INNOVATION THROUGH ARTEFACTS: ARTFUL LEARNING IN MANAGEMENT EDUCATION

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ABSTRACT

Our interest is on how physical artefacts can enhance innovation in management learning. We draw on some two decades of practice in both academic and consulting environments, paralleled by research into the learning impacts of these artefacts. Even in the generally rational and conventional environment of MBAs and management learning, artefacts can have profound impacts in individual learning and change. What began as narrow and experimental, has subsequently broadened and become more mainstream across the business school. But there are also barriers to be overcome.

CONTEXT

Our high-level concern is with how to support learners in business schools to be more effective in business innovation. That divides into two halves: the teaching of innovation as well as innovation in teaching. Most of what we review here concerns both halves simultaneously. In terms of the granularity of the innovation dilemma, we examine three interlocking dimensions. Firstly, there is the organisation, in our case a business school within a capital-city based university. Secondly, there are the staff of the organisation, both academic and administrative. Finally, there are the students, who range through the whole spectrum of undergraduate, masters, MBA and executive education. Based on our experiences, we also take note of the barriers to innovation relating to these three dimensions.

Having set these concerns and context, this paper is concerned with the evolution and thinking about the practice of using artefacts in the management learning process, often in ways that are unconventional for business schools, though not in other academic disciplines.

METHODS

The research method deployed in this paper is primarily participative and collaborative action research. This involves the authors at different times and places being all of researchers, designers of the collaborative and pedagogic activities, and also participants in the activities. Of relevance here is Stringer's concept (1996) that action research can include "the search for understanding in the company of friends".

Given that the risks of bias are accentuated by this approach, a variety of methods of data collection were used. There was very extensive reflective note-taking by the organisers, including active use of artist-style sketchbooks.

For the whole of the two decade period we have systematically documented the approaches photographically, and to a much smaller extent through video. In recent years, we have extended this so that the photographic documentation is largely undertaken by students themselves. This photographic documentation supports the creation both of individual artefacts, and of new artefacts created collectively by the cohort as a whole. It also provides a retrospective resource for the researcher into learning processes.

LITERATURE

Our theoretical framing was initially based on experiential learning (Dewey 1988), transitional objects (Winnicott 1971) and the Plan-Do-Study-Act cycle (Deming, 1986), which we prefer to the much more commonly used learning cycle (Kolb 1984). We augmented this with Theory U (Scharmer 2009). Latterly, we have been revisiting the Three Worlds

theory of knowledge (Popper 1978), which brings together the physical world (1), the mental world (2), and the products of the mind (3). For Popper, both analogue and digital technologies were grounded in a physical substrate of World 1, but computer programmes and designed physical artefacts both were also products of the human mind (World 3).

Much of higher education is focussed on World 2 and the immaterial dimensions of World 3. An experienced anthropologist (Ingold 2011), however, points out the significance of making physical objects:

"…making is less a matter of projection than one of gathering, more analogous, perhaps, to sewing or weaving than to shooting arrows at a target. .... the creativity of making lies in the practice itself, in an improvisatory movement that works things out as it goes along."

We apply Popper's framework to draw out key features of how physical artefacts can create experiences quite different from what occurs in more conventional management education.

INSTITUTIONAL DIMENSION OF INNOVATION

The British higher education system, and the universities within it, is often accused of conservative tendencies, and reluctance to embrace innovation. There is an extensive national quality review regime which now extends to all universities. There is an extensive surveying of final year undergraduates for the National Student Survey, detailed results of which are publicly available. In professional schools such as health, law and business, many degree courses are subject to meeting standards created by the professions. Business Schools face up to three major accreditation bodies.

Looking back over two decades at City University London, the university and its business school have been very much middle of the road, neither aggressively pursuing innovation for its own sake, nor posing unnecessary obstacles to innovation. What this means, is that the locus of innovation is very much at the level of lecturers and programme directors. Where significant financial, academic or reputational risks are involved, then naturally innovations will be analysed very closely. But where risks are low, and if academics or administrators can make a sensible case for innovation, it is as likely as not to be supported from above.

STAFF DIMENSION OF INNOVATION

Here we situate key uses of artefacts in management education through the lens of academics involved in innovative learning methods. Our mainstream work on innovation began in the early 1990's, particularly within the then-new discipline of knowledge management. We

had a concern with how knowledge stimulated and could be transferred within the innovation process. But despite being academically involved in innovation, this did not mean that we were ourselves were wholly committed to innovation in teaching and learning processes. To achieve that, we ourselves were at times a barrier to innovation, and therefore it is worth examining three specific experiences which reduced or removed such barriers.

Firstly, one doctoral research project (Courtney, 2002) involved interviewing senior executives about barriers to innovation in client-server architecture. Early interviews using a client-server diagram involved much time wasted in explaining the diagram. It was decided to commission a toy-maker to make a one-off 3D wooden model of the diagram. This dramatically reduced the time needed to explain the concepts, and from then onwards we became interested in idea of "transitional objects" (Winnicott 1971). Although these could be mental or 2D as well as physical, our positive experience with 3D transitional objects initiated an interest that has continued through nearly two decades.

Secondly, in 1999 there was an opportunity to present a keynote lecture on "knowledge and space" with many senior executives in attendance, and the two co-authors collaborated on the design of a physical object which might represent this (Figure 1). The outcome was an ordinary garden shed populated inside with many curious objects, and somewhat in the form of a participative art installation (Ward and Holtham 2000).

Figure 1: Garden Shed as a stimulus to learning

The third defining moment in our thinking came when one co-author was visiting a Canadian university and noticed a suitcase in a professor's office. It turned out to be an Australian business school PhD thesis (Loi, 2004; Loi, 2005). The suitcase was full of smaller boxes and 3D objects, with relatively little conventional text. This had an even more profound effect on shifting the authors' thinking - it was possible to transmit academic business knowledge other than through a 2D thesis.

In 2005, the MBA Director proposed creating a new elective that would "be difficult to copy" and "drew on London as a learning space". Because of the risks involved, four professors (of information management, strategy, HR, and systems thinking) collaborated on the

design and implementation. The module was called "The Business Mystery"; it has been latterly renamed "The Art of Management". There are no lectures, and most of the activities involve external visits to arts/culture locations, with specially designed activities perhaps involving an educator in the discipline (eg a music teacher rather than a musician).

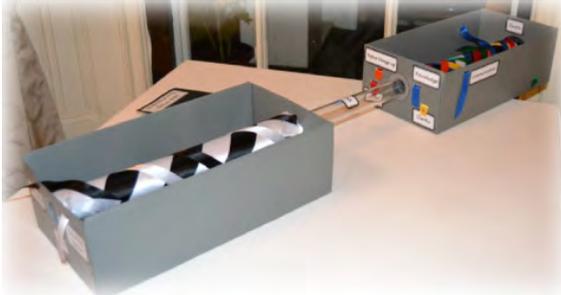Right from the start, students were required to produce

Figure 2: MBA Coursework - cardboard shoe box

The coursework has always involved an artefact to be exhibited, and over the years these have involved actual artworks, installations, games, performances, collections and a very wide range of unusual exhibits. Latterly, due to time constraints, there has been a shift towards providing students with a blank artefact, such as the plain cardboard shoe boxes shown in Figure 2. These are used to represent to third parties the MBA student's personal journey.

Figure 3: MBA Collective Activity - design and production of an optych at the Whitechapel Gallery

The MBA elective also involves collective activities, such as production of a collaborative optych (Figure 3), and more recently the writing and presentation of a collaborative radio play. In both these cases, students had one hour jointly to plan the enterprise and then 90 minutes to write/paint small team segments that in the final session interlocked to create a coherent whole.

As the elective became an accepted part of the MBA, the initial personal risks were reduced, and it is now led by a single academic.

When in 2011 employers asked for a greater emphasis on self-awareness and reflection from undergraduates, the co-authors developed a first year elective module

called "The Reflective Practitioner". This also required the production of an artefact, but in this case all students were provided with a standard artefact. These have included Story Cubes, pizza boxes and latterly large matchboxes.

Figure 4: BSc Reflective Practitioner - collaged pizza boxes publicly representing key qualities of the student

It is interesting that the strong emphasis in this module since 2011 on making for exhibition has become fashionable, not least in the innovation fuelled design and technology firms adjacent to the university. Ironically, much of the interest in making has come from web and app developers, whose actual products are virtual and intangible. It seems that the more of the world that is web-based, the more importance is being placed on physical objects as playing a role in the development of these intangible products. The fashion is also fuelled by the growth of 3D printing and control of the internet of things via small computers such as the Raspberry Pi.

STUDENT DIMENSION OF INNOVATION

Up to the financial crisis of 2007/8, the approaches described above were generally well received by students across the board. But after that point, there became a steadily increasing set of concerns from a minority of students, approximately a quarter of a cohort. These relate to modules where such approaches are compulsory. There were no equivalent problems on elective modules. By around 2011 these had actually escalated (with changing annual cohorts of students) into strident complaints about "irrelevant" content and approaches, and near-libellous written comments on the faculty. High scoring modules began to get lower ratings. Ironically, this module had been created in close collaboration with employers, and the employers' advisory panel continued actively to support the approach. There was also continued support from senior colleagues. But since in the UK module scores and student literal feedback are made public to academic peers, this could not continue, and in one degree programme the module had to be massively revised to take account of this minority of strongly voiced comments.

Since the main variable was the change in the economic climate, our conclusion was that concern about employability was driving a particular type of perhaps quite rationally oriented student to feel they needed to challenge perhaps the only module in a one year degree that did not conform to traditional content transmission.

In a higher education system such as the UK which is highly transparent on student feedback, it cannot be assumed that business students, especially on high fee professional degree programmes that have a dominantly rational approach to learning, will necessarily support innovative learning methods that take them out of their comfort zone.

By contrast, the ratings on elective courses have continued to be high, and the feedback from employers and peers to the artefact work of students are highly supportive. Here are comments on the 2014 first year undergraduate exhibition:

"I thought I was going to a Business Students Exhibition, surprisingly I met artists, engineers, architects, designers... all very passionate about their work. A beautiful surprise!" (Engineering Manager)

"Yesterday was my second visit to a Cass creative exhibition. I expected to be wowed again by cubes and hexagons - the ongoing concept of six sided thoughts. This year the motif of the industrious was added to with a new theme of pizzas and their boxes. By viewing the box as a grounded object and taking one side out of the six the students were able to think of the INSIDE as the sixth side and provide a three dimensional display as their true selves" (Lecturer in Health Sciences)

RESULTS
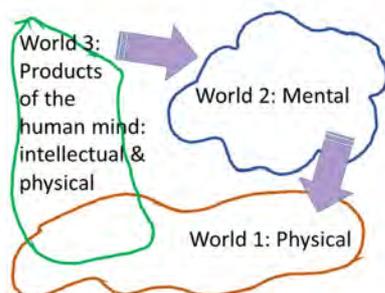
Figure 5: Popper worlds

One reading of Popper's three worlds (Figure 5, our drawing) is that the physical substrate of W1 can stimulate mental processes (W2) which then lead to more innovative physical or intellectual products. However, our suggestion is that the type of artefacts that we have been deploying in innovative management education perhaps more dominantly impact on the mental processes of W2 and thence impact on the physical world.

Taking the three dimensions of organisation, staff and students, the assessment in this case study was that the organisation level was broadly neutral in terms of innovative learning methods. Because of the personal risks, even willing faculty needed to have their confidence built; perhaps through isolated but powerful incidents. Perhaps the most surprising finding is the degree of resistance by a minority of business students to more artful methods, to being taken outside the comfort zone of transmissive teaching and passive learning.

CONCLUSION

In conclusion, we argue that management education needs to augment its classic learning methods taken from medicine, science and law, with methods derived from humanities and arts. There is great potential in the use of designed artefacts, as ends in themselves. And there are many ways in which artefacts can act as mediators in the creation and sharing of both individual and organisational knowledge.

Popper's three worlds provide a useful framework for underpinning such deployment of artefacts, and there is now a solid body of evidence supporting the value of artefacts in management learning. However, there are barriers and constraints, surprisingly mostly in student attitudes to what are "acceptable" management learning processes in the early 21st century.

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