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CUTTING YOUR COAT ACCORDING TO YOUR CLOTH: MAINTAINING TECHNICAL SKILLS AND UNDERSTANDING WITHIN TIGHTER BUDGETS, THROUGH CONNECTING COMMUNITIES IN MUTUALLY BENEFICIAL AND SUPPORTED SKILLS EXCHANGE

APPRENTICESHIPS | CRAFT | TECHNOLOGY | COMMUNITY | NON-VERBAL LANGUAGE



ABSTRACT

THE PROBLEM: ART AND DESIGN ACADEMICS ARE UNDER INCREASING PRESSURE TO MAINTAIN QUALITY IN TEACHING AND LEARNING WHILST REDUCING STAFFING COSTS. FORCED TO DEVISE METHODS FOR COURSE DELIVERY USING LIMITED STAFFING WITH INCREASED STUDENT NUMBERS, CREATIVITY IN ECONOMIC COURSE DELIVERY IS ESSENTIAL.

Traditionally learned through demonstration, observation and emulation, skill-based classes are being dangerously squeezed out, with students turning to online tutorials to substitute skills learning. This type of learning can be limited due to its one-sided nature. Whilst online learning and new technologies alleviate staffing presence in studios and workshops, pedagogic research suggests that demonstration and physical interaction to impart skills is desirable for deeper understanding: '...there is value in teaching by example alongside a practical experience.' (Boyes & Cousens 2009)

The Proposal, Apprenticeships: This paper supports positive strategies in engaging the wider community to compliment and support skills-based learning, alleviating financial pressures on staffing budgets. With the governments' recognition of apprenticeships, the education sector could emulate this approach through mutually beneficial reciprocal partnerships with the wider community. Undergraduate (UG) design students with information technology (IT) and computer-aided design (CAD) skills, partnered with amateur textile groups dominated by highly developed technical craft skills, have complimentary skillsets to trade. By bringing together novices and experts who are one and the same, depending on the focus of the activity, a mutually beneficial and supportive relationship could evolve around exchange of skills. This promotes and celebrates broader community participation in learning and teaching without additional staffing.

Participants: Edinburgh College of Art (ECA) UG textiles student, The Embroiderers Guild, The Quilters Guild, conservation studio staff at The University of Edinburgh.

Method: Qualitative research through case studies exploring how partners from different generations and with complimentary experience can engage and exchange skills through embroidery and CAD, as creative tools for textile designers.

INTRODUCTION

Art and Design academics are under increasing pressure to maintain quality in teaching and learning whilst reducing staffing costs. Forced to devise contingencies for course delivery, priority focuses on essential



core learning. Practical skills-based competences, traditionally learned through staff heavy demonstration, observation and emulation are expensive to operate and are therefore being compromised to cut costs. To substitute face-to-face teaching, students are turning to online tutorials. This unvetted interface as a learning environment has limitations due to its one-sided nature. Skills can be acquired, however, this approach to skills acquisition lacks the tacit understanding of craft and materials, exchanged through physical interaction between people.

The proposition for this paper brings people together; facilitating exchange of complementary skills in partnerships, where teacher and learner swap roles according to activity (figures 1 and 2). The case study presented supports positive strategies in engaging the wider community, with project activities focused around acquisition of technical skills, to compliment core teaching in conceptual thinking, aesthetics and design development.



INCREASED STUDENT EXPECTATIONS, BULGING CURRICULA AND LIMITED STAFFING BUDGETS

University programmes are currently operating with reduced staffing hours, greater student numbers and increased student demand. In December 2015, *Times Higher Education* (THE) reported Scottish Government higher education budget cuts of 3% reducing funding for Universities (Morgan 2015). With students paying large fees, demand for value for money drives and increases student expectation. A 2015 *Higher Education Academy* (HEA) and *Higher Educational Policy Institute* (HEPI) survey of 15,000 full-time UK students, found that students spent more time studying independently than they did with teaching staff, leaving them feeling dissatisfied with their University experience. Staffing is a major cost for Universities and is unlikely to increase with even tighter budgets. Practical Art and Design subjects are particularly vulnerable to these complaints, requiring comparatively larger proportion of hands on teaching particularly for skills-based learning.



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Forced to acknowledge National Student Survey (NSS) results, staff are increasingly aware of student satisfaction and the need to devise ways of delivering meaningful learning with ever shrinking budgets. Promotion of cross-disciplinarity and increased access to equipment and workshops across programmes, schools and the wider University, compounds this problem further, bringing pressures to impart specialist skills effectively to non-specialist learners. Conventional discipline specific taught skills-based lessons, heavy on staff teaching hours are being cut, leaving students with gaps in access to specialist skills and advanced techniques beyond basic understanding. Individuals are turning to online sites as a substitute for face-to-face instruction. Unvetted for accuracy or level of professionalism, these learning platforms increase the risk of student access to poor teaching and impact upon learning on a range of levels. Crucially lacking in online learning, is the tacit understanding passed on through physical interaction with materials and conversation in action, vital for deeper learning and understanding around craft and materials based subjects. Boyes and Cousens (2009) study in learning through live demonstrations, ably argues the desirability to learn from, and with other people.

SUGGESTED SOLUTIONS

This paper acknowledges the benefits of learning through physical interaction between individuals, particularly around craft-based skills. Interpersonal interaction fuels richer deeper learning, in contrast to the risk of surface acquisition of skills through the two-dimensional (2D) interface of a backlit computer screen. The argument goes further, in promoting the benefits of reciprocal apprenticeship relationships between groups with complimentary skillsets, in this case amateur technical

experts and computer savvy UG design students. Embracing voluntary experts from outwith the University, additional staffing costs are reduced, yet learners benefit from one to one teaching. This rewarding and rich experience for both parties provides tailored quality learning, furthermore promoting a connected community within, and beyond the University environment.

THE PARTICIPANTS

For this case study, two groups of participants with complimentary skills were brought together over three weekly sessions.

STUDENT GROUP: ROLE AND PRIOR EXPERIENCE

This group comprised 16 2nd year UG textile students with competent CAD skills, specifically *Photoshop*, as they had recently taken taught classes. With sewing now largely marginalized within UK schools education, most students had limited stitched textile experience.

TECHNICAL EXPERTS: ROLE AND PRIOR EXPERIENCE

15 dedicated amateur embroiderers from the local *Embroiderers Guild* and *The Thistle Quilters* volunteered for this project. They were aware from the outset that this was a reciprocal arrangement and understood that there was deep appreciation of their valuable skills and contribution to the project. This was important, as, for success, full commitment is required from all parties. With the average age of the group being 70, most of these women were taught sewing at school from age 7. In contrast, their experience with CAD was limited.

STAFF ROLE

From the outset, ECA staff were introduced to all participants as facilitators and coordinators, as opposed to teachers. Laurillard (2002) promotes the role of staff as being to foster the community of learners, helping to form effective and

productive collaborations between learners, as opposed to conventional roles of staff providing the teaching to the learners. She also suggests that 'Argument [or in this case exchange of skills] between students [inexchange with technical experts] about a topic can be an extremely effective way of enabling students to find out what they know, and indeed what they don't know...' (Laurillard 2002: 158).

We learn best when we are fully involved in the activities associated with the learning experience. For students in the role of learners, learning alongside an expert can be inspirational (figure 1). For the volunteer amateur experts, the opportunity to work with students, accessing new technologies and materials motivates involvement (figure 2). Additionally for students in teaching roles (figure 2), there is no better incentive to fully understand a task or technique than when one needs to pass this on to a third party. Therefore, this approach has the potential not only for effective acquisition of skills, but as an immersive experience for both parties in both roles.

THE QUESTIONS

Questions were developed and investigated through the case study:

- Would apprentices be tacit observers of the master's practices, or can apprentices and masters learn simultaneously within the same activity?
- With the student experience, how can teaching another person, as an active method of learning confirm understanding?
- Can voluntary technical experts provide superior quality instruction and experience, compared with learning through printed publications or online interfaces?

OUR PROJECT REINFORCES TWO-WAY EXCHANGE, WITH AN APPRECIATION FOR BALANCE AND VALUE OF COMPLIMENTARY SKILLSETS.

THE ACTIVITIES

The Needlework Development Scheme (NDS) was established as a central focus for the project tying together all activities. In operation from 1934-1961, and using historic embroidered examples as teaching aids, and printed pamphlets to support learning, the NDS hugely influenced embroidery and sewing education throughout the UK during the 20th century and beyond.

DAY 1

NDS specimens acted as catalysts for discussion, with mixed groups and pairs preparing supports and boards for the preservation of the historic textiles samples (figures 3 and 4). All participants were encouraged to take notes, sketches and photos to be used on day 2.

Positive feedback was received regarding the Day 1 experience, for example: 'This worked very well. I liked that on day 1 we were all learning something new, as this allowed us to relax and get to know one another.' (Expert M 2015) 'Working with the collection helped us appreciate the qualities in these precious embroidery examples.' (Student LM 2015)

DAY 2

During the morning session the students operated as mentors. Pairs and small groups of participants were challenged to utilise sketches, drawings and photographs from day 1, as a basis for creating files for digital printing. Students were tasked with preparing notes in advance to

work with the technical experts in the computer lab, leading and assisting them to: scan and save images; open, crop, resize, repeat, layer and re-colour designs. The pairs/groups were encouraged to work with one monitor, with students taking turns in leading activities and supporting the experts in creative and technical exploration of the CAD tools.

McLoy (2011: 4) states that 'Reciprocal learning is the concept that a person concurrently learns, or even re-learns whilst teaching another person a skill, trade or idea.' In order to be able to pass on a skill, the students must fully understand the skill themselves. Running subsequently to the student Photoshop sessions the previous week with technical staff, these skills exchange workshops were intended to further embed this learning, whereby students led the experts in similar activities. As the experts had very little knowledge of CAD, students had to breakdown their own understanding in order to communicate to their partners.

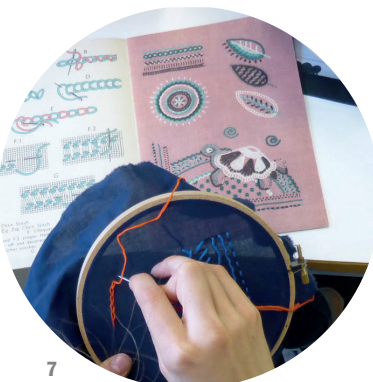
Feedback from the Day 2 morning session included:

'I felt an improvement on designing digitally such as the use of the Photoshop software. This was reinforced when I worked with women from the Embroiders' Guild as I was then having to teach these skills, which allowed me to consolidate the skills'.

(Student EW 2015)



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On explaining Photoshop techniques to others, one student commented ‘...talking the process through did really help to cement it in my own head.’ (Student AW 2015) The additional benefits of working with individual partners encouraged students to answer questions posed by their partners and break down their own understanding in order to communicate this to someone else: ‘It made me reflect quickly, yet deeply about my own knowledge in order to be able to teach it’ (Student ZN 2015) This was also true in peer-to-peer support for teaching, where two students worked with one guild member (figure 6).

In this project I found that the exchanging of skills between the embroiderers and the students was successful as it gave us the opportunity to learn a new skill as well as refine our own. This was definitely the case when teaching our embroiderer, Georgina, as when we were teaching her I found that Hazel (fellow student) and I were also refining our own skills on Photoshop together, helping each other.

(Student JH 2015)

Peer assisted learning (PAL) is a recognised method of learning explored by Topping and Ehly (2009) whereby students are actively placed in groupings to facilitate learning from

and with one another. Leelawong & Biswas (2008) have contributed much in the field of research where learners use teaching as a means to improve and embed learning. The researchers devised synthetic learners for children to test ideas and understanding on through teaching the synthetic learner themselves (Leelawong & Biswas 2008). In this case study, our students were testing their own understanding of CAD through teaching the guild members.

The second day afternoon activity introduced and used the sublimation digital printer and large format heat transfer press. The groups printed their files together; further developing trust and social bonds through engagement in shared activities.

DAY 3

In order to investigate students self-learning and to provide comparison with reciprocal learning, students were given two separate tasks:

Task 1: Using only one book or pamphlet, learn a stitch or technique (figure 7)

Task 2: Learn a technique or stitch from an online resource.

During the tasks it was important that the students did not to cross-reference or confer with other students for help or direction. Additionally, these tasks supported a range of learning styles.

Feedback from the tasks that took place during the third day included:

This exercise really made me appreciate my generations ability to film something and put it online. If I had been learning stitches (from books) in the days of NDS I would not have been doing textiles. I don't know if it was the language, but it just made the reading a lot harder to understand.

(Student CB 2015)

The statement above highlights that technical language used to describe skills can be discipline specific and as a result alienate new learners. Conversely, another student commented:

Comparatively, I found the video tutorials much easier to follow than the diagrams from the book. I find I tend to learn much better when there is an actual person guiding me through a new process, and with the over-the-shoulder viewpoint of the YouTube videos, it's really easy to follow the person's motions.

(Student EW 2015)

One student even managed to learn effectively using visuals only from an online tutorial, as she could not understand the language: 'I couldn't understand the lady so I just had to watch her intently.' (Student CB 2015) Online videos are a presentational medium with linear illustration. The option for self-pacing gives the learner control to view and rewind. However, the lack of interactivity possibility limits learning. In this next example, the lack of discursive opportunity compromised learning, while the student did follow the tutorial and produced a series of stitches she commented: 'I'm not sure if I am doing the stitches correctly...I will have to ask Ann on Monday!' (Student AW 2015). The limitations of video are reaffirmed in a comment by Guild member Julie, who despite using online sources promotes traditional learning: 'I think learning embroidery face to face with a tutor is most effective as you can watch exactly how they hold the fabric, needle and thread, as well, it gives you the ability to pick up tips and ask questions if you don't understand.' (Expert JB 2015)

DAY 4

The fourth day focused on the technical experts as mentors to the students. Using the digitally printed

samples created through Photoshop and sublimation printing, and from discussions on days 1 and 2, the groups were asked to work on stitched pieces, with the guild members leading the activities. Where appropriate specific NDS pieces were brought out of the collection for more focused study, particularly pertaining to technique. Imparting specialist hand skills to younger generations has long traditions largely lost in recent years. The advent of the return to modern apprenticeships recognises the value of experienced people as vital contributors to training and education. For many participants, sharing these skills is seen as a privilege.

For the students as novices learning and refining textile skills takes time and practice. Although basics may be gleaned from other sources, the opportunity to learn directly from experts encouraged questions, discussion and above all physical interaction between individuals focused around materials (figure 8).

Feedback from the fourth day session included the following student comment: 'It was much easier to learn alongside a teacher than by using a book or video tutorial. Julie was a patient teacher and we discussed where I was going wrong and different ways I could make my stitching neater.' (Student RS 2015)

One guild member worked between the students giving practical instruction: 'I felt I was able to learn more quickly as Margaret demonstrated.' (Student LM 2015) This expert also used a book for reference whilst teaching (figure 9) and a student observed 'I would like to point out how easily Margaret could interpret the instructions, where we had some trouble learning straight from the book. I feel like this difference is generational.' (Student LM 2015)



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RECIPROCAL BENEFITS

There is currently disconnect between Universities and amateur craft organisations. For technical experts in the novice role, advancing technology, particularly associated with CAD, has excluded amateurs with restricted accessibility. This project supported amateur technical specialists in embracing the potential of technology through facilitating workshops and fostering relationships:

Julie (expert) also showed us how she had photographed her embroidery samples and made them into a digital print, proving how she had developed her knowledge from the previous Photoshop workshop. It was really nice to know that both sides had benefitted from the project, as Julie was excited about the design possibilities of the new CAD software she had learnt.
(Student RS 2015)

The premise for this paper is that physically working on exchange of skills in partnerships through specific

tasks as a method of learning, is not only effective for acquisition of skills, but is immersive as a social learning and teaching tool. Academic research on the subject confirms this. Jacques and Salmon (2007: 3) determine that, 'We learn best when we are personally and actively involved in the learning experience...when our participation with others is valued and when there is a supporting framework in which to learn.' Chickering and Gamson (1987: 61) also promote the positive effects of working in teams: 'Working with others often increases involvement in learning. Sharing ones' own ideas and responding to others' reactions improves thinking and deepens understanding.'

Skills exchange is not a new phenomenon with websites and organisations springing up over the past decade facilitating growing demand. For examples see www.swapaskill.co.uk, www.yoursquaremile.co.uk and www.tribes.trib.net/skillswap. Whilst acknowledging the efficacy of these groups' relevance,

in comparison, this project offers a closed environment with vetted experts supported by specialist equipment. Our project reinforces two-way exchange, with an appreciation for balance and value of complimentary skillsets. As online craft groups and communities grow exponentially, conversely, *The Embroiderers Guild* and *Quilters Guild* have struggled to enroll younger members. Students can reject these organisations as old fashioned and irrelevant as highlighted in the following statement: 'I had assumed it [the guild] was for older people, and I didn't think I was technically trained enough to join' (Student CB 2015). This project facilitated a relaxed introduction to the Guilds through engaging its members in workshops with students, building bridges between academia and the wider community (figure 10).

One group of project participants has subsequently cultivated the social relationship, meeting up again since the project concluded for 'soup and stitching'. Despite a 60-year age gap, Chloe (student) would now describe Margaret (expert) as a 'very skilled pal'. Margaret has introduced students to extended skills and expertise broadening their stitch repertoire and even donating excess materials and equipment to the students. Support for students in developing skills in this field through such organisations is clear. For the Guilds, updating content and concept development through encouraging younger design student members is obvious. However, the most valuable resource that this initiative offers is the people themselves and the interaction afforded through the project activities. Teaching by example and around a practical experience embeds learning with tacit understanding. It allows time and space for questions and demonstrations as activities unfold, which is almost impossible to

reciprocate through a web interface, or virtual user group/partnerships, on which society is in danger of becoming over reliant.

As part of the project, students interviewed the experts for feedback on the process and recorded this as a research component on their reflective blogs, see:

Hazel Stevens –
<https://andsotosew.wordpress.com/>

Alison Wibner –
<https://ndsskillsexchangeproject.wordpress.com/>

Emma Wilkinson –
<https://ewilkinsonnds.wordpress.com/>

Jemima Homer – <http://www.jemimahomertextiles.wordpress.com/>

These records clearly demonstrate the process and enthusiasm of the participants who felt valued in both roles of this project:

'It was an extremely enjoyable few days and I loved it. I am sure I learned more from the student than he did from us.'

(Expert AW 2015)

'I would love the chance to work with this fabulous group of women again.'

(Student AW 2015)

CONCLUSION

This case study specifically focused on technical skills complementing core teaching and learning activities. As such, teaching of conceptual thinking, aesthetics and design development remained with academic staff, integrated within the curriculum alongside these workshop activities. Without adding pressure to staffing budgets, students embedded their knowledge and developed their own understanding through the skills exchange, tapping into a rich resource

of specialist expertise from within the local Guilds. As a complimentary component to underpin creative design thinking, and particularly discipline specific specialist technical understanding, this approach to learning and teaching is highly relevant. Time spent in one-to-one partnerships explaining technique both verbally and manually proved a rich reciprocal learning experience for all participants, with the added bonus of being cost effective in supporting the curriculum and academic staff. Transferable and relevant in many different settings, this approach supports academic teaching whilst building reciprocal learning communities through connecting students with experts' out-with academia.

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FIGURE CAPTIONS

Figure 1: Skills exchange around stitch, Embroiderers Guild members and 2nd year undergraduate textiles students.

Figure 2: Skills exchange around print, Embroiderers Guild members and 2nd year undergraduate textiles students.

Figure 3: Student and Guild member in conservation workshop making textile sample mounts.

Figure 4: 19th century bloomers with internal mounts, date unknown, NDS ECA.

Figure 5: Students leading technical experts in Photoshop activities, 2015.

Figure 6: Peer-to-peer support from students guiding experts in learning Photoshop skills, 2015).

Figure 7: Learning stitches from NDS booklets, published 1952 and 1949.

Figure 8: Expert guiding students through stitch activities (2015).

Figure 9: Expert working alongside students, 2015.

Figure 10: Positive relationships have been built connecting learning communities, 2015.