didn’t happen. We only had a few weeks and I just couldn’t get that amount of detail that I wanted into one final thing- when I had my crit it just showed, I had good ideas but I had lost them on the way. I had this other idea of what I thought is was going to be .I should have thought no let it run.” (Transcript 6)

“all the projects set so far have been quite specific in what they are asking in the brief and the final outcome has to be a set- I’m not used to this so you have to be a lot more methodical in the way that you work with.”.(Transcript 9)

“Sometimes aiming for a goal can be good but sometimes it can really narrow your mind .and it’s not going to help you. I’m just trying to be more open minded and hopefully it will come out better.” (Transcript 8)

However students with these approaches continue to face difficulties making decisions developing initial ideas into designed objects.

“I am still learning, My biggest thing is making decisions. I can’t make decisions and still now we’ll get a project and we’ll have a few different ideas a few different areas of research and end up end up either crashing and burning or trying to combine it all together. I think I have become better at just literally- going back to the brief – what is it they are asking you –you are asked to do quite specific things or if you have a really strong idea to go with it or you could end up killing yourself waiting for the perfect idea. So I need to focus on working through my research- researching what’s relevant – what’s not – why I should be looking at it’s think that’s what I have started to do . If I am looking through a magazine –and I see something.”(Transcript 4)

“The beginning stages of design are really difficult when you have got all your research together and you have to draw from it and work it into a design. I think that’s the most difficult stage but once you know what you are doing and you are just designing and making things it gets easier.”(Transcript 10)

"I find it hard to make decisions and maybe because my work is so eclectic – that's why I am looking forward to my personal project because that would be a finished thing"(Transcript 5)

"I find it really hard doing a final piece because like this drawing I couldn't ever recreate that in exactly the same way' I find it quite frustrating. I think I want that picture but it never worksagain there was this probable. I did it in my sketch book but couldn't really translate it again to get the same mark - the same problem."(Transcript 11)

"Well because I research to much- I have a really nice concept but then it means because I have taken so long for all of that to happen – the design process might not be as slick as should be-which means going back and reworking projects."(Transcript 4)

At this level students continue to use collections to gather material to add to personal archives or to inform specific academic briefs. Photography and text continue to be the principal means of collecting information.

Interviewer "How do you decide which things to focus on when you get into the museum?"

"I probably go for shapes and also if there is something that looks a bit odd that catches my eye."(Transcript 5)

"If I can photograph I usually photograph. Or I use a notebook but I don't tend to sketch."

Interviewer: *"Is there a reason for that?"*

"I'm just not really a sketcher more of an assembler."(Transcript 2)

"Sometimes the photographs are useful references if you want to remember a certain sculpture and if you get a brief on sculpture you could go back to that so I would still take photographs."(Transcript 10)

Interviewer: When you go into this kind of space or into a museum how do you record the information that you need?

"When we went into the V&A we came up with a list of different survey methods we do take lots of photographs but then we have to have reasons for taking them. I think I started off mapping people see if which space people used more recording the movement of light around the room, noise levels with a Dictaphone." (Transcript 10)

Interviewer: *'When you go into the museum how you do record the information you need form the things that interest you?*

"Normally I would try and take a note book. And just like jot some stuff down and pick some stuff up. I do some drawing but not like - not overly – I think like I don't know I think I just like to be there."(. Transcript 9)

Interviewer: *When you go into museums how you do record what you see there?*

“Um – well like in the Metropolitan – it’s huge. I looked to see where I wanted to go – the modern art bit and the statue bits and then I just walk around and then things give me ideas. If I get inspired by something I’ll write it down – the artist or something so that I can look at it again.. Sometimes I draw and take photographs if you are allowed.”

Interviewer: “Out of all those things which do you do the most?”

“Write notes.”(Transcript 12) “I never draw inspiration from clothing its always more from – I don’t know I find that really interesting about a museum especially the V&A – each object can inspire something whether its colour pattern texture shape that can then be translated into fashion.” (Transcript 6)

The predominance of photography and text as a means of recording information from museum collections in this category seems to be related to several factors. Mobile technology allows students to take high quality digital images easily Secondly, a loss of confidence in drawing skills and in particular the confidence to draw in public places.

At this level students’ requested practical measures that would help them to view and record information from museum objects more easily. These requests included information about exhibitions, improvements in sitting and lighting for people wishing to draw objects and reductions in admissions charges for students.

***Interviewer:** ‘Do you think there is anything that the museum could do to attract you to go more often or to enable you to make better use of your time there?’*

“I can’t say that they could do anything else besides student discounts, there’s a lot of space there. Sometimes they get really iffy about the photographs and everyone just wants to take photographs and that’s just to preserve the work.”(Transcript 8)

***Interviewer:** ‘Is there anything that puts you off doing drawing in the museums?’*

“I think sometimes if there is nowhere to sit that’s quite annoying.”(Transcript 3)

“I find it hard to draw in museum because me personally I get distracted by people walking around and there is always somebody who says – oh what are you drawing?” (Transcript 16)

In this level students begin to identify their own interests, belief and values and explore how these relate to their understanding of the discipline and the requirements of academic tasks. They are beginning to understand the need to work independently but in practice tend to have limited strategies, but the processes associated with that such as reflection and review are still confined to course related or tutor led activity. These approaches influence their engagement with museums; they would only occasionally organize to museum collections and continue to regard time away from academic studies and cost of travel as reasons for not making more regular visits.

At this levels prefer to learn about the work of contemporary practitioners in their discipline and continue to question the relevance of broader theoretical, cultural and historical, including museum collections) to their work. This seems to suggest that HE and museums will need to explore to design studies why learning from these diverse sources is important to the development of their work They appreciate the relevance of contemporary practitioners and perhaps more should be made of this as a lens through which to other historical and theoretical sources.

At this level the emphasis is student's inquiry and research processes is still on collecting and experiment as well as mastering new practical skills .They continue to find it challenging to make decisions about progressing work beyond this initial phase.

Integrated (Level 3)

3.1Capacity for self author-ship and skills for independent learning

At this level, student's capacity for self authorship begins to increase and shape their engagement with their discipline, museum collections and other sources of inspiration. They begin to use academic briefs as tools for pursuing personal and disciplinary interests. This does not mean that they don't fulfil the requirements of academic tasks, rather that they use the briefs as opportunities to investigate things that interest them.

"Where ever you go to uni – it doesn't matter- everywhere you go has a style – it doesn't matter what the overall style is as long as your work is your work and your personal thing. I have kind of had this really long journey this year and eventually just come to the conclusion that the way that I work and the way that I do things is very different to a lot of people on my course. It doesn't mean that its worse it just makes it more interesting." (Transcript 4)

Interviewer: "What personal qualities do you need to be a good designer?"

"To be a good designer you have to have a really strong vision that's completely uncompromising and even if somebody - I think you learn that skills even if you have got four different tutors saying different things and eventually you have to decide what you think I think that is a really important side of our course. Essentially being a good designer is having a strong vision of your aesthetic." (Transcript 6)

"I'm probably like a Magpie, I pick out words in the brief and fit it with what I like and the brief to fit what I want to do. This is probably very naughty." (Transcript 2)

Interviewer: "Are you working on anything else at the moment"?

"No, not for the course but I always think I am working on things for myself – the project is for my self- the sketch book is not just for the course it's for everything I see- I draw. Interested in objects –morphing into the human –boundaries between the human and the object – we created them I want to do some portraits and their favourite objects." (Transcript 5)

Students at this level often have personal or commercial projects they are working on alongside their course of study. They also begin to think of themselves as designers belonging to a discipline entitled to question the boundaries and content of their discipline.

Interviewer: "Where do you feel that it(Graphics) sits?"

"Definitely as a communicator .Both graphics and illustration work well as narratives. So with the creative writing that links. Graphics is preoccupied with layout and type perhaps refining whereas I think I rely more on the moral or philosophical side of things, the underlying debate , that's where my interest lie so I just go for whatever I am interested in doing basically. I do what my interests are." (Transcript 2) "I think nowadays Graphics is quite broad so I am really enjoying looking into the types of work

that I like and the style that I like to work in. – it's quite clean cut and I have quite a specific style of working which I had not really realised, I am quite into challenging what Graphics is. I don't really enjoy doing the 2 D stuff.. ----- am actually quite interested in product design It's influenced by the way that I perceive Graphics I think Graphics and product can role into one and nowadays especially for Graphics you could end up doing-..... - how does a blind person get to a seat on a bus.But by doing Graphic design I will learn the thinking skills and the ideas skills which – if I do end up doing more.”(Transcripts 5)

Interviewer: *”You have talked about making a living as an illustrator – what kinds of knowledge and skills do you think you are going to have to have in place to earn a living as an illustrator ?”*

”I think for me I am going to have to have something that I really believe in. to promote myself. If I don't have that at the end of three years I'd like to work for a design studio and try and get it from there: I did do a bit of work experience in the summer for the association of illustrators.”(Transcript 9)

At this level students make use of reflective practice as a way of self directing and evaluating their own work

Interviewer: *“So that reflection from other people is an important part of your process?”*

“Yes definitely. Really important. I think. I often don't realize what is expected until I see everyone else's and then I am like oh - yeh that's what they wanted. On a couple of projects I have been of yes that's exactly what the brief asks for – it's the realization after you have seen other peoples work and people have talked about your work.”(Transcript 5)

Interviewer *‘How important is time for reflection in the development of your work?’*

“I wouldn't say that I build it in or say that I make time in my time schedule for it but inevitably it's something that happens. I always reflect on where I come from to where I am going.” (Transcript 6) **Interviewer:** *“Are you quite happy coming up with a polished piece for instance ?”*

“Well because I research to much- I have a really nice concept but then it means because I have taken so long for all of that to happen – the design process might not be as slick as should be-which means going back and reworking projects. I don't mind that because this term we have three projects. And we have time to go back and clean up everything that you have done so far. I am almost enjoying going back and having to adjust. It is a way of learning. Although not all the projects are my favourite I am going to go back now and do and make sure that the idea and the design are strong and then go from there. You never know in the third year I might use that in my portfolio. So I am quite happy to be going I think it is quite a nice thing to go back to projects.”

However the research continues to suggests that at this level many students continue to find the transition to independent learning challenging.

“Yes. One criticism is – this week my tutor is only in on Tuesdays. So Monday, Wed, Thursday, Friday and the weekend I have to fend for myself. It is quite hard you are still

only in the first year and I have come from a foundation that was so structured but to somewhere that not – I know we do well compared to London Arts but I would still, like more support. I really thrive on somebody saying to me – that's good- that's good- that's a nice idea well done keep going. But the good thing is that I have come out of this year in my work a lot more independent. If I have an idea I tend to just go with it rather than wait for somebody to tell me it's a good idea but in the same way sometimes it's harder because you get to crit and you look at your work and you think I am not quite sure I have done what I am supposed to have done. It can be frustrating if you have to go back. I guess then that is just a learning curve- quite often you do have to go back- and think well I have done it wrong but you learn a lot more from your mistakes.” (Transcript 4)

Interviewer: “Is there anything that you think the tutors could do to enable you to get more out of the course?”

“Well we don't really have tutorials- but if you want it you can go and ask for it – I am kind of used to it.” (Transcript 5)

Interviewer: “Do you ever talk to people about the brief before you start?”

“The thing is most people usually go off and - the first day- people go off and do their own thing you don't really see anybody whereas before on foundation you couldn't go home so you had this thing of doing brainstorming you would all wander around the classroom looking at everyone else's brainstorm and see what their think looks like and talk to people a lot more. I do really well from talking to people and it has only been as the class has got a bit closer that we have started to be like – now I am doing this – my idea is this – what do you think – what are your ideas. Even then it's still hard because everyone at Brighton is quite different.” (Transcript 7)

“Since I have been here I tend to get the brief – read it, underline things that are really relevant and then just tend to go off and start researching. But what I used to do on foundation- on foundation you had to be in 9-5 there was no leeway about it. You couldn't skive off you just had to be there so I used to first of all get a big piece of paper and write out all my thoughts, feelings and things that I could look into and then I would go off to the library and look through magazines. The photocopy a maximum of 10 bits of information – so I would have two brainstorming sessions by the end of the first day. A brainstorm on written words and a brainstorm of visuals. That is current – because the magazines are current – but relate to my thoughts- which I much prefer to what I have been doing here. When I am here – I just get the brief and then you wander around and then I end up going home in the evening and doing it then – and just researching of the internet. I think I want to go back to having it written out and having a couple of brainstorms one written and one visual to sort myself out.” (Transcript 5)

At this level students are using self authorship and independent learning skills to shape their engagement with their sources of inspiration, including museum collections. They bring these identities and skills to the discipline and begin to see themselves as designers. However, the research suggests that students continue to find the transition from structured pre university courses to independent and self authored approaches required at HE challenging

3.2 Engaging in dialogue with other thinkers and practitioners

At this level students demonstrate a greater awareness of the need to contextualize their work within broader historical, theoretical and cultural debates as well as within contemporary practice.

Interviewer: *“If you think about the work that you make can you talk about the artists that influence you?”*

“I would defiantly say so. If can be an artist per project so to speak almost, not so cut and dry like that but.... I usually do communicate---- it might not even be an artist but a particular movement because I am very interested. I believe that everything that we do is in context with the old. So, to see where it fits within modern times and where ideas have come from before and how that relates. I find that really interesting.” (Transcript 2)

“Hopefully mine but I think that a lot of Graphics is learning from what has gone before so often you will do a piece of work that is based on something – for instance I did a project where I based the layout on an IKEA catalogue. It’s always your idea but the way that it’s done may be taken or borrowed or adjusted from something else that already exists.”(Transcript 5)

3.3 Understanding and skills used in the research/inquiry process.

At this level students are engaged in a process of refining their visual, conceptual and material languages to enable them to progress their work in a way that fits their personal vision. Students at this level focus on working with the sources they have gathered and the practical experiments they have done to develop ideas and take their work forward. Alongside this they seem to make earlier decisions about the direction of their work The criteria they use to make decisions varies with each student – it may be aesthetic conceptual, personal strategic, or even market orientated.

Interviewer: *“What about the process?”*

“Of making of research. I find that bit quite easy – some people crazy with research but I think I get enough for what I need to do.” (Transcript 16)

“I think a sketch book is useful for that – even though you are recording your thoughts – even though my sketch books are really messy and just for me – it needs narration – you need the person there if you look through it so that I could say I did that because of that and I did that because of that. I think that is a really important thing for me creatively and I think that is part of the skills you learn very quickly in your fourth and final year is how to eliminate things incredibly quickly and you make your decision making processes much more concise. I think that comes from being a year out in industry you don’t have time to think about things for long. And you are given project that might only last a day. Your decision making process are in incredibly quick and you have to draw on a lot of previous knowledge and I think that is quite important.(transcript 6)”

“I pontificate for too long on how I should approach the brief and what route I am going to take and how I am going to satisfy it. I very quickly come to conclusions about what I am going to do, rather than visually exploring and letting the work come to me. I don’t work in sketch books very often. I think about it for a long time maybe, maybe do a piece of creative writing to do with it and then and all of a sudden these.”(Transcript 2)

“First of all a bit of confusion and it might be a bit ropery but I try and find a theme that seems to be going through them all and then I’ll make some more pictures and then something will click, and hopeful this happens really early on so that I can go for whatever it really is, like when it’s was performance I’m like right I’m going to do performance and nothing else (Transcript 5)

“I am looking at into sustainable fibres and that has led me into to thinking about some of the native American ways of life because they did things so sustainable. What I am doing at the moment I have just photographed it – they used to make boats canoes out of silver birch bark and its an amazing process. You have to strip it of and put it in heated water so that you can strip it into thin layers – it’s the most versatile thing ever .Basically it fits in with the sustainability stuff. I have ordered it from America. Before America it came from Siberia – that’s the most flexible stuff.” (Transcript 9)

At this level students also have greater mastery over their practical and conceptual processes and demonstrate greater awareness of the need to integrate knowing and doing in their work.

“To get the balance right between thinking and doing. I am a thinker but sometimes you have to just do something- to decide that I am definitely following this route and I am actually going to put my pen to paper and commit to that.”(Transcript 2)

“I do quite a lot of research and I always want there to be quite a strong concept and a very strong idea behind my work. I am not just one of those Graphic designers that just want things to look good. I don’t think they are like that, they want you to have good ideas but in some places its sort of – as long as it looks nice that’s all that matters but I really want to research to get a real nice message or story or context for people so that some people might look at it and think that it looks good but others will look at it and see a deeper meaning to it. So it’s trying to get the balance between design and concept.” (Transcript 5)

“I would say that with knit it is happy accidents , its one of those things that you can’t possibly predict and I think that is the joy of the design process- sometimes I start with a very strong aesthetic of what I want it to look like at the end but it never turns out like that.. I has elements of it but never quite how I envisaged it at the start”.(transcript 6)

“Yes generally. I know what I am going to do pretty much and make it happen basically. Everybody says that you have to make mistakes and that if you didn’t make mistakes nothing would progress and its true but its really annoying especially with fashion – you get the paper pattern and you do the marking out and then you change the pattern and then you do it in the thing – then you see it together and that wrong so you have to change it and then you have to go through the – there are so many different layers to it. It’s hard doing it over and over again.” (Transcript 16)

“Well it depends what it was trying to say really. Say he said something about language and the way that people communicate and how that works well I think language is a very successful way of communicating with people and in order to make visuals as successful as language I just take some of the concepts, some of the concepts of speaking and try and relate that and that’s probably how I combine the communication with my creative

writing. I have been trying to do film making because that's that idea of more fast moving speech." (Transcript 2)

In their work with museum collections students at this level tend to respond to the collections in a variety of ways depending on their purpose for that day. In the main however, it seems to be a process of active looking and remaining open to the discoveries that they might make in museums and how these discoveries might help them in their work. In part it's about managing the unknown, the unexpected and the implications this might have for their own work.

"You can draw something from something that you don't realise that I am going to take something from so I might not go with any preconceptions with what I might look for to be honest. That sounds a bit vague but you can often take something from what you might think is the complete end of the spectrum but you realise that it relates. I think I would just look for things that interest me, maybe films."(Transcript 2)

"I think that it varies from place to place depending on the gallery or the museum and what I want to take from it on that particular day. I really really enjoyed the MOMA that I have just been too and I have been to other museums that nothing to do with nothing and you take from it different things from it and think oh I could go there for that."(Transcript 2)

"I think that is a real big problem – for me that's really problematic in the sense you can essentially look at thousands of things and you are - with the way visual designers work you record things very quickly and you naturally- well obviously everybody has a design side and you automatically eliminate things as you go along. I wouldn't say that a conscious process it's just something that evolves. I think it is essential to look at that many things even though at the time it can be time consuming and quite irritating. Sometimes a year later you can say I saw that there or that was really interesting and that could be applied to this and I think that is the really nice part of looking through an archive is that quite often you don't know what you are looking for and as long as you have got the time it is normally a really pleasurable experience."(Transcript 6)

.For these student's , whilst the time and cost of visiting collections continue to be problematic for students they are not the primary difficulties Students at this level more likely to express frustration with museums about the difficulty of accessing resources within timeframes that enable them to use the resource for academic projects. They make strong appeals for more information and support from museums about how to access specialist collections and the permissions and time frames they need to work with these sources. Whilst they also find the museum environment intimidating they are more likely to express this in critical or evaluative terms.

"But with regard to museums in my design work I think it is a shame, because the V&A seems to be – is a difficult thing to access and that's a real shame because we could really utilize it so much more..There is just so much more that could be done to help us out – there should maybe a talk given on the V&A because everybody uses it regardless of what course you are on – it's really essential, I can't think of one person that does go to the V&A regularly. I think it should be made cheaper and easier. For us to get there but then maybe more access online or it was slightly easier to access."(Transcript 6)

Interviewer: 'What would you like to see?

“The access made easier. I have been trying to access historical embroidery for my work and things like that and it’s just so incredibly hard and such a lengthy process to make an appointment ,it not very easy to go up there often , not that I am criticizing I think that has a knock on affect on all of us” (Transcript 6)

“Well I know we are only an hour from London but it’s quite expensive to get to London, it’s difficult to get up there quite a lot. It’s probably easier for London Universities to visit archives because they are really useful but because they are so far they take up a whole day that sometimes you don’t have. Online its worth looking at things to make sure that the things that’s there is there – it’s quite difficult to search archive”(Transcript 3)

“What’s my view on it – its (the V&A) kind of designed in such a way that you are not meant to be there it’s a really – what’s the word for it – a massive building- you feel a bit intimidated. “(Transcript 16)

Another aspect of this category is that students are much more likely to use drawing as a means of recording the information that interests them in museums.

“There is something lost if you take photographs – if you quickly sketch it down – you have the reference then and there you don’t need to go and look it up- print off a perfect example off the internet. I would quite like to do more of that.”(Transcript 5)

In summary at this level students learn from museum collections and other sources of inspiration in an integrated way .They demonstrate awareness of the interests and beliefs driving their engagement with the discipline and have developed skills to enable them to progress their work independently They appreciate the relevance of working with broader contextual sources including museum collections and they use these sources in an open and flexible manner They are also more confident about their conceptual and practical skills and are much more likely to use drawing as a means of recording the information they gather from museum collections. They use thinking and doing processes in their inquiries in an integrated way, remaining open to the discoveries of each. Whilst students at this level still face difficulties with the time and cost of visiting collections this is not their main concern .The appeals they make are for more information and support from museums about how to access specialist collections and the relevant permission and timeframes projects.

Immersed (Level 4)

4.1 Capacity for self authorship and skills for independent learning

In this level students demonstrate a commitment to interrogating their own motivations and intentions for their work and how this relates to broader discussions within their discipline. Students their capacity to self author their work to guide their engagement with museum collections and others sources of inspiration

“The images that I am using in my work are images from my family.- snapshots of family memories and that’s were I am at the moment but that might not always be there. I think what I am trying to do in my work is to make a comment in my work on emotions perhaps or little scenarios in life. I am at the stage where I have to look at my own before I can look at the bigger picture- that’s why I am at the XXXX – I’ve gone back to square one to go forward because I have changed my career completely.As an artist I am here to unpick in people- to show things to people in themselves. If I can do that without getting

myself in it then I have done something good, but at the moment I think I have got to much of myself in it.- that's what I am struggling with – the autobiographical.' It's just too easy to become self involved that's a stage I had to go through – but I need to work through it, and luckily I am coming out of it now, but I had to go there to see what I wanted to say- I just work from the heart. That's all I know.. I am coming to completely new work – all I have ever known is deep down in the soul- that sounds well – but that's where I am working from – just what feels right and what has meaning. The images I came back to again and again- I know they are in my unconscious and they are there for a reason and that's what we are all doing we are all doing – they are archetypes in the unconscious, they speak to us because of certain reasons and as an artist I am here to unpick in pick – to show things in people to themselves .Before I was looking and putting it through my own filter- putting it into the picture we all have in our minds – I was seeing, but now it's more about understanding what I am seeing – why – all of that the age old question. I think I am just at a stage in my life where I didn't want to say the same stuff anymore – it didn't make any sense – the words weren't in tune with the picture .I was just working through something.”(Transcript 1)

Another aspect of this category is that students embed processes of reflection, review and evaluation into all aspects of their work For instance

“Reflection comes at different stages, in the making it has to be quite quick. And there are moments when I am reflective so it could be one or the other – I am caught between the two at the moment. May be I have two strains of work where one piece is more considered where I have resolved and others are just getting that emotion out. And then perhaps afterwards I can reflect on that piece and take it somewhere else. Most pieces are points along a journey and then an end piece that is more considered.”(Transcript 1)

At this level the students use collections in the manner described in previous categories but also use them in a selective and purposeful way to gather information on particular aspects of design or to solve particular design problems

“Most of the collections I look at or borrow from in the National Gallery – I mainly look at paintings and if I was looking at three dimensional work it would be the Wallace collection, perhaps the Baroque period, just having access to the ceramics in London. There aren't really any major collections I could have gone to see apart from the one here which obviously you can't see at the moment – so I tend to travel further out to see things. I go down to Brighton there have a nice collection there of the Staffordshire figures I can't remember the name of the collection now but I really enjoyed them.. I went up to Barnsden to see the national museum to see the national collection of figurines up there. They have been quite important in my work so that is something that I do look at..... I am interested in assemblage and the stepping out of the two dimensional space into three dimensions I have sort of been following that throughout history so I guess that's why the Baroque period is so important to me – because that's a stepping out as well - things bursting into life.”(Transcript 1)

“At the moment I am doing lots of embroidery so I am looking closely at the 18th century and over the next few months I will be using the V&A as it's such a useful archive for us as design students because its so extensive – um and fashion wise with regard to my knitting, its taking on quite a 1930's look and with knitting techniques you look back in

time. – my knitting techniques span centuries so I can't put a finger on it but it's just essential to draw from lots of different influences.”(Transcript 6)

4.2 Engaging in dialogue with other thinkers and practitioners

At this level students interrogate a broad range of historical, theoretical and cultural sources, including museum collections to enable them to uncover the meaning and develop the practical and conceptual languages in their own work.

“am drawing a lot of seated figures it's because its hierarchical it's a heighten figure – there is a reason why I am attracted to that, because it keeps coming up and now that I have done the reading I understand what that is..... It was almost like a religious experience _ I was blown away seeing all these painting – Goya the black period - wow. The sleep of reason – when I see excellence it makes me just want to go away and make something – you just try and aspire to what these people have captured. It's just trying to capture that thing – isn't it?”(Transcript 1)

4.3 Understanding of and the skills used in the research process

These students learn from museum collections and other sources of inspiration in a much more focused way – using objects as examples of how to solve problems and contribute to the development of their personal inquiries. At this level students are capable of learning from museums and archives and other sources in a very strategic way as well as to using these them as to learn about and cultural and historical knowledge in a more general sense.

“It depends on the mission for that day. If you are lost in your work sometimes you just go and look and those things speak to you. And other time when perhaps – one time I went off to the British museum because I needed a structure to contain things in – to contain the things I was making so I went and looked at African sculpture because some of those things are quite complex in the way they are fitted together – there are standing and the totems poles and then I went up to the print and looked at some of the drawings up there to see how people had put things together – I'll deliberately go and look at things like that. Or if I go to the National Gallery I'll go to the Sainsbury's wing because that's the time when its of excellence – you know that those things are thought about and put together in a certain way – the composition is strong – so I'll go there for that- also because they are familiar to people and those are the figures that are used to instruct people and those are the powerful figures so those are the things I use in my own work because they are timeless. The Wallace collection. It's incredibly important to see these things in the flesh than look in books – when you see something like that it can really captivate you and take you somewhere else in your work.- bring you to life”.(Transcript 1)

In this category, students totally immersed in their discipline .Practical and conceptual tools are used unconscious yet skilful way, with each remaining open to each other.

“there's a language in what I am doing at the moment.- I always see art as just another language It's scatology , the breaking down, degradation – it's almost like everybody is playing the same game at the moment, but maybe because you see it you see it everywhere – I think we are all the abject it's in the make-up of what I am doing.”(Transcript 1)

“When you become to self conscious you know that it’s wrong when you start over analyzing it It’s that moment that gesture when you are just making that you know that its right.”.(Transcript 1)

In this way students at this level interrogate collections for the clues about the practical processes or the conceptual ideas developing in their work.

Interviewer: “What are the things that you focus on when you visit a museum?”

“If its ceramic you would be looking at the glazes , design, you always think what process has it been through – you need to understand how it was made if you wanted to reproduce it- it might give you a feel of the way it’s been made. And you can re create that feel. I When I was looking at Staffordshire flat back, they were produced at low cost and they still retained a character and that is why I was fascinated by them.”(Transcript 1)

Student’s engagement with objects is also more complex and they use drawing as a means to explore their interpretation and engagement with objects. “

“If you draw it goes into long term memory. I take photographs if it’s just something I want to get .If I want to understand it I’ll draw it. - there’s an argument in schools and college there is too much digital photography going on – if you don’t draw it you can’t see it three dimensionally. When you take a photograph it’s just a quick reference. If you look at something two dimensional you never have to understand what’s behind it – so that’s why you have to draw it., because when you are drawing you are doing perspective. It’s the same when you feel something –.....when I can feel something or visualize something I know what it is. I’ve got it- I can understand it – just looking at things two dimensionally doesn’t work for me.”(Transcript 1)

At this levels students have the confidence, skills and motivation they need to work with museum collections. However, they continue to make appeals to museum for more targeted support with their research One students commented:

‘I thought there would be a link (between the Royal College of Art) with the V&A. I thought that there would be.”(Transcript 1)

In summary in this category students have an a well developed capacity to self-author their work They are aware of the personal interests and motivations driving their work and they use these to shape their engagement with the discipline , producing work that is interest to a wider audience. Students at this level have well have the reflective and evaluative skills necessary to enable them to progress their own learning. They are engaged in an active dialogue with a diverse range of sources, including museum collections that enable them to develop the languages and the meaning of their own work. In their inquiry processes they focus on analyzing and developing work and refer to museum objects as examples of good practice They feel comfortable work in museums but express disappointment that museums do not have formal links with HE that would grant them easier access to specialist collections.

The relationship between the categories

The research identifies four categories of description which are related hierarchically. These categories are named isolated, introduced, integrated and immersed .Each category is characterized as

by the students expanding awareness across a number of key learning dimensions. These dimensions are self authorship, independent learning, dialogue about contextual sources, understanding of and skills used in the research or inquiry process. The research suggests that students focus in each of these dimensions affects how students learn from museum collections and other sources of inspiration.

1. The capacity for self authorship and the skills to learn independently.

1.1 The focus in terms of the student's capacity to self author their work:

The findings suggest that as student's capacity to self authorship increases, their engagement with their museum collection and other sources of inspiration changes. In the less powerful categories (level 1&2) students found it difficult to articulate the personal enthusiasms driving their engagement with museum collections or other sources of inspiration. In the more powerful categories (levels 3&4) students capacity to self author their work increased and they used these interests and concerns to shape their engagement with their sources in a manner that was personally meaningful to them. The research also found that as a student's capacity to self-author their work increased so did their motivation and their identification with their discipline. The educational value of self authorship was highlighted by Baxter Magolda (2006) who argued that this was the primary purpose of HE and by Davies, A (2006) whose work has previously highlighted the importance of this aspect of learning for design students. This report argues that self authorship might be essentially important for art and design students as their autobiographical experience are often located at the heart of what they choose to be interested in and in what they choose to focus on.

1.2 The focus in terms of the student's ability to work independently.

Students varied across the categories in the extent to which they took responsibility for their own learning and had acquired associated skills of reflection and review. In the less powerful categories (levels 1&2) students relied on course directed or tutor directed activities to help them identify relevant interesting museum collections or other sources of inspiration. In the more powerful categories students (levels 3&4) took more responsibility for directing their own learning and used processes of reflection and review to identify sources that might interest them and explore how to work with them to develop their own work.

3. Dialogue with other thinkers and practitioners

The focus in terms of the students understanding of the need to contextualize their work and engage in dialogue with other thinkers and practitioners.

The research found that there was an expanding awareness of the need to contextualise work and the extent to which they were able to identify and engage in debates relevant to their personal interests. Students in the less powerful categories (levels 1&2) relied on tutors to identify the sources, including museum collections, to contextualize work. Students at this level appreciated the relevance of examining the work of contemporary practitioners but placed less value on and broader theoretical historical, cultural sources. In the more powerful categories (levels 3&4) students discovered their own influences and investigated these independently, including arranging visits to relevant museum collections. Whilst students in this category also enjoyed investigating the work of contemporary practitioners they also appreciated the need to contextualize their work in a broader range of historical, theoretical and cultural sources.

4. Understanding and skills used in the research/inquiry processes.

4.1 Students focus in terms of their understanding of the research/inquiry process in design

Students across all categories gather material which they add to personal archives and use to help them develop their work. However, the research found that in the less powerful categories (levels 1&2) students focused on gathering ideas from their sources of inspiration, including museum collections and experimenting with processes and materials .In their work with museum collection they focused on collecting information on colour, shape and texture that contributed to this initial stage of the design process. At this level students often found it difficult to move beyond this stage, to make decisions about competing options presented through their work. They also appeared to have limited strategies for enabling them to make decision between competing lines of inquiry identified in the initial stages of their research and the subsequent development of ideas or products.

On the other hand students in the more powerful categories (3& 4) appear to find it easier to make early decisions and choices about competing options presented to them through the initial stages of their research .The criteria they use to make these decisions may stem from course requirement or personal enthusiasm but these early decisions allow students to spend more time evaluating and reviewing methodologies, finalizing and presenting designs. In the more powerful categories students are more likely to focus on using museum collections and other sources of inspiration as vehicles for helping them solve design or presentational problems in their own work. They are also more likely to understand sources as complex and relate to them through their own interest.

4ii) The focus in terms of the use of practical and conceptual skills.

Across the categories there was the development of a gradual confidence in the ability to use the conceptual and practical tools to work sources of inspiration and transmute them into something that was their own. In the less powerful categories (levels 1 &2) there was an emphasis on learning the debates that define the boundaries of the discipline and learning the practical skills associated with the discipline. At this level the acquiring practical skills is often quite self conscious and time consuming and students may need to spend time mastering these before incorporating conceptual approaches In this way students might use their sources of inspiration, including inspiration from museum collections to test out practical experiments and prompt readings of conceptual ideas. In the more powerful categories students (levels 3&4) students use their conceptual and practical skills interchangeably and remain open to the learning developed through each strand. They work in a skilful unconscious and intuitive way with their practical processes and relate these to broader cultural, historical and cultural influences.. Both tools are used for the purposes of furthering personal lines of inquiry.

Conclusion In conclusion the suggests that students memories stemming from childhood and educational experiences are important for shaping how HE students engage with museum collections and other sources of inspiration. It suggest that these prior associations mingle with students current conceptions of and approaches to learning developed whilst at HE to determine the extent to which students continue their engagement with museum collections or other sources of inspiration. It also suggest that these factors also influence the way in which students respond to practical and psychological problems they encounter working with specific learning environments such as museums.

Implications for teaching and learning

The research highlights how the processes that inform designer's creativity are often developed over several years if not a life time. They are both autobiographical and worldly. Childhood experience of visiting museums seems for instance to continue to affect current attitudes towards them. What should HE focus on in order to offer the best interventions it can to develop a student's creative scholarship? What part might visiting museum collections play in this process? The experiences laid down at university are central to equipping students with a professional identity and a way of working that will sustain them through their professional lives. Learning to use museum collection effectively during these years could be extremely beneficial to students as they are a resource that can be used after the student has left HE. If used effectively, the evidence suggests that they can be a powerful ally to the designer. The research suggests that the implications for learning and teaching are;

1.Supporting self-authorship and independent learning

The research found that the inquiry processes in design are driven by deep rooted and early personal interests and experiences, which are used to guide the interpretation of museum collections and other sources of inspiration. For the design student knowledge and new skills are viewed through the prism of personal interest and autobiography is pivotal to the way that they learn. Theoretically this seems to suggest that Biggs model of Solo taxonomy needs to be adjusted to reflect the primacy of personal experience, and authorship to the creative process. Marcia Baxter Magolda (2006) argues that self authorship is related to making choices and decisions as a person. A person that has a set of beliefs and values in place against which to make those decisions and that the most important task of HE is to equip students with this capacity. Davis, A (2006) work has already drawn attention to the importance of self authorship for design students. This research suggests that for art and design students whose work is rooted in autobiography and driven in personal interests and consequentially the capacity of self authorship might be especially important. The processes of self reflection, review and evaluation associated with independent approaches to learning also help students to question and refine those beliefs and values and the decisions and choices related to them. It is in this way that students bring their identities to the construction of knowledge and learn from museum collections and other sources of inspiration.

The research also suggests that students may benefit from more support making the transition from further education to HE and its focus on independent learning. Whilst the evidence suggests that design students do eventually make this transition, it also found that many students found this transition difficult and may benefit from a more structured and supported introduction to independent learning. More effective use of reflective strategies may help many students to reveal the connections and flows between different strands of their work at an earlier stage enabling them to deepen and strengthen their investigations. They may also benefit from a better insight into the personal motivations and interests driving their work and how these relate to broader disciplinary debates. Much of this support could be delivered through PDP style activities.

Recommendation: HE to introduce specific measures to help students make the transition to independent learning and builds their capacity for self authorship perhaps through PDP style activities.

B Supporting dialogue, collaboration and informal learning.

The research found that students who don't fully appreciate the relevance of contextualising their work within a broad range of historical, cultural, and critical sources can sometimes make very powerful work, by bringing their imaginative and creative powers to bear on their sources. However it also found that students awareness of how what they have made fits into the trajectory and

languages of the discipline is likely to be limited and they may be less equipped to sustain their creative practice. Equally students who contextualize their work well and visit museum collections regularly may not always make the most creative work but this broader awareness can powerfully augment student's existing creative abilities and also create a sense of professionalism. It can help them sustain a flow of ideas. For these reasons encouraging students to make the transition to a deeper understanding of the discipline is important for HE and museums. This research suggests that students may benefit from more opportunities to debate the question of relevance. Why are the things that surround us and well as things that have gone before (e.g museum collections) important?. The evidence suggests that the more students appreciate the relevance of museum collections to their work the more motivated they are to access them. This means that within HE and within museum education we may have to do more to ensure that students understand and appreciate how museum collections can help them with their own work. It suggests that HE and museums may need to do more to persuade some students of the relevance of collections, by demonstrating the links between past practices and contemporary trends. The research suggests that students are not always persuaded of the relevance of contextual sources simply by being introduced to them, they need opportunities to discuss the relevance of them to their own practices.

Recommendation: HE and museums to introduce and create opportunities to discuss the relevance of museum collections and other contextual sources to students contemporary practice.

3. Making the research and development process more explicit: The research also goes on to suggest that students learn from museum collections and other sources of inspiration by collecting ideas, images, thoughts and practical experimentation in the less powerful categories and interpreting and analyzing sources in the more powerful categories. Analyzing and interpreting practical sources and processes requires a range of visual, aesthetic, observational and decision-making skills and that some students need more help developing their aspects of learning. In particular students may benefit from discussion about how museum collection might help students solve design problems in the later stages of a project as well as providing sources for initial inspiration, The research suggests that many students find it difficult to make the transition to more focused work and would benefit from more support at this stage of the project. This support can come from learning from fellow peers who have made this transition and from tutors who can help students through these transitional stages.

Recommendation HE to consider way in which it can ensure that students understand the entire research/inquiry process in design and are supported through the transitional stages to more focused work.

Recommendation HE and museums to demonstrate to students how museum collections can be used to solve design problems at all stages in the design process.

D. Emphasizing the importance of high level practical and conceptual tools in the creative process.

Learning the practical skills and conceptual tools associated with the discipline is also central to becoming an expert practitioner in the field and that without the early mastery of these students creative practice may not flourish. The research found that during the process of acquiring new practical and conceptual tools students move back and forth between the levels of understanding whilst new skills and understandings are brought within personal experience. In particular the research found that an inability to master the languages of practical processes can frustrate conceptual expression.

However the research also suggests that design students often work with an incomplete understanding of the languages and meanings that they are working with and it is important to their progression that students feel confident to pursue a line of inquiry even if the meaning is not clear in the formative stages. Because of this the research found that students must embrace transitional moments of not knowing or 'luminal states', if they are to improve. Cousins, G (2006) argues, unless students enter these states of not knowing or luminal spaces they are likely to remain at the level of ritualized learning rather than the integrated understanding signified in Biggs, J (2003). The research argues that for design students developing the confidence that their discoveries will lead to something that is meaningful to them and that they will come to know eventually is an important aspect of their learning. It also argues that design students' strong reflective processes are important for revealing the connections and flows in students' own work.

Recommendation: HE assessment recognise that students' level of understanding will move back and forth between different levels of understanding as new conceptual and practical skills are brought within personal understanding.

Recommendation: HE assessment recognise and support students through transitional phases in their understanding or luminal states.

4. Developing skills and confidence to work with museum collections.

The research identified a number of problems students face in their work with museum collections. It found that whilst these problems were consistently reported on across all categories, the students in the less powerful categories' (levels 1&2) were more likely to identify problems relating to time away from academic studies and the cost of travel to museum collections and lack of confidence and skills to work in museums, in particular drawing and observational skills. Whilst students in the more powerful categories (levels 3&4) generally felt more comfortable working in museums but were more likely to identify problems relating to accessing the information and collections. In summary the problems identified by students of working with museum collections were;

1. The time away from academic studies and the cost of travelling to museum collections especially for students outside London.

The research suggests that students in the less powerful categories (levels 1&2) found it the most difficult to find the time and money to visit collections. The most motivated students also identified this as problematic but the research argues that because these students were found to have a better understanding of the relevance of the collections to their work they were more likely to overcome these practical constraints. The research concludes that museums and HE will need to work together to ensure that students appreciate the relevance of working with collections to their development as practitioners and design scholars. It also suggests that museums and HE will need to work creatively to encourage students to access the collections they need to address the issue of time/cost for students outside London.

Recommendation: Museums to consider ways to reduce the time and cost of accessing collections. Measures might include free student admission, building virtual collections and where possible taking museum objects to HE.

2. Skills and confidence to work with museum collections

The research suggests in the less powerful categories (levels 1&2) students lacked the confidence and the skills, especially drawing skills, to work effectively with museum collections. Additionally they

also described problems, searching websites effectively, talking to museum staff to discuss access to collections and understanding the permissions and time frames required to work with the collections.

The research also found that students with these approaches also tended to restrict their use of the collections to the initial stages of their inquiry/research, using them to collect initial inspiration on colours, textures, shapes etc. In the more powerful category (3&4) students were generally more confident about these facets but did express frustration with the difficulty of accessing more specialist information or personal support for research. Students with these approaches used the collections more flexibly; in addition to using them for initial inspiration they also used them to inform the analytic and presentational stages of their work. At this level, students expressed frustration with the timetables for accessing specialist collections, which were not always compatible with the time scales of HE. The research concludes that HE and museum need to work together to build the skills and confidence of students to work with the collections. This might include observational and drawing skills, interpreting and handling objects, information about permissions and routes for accessing collections. It also suggests that museums and HE work discuss how to enable students to work with specialist collections at undergraduate level. It suggests that making access to museum more transparent would be helpful to students and that perhaps some form of student liaison post could be created through which all student related inquiries could travel.

Students with less powerful approaches to their learning (Levels 1&2) also called for small adjustments to help them feel more confident about working in museums. These requests included firstly, student only sessions, so that they could work without the public present, secondly, for the lighting to be brighter during these sessions to improve observation and drawing. Thirdly, better seating and access to equipment for drawing.

Recommendation: Museums and HE to introduce measures to improve students' confidence and skills to work with collections. These measures might include, drawing, observational, interpretation and handling skills.

Recommendation: Museums to consider offering student only session in which the public are not present and the lights and seating arrangements are adjusted for drawing.

Recommendation: Museums and HE to introduce measures to improve students' access to information about the time scales, permission and routes through which to access collections not on public display.

In conclusion this research suggests a focus on teaching and learning within higher education should be firstly be on developing students capacity for self authorship and independent learning, secondly on ensuring explaining the relevance of broader contextual sources, including museum collections, to students current practice and greater opportunities to discuss contextual issues informally with peers. HE tutors, fourthly making the inquiry process design more explicit and offering support to students as they make the transition from the initial stages of a project to more focused work. Fifthly, by equipping students with the confidence and skills to work more effectively with museum collections and well as improving the information about and access to collections not on public display. In relation to learning from museum collections,

Summary of recommendations

Recommendation: HE to introduce specific measures to help students make the transition to independent learning and builds their capacity for self authorship perhaps through PDP style activities.

Recommendation: HE and museums to introduce and create opportunities to discuss the relevance of museum collections and other contextual sources to student's contemporary practice.

Recommendation: HE to consider way in which it can ensure that students understand the entire research/inquiry process in design and are supported through the transitional stages to more focused work.

Recommendation: HE and museums to demonstrate to students how museum collections can be used to solve design problems at all stages in the design process.

Recommendation: HE assessment recognise and support students through transitional phases in their understanding or skills development

Recommendation: Museums to consider ways to reduce the time and cost of accessing collections. Measures might include free student admission, building virtual collections and where possible taking museum objects to HE.

Recommendation: Museums and HE to introduce measures to improve students' confidence and skills to work with collections. These measures might include, drawing, observational, interpretation and handling skills.

Recommendation: Museums to consider offering student only session in which the public are not present and the lights and seating arrangements are adjusted for drawing.

Recommendation: Museums and HE to introduce measures to improve students' access to information about the time scales, permission and routes through which to access collections not on public display.

Limitations of the research.

The research question itself presented some initial difficulties but was kept in place because it reflected the different interests in the research .By asking about sources of inspiration, the question makes the assumption that museum collections are a source of inspiration for student's .and whilst the research found that students are inspired by these sources, the research does not attempt to assess the significance of these sources in relation to others or to assess the impact or value added of this source on the creative achievements of art and design students at the University of Brighton or the Roayl College of Art .

The research question was also found to be very ambitious given that that we still know so little about the art and design process. This research has contributed to this understanding by beginning to map out that process as experienced by students within HE. In a sense this was found to be one of the

primary tasks of the research .Understanding how students learn from their sources of inspiration was found in part to be a process of revealing what the process of learning is in art and design.

The original intention for the research project was for the approaches of design students from three different design courses (Interior Architecture, Graphics and Illustration, Fashion and Textiles), at the University of Brighton and the Royal College of Art ,and across four different year groups to be contrasted and compared This was found to be to complex given the timescales and logistical problems of accessing students; the research was simplified so that the experiences of design students were investigated, removing the requirement to make comparisons across different year groups and disciplines. It was felt that this more detailed comparison might form the basis of subsequent research, once the initial base line work had been completed.The phenomenographic research methodology used in this research focuses on the student experience of learning from their sources of inspiration and museum collections within the context of their normal educational environment - higher education. This methodology doesn't investigate the impact of value added specific learning interventions such as visits to museum collections, and although it does offer some insights into the behaviour of students in museums – this is not its primary purpose. These types of investigations would require a different approach that allows the researcher to work more closely with students within the museum. The ability to do this depends partly on the availability of resource research and secondly the forward planning of these visits so that clashes with academic programmes are avoided. One further limitation of the methodology is that the experience of the students is not triangulated with the perspectives of museum staff or HE staff.

Interviewing students so that the lines of questioning shed light on the research question took practice and much of the material collected in the initial stages was found to be irrelevant. Analyzing the data collected in the transcripts also took much longer than planned for – after further investigation the researcher found that these transcripts analyzed by teams of researchers who discuss and debate the categories. In future projects consideration should be given to ensuring that the data is analyzed by small teams of researchers familiar with the methodology and more time is allocated to this stage of the research. As the data in this research was analyzed by one researcher, the interpretation is a personal one reflecting the viewpoints and conceptions of the researcher.

The research identifies the variation between students and the relationship between the categories. It highlights some of the difficulties students face as the move through the categories However ,much more is needed to more fully reveal the troublesome moments that students encounter or the threshold knowledge that they must acquire to enable them to make the transition from one category to another. Future research might examine threshold concepts in art and design and question both staff and students about their perceptions of these.

The management of the research project faced one or two difficulties. Firstly, the project started in November midway through the first term- this delay meant that the researcher was out of step with the academic planning cycle making it difficult to negotiate access and times to interview students. This is especially difficult for researchers who do not have teaching relationship with students To be effective research staff need early access to academic staff responsible for enabling them access to the research population and most importantly a clearly defined research question and accompanying methodology.

The researcher is aware that insufficient use was made of the web 2 facility This was for several reasons ,the researcher was unfamiliar with using web 2 and given that time for the project was limited choose to prioritize the research.

One of the main unexpected benefits of the project was that students seemed to really value and benefit the opportunity to discuss their work in depth with one person. Art and design is an expression of a personal point of view and in enabling students to reflect on all aspects of their experience students seem more confident about articulating the connections and flows between different components of their work.

Conclusion

The research set out to shed light on how design students learn from their sources of inspiration and museum collections. In doing this it answers calls from within museum education (Speight, C 2007 & Cook, B 2007) for a better understanding of how practice based art design students learn from museum collections and from within art and design (Refsum, G 2002) for a better understanding of the learning that takes place through the making process. The research used the Phenomenographic research method pioneered by Marton & Saljo (1978) and extended and developed by Biggs, J (2003), Trigger & Prosser (1999) as the principal tool for investigating the student experience. In total 4 focus groups, 24 in depth interviews and three accompanied group visits were conducted with students from three design courses at the University of Brighton and the Royal College of Art.

The research identified categories of student experience which were related hierarchically by an expanding awareness of particular aspects of learning. The categories that emerged were similar to the SOLO taxonomy hierarchy developed by Biggs, J (2003). It found that in the less powerful categories (levels 1&2) students had little awareness of the personal interests and motivations driving their inquiries and relied on tutors to guide their interpretative processes. They also tended to work from sources that immediately surrounded them rather than exploring sources that from historical, theoretical or cultural origins, including museum collections. In their inquiry and research processes they focused on the initial stages of collecting inspiration for projects and acquiring the practical skills related to their discipline. Students in these categories found it difficult to make decisions about competing options presented through their work. They identified problems of time away from academic studies and cost of visiting collections as reasons for not engaging with museums. They also lacked the confidence and skills, particularly drawing skills, to work effectively with collections.

By contrast in the most powerful categories (levels 3&4) students learning was characterized by a strong sense of personal intention and an ability to work independently. They also actively sought sources of inspiration – not just from what surrounds them within the contemporary field but from a broad range of theoretical, cultural and historical sources, including museum collections. These students had a more complex understanding of the inquiry/research process in art and design and used their source from museum collections for initial inspiration but also to solve analytical and presentational questions in the later stages of their inquiry processes. Students in these categories used their personal interest and ability to work independently as tools to help them make decisions about how to choose between and progress different ideas presented through the initial stages of research.

These findings suggest that there is a variation in the way that design students learn from museum collections and other sources of inspiration. The report concludes that teaching and learning should focus on developing students capacity for self authorship and developing the skills for independent learning, especially the processes of reflection and review. It also concludes that HE and museums. Need to do more to explain to students the relevance of working with museum collections and other contextual sources. Further investigation into the creative benefits for students of working in a studio, alongside other practitioners rather than working alone at home also need to be further investigated.

It goes on to agree with recent calls within art and design for research/inquiry processes to be made more explicit to students, arguing that this may help some students overcome a tendency to equate collecting materials and ideas with the entirety of the research process. Finally the research concludes that many students lack the confidence and skills to work effectively with collections and that He and museums need to work together to improve these. In the less powerful categories the research found that students found the museum quite an intimidating place, finding it a challenge to access the information they needed and to draw confidently in its public space. They described a number of aspects as problematic including, the time and cost of visiting the collections and accessing specialist information. In the more powerful categories (levels 3&4) students felt more confident working with the collections, but expressed frustration about the difficulty of accessing information/collections in timeframes that would enable them to use this research for academic projects. It suggests that museum education may benefit from creating specific opportunities for students to work with collections such as a student evening that excludes the public allowing students to draw more freely. It also suggests that students would benefit from a more targeted form of personal support from museum staff that supports students with their individual inquiries and offers response times that match the fast pace of academic assessment.

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