The Evolution of Art and Design Pedagogies in England: Influences of the Past, Challenges for the Future

Nicos Souleles

Abstract

This article traces the historical evolution of instructional methods in art and design education in Britain to identify the influences that inform current practices and compare the latter against recent debates on what are design education and designer in the context of the global economy and the widespread use of information and communication technologies (ICTs). This evolution starts in the thirteenth and fourteenth centuries with the master-apprentice model of learning on a one-to-one basis. Examination-dominated teaching and didactic approaches prevailed up to the early twentieth century. In the latter part of the twentieth century, the entrance of art and design education into academia ushered gradual changes to pedagogy. The call for change has become more prominent in the context of the global knowledge economy.

Keywords

master-apprentice, didactic pedagogy, knowledge economy, education, competencies

Introduction

In light of recent debates on what are design education and designer in the context of the global economy and the widespread use of ICTs (AIGA/NASAD 2004; Swann & Young 2000), it is relevant to examine the evolution of art and design pedagogies in Britain, for this can help identify historical influences that inform current practices. The relevant literature is minimal. This is particularly so the case with the early period and less so with the contemporary situation due to the plethora of current debates on art and design education in general. It is mostly through the examination of the historical evolution of art and design education in general and the debates on content and structure that this article traces the main milestones for the evolution of art and design pedagogies.

When shifting through the literature of art and design history, one inevitably notes the research lacuna articulated by Romans (2004), who welcomes more revisionist research in this area. Romans (2004, 270) states that the dominant history of art and design education was established by books published in the 1960s and 1970s that offer a substantially corroborative account of the history of art and design education. The author questions not the accuracy of seminal events in art and design education since the 1830s as dealt with by the dominant history, but the non-disputation of their gospel: government introduction of public art education was exclusively in response to the economic necessity of improving manufacturing outputs and exports.

The origins

Craft training as distinct to art education has roots in the medieval guilds of craft artisans in the thirteenth and fourteenth centuries. The formation of artisan guilds can be traced to a parallel growth in this period of decorative and building industries associated with the construction of churches, abbeys and public works. Carpenters, workers in stained glass, master builders, painters, carvers, stone masons and sculptors formed associations known as guilds. These were not interested in

training a new generation of master craftsmen, and primarily functioned as closed professional circles to protect the trade and the economic interests of the master craftsmen derived from the practice of their craft (Macdonald 1970, 20–1).

The strict hierarchy that permeated the guilds, made apprenticeships fully dependent upon the whim of master guildsmen; the majority of untrained workmen followed instructions. On occasions when a young person of 13-14 was accepted for an apprenticeship under a master craftsman, the apprentice would need a satisfactory performance over 5-7 years to obtain a certificate from the guild. Early years of apprenticeship consisted of routine mechanical labour. At some stage during the latter years of the apprenticeship, the master-apprentice model of learning on a one-to-one basis the specialised skills of the craft took place in a gradual and didactic manner. After three or four years of practice, the new craftsperson could submit a test piece to be judged by the principal master of the guild and other associates, and if successful the apprentice would receive permission to set themselves up as a master with their own establishment. In the fifteen and sixteenth centuries, this well-entrenched modus operandi and the power of the guilds was challenged by strong monarchs and central governments. From this period, onwards decrees and royal approvals regulated most guilds, but some form of bound apprenticeships survived until the early nineteenth century (Macdonald 1970, 21-2).

In 1768, following a royal Instrument of Foundation signed by the monarch George III, the Royal Academy of the Arts comprising Schools of Design, became the first regular school of art in England. Prospective learners were required to submit drawings, and, if short-listed, they were invited to produce under observation another drawing at the academy. These entry exercises varied only slightly throughout the eighteenth and nineteenth centuries (Macdonald 1970, 29). The learning process consisted of laborious and detailed drawing of an object for about 30 hours per week, and successful learn-

ers were allowed to move on to drawing a human model. This supervised practice-based routine was supplemented with sporadic lectures delivered by professors or Visitors of anatomy, architecture, painting and perspective, each of whom presented six lectures per academic year. During the nineteenth century the system of tuition by rotating Visitors came under much criticism on the grounds that it failed to provide for a coherent teaching programme and exposed learners to conflicting advice (Ashwin 1975, 3).

The early period

In 1835, following a report by the Select Committee on Arts and Manufactures, the government introduced the first publicly funded system of art and design education in Britain. The committee also recommended the establishment of public galleries and museums of art, to be founded by a combination of national and local grants (Ashwin 1975, 10). Further, the committee recommended the development of British society's interest for 'taste', that is, the dissemination and cultivation of public awareness towards a commonly appreciated visual language for the values of antiquity. This was encouraged through access to museums and exhibitions and through the introduction of young men to the principles of correct drawing (Romans 2004, 51).

There is some debate regarding the motivations of the committee and the government. The prevailing view is that French manufacturing benefited from better designs, and that without the economic crisis in the 1830s, the provision of a system of art and design education would not have entered into the minds of politicians at that time (Macdonald 1970, 67-8). In a revisionist critique by Romans (2005), the weakness behind the reasons put forward by Macdonald (1970) for the first publicly funded system of art and design education exists in generalising the economic problems faced by a small section of manufacturing, the fancy silk and ribbon trade. There is also the position that public art and design education was started by the middle classes and was for the middle classes: a middle

class cultural hegemony established in the course of the nineteenth century. Carline, a non-revisionist historiographer of art and design education, provides a viable explanation associated with the diversification of manufacturing, and at the same time reveals aspects of what art education was prior to 1835, and what it aspired to become:

There was the growing recognition that art education was a social issue implying broader considerations than the drawing masters of the past had assumed. The time was ripe for developing a system of art teaching instead of merely showing the pupil a number of technical tricks for representing distance, foreground, skies or reflections... Schools where design is taught should be located near factories...

(Carline 1968, 75-6)

This was the first time that art and design education followed a prescribed national syllabus and there were attempts to serve the interests of manufacturing (Swift 2005, 70). Schools of Design were founded, and these were accountable to the centrally planned and administered National Course's requirements. The actual content of the syllabus consisted of practising technique in the reproduction of ornamental art, using examples from antiquity and medieval times; this conventional drill was called 'art teaching' (Carline 1968, 76-9). Schools of Design were awarded no local autonomy on educational matters. Instead, what prevailed was a centrally managed, criterion-referenced, with regular examinations and assessments, manufacturing-related education system. Art and design curricula were focused exclusively on expertise in drawing, and the teaching methods were heavily prescriptive. The nineteenth century system of frequent examination initially led to far too much time being spent on examination-dominated teaching (Swift 2005, 85-6).

In time, the prolonged teaching process of supervised practice of technique to serve the design interests of manufacturing raised complaints that teaching was becoming too mechanical. However, Design Schools

persisted with this practice and the separation of fine art and design, by requiring learners to declare that they had no intention of becoming painters or sculptors. Life drawing was originally rejected but later was reluctantly introduced after external pressures and the popularity it shared among learners. According to Carline (1968, 80), the separation of fine art and design constitutes one of the main reasons for the failure at the time of art education. The description provided by Macdonald is indicative of the learning and teaching routine that prevailed in Design Schools:

The atmosphere in the School was that of a classroom. On entry the pupils went straight to their places with their drawing boards and paper, and then sat in rows behind the stands upon which their boards rested, while the master handed out diagrams of patterns or ornament on cards, or in books, so that they could copy 'from the Flat'... The pupils were not allowed to talk, to move about, or to touch any casts.

(Macdonald 1970, 74–5)

For the next decades following the changes originating in 1835, the landscape of art and design education was not uniform. Efforts to structure and deliver centralised curricula through Schools of Design inevitably drew critiques from prominent artists and educators outside the national system, with opposing views on both the content and the methods applied. In the mid nineteenth century, views neatly reflected the opposing views of the Humanist and Empiricist traditions in art and design education, that is, in the former working from reasoning or knowledge that proceeds from theoretical deductions rather than from observation or experience, and in the latter learning through doing via sense and experience (Swift 2005, 73).

Starting from 1853 and until the Coldstream Report of the early 1960s, subsequent governments regularly intervened with further modifications of art and design education. In its first report in 1853, the Department of Practical Art introduced general instruction in art as a

compulsory part of elementary education. This was justified as a necessary measure to prepare candidates for higher studies in the Schools of Design. In terms of teaching, the report critiqued the 'gratuitous' distribution of examples for copying at the discretion of the master as useful in certain cases but inadequate for most. Instead, it encouraged the production of instructional publications to assist new teachers who relied upon the work of the masters (Ashwin 1975, 36-8). A laconic but nevertheless indicative acknowledgement in the report that teachers are significant for the learning process, although the report did not deal with learning methods per se, is the following statement: 'experience has shown that an intelligent teacher, although unable to draw himself, may acquire some useful power of directing others how to do so' (Ashwin 1975, 38).

Soon afterwards, the Department of Practical Art was subsumed into the Department of Science and Art, and until 1899 the latter controlled the whole of public art education, including what went on in elementary schools. The instructional system that prevailed consisted mainly of stereotyped exercises in copying from 'uninspiring models' (Ashwin 1975, 65). These highly prescriptive practices followed detailed and technical reproductions of Victorian images circulated by the Albert Museum. By the early twentieth century, a distinction was established between the higher discipline of teaching drawing to serve the needs of manufacturing, and the lower discipline of teaching art in elementary education for the purpose of encouraging creativity (Thistlewood 2005, 182-3).

Art and design within the emerging national system of education

Through the Balfour Act in 1902, the early part of the twentieth century saw the beginnings of a national publicly funded system of education gradually coming into place. It was argued that the main rationale for a national system was that, with mass education developing fast in other countries, Britain needed an educated workforce to maintain its position in world trade

(Gillard 2007). Among the changes introduced through this Act, it became government policy that children aged 5-11 attended primary schools, and a national system of secondary education was established into which the elementary schools and the fee-paying secondary schools were integrated. Local Education Authorities (LEAs) were established, with authority over the secular curriculum. LEAs began to establish first and second grade secondary schools, with the latter encompassing subjects such as English language and literature, geography, history, a foreign language, mathematics, science, drawing, manual work, physical training, and household crafts for girls (Gillard 2007).

In 1903, a report released by the Board of Education noted the absence of a firm art educational dogma, and the unclear connection of art to the overall emerging national educational structure (Ashwin 1975, 63). In 1926, the Hadow Report addressed these shortcomings. With the introduction of universal secondary education after the age of 11, the Hadow Report outlined principles on how taught subjects ought to be delivered. There were guidelines for religion, English, history, geography, modern foreign language, elementary mathematics, science, drawing and applied art, handicrafts for boys, needlecraft and handwork for girls, housecraft, gardening, music, physical training and games, and corporate activities. Art education was dealt with in the subject of drawing and applied art, and, according to Ashwin (1975, 65), the influence of nineteenth-century thinking on art and design education is still evident in the Hadow Report – the significance of developing a wider appreciation of taste. The report also notes the importance of drawing as a means of self-expression and as an invaluable skill for the study of other subjects. The improved methods of teaching entailed:

(i) Object drawing, including the drawing not only of artificial objects but also of natural objects in monochrome and colour, with various media, e.g. pencil, pastel, paint; (ii) Memory drawing; illustrative and imaginative work; (iii) GeometriThe Hadow Report of 1926 confined formal art education to drawing, painting became a category of drawing, and memory drawing was designated as an improved method of teaching. There were, however, some discerning views on the significance of drawing, indicative of which is that of Professor Alexander Bain:

cal and mechanical drawing; (iv) Design.

(cited in Gillard 2007)

The utility of Drawing as a general accomplishment must not be overrated... for special purposes [drawing] is indispensable. But as a foundation of intellectual training, its influence is liable to be mistaken ... Drawing compels the child to observe just what is necessary to the ends and no more ... The pupil does not necessarily give any more heed to the things that he does not intend to draw ...

(cited in Macdonald 1970, 324)

Lastly, it is due to the Hadow Report that we can identify the emergence of what is now known as the studio space: that is, a dedicated learning—teaching area specifically for learners of art and design to explore, create and exhibit.

In the immediate post-Hadow period the process towards a national system of education continued with further modifications and restructuring; it was interrupted by the war years (1940–4), and reconvened prior to further significant transformations in the 1960s. The significant events of this period *vis-à-vis* the development of art education are not many, and relate more to education as a whole, and the wider efforts to establish a national education system. They are worth mentioning here not only for reasons of continuity, but also to illustrate the mode of thinking that prevailed among decision-makers.

The Spens Report of 1938 recommended the division of secondary schooling into three distinct areas: grammar schools for the academically able, technical schools for those with a practical interest and new 'modern' secondary schools for the rest. These divisions were based on notions of intelligence and aptitude, and

were a departure from nineteenth century beliefs in formal discipline and mental transfer which up to this period played an important role in perpetuating a common curriculum for all learners. Instead, this report recognised individual differences in interests, abilities, and rates of physical development and intellectual progress, as well as the impact of individual cultural, social and economic environments. This shift towards recognising different learning styles, interests and abilities – a radical thought at the time – entailed a re-evaluation of the structure of curricula and teaching methods:

...it is recognised today that he [sic] learns best who learns with interest and with a purpose, or to put it in another way, he learns best who sees meaning and significance in what he learns ... The curriculum, to have meaning for the learners, must be adapted to the stage of development of the pupils ... It means, finally, that teachers must be on their guard ... to see that instruction is adapted to the interests and abilities of the pupils ... (cited in Gillard 2007)

In terms of art education, the Spens Report confirmed the prevalent thinking at the time of perceiving art education as peripheral to education in general. There was expressed doubt in the report of the usefulness of learners before the age of 13 having to attend junior art departments (Gillard 2007).

In relation to the period where a national system of education was emerging, art education was next mentioned in 1959, in the Crowther Report. This report identified the congestion that took place in the curriculum of secondary education with the unfortunate consequences that art subjects were dropped in favour of other academic subjects. The Crowther Report highlighted the significance of making art education a 'respectable' part of the general education system (Gillard 2007). Such calls were not heeded until the Coldstream Report of 1961. What can be deduced for the period of the emerging national system of education is that art education was peripheral primarily because of the wider focus on dealing with the challenges of setting up a universal system of education, but also due to the value attached to other academic subjects in comparison to art. These are the recurring themes for this period. However, as a subject art was taught, albeit following methods that were heavily prescriptive and mechanical, and focusing mostly on drawing. There is no evidence that the emergence of the studio space altered in any way traditional teaching methods, or that the acknowledgement as far back as 1938 of the significance of recognising different learning styles, interests and abilities, filtered down to any radical rethinking of pedagogies. The master-apprentice model entailing a strong didactic approach to teaching and learning remained prevalent in art subjects.

The Coldstream Report – entering the academe

In 1960 stemming from recommendations by the Coldstream Report, the three-year Diploma in Art and design (Dip AD) was introduced, to replace the National Diploma in Design (NDD), which had been in place since 1946. With emphasis on drawing and the development of craft skills, the latter was considered as too vocationally oriented and academically narrow (Owen 1998, 238). Subsequently, the Dip AD was structured to offer broader contextual training with the inclusion of other subjects such as literary humanities and art history. With the inclusion of theoretical subjects, the intention was to offer for the first time a course of art and design study that had academic credibility and was comparable to a first university degree (Ashwin 1975, 83; Jonathan 2000, 24). A significant change in art and design curricula was the addition of experimentation with materials and processes and the focus on the individual learner's creative talent and potential, in contrast to the previous emphasis on uniformly developing craft skills. Although not articulated as explicitly at the time, this last change constitutes the nascent step towards asking learners to take responsibility for their learning. These changes were more momentous than minor adjustments to the curricula. Whereas NDD courses were

teacher-led, emphasising solely craft skills and high levels of specialisation, the Dip AD emphasised the acquisition of skills for the emancipation of creative individuals. Once the skills were acquired, the curriculum became learner-centred (Owen 1998, 238).

Upon admission to the Dip AD, learners completed a pre-diploma (Foundation) course of one year, followed by a three-year diploma study in one of four areas of specialisation among fine art, graphic design, three-dimensional design and textiles/fashion. Complementary subjects represented about 15 per cent of the course (Ashwin 1975, 94). The introduction of the Dip AD, with emphasis on learners presenting evidence of achievements in the form of practical projects completed over long periods of study as work to be assessed, led to the birth of the 'degree show' or 'degree exhibition': that is, the public display of final year projects. It also became a requirement for thirdyear learners to complete a thesis as part of the final examination process (Lewis 1995). It is during this period that independent art schools started to gradually merge with polytechnics that later amalgamated with universities. Such mergers allowed for the introduction of diverse critical and contextual studies in art and design degrees, and from the 1970s there were arts honours degrees with a variety of foci and specialisations (Owen 1998, 238).

This diversification of art and design curricula and departure from narrow purely vocational practices focusing mostly on drawing is a reflection at the time of the development of new perceptions on the role of art and design education, the development of new areas of professional interest, but also of the academicisation of art and design studies. Within the context of polytechnics and universities, art and design education was to adapt to, and accept, new forms of management and administration, thus gradually mutating away from the original recommendations and expectations of Coldstream for a liberal, flexible but also academically intensive study. An indicative view of disapproval and even antipathy for the loss of curricular independence and the imposition of modularisation following the mergers with polytechnics and universities is that expressed by Thompson:

Fine art has been reduced ... to being a study area amongst other study areas... [this] has been enforced and reinforced from both inside and outside these new-style university institutions. From within, through the drive to 'programmatise', thoroughly 'academicise' and 'professionalise' all undergraduate work. From without, through... the imposition of the several processes and instruments of academic testing, quality monitoring, surveillance and control ... The open-ended, developmentally flexible degree courses envisaged by Coldstream have more or less disappeared, replaced by the overregulated, over-supervised and over-examined, pedagogically staged, benchmarked, and modularized undergraduate courses... (2005, 218–22)

Despite such strongly-worded opposing views about the state of art and design education, it is in the changes introduced after the Coldstream Report in the early 1960s, that today's HE (Higher Education) art and design courses trace their origins. This admission is made explicit in the Art and Design Benchmark Statement:

Learning in art and design stimulates the development of an enquiring, analytical and creative approach, and encourages the acquisition of independent judgment and critical self-awareness ... Studio-based activities are a significant feature of art and design education, providing loci for both individual and group tuition. Effective learning environments are engendered in studios, workshops, production units, and computing units, with staff and students sharing experiences as partners in the process of learning. Distinctive features of the subject include ... the use of projects as a vehicle for learning, and the group critique, where students present and discuss their work with their peers and tutors ... (Buss & Gretton 2002)

This statement, however, reads more as an uncritical overview of what is expected or hoped

for at HE level, rather than as a true reflection of what in reality happens in terms of teaching and learning. The modularisations of curricula, the introduction of various contextual subjects, the increase of university courses that fall under the umbrella of art and design, the wide use of studio spaces and the requirement for a submission for a final written thesis, are no indication that pedagogies have changed for the better because of, or since, the Coldstream Report.

The first significant critique of art and design pedagogies in the post-Coldstream period, appeared in a seminal paper written in 1986 by Swann (1986), titled 'Nellie is Dead'. The authors lambasted the traditional methods of teaching that relied heavily on one-on-one tutorials – the master-apprentice approach - that took place between the tutor and the learner, often resulting in the tutor demonstrating skills to improve aspects of the learners' work - more or less a 'sitting-by-Nellie' approach similar to the traditional 'atelier' method derived from the master artist/craftsman that involved an expert showing an apprentice how to complete a task. Sitby-Nellie has never been valued for its challenge to the intellectual development of ones who have to do the sitting (Swann 1986). More specifically, Swann (1986) berated the wellestablished tradition of delivering art and design courses based on a formula of setting design problems followed by a long period of individual tuition while work is going on, and then followed by a group 'crit' of the work at the end. Later, Swann continued his critique on the persistence of teaching and learning methods that predate the Coldstream Report and, in his view, are not responding to the challenge of today's university education:

Design lecturers have been quick to extol the virtues of learning by doing. However, used ad infinitum as a practical, skills-based series of exercises, it can be argued that [the project] has had little to contribute to the intellectual development in understanding the process of design. Practice may make perfect in terms of the production of ... artefacts, but the quality of critical inquiry is more valuable than the quantity of

repetitive, performance orientated projects... (Swann 2000)

Prevalent teaching methods and the crit

Buss (2002, 178) proclaimed that the teaching of art and design in HE has come a great distance since Swann's (1986) seminal paper 'Sitting with Nellie' was first published. He noted changes and influences in teaching and learning, including widespread use of independent and peer group learning, the articulation of learning outcomes, the development of assessment criteria, the promotion of reflective learning and the significant increase in stafflearner ratios. It is normally expected that learners in studio-based disciplines pursue a programme of staged development (scaffolding), and gradually progress towards independent and personally focused learning. To support this progression, a number of instructional approaches are employed of which a large part is work on project-based enquiries in groups or individually. Often such projects entail prolonged periods of self-directed study, supported by formative (oral) feedback in tutorials and through group critiques. This modus operandi is complemented with contextual (theoretical) subjects to encourage the development of critical thinking and professional practices (Buss & Gretton 2002).

Similarly, Jackson (1997) identified a number of practices that he considers not only unique to art and design education but also valued by other disciplines as examples of good practice. Learning is mostly facilitated by doing, with very little 'chalk and talk', although often in crits there is a tendency among some teachers to dominate talking. Group work, which is common practice, attempts to mirror the realities of the professional world, and autonomous learner activity with some negotiated control over the curriculum is part of the objective to promote independent and critical thinking skills.

It is worthwhile expanding further upon the function of the crit as it is one of the most-wide-spread learning methods used by art and design educators in the post-Coldstream period. The crit normally takes place at the end of a lengthy

study period and involves the individual presentation of completed learner projects to a group of peers in the presence of the teacher and sometimes an appropriate industry expert. The purpose is to receive informal feedback and to function as a form of formative assessment (Blair 2006, 83). It has been described as 'a powerful vehicle for the induction and enculturation of learners into the dominant mores and beliefs of a programme and its discipline' (Percy 2004, 1). The implication is that there is a dominant view through the crit process, usually that of the teacher and/or that of the master industry expert. Mulvey fittingly describes the process as 'macho crit':

The students would be allowed to do what they wanted for a few weeks. Then towards the end of each term there would be a big gathering of staff and students. The students' work would be examined in front of the others and clear examples of success and failure pointed out to the year group. It seemed that the educational idea underpinning this was that a hard-hitting attack would encourage the students. (Mulvey 2006)

Concerns about the crit were also raised by Orr et al. (2008, 7-8), who identify pitfalls and problems, some relating specifically to learners and others to organisational issues. The former include the apprehensiveness of shy or quiet learners about participating in group presentations, lecturers behaving like 'prima donnas', vague feedback during the crit or self-absorbed comments such as: 'I like it - don't change it', the negative connotations of the word 'crit' which is often associated with critique and criticism, and the use of norm referencing vocabulary by comparing one piece of work with another. Organisational concerns about the crit relate to how time-consuming the process is for lecturers. Poor planning combined with lack of time can lead to lecturers barely looking at some work, while spending large amounts of time over others. Often crits become atomised to one learner at a time, even if the original intention was to discuss overarching issues.

Similarly, Davies is also scathing, noting how

students have reported how humiliated they have felt by such a public scrutiny of their work with little opportunity to reply either because they do not have the confidence or they do not wish to challenge the judgment of the master ... This is the heart of the strategic approach – planning to please the teacher rather than trying to make sense of a complex world ... the emphasis [in crits] has always been on the artefact as the principal criterion of success, rather than what a student has actually learned as a result of the project ... (Davies 1997)

intimidating the process can be for some learn-

ers, and how the emphasis can shift not to what

was learnt but rather the value - often subjective

- of the final artefact:

This dissonance between what the final project represents in itself and the inability of some learners during a crit to articulate, justify, explain, rationalise and contextualise the learning process and how they went about designing and developing the artefact, is also noted by Percy (2004, 2) as the problematic of 'practice versus discourse'.

For many students and staff, practice forms the basis of their command of the subject. Yet analysis of observations revealed that both staff and students often had difficulty articulating the theories that underpin their practice. Whilst the research found much evidence of students being advised on what to bring to the crit, and how to organise their work for presentation, there was little evidence of students being taught the skills of critical reflection and argument.

Why art and design education has not found it easy to get rid of the crit has a lot to do with the strong vocational nature of the associated disciplines and the prominence of the production of an artefact over the development of critical thinking. In the post-Coldstream milieu of art and design education, the practical outcome is supported by contextual subjects but inevitably remains in second place to the artefact. Jackson (1995) notes a number of underlying assumptions and values in the traditional method of

assessment in art and design *vis-à-vis* the prominence of the final outcome:

that students' achievement of course objectives can be judged adequately from looking at the physical artwork products; that students develop progressively towards their best work, and that their 'exit velocity' is the best and fairest measure of their ability; that students are novice designers, who, on graduation become qualified, if somewhat junior, experts... (Jackson 1995)

In the post 1960s period, despite the entry of art and design into the academe, the subsequent modularisation with demands for stated learning outcomes, and the use of new teaching and learning methods - often driven by the need to deal with increased numbers of learners - the influence of past practices is evident. Despite the educational pitfalls, the crit remains a distinctive instructional method for art and design disciplines. In addition, project-based work is the norm, due mostly to the nature of expected practical/vocational outcomes. The original master-apprentice model or 'sitting with Nellie' has not been abandoned completely, but rather eroded and complemented under the pressures of entering the academe. The situation resembles more a state of balanced mutation as old practices slowly fuse into the academic requirements and practices of university curricula, and in the process acquire some educational legitimacy not always without critique or opposing views.

Art and design education in the knowledge economy

The present challenge to art and design education stems from changes in HE due to expectations and pressures for the development of curricula that address the graduate skill set for the global economy. As universities are called upon to cater for the provision of the skills and knowledge required to succeed in the knowledge economy, inevitably art and design education, art and design, are confronted with the complexities of dealing with what Kirschen-

mann (2001, 12) described as the 'electronic Prometheus'. Visual information can be extensively modified and thus impact upon what is perceived or experienced. Subsequently, there is a need to encompass in art and design curricula new forms of visual literacy and competencies that cater for the interpretation of digitally generated visual outputs, as well as to address the ability and skills to create them.

In addition to the pressures from above and the role of HE in preparing graduates for the knowledge economy, there are also pressures from below in the form of the current generation of art and design learners: they are comparatively more computer literate than lecturers who were educated in the pre-digital world of the immediate post-Coldstream period. The use of the World Wide Web, including email, blogs, Twitter, Facebook and online virtual worlds, plus the widespread use of mobile devices such as iPods and iPhones, is a common characteristic among a younger generation of learners, who often turn up in the design studios holding laptops with the latest software. Design schools today employ an entire generation of disillusioned pre-computer design educators who feel increasingly irrelevant and are retiring en masse (Maeda 2002).

The form this discourse has taken the past few years brings forward issues that go to the core of what is design and what is a designer in the context of the knowledge economy, and inevitably this discourse seeks to inform the structure and delivery curricula (Friedman 2004, 31). The notion of the primacy of synthesising information from different forms of evolving cross-disciplinary knowledge in constantly changing working environments, combined with vocational know-how and expertise to produce an outcome, is the prominent theme that emerges out of the current discourse on art and design education. For example, for Friedman (2001, 20) what designers must know is that giving physical shape to an object is a small part of the design process. In his taxonomy of the domains of design knowledge and skills, Friedman includes skills for leading, understanding of the human world, knowledge of the artefact and ability to embrace the ever-changing environment. Since no single designer can master all areas of knowledge and skills, it is necessary to use expertise without being an expert. The intellectual tools of the knowledge economy are the tools of scientific enquiry, and the distinction between 'doing' and 'knowing' is not applicable, for designers need to know both:

We need a new paradigm for design education ... many of today's design tasks involve complex adaptive systems ... Design sciences merge when skills-based professions move from traditional rules of thumb or trial-and-error methods to the use of theory and scientific method ... design emerges from an arts-and-craft approach to a basis in theory and research ... (Friedman 2001, 22)

Along similar lines, Vining (2007) first identifies the hierarchical nature of HE as an impediment for design curricula keeping pace with the realities of the global, interconnected, hypermodern world of the twenty-first century, and then embarks on a critique of universities who do not allow learners to customise their programmes of study. In her view, new design curricula should be decentralised, allowing for self-organisation and adaptation. They should be transtime and trans-media,: that is, curricula should cater for flexible continuous learning; they should be connected with different university departments and industry; curricula should provide for experiential learning (how to learn, not what to learn); they should be hybrid (faculty as knowledge brokers); they should be transparent (free flow of information, no 'silo mentality'); they should be visionary in developing hybrid courses; and they should be entrepreneurial in utilising existing resources to generate alternative sources of income (Vining 2007, 7).

Similarly, and in response to working environments that are becoming more complex and unpredictable, Herriot (2004) identifies areas of study that should be explored in design curricula, including psychology (cognitive theory, perceptual processes, human interaction, problem solving, strategic thinking), communication

(content analysis, symbolism, grammar, anthropology, sociology, linguistics, semiotics), marketing and business (identification of an audience, the creation of a message, environmental factors, budget and scheduling), social sciences and humanities (the study of art, literature, movies, culture, politics, history, ethics, religion, philosophy and other liberal education studies), and aesthetics (the psychology of colour and the histories of design and art).

Conclusion

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

When tracing the evolution of art and design education in Britain from the medieval period of the master craftsmen and up to the early 1960s, we note the persistence of the transmissive model of teaching and learning and a fluctuating focus on debates about content and structure as opposed to pedagogies. In addition, we note that in more recent times there is a gradual shift away from the didactic approaches of the past, mostly due to the influences of contemporary debates about art and design education plus the influence of the academe. Significant changes in art and design instruction will occur when the debates of the present and the influences of the past are replaced by curricula and instructional practices that reflect the new discourse on art and design education.

Nicos Souleles worked in Higher Education in Sydney, Australia, Northern England and the United Arab Emirates. Currently he is working for Cyprus University of Technology in Limassol, where he co-ordinates the research lab 'Networked Learning Technologies in Art and Design' (www.elearningartdesign.org/nltad). His research interests include art and design education, design education for the knowledge economy and elearning/networked learning in art and design. Nicos was awarded a PhD in Educational Research from Lancaster University. Contact address: Department of Multimedia and Graphic Arts, Faculty of Fine and Applied Arts, 94 Anexartisias Street, lakovides Building, 2nd Floor, 3040, Limassol, Cyprus.

Email: nicos.souleles@cut.ac.cy

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