

The implementation of object-centred learning through the visual arts – an approach for 21st century educators

ANTHONY PARTON, DOUGLAS NEWTON AND LYNN NEWTON¹

Durham University, Durham, UK

ABSTRACT

In the past, museums were places to “Look, but don’t touch!”. Today, many museums allow opportunities for visitors, whether tourists or students, to interact with their artefacts. “Hands off!” has become, “Hands on!”. At the same time, digital technologies now make it easier for us to access information about those artefacts, interpret it, and construct and communicate the story behind the artefacts in imaginative ways. The potential for learning *about* and *through* such artefacts is evident. This article describes how this potential was realised in a collaboration between a leading Oriental Museum and undergraduates studying a visual arts module at the University of Durham, UK. It describes some guiding educational principles, the students’ interaction with objects of art, their research processes and logs to create the stories behind the artefacts, and the presentation of their ideas in podcasts. Their responses achieved the aims of high levels of motivation, the construction of understandings (and their limits), imaginative communication, heightened information technology skills, and personal satisfaction. That this approach could be usefully applied elsewhere is indicated, along with some limitations.

Keywords

autonomous learning, creativity, podcasts, museum art, motivated learning

¹ Corresponding Author – Prof. Lynn Newton, Durham University School of Education, Leazes Road, Durham, DH1 1TA e-mail: l.d.newton@durham.ac.uk; tel.: 0191-3348379

CONTRIBUTOR DETAILS

Dr Anthony Parton is Director of Undergraduate Art History at Durham University. He is a specialist in modern European art and has published widely on the theme of Russian modernism. His most recent book is *Goncharova: The Art and Design of Natalia Goncharova* (Antique Collectors' Club, Woodbridge).

Contact: Durham University, School of Education, Leazes Road, Durham, DH1 1TA, UK
E-mail: Anthony.Parton@durham.ac.uk

Professor Douglas Newton PhD DSc is a lecturer and researcher at Durham University with a particular interest in fostering purposeful thought. His most recent books include, *Teaching for Understanding*, and *Thinking with Feeling*, (both London: Routledge). Both books have attracted widespread interest and *Thinking with Feeling* has been described as a Copernican shift in the notion of teaching.

Contact: Durham University, School of Education, Leazes Road, Durham, DH1 1TA, UK
E-mail: d.p.newton@durham.ac.uk

Professor Lynn Newton PhD is Divisional Director for Initial Teacher Education in the School of Education, Durham University. Her most recent books include *Creativity for a New Curriculum* (Routledge, London) and *From Teaching for Creative Thinking to Teaching for Productive Thought* (The International Centre for Innovation in Education [ICIE], Paris).

Contact: Durham University, School of Education, Leazes Road, Durham, DH1 1TA, UK
E-mail: l.d.newton@durham.ac.uk

The implementation of object-centred learning through the visual arts – an approach for 21st century educators

INTRODUCTION

Museums can provide opportunities for both experience and meaning-making. However, all too often, the objects that they contain have been presented, and hence received, as ‘closed’ worlds. Out of reach in the glass cabinet, these objects lie dormant and mute with only a label (sometimes handwritten) to speak for them. What does such limited information really tell us about that object? It is hardly surprising if galleries and museums have been commonly seen as places of diversion and entertainment, as sources of fragmented, passive learning.

In recent years many museums and galleries have begun to make strong efforts to render their collections more accessible, more relevant, more meaningful, and to engage the visitor’s intellect and emotion. We recognise that museums and galleries hold many artefacts capable of generating learning of quality (Vartiainen, 2014). Each has a life story to tell and each represents a direct link with its creator and with the contexts of his or her creation, authentically representing their endeavours to achieve valued ends (Hampp, 2014). Furthermore, getting to know such an artefact by more than sight alone can enrich that knowledge (Steier, 2014). In addition to discipline-specific competence, certain generic skills (like the ability to communicate) and values (like tolerance and compassion) are also seen as valuable (Chan et al., 2014). The notion of fostering student effectiveness was promoted by the UK’s Royal Society of Arts; Stephenson explained that this means helping students ‘to take effective and appropriate action, explain what they are about’, and ‘learn from their experiences’ by giving them responsibility for their growth in ‘the pursuit of excellence in the development, acquisition and application of knowledge and skills’ (1992, pp. 2-3).

This article provides details of one such attempt to add value to learning in this way, enriching learning through the context of an art history module, *Objects of Desire*, on an undergraduate programme in Durham University.

THE STARTING POINT

The Oriental Museum of Durham University has a diverse collection of over 25,000 objects of art and material culture, many of which are in storage. These represent the cultures of Ancient

Egypt, the Near and Middle East, the Indian Sub-Continent, central and south Asia and the Far East. They are of both ancient and contemporary manufacture. A collaboration with the Museum staff offered a unique opportunity for undergraduate history of art students to work with its artefacts in store. Many museums, whatever the nature of their collections, lend themselves to support for undergraduate study in this way. The problem is how to make the most of the opportunities that such specific collection present. In Durham, we particularly wanted the undergraduate students to experience:

- (i) an opportunity for study and research that is both attractive and rewarding;
- (ii) learning that is coherent, meaningful and worthwhile; and,
- (iii) that involves a process to strengthen their study and presentation skills.

These ends are, to some extent, mutually supportive, if they are seen in terms of meeting students' psychological and learning needs (Newton, 2012).

Regarding the first of these goals, the opportunity should engage and motivate the students. A task which promises to satisfy a need or promote something of personal value generates interest and initiates engagement (Newton, 2014). One such need is that of autonomy. Deci and Ryan (2000) describe autonomy in learning as choosing, shaping and completing a task in ways felt to be personally satisfying, fulfilling, rewarding, or goal-advancing. Offering autonomy is a powerful motivator and also fosters creativity, cognitive flexibility, and self-esteem (Deci et al., 1991).

Regarding the second goal, the engagement with the artefacts should produce a personally meaningful, coherent and durable body of knowledge. Engagement is associated with a deeper approach to learning in which inferences can be made, relationships constructed and possibilities explored (e.g. Saljo, 1982; Tait & Entwistle, 1996). Students must do this for themselves. All tutors can do is set a task which increases the likelihood that it will happen (Newton, 2012). Engagement, however, has three components: intellectual, emotional and behavioural (e.g. Fredricks et al., 2004). Intellectual engagement alone can achieve a lot but there is no thought without emotion and emotions can support the efforts of the intellect. For instance, positive emotions, like feeling moderately happy, secure and unthreatened, can foster the constructive processes of understanding and creativity (Newton, 2014). Furthermore, a museum which offers direct interaction with its artefacts can foster behavioural engagement and richer and more memorable understandings (Steier, 2014).

For the third goal, the task should cultivate students' competence in study and presentation. 'Competence involves understanding how to attain various external and internal outcomes and being efficacious in performing the requisite actions' (Deci et al., 1991, p. 327). Competence can be intellectual (as in developing self-regulated learning and research skills), the cognitive handling of academic emotions (like anxiety), and the acquisition of know-how (such as presentation skills) (Pekrun et al., 2006). Like autonomy, it is a strongly motivating need, and providing for it can make a significant contribution to what Deci and Ryan (2000) have called the need for self-determination.

Some vehicle which offers to satisfy such needs is required. Whilst some of the works on display in the Oriental Museum are world famous, such as the Ancient Egyptian servant-girl statuette in wood from 1350 BC, and have been well researched and published, many of the works in the collections have not. Each could serve as the basis of an enigma, mystery, puzzle or problem in need of resolution. Problem-based learning (PBL) entails giving students a genuine problem which they address and solve themselves (Schwartz et al., 2001). Developed to train medical students, it has been applied in a variety of disciplines and much has been claimed for its effectiveness (e.g. Beringer, 2007; Newton & Newton, 2009). In this context, it could offer an autonomous opportunity to construct an artefact's story, develop competence in study, and enhance presentation skills in the process. The amount of autonomy can vary but, here, the freedom to choose an artefact, explore it, build its story, and develop competence along the way, places such a task at the strongly autonomous and motivational end of the continuum (Gagné & Deci, 2005). Like most approaches to teaching and learning, however, PBL is not a panacea and its effectiveness depends on the context and the aims. Students can, for instance, fail to be insightful and miss some crucial connections which may be needed in later work

THE APPROACH

In the work we describe here, students are presented with an opportunity to engage in PBL through a newly devised undergraduate module of study, *Objects of Desire: Oriental Art and Its Histories*. The students choose one object each from the Museum's collection that especially appeals to them - in a sense, an object that 'speaks' to them - which they research to construct its meanings and histories. The students' findings are then presented in the form of an audio-visual podcast of about five minutes duration. In this way, the students have the opportunity to learn what happens to art objects when they cross cultural divides, and how their meanings and

significance are contingent upon the cultures and times through which they pass, from the moment of their creation to their eventual display in museum or gallery contexts. Students are thus encouraged to explore the ways in which their object reveals the complex patterns of cross-cultural relations between Western Europe and the Oriental world.

The students who take the module

The students who choose this module are largely second and final year art history undergraduate students with a potential interest in Oriental art or in developing vocational skills for the art-related workplace. The module also attracts students from various other disciplines (e.g. archaeology, anthropology, politics, middle-eastern studies, theology, history and modern languages) for whom the study of Oriental art complements their existing academic interests. In any one year the majority of students taking the module are from British and European backgrounds (c.80% of the group). However, approximately 20% are international students from the Indian Sub-continent or from the Far East. They give reasons for joining the module as a desire to learn more about the art of their own indigenous cultures, advancing the view that they have never before had an opportunity to learn about this. The module is seen as offering them an opportunity to discover more about their own cultural background.

The ways in which the module relates to and enhances the lived experience of the students who take it was not anticipated in the planning stage. It quickly became evident, however, that students were engaging with this module specifically because it offered them the possibility of enriching their lived experience. Although the students are invited to select research objects on the basis of aesthetic appeal or intellectual curiosity, objects that ‘speak’ to them personally, it is obvious from the research proposals, in which the students comment on the rationale for their choice, that the majority of students carefully choose objects that in one way or another relate to their own experience and can speak to it.

Anja wrote that she had chosen to research an Indian miniature painting because:

“I am half-Indian and sadly do not have much Indian culture or influence in my life so I was interested to learn more about the history and culture of India through this project and more specifically through my object.”

Becki wrote that she had chosen to study an ancient Egyptian gold and amethyst necklace because of a collection of gold and amethyst jewellery that had been bequeathed by her

grandmother, a French Tunisian with a love of modern North African jewellery but designed in a traditional form. She explained:

“It amazes me that a piece of Egyptian jewellery from thousands of years ago can look so alike something my grandmother bought in Africa less than 100 years ago. Amethyst has long been my favourite stone and it was this magpie desire, aided by my childhood fascination with Egypt and my inherited jewellery that lead me to choose this necklace. One could argue that my childhood interest with Egypt was nothing more than false Orientalism, but I suppose that this module’s function is to re-educated those about the Orient and Orientalism.”

In both cases the students chose their objects because of the personal connections that can be established with them. By researching these specific objects the students can learn more about where they have come from, about the cultures that have shaped them, and can situate their own story in the broader picture of history and culture as it touches their own lives.

When asked to explain the rationale for choice of object, approximately 60% of the students in each year advance personal and cultural connections as the motivating factor. What is particularly interesting, however, is that this is not the only factor. They often go on to explain that choice of object is also dictated by aesthetic appeal. The connection with lived-experience and the opportunity that this offers to gain a greater degree of personal understanding supported by aesthetic appeal seem to be strong motivating factors that ensure continued commitment to the project and contribute the learning process. Of the remaining 40% of students approximately 10% make their choice on aesthetic grounds alone or on grounds of curiosity, whilst the remaining 30% make their choice because it will broaden their cultural knowledge in relation to an existing field of academic study and enable them to contextualise it.

The nature of the module

The research which the students undertake is underpinned by a rigorous taught programme which aims to equip them with the necessary critical thinking that they will require to do the research. The taught programme introduces the students to relevant cultural and post-colonial theories, principally those of writers such as Edward Said (1993; 2003) and Homi Bhabha (1994). It begins by introducing the students to theories of Orientalism and alerts them to the continual need to reflect upon the assumptions that they might bring to the field of Oriental art and the validity of the meanings which they might derive from it, since our understanding,

interpretation and responses to Oriental art will inevitably be conditioned by our received view of the Orient which may be naive.

Students begin by studying Said's text, *Orientalism*, in which the author exposes Orientalism as a semi-mythical construct (Said, 2003, p. xiii). They then engage in a deep deconstruction of the mechanics which underpinned 19th and early 20th century European images of the Orient. They explore ways in which the visual arts played a key role in misrepresentations of the Orient so as to bolster and entrench a specific power relationships in which the West presents itself as superior and dominant whilst the Orient is conceived of as the subservient other. Although a somewhat blunt instrument at this stage in the programme, it is important that the students begin to see patterns of Orientalism at work in the cultural field and learn to recognise it.

More recently, views that Said expounds in his book have been considered somewhat limited in that they rely upon a simple binary opposition between West and East. Current cultural and post-colonial theory and criticism has problematised such relationships. At this stage, therefore, the taught course engages in more subtle and qualified discussion. Attention turns towards more nuanced ideas such as that of hybridity, defined by Ashcroft *et al* as 'the creation of new transcultural forms within the contact zone produced by colonisation' (2003: 118). The students are encouraged to consider 'hybridisation' as 'a means of evading the replication of the binary opposites of the past and developing new anti-monolithic models of cultural exchange and growth' (2003: 183).

The taught course concludes with a study of the work of Homi Bhabha, and his attempts to achieve a more precise understanding of the complex intercultural processes that are at work when two cultures meet. Attention turns to his concept of the Third Space of Enunciation, a concept which asserts the interdependence of coloniser and colonised and which by extension questions the viability of ideas such as the purity and originality of cultures. It is in this Third Space, Bhabha argues, that 'we may elude the politics of polarity and emerge as the others of ourselves' (1995: 209).

The taught elements are, therefore, imperative aspects of the module since they provide the students with the relevant critical understandings, concepts and terminology with which to engage with their chosen object at a meaningful level.

The module is popular not only amongst students of a European background but also international students from the India Sub-Continent and the Far East, from Pakistan, Singapore, Hong Kong, China, Korea and Japan. When such students are members of the group, the level of critical study is inevitably enriched and deepened. They contribute very different cultural narratives, describing not so much their own experiences of the cultural imperialism the West has historically exerted upon the East, but rather more subtle cultural influences that have impacted upon their own indigenous cultures as a result of cross-cultural engagements. In other words, these international students open up entirely new forums of critical discourse within the group by displacing the conversation from a simple West/East dichotomy to a more subtle and nuanced exploration of cultural intercourse, as Bhabha describes it within their own immediate and ‘local’ sphere of cultural experience. All of this is crucial in underlining the idea that the student’s engagement with objects of other cultures is inevitably contingent upon their own cultural experience, whatever that may be, as well as upon the complex mechanics of cross-cultural influences over time as they might have affected the design and function of their chosen object and of the meanings that it has acquired over time.

At the heart of the module is the student’s personal engagement with his or her chosen object of desire and the podcast presentation. The object is researched during the course of the academic year, beginning with records and information in the Oriental Museum. The students are encouraged to engage not only with the specifics of the object but with the wider socio-cultural, geographical, historical and political discourse of which it forms a part. This includes: techniques employed in its creation, original function, iconography, symbolism, ownership (past and present), ethical matters, shifting meanings, contexts of display, and the ways in which the object may be seen to emblematised these in its own specific history.

During their research the students are required to plan their investigation and keep a log in which they not only record their findings (fig. 1) but also their reflections upon the research processes with which they are engaged, the problems it poses and the solutions they discover either in the research or the practical phases of the project such as the filming (fig. 2). There is a strong self-reflective aspect to the log, which also acts as a locus where the student can begin to ‘story-board’ their presentation and finalise their podcast script (fig. 3). The keeping of a log ensures that the student remains on task throughout the duration of the project and they act as a repository for the evidence upon which they will draw in the design and production of their podcasts.

In terms of assessment, the log demonstrates the extent to which the student has researched hi/her object, identifies sources used and the various dated entries and self-reflective aspects demonstrate the degree of commitment to the overall project. Students may complete their logs either in hardcopy format by using a note book or in digital form using Tumblr (a website for posting and blogging: <https://www.tumblr.com/>). Interestingly, although the assessment for the module demands the production of an audio-visual podcast and hence an engagement with digital technology, very few students (<10%) engage with the idea of a digital log. The majority employ the hardcopy format and explain that this offers them a greater opportunity for thinking about their object in more creative ways. It also offers them the possibility of mind mapping ideas in spider charts or adding text boxes and, in some cases, using collage to glue in things like train tickets to London to evidence visits to the Victoria & Albert Museum. These are processes which are less easily and less quickly achieved in digital format. Indeed, some students have specifically opted to use sketchbooks and have begun their research not by recourse to archival materials or books in the library but a process of by sketching their object, explaining that they can best begin to understand it and experience it through a process of visual analysis. The log acts as a record of the student's journey of discovery: as they learn more about their object, encounter problems and employ lateral thinking skills to solve them. As the log develops, so too the student can see the progress of their research journey and several students have told us that this helps them to remain engaged with the project from start to finish. Whilst 30% of the summative assessment involves an examination of the taught part of the programme, the remaining 70% is for the research log and podcast.

The podcast and digital technology

Mid-way through the academic year the students are encouraged to turn their attention to the creation of their podcast; they are responsible for all its aspect, from filming, scripting and presentation to editing. In many cases, the students who enrol on the module are unfamiliar with the technical and editorial requirements of podcast production. Indeed, no more than 10% of any one group of students has any existing experience of multimedia. Student feedback, however, suggests that the opportunity of learning how to make a podcast in a more informal arts environment as opposed to a more formal IT context, is an attractive one for them. The technical requirements of this aspect of the submission are not, however, overly demanding. Most filming is undertaken using a small video-recorder or smart phone. The Oriental Museum provides support in the form of tripods, lighting, rotating tables, and related resources.

Before filming takes place the students have the opportunity to watch examples of good practice in the form of audio-visual podcasts made by students in previous years. Class discussion identifies the key ingredients of a successful podcast like careful planning, use of script, paced delivery, concise expression, appropriate use of contextual images / background music, smooth transitions. Peer teaching and support is brought into play in the form of students who completed the module in the preceding year. These previous students give short presentations on how they filmed and edited their podcasts and discuss the problems and pitfalls that they encountered. Question and answer sessions with former students, the module leaders and the staff from the Oriental Museum not only help solve potential problems that the students might face but also instil a sense of confidence.

Having captured their footage, the students download and then edit it, using video-editing programmes already installed on Apple Mac or Windows devices. At this stage they may import sound, images, interview clips, and advance their argument not only through the spoken word but also at the level of visual comparison and contrasts.

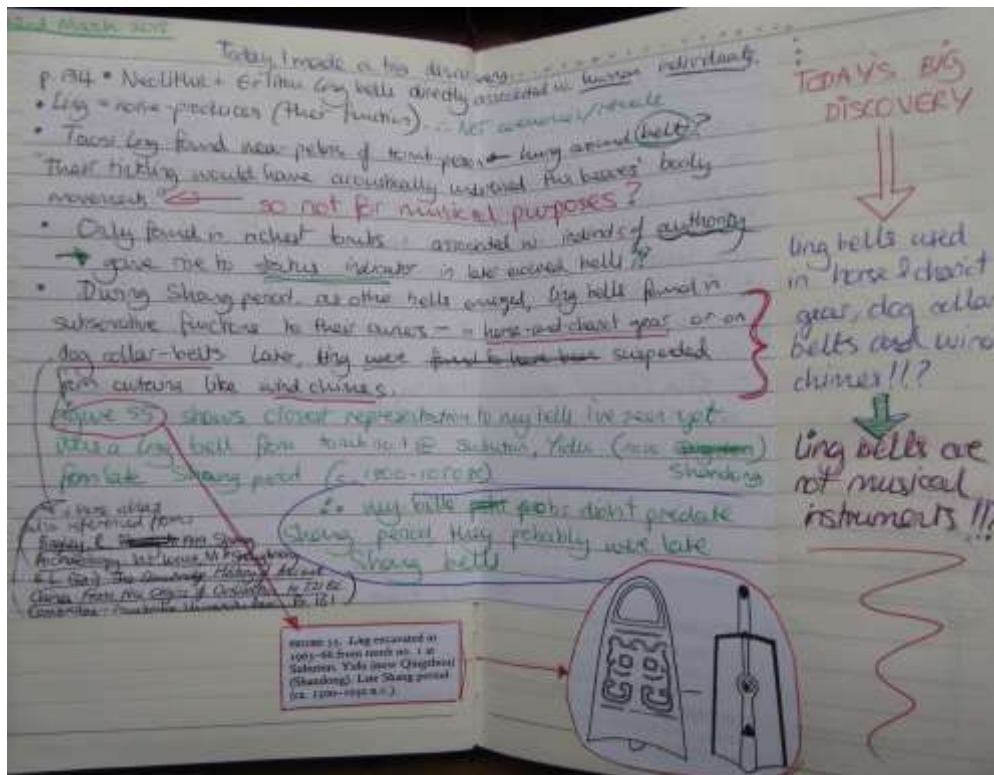


Fig. 1: Example of a research log (by courtesy of Charlie)



Fig. 2: Example of a self-reflective assessment in a research log (by courtesy of Deepth)

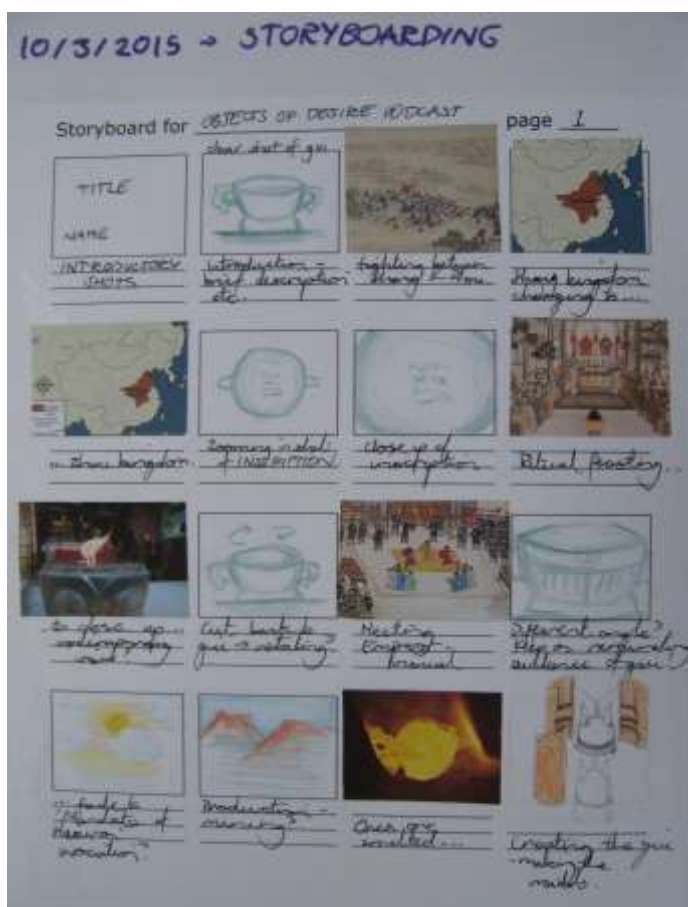


Fig. 3: Example of a storyboard page from a research log (by courtesy of Ena).

THE STUDENTS' RESPONSES

The first year of teaching this module was treated as a pilot. Their evaluations (which were collected anonymously via the University's electronic feedback system) were overwhelmingly positive. One wrote:

"...explores so much breadth of material but with the freedom to explore any aspects in depth for the podcast or for the exam; what a perfect balance!"

Another wrote:

"I was fascinated by this module because it felt very multi-disciplinary and brought me away from anything I had yet studied. In order to understand the arts of other cultures it involved understanding some of their history and religion, too. It really reaches out beyond itself as an area of study, particularly because it tackles such a huge area."

Regarding teaching methods one referred to the success of peer teaching as one of the interventions in the module delivery. About the assessment another student wrote:

"The podcast is such a creative idea for a summative assignment, and I know that I have learned many things that I would not have if the summative assignment was simply a traditional essay. Also if one views art as a kind of communication, then it is appropriate that a piece of work about art has to engage in the art of communication itself!"

The students' attainment on the module was gratifying, with all passing the module and 18 of the 22 (81.8%) receiving at least 70% of the marks.

At the end of the year, after student feedback, some minor changes were made. For example, a member of the Museum staff was invited to speak to the students about the qualities that the Museum and its audience would look for in a good podcast. Former students were invited to return to discuss how they had made their podcasts and to explain the creative solutions they had adopted to solve the problems they encountered. Finally, the allocation of marks for the podcast (originally 70% of the module mark) was divided into three components: the podcast itself (40%), the research log (20%), and the research proposal (10%). What follows are a series of still images taken from four student podcasts to demonstrate the different ways in which each researched, engaged in problem solving and presented his/her work as well as the ways in which their objects developed their learning beyond the field of art history alone.

Examples of the students' podcasts

Frankie, a student who had previously studied Art History as well as Chinese, decided to research a Chinese Han Dynasty jade cicada (fig. 4a). She explored the symbolism and function of such objects in the context of ancient Chinese funerary practices and demonstrated how the cicada would be placed on the tongue of the deceased to prevent the escape of spiritual essence from the body (fig. 4b). There was, however, some doubt as to whether or not the cicada was indeed made from jade. She discovered that this could be clearly ascertained by performing a specific gravity test. Her podcast footage demonstrated the test that she undertook (fig. 4c) and as a result she proved that the cicada was not, in fact, made of jade, as originally thought by the museum, but was made of nephrite.



Figs. 4a-c: Stills from Frankie's podcast on the subject of a 'jade' cicada.

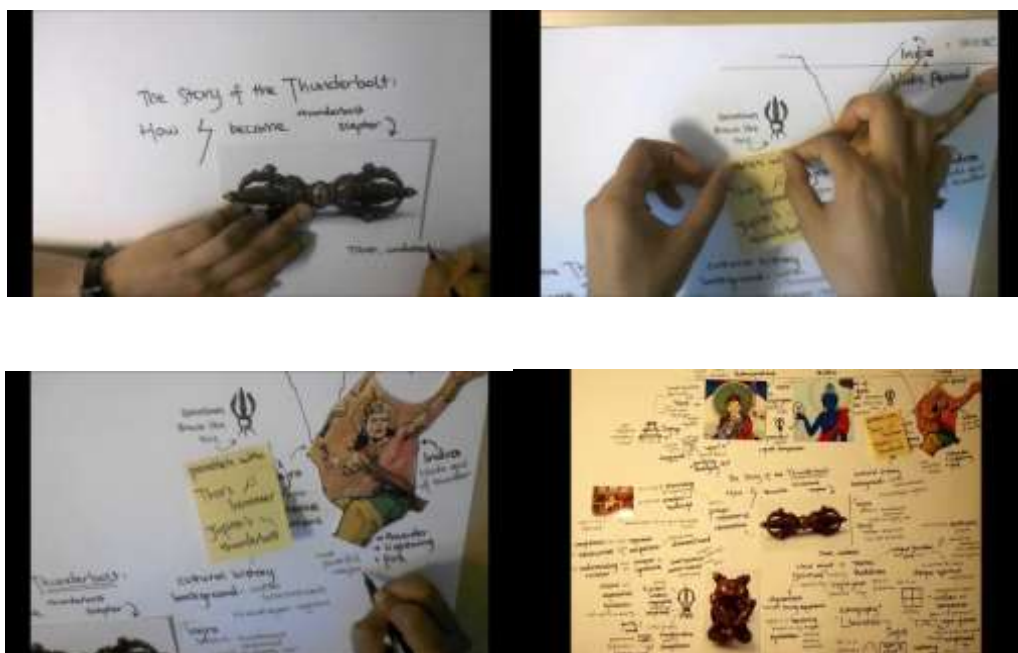
In another project, Gina, whose academic interests included Art History, French and Islamic culture and who had spent a year abroad in North Africa, explored an Iranian glazed ewer of unknown date and origin (fig. 5a). She adopted a comparative approach in her research by identifying similar objects in other collections where the date and place of manufacture were already known (fig. 5b). By studying the glazing techniques of these other objects and comparing them with her own, Gina was able to place the ewer culturally, geographically and chronologically. She noted that the Arabic or Persian script around the neck of the ewer had no meaning (it was decorative) and therefore this seemed to locate the object in a secular as opposed to a religious context. This was supported by the fact the representation of animals seen around the body of the ewer is not found in Islamic objects of religious function. She explored the trade in ceramics in ancient Persia at this time by referencing the sale of such items in Persian miniature paintings (fig. 5c) and discovered that a ewer such as this would have been intended for a high-class clientele who could afford such an object. Finally, Gina considered the design of the piece and noted that the spout was placed too high on the wall of

the ewer to be properly functional. As a result she concluded that the piece was made and displayed for its symbolic value as a status symbol rather than as a functional artefact.



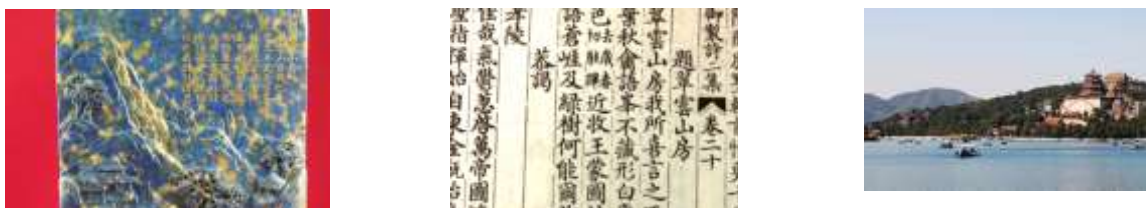
Figs. 5a-c: Stills from Gina's podcast on the subject of an Iranian ewer.

Hanan, a student of Zen Buddhist faith, selected as her object a Tibetan vajra (a symbolic representation of a thunderbolt employed in Buddhist worship). Her presentation was very different to the others since it followed an accumulative model in which she began with the object itself (fig. 6a) and gradually built her learning about it outwards (figs. 6b & 6c) to create a kind of spider-diagram or 'mind-map' which clearly explained the history, symbolism and religious significance of her object in Tibetan Buddhist culture. Having completed her presentation the camera finally pulled away from the sheet to reveal the overall picture that she had constructed which demonstrated the complex context of beliefs, ideas, influences and practices which had given rise to the vajra that she had studied (fig. 6d).



Figs. 6a-c: Stills from Hanan's podcast on the subject of a Buddhist vajra.

In our final example, Jia, from Hong Kong, chose to explore a Chinese Qing Dynasty reading-stand in lapis-lazuli. The object takes the form of an upright panel of lapis-lazuli with a low-relief landscape carved into it and a poem rendered in gold leaf. She began by translating the poem from Chinese and discovered it to be a meditative reflection upon the landscape views that the author had observed from ‘The Green Cloud Mountain Room’ in which he was writing. Jia discovered that the carved scene illustrated the imagery of the poem. She then undertook research into the authorship of the poem and discovered that it had been written in the Qing Dynasty by the fourth Qing Emperor QianLong, a prolific poet whose works now fill ten volumes. She identified the specific poem in QianLong’s *oeuvre* (fig. 7b) and recognised it as one of a series of poems inspired by the views from a specific room in one QianLong’s favourite ‘walking palaces’, which she subsequently identified and located, (fig. 7c). Jia concluded her research by exploring the aesthetic and philosophical relationship of the poem to the choice of stone, the lapis-lazuli, and to the specific manner of its carving, so that the Tao qualities of the stone might be revealed through the meditative qualities of the poem.



Figs. 7a-c: Stills from Jia’s podcast on the subject of a Chinese low-relief reading stand.

While these are just four examples of students’ work, they are typical of the quality of engagement with *Objects of Desire*. They mirror the breadth and depth of exploration and imagination that went into the individual projects for all participants in the cohort. As a personal project, it is engaging and immersive, starting from the choices available to the students, autonomous problem solving and presentation skills and the creative thinking needed to investigate and construct their stories. We feel we can recommend this approach and are confident it could be widened to suit students of other ages.

CONCLUSION

Ways of teaching and learning in museums and galleries are changing in a digital age. They want visitors to be active participants in the experience and so offer interactive events for them. While many are also using digital media to offer virtual tours (Preradović et al., 2014), direct experience of their artefacts remains a powerful source of interest, curiosity and, importantly, questions and problems, especially if we can tell the stories of those objects to support meaning-making.

On this module, we believe that learning about and through art benefited greatly by drawing on a museum's artefacts and using them to engage students in autonomous, problem based learning. Stefanou et al. (2004) identify three kinds of autonomy: organisational, procedural, and cognitive. The approach described here offered opportunities for all of these. The students had to organise their work; they chose the investigative procedures they wanted to use; they synthesised and reflected upon their own thoughts about the artefacts; and they used creative thinking to construct and tell the artefact's story. In short, the approach has lived up to its promises.

In particular, achieving the learning outcomes of the module was important. The external examiner was of the view that the podcasts and associated materials were '*all very engaging and had been made with energy, imagination and ingenuity. The skills developed in the exercise are surely of especial utility in the present age*'. Subsequently, the examiner wrote, '*The skills ... that the exercise calls upon again prepare the students beyond the strict confines of academic scholarship*', and he '*was able to admire some works of considerable wit, ingenuity and richness of effect.*' (External Examiner, 2014/15)

In education, rarely, if ever, are situations identical so findings of this nature are often not entirely generalisable. Nevertheless, while this has been about using objects of art in a way which generates thoughtful engagement, enhances skills, and fosters the construction of understandings (and the limits of understandings) in university students, we believe the general approach can have application amongst learners of any age. Museums now often place less emphasis on an authoritative transmission of information and allow more opportunity for the audience's interaction with and interpretation of its artefacts (Alexander & Alexander, 2008; Hooper-Greenhill, 2000). The Do-Not-Touch rule is less strict and children and young students are encouraged to explore, mentally and physically, all the museum and its artefacts have to

offer, They are allowed to touch, handle, interpret and evaluate robust artefacts and replicas and consider their contextual meaning (Anderson et al., 2002; Clarke et al., 2002). They also often have the opportunity to collect information and present their conclusions using digital multimedia (Wishart & Triggs, 2010). Wishart and Triggs, bringing together their findings across five European countries, found that the children's learning benefited from engaging directly with museum artefacts, from the research they did to construct an understanding, from the need to organise their thoughts for presentations, and from taking responsibility for their learning. Given this, it is likely that they, too, could benefit from a version of this approach tuned to their age and experience. We should not, however, allow enthusiasm to take this too far. Every approach has its limitations. Candlin (2003) reminds us of one limitation: hands-on access can enable those with visual impairment to make sense of some artefacts, but may not be sufficient for every artefact, at any age. The learning process as described here, and the presentation of an artefact's story would not always be appropriate but we trust that readers will be able to relate and adapt the approach to suit their own situations (Bassey, 2001).

Students are motivated by a variety of psychological needs and personal goals. Here, particular attention was given to the need for perceived relevance to matters of personal consequence, like autonomy and competence (Newton, 2014). Another important need is for relatedness. According to Deci et al. (1991, p. 327), '*relatedness involves developing secure and satisfying connections with others in one's social milieu*'. It would be worth exploring how this might also be accommodated and how it affects the outcomes.

There is, however, another note of caution to add. What has been described here gives a lot of choice to the student – self-determination more or less demands it. Expectations and teaching practices can be inimical to such an approach. In some cultures, students expect to be told what to do, either because they see the tutor as the source of knowledge or because they want to be given what they believe they pay for. We did not note this here but it would be wise to be alert to the possibility. At the same time, some tutors feel an urge to be in control and closely manage activities. Wider than this are demands from outside the institution that students should perform in measurable ways and that tutors are accountable for their measured performance (Vartiainen, 2014). This may constrain what tutors do. We do not suggest that this approach is the only one but pressures of this kind should not deny students the advantages of learning in this way.

REFERENCES

- Alexander, E.P. & Alexander, M. (2008), *Museums in Motion: An Introduction to the History and Function of Museums*, Lanham, AltaMira Press.
- Anderson, D., Piscitelli, B., Weier, K., Everett, K., Tayler M. & Tayler, C. (2002), Children's Museum Experiences: Identifying Powerful Mediators of Learning, *Curator: The Museum Journal*, 45:3, pp. 213–23.
- Ashcroft, B., Griffiths, G. & Tiffin, H. (1995), *The Post-Colonial Reader*, London, Routledge.
- Ashcroft, B., Griffiths, G. & Tiffin, H. (2003), *Postcolonial Studies: The Key Concepts*, London, Routledge.
- Bassey, M. (2001), 'A Solution to the Problem of Generalisation in Educational Research: fuzzy prediction', *Oxford Review of Education*, 27:1, pp. 5–22.
- Beringer, J. (2007), 'Application of problem based learning through research investigation', *Journal of Geography in Higher Education*, 31:3, pp. 445–57.
- Bhabha, H. (1994), *The Location of Culture* London, Routledge
- Bhabha, H. (1995), 'Cultural Diversity and Cultural Differences', in Ashcroft, B., Griffiths, G. & Tiffin, H., *The Postcolonial Studies Reader*, Routledge, New York 2006, pp. 155–157.
- Candlin, Fiona (2003), Blindness, art and exclusion in museums and galleries, *The International Journal of Art Design*, 22:1, pp. 100-110.
- Clarke, A., Dodd, J., Hooper-Greehill, E., O'Riain, H., Selfridge, L., & Swift, F. (2002) *Learning through culture*, London, RCMG.
- Chan, R., Brown, G. T. and Ludlow, L. (2014), 'What is the purpose of higher education? A comparison of institutional and student perspectives on the goals and purposes of completing a bachelor's degree in the 21st century', paper presented at the annual American Education Research Association Conference, Philadelphia, April 5.
- Deci, E.L. and Ryan, R.M. (2000), 'The "What" and "Why" of goal pursuits: human needs and the self-determination of behaviour', *Psychological Enquiry*, 11:4, pp. 227–68.
- Deci, E.L., Vallerand, R.J., Pelletier, L.G. and Ryan, R.M. (1991), 'Motivation and education: the self-determination perspective', *Educational Psychologist*, 26:3 & 4, pp. 325–46.
- Fredricks, J., Blumenfeld, P. & Paris, A. (2004), 'School engagement', *Review of Educational Research*, 74:1, pp. 59–109.
- Gagné, M. & Deci, E.L. (2005), 'Self-determination theory and work motivation', *Journal of Organizational Behavior*, 26, pp. 331–62.

- Hampp, C. (2014), 'The role of authentic objects in museums of the history of science and technology', *International Journal of Science Education*, <http://dx.doi.org/10.1080/21548455.2013.875238/> Accessed 20 July 2015.
- Hooper-Greenhill, E. (2000), Changing values in the art museum: rethinking communication and learning, *International Journal of Heritage Studies*, 6:1, pp. 9-31.
- Iniesta-Bonillo, M.A., Jiminez-Castillo, D., Sanchez-Frenandez, R., Cervera-Taulet, A. and Schlesinger, W. (2014), 'Analysing graduates' market heterogeneity in Higher Education', *Proceedings of the 8th International Technology, Education and Development Conferences*, Valencia, 10–12 March, pp. 3659–69.
- Newton, D.P. (2013), *Teaching for Understanding* (2nd ed.) London: Routledge.
- Newton, D.P. (2014), *Thinking with Feeling* London: Routledge.
- Newton, D.P. & Newton, L.D. (2009), 'Knowledge development at the time of use: a problem based approach to lesson-planning in primary teacher training in a low knowledge, low skill context', *Educational Studies*, 35:1, pp. 311- 22.
- Pekrun, R., Goetz, T., Titz, W. and Perry, R.P. (2006), 'Academic emotions in students' self-regulated learning and achievement', *Educational Psychologist*, 37:2, pp. 91-106.
- Preradović, N.M., Miličić, D. and Đuričić, P. (2014), 'A model of service learning and outreach for primary education through museums', *International Journal of Education and Information Technologies*, 8, pp. 48–55.
- Said, E. (1993), *Culture and Imperialism* London: Chatto & Windus.
- Said, E. (2003), *Orientalism*, London: Penguin.
- Saljo, R. (1982), *Learning and Understanding* Gothenberg: University of Gothenberg.
- Schwartz, Z.P., Mennin, S. and Webb, G. (2001), *Problem-based learning* London: Kogan Page.
- Steier, R. (2014), 'Posing the question: visitor posing as embodied interpretation in an art museum', *Mind, Culture, and Activity*, 21, pp. 148–70.
- Stefanou, C.R., Perencevich, K.C., DiCintio, M. and Turner, J.C. (2004), 'Supporting autonomy in the classroom', *Educational Psychologist*, 39:2, pp. 97–110.
- Tait, H. and Entwistle, N.J. (1996), 'Identifying students at risk through ineffective study strategies', *Higher Education*, 31, pp. 97–116.
- Vartiainen, H. (2014), *Principles for design-oriented pedagogy for learning from and with museum objects* Dissertations in Education, Humanities and Theology, No. 60, University of East Finland.

Wishart, J. &Triggs, P. (2010), 'MuseumScouts: Exploring how schools, museums and interactive technologies can work together to support learning', *Computers & Education*, 54, pp. 669–678.