



Losing the edge: the risk of a decline in practical conservation skills

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Keywords

intervention; craft; skill; training; education; ethics

Introduction

‘Our people have become more sophisticated but less wise; intellectually more elaborately taught, but practically less competent.’¹

There is a danger that the opportunities to learn and maintain the necessary skills for high-level hands-on conservation are diminishing. The causes of this loss are many, but they impact at every stage of the educational progress of a potential or developing conservator. The time dedicated to practical craft in primary and secondary education is being reduced and the qualifications for non-academic studies have been downgraded. The curricula of college conservation courses are taken up with activities that accentuate academic aspirations and must also reflect the current needs of employing institutions. In museums and heritage organisations priority is given to surveys and storage, or to quick turn-round loans and exhibitions. The importance of developing and maintaining skills at a high level, and the devastating effect of their loss, does not seem to be appreciated by museum managers or even by conservators themselves. This article discusses only the risk. Although some possible ways of mitigating this risk become apparent when describing the problem, they are not dealt with in detail here.

Methodology

The impetus for the current research, and for this article, came from concerns recently expressed to the author about the apparent trajectory of museum conservation. The danger of a damaging imbalance in the activities of conservators has been a recurring theme in the author’s writing.² A major source of background information is inevitably the author’s own recollections. These cover more than 40 years of involvement in conservation, including practical work, scientific research, senior management and teaching. Numerous visits, and revisits, to conservation departments and private workshops took place during this period. They allowed observations about changes in activity and attitude over a period when conservation was deemed to be developing as a profession.

The more recent, more academic, element of the research involved conventional study of conservation publications and the literature about the development and measurement of practical skills. Prospectuses for conservation courses were examined, as was government literature about vocational training. The direct link to the UK conservation scene was maintained through use of documents provided by the Institute of Conservation’s (Icon) office.

A less structured, but very important, part of the research consisted of correspondence and conversations with conservators, conservation teachers and managers working in institutions and in private practice (hereafter referred to as ‘respondents’). Most of these discussions related to the situ-

¹ David Lloyd George, quoted in foreword to Vicomte de Mauduit, *They Can’t Ration These* (1940; reprinted London: Persephone Books Ltd, 2004), 11.

² Jonathan Ashley-Smith, ‘Restoration is an Eleven Letter Word’, *V&A Conservation Newsletter* 8 (1980); Jonathan Ashley-Smith, ‘Editorial’, *V&A Conservation Journal* 11 (1994), <http://www.vam.ac.uk/content/journals/conservation-journal/issue-11/editorial/> (accessed 13 April 2016); Jonathan Ashley-Smith, ‘A Consistent Approach to a Varied Collection’, in *Restoration: Is it Acceptable?* *British Museum Occasional Paper* 99, ed. Andrew Oddy (London: British Museum Press, 1994), 89–94; Jonathan Ashley-Smith, ‘Reversibility—Politics and Economics’, in *Reversibility: Does It Exist?* *British Museum Occasional Paper* 135, ed. Andrew Oddy and Sara Carroll (London: British Museum Press, 1999), 129–32; Jonathan Ashley-Smith, ‘The Basis of Conservation Ethics’, in *Conservation: Principles, Dilemmas and Uncomfortable Truths*, ed. Alison Richmond and Alison L. Bracker (Amsterdam: Elsevier/Butterworth-Heinemann, 2009), 6–24.

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ation in the UK but opinions were also sought in continental Europe, Australia and the United States. These interactions were not structured as formal academic research interviews. Some face-to-face conversations were quite discursive. There was not a single list of questions that were sent to all respondents. As the author gained a greater understanding of the subject, the wording of some questions was altered to make them easier to answer. The comments of earlier respondents might suggest additional questions that were only addressed to those that followed. In a number of cases the respondents requested anonymity. This, and the informality of the information gathering, means that many of the responses can do no more than validate this as a subject for research. The small sample, about 35 discussions, means that conclusions must be speculative. When quoted, many responses will be presented as anonymous extracts from conversations, more often than not ascribed to a specific category of respondent.³

The views expressed may not reveal the whole truth. As one senior conservator, who has worked both in a museum and in private practice explained: 'Few of us will want to confess to cases where we have been stumped by lack of skill or confidence. And we don't like to tell tales about other people failing'. This sensitivity to open discussion and the complexity of the whole subject suggest that this article must be treated as a preliminary and incomplete report.

The development of skill

Without defining the word 'skill' too rigorously at this stage, it is obvious that a certain skill-set determines what it means to be a conservator. In the 'Development Route Map for Conservators' Icon makes use of the 'Novice to Expert' scale.⁴

This makes it clear that the requirements for the role of conservator are considerably more than just manual skills. There are other necessities such as relevant knowledge, self-confidence, understanding of context, and the

³ Where a quote is publicly available it is given a traceable reference. Where the respondent gave permission to use extracts from emails or conversations the name is given with the quote. The correspondence will never be in the public domain, so there is no value for other researchers in a string of dated citations of personal communications, many anonymous. The information gathering took place in two main time periods: April–June 2015 and November 2015–April 2016.

⁴ Icon (The Institute of Conservation), *Icon Professional Accreditation of Conservator-Restorers (PACR) Accreditation Handbook*. April 2016, p. 41, http://icon.org.uk/system/files/pacr_handbook_2016.pdf (accessed 8 May 2016).

Table 1 Novice to expert scale from *Icon Professional Accreditation of Conservator-Restorers (PACR) Accreditation Handbook*. April 2016.

	Knowledge	Standard of work	Autonomy	Coping with complexity	Perception of context
1. Novice	Minimal or 'textbook' knowledge without connecting it to practice	Unlikely to be satisfactory unless closely supervised	Needs close supervision or instruction	Little or no conception of dealing with complexity	Tends to see actions in isolation
2. Beginner	Working knowledge of key aspects of practice	Straightforward tasks likely to be completed to an acceptable standard	Able to achieve some steps using own judgement, but supervision needed for overall task	Appreciates complex situations but only able to achieve partial resolution	Sees actions as a series of steps
3. Competent	Good working and background knowledge of area of practice	Fit for purpose, though may lack refinement	Able to achieve most tasks using own judgement	Copes with complex situations through deliberate analysis and planning	Sees actions at least partly in terms of longer-term goals
4. Proficient	Depth of understanding of discipline and area of practice	Fully acceptable standard achieved routinely	Able to take full responsibility for own work (and that of others where applicable)	Deals with complex situations holistically, decision-making more confident	Sees overall 'picture' and how individual actions fit within it
5. Expert	Authoritative knowledge of discipline and deep tacit understanding across area of practice	Excellence achieved with relative ease	Able to take responsibility for going beyond existing standards and creating own interpretations	Holistic grasp of complex situations, moves between intuitive and analytical approaches with ease	Sees overall 'picture' and alternative approaches; vision of what may be possible

ability to consider options and make autonomous decisions in the face of complexity. Using this scale, an applicant for Icon's Professional Accreditation of Conservator-Restorers (PACR) should be 'proficient' across the points described in the professional standards.

Achieving this level of proficiency is deemed to take 'about 5 years after completing primary conservation training (e.g. a first degree or masters course), or 8–10 years after working in conservation including practical training'.⁵ Mention of the need for supervision seems to disappear at the 'competent' level. The 'expert' demonstrates deep tacit understanding, achieves excellence with ease, and is capable of an intuitive approach.

One of the pioneers of 'performance consultancy', John Whitmore, identifies four stages of learning:

Unconscious incompetence—no understanding

Conscious incompetence—low performance, recognition of weak areas

Conscious competence—improved performance, conscious effort

Unconscious competence—higher performance, natural automatic effort.⁶

This progress speaks to the development of tacit or embodied knowledge, which refers to knowledge possessed by an individual that is difficult to communicate to others via words and symbols. Tacit knowledge can be acquired without language. Apprentices, for example, work with their mentors and learn craftsmanship not through language but by observation, imitation and practice.⁷ This 'tacit' or 'silent' knowledge is in contrast to explicit knowledge, which can be readily articulated, codified, accessed and verbalised. It can thus be taught in a one-to-many fashion in a classroom. This is the 'textbook' knowledge of the 'novice'.

In a 2014 paper on 'Fostering and Measuring Skills', Tim Kautz and his co-authors give a long-term view of the development of skills:

'They have a genetic basis but are also shaped by environments, including families, schools, and peers. Skill development is a dynamic process. The early years are important in shaping all skills and in laying the foundations for successful investment and intervention in the later years. During the early years, both cognitive and non-cognitive skills are highly malleable.'

In this context non-cognitive skills are defined as 'personality traits, goals, character, motivations, and preferences that are valued in the labour market, in school, and in many other domains'.⁸ This seems to mirror the view of Joyce Hill Stoner, Director of Preservation Studies at the University of Delaware, about what a potential student should bring to a conservation course. She suggests that attributes, such as commitment, enthusiasm, honesty, a sense of respect and responsibility, a compatible temperament, problem-solving skills, intelligence and academic ability, must be inherent in the student's character.⁹

Most respondents thought that the 'novice to expert' scale was realistic and that it took about five years after graduation to be proficient, that is, to merit accreditation. Views on the amount of time needed to become a confident expert varied between 5 and 20 years. It seems that some conservators believe it takes longer to achieve expert status in their own specialism than in others. There is no doubt that the skills needed to practise in, say, ceramics conservation are different from those needed for textiles, so a competitive belief about necessary levels of skill might be expected. There also appears to be an age bias; older respondents recommending a longer time to achieve proficiency. This is arguably because seasoned professionals believe it took a long time to reach their present level of skill and are suspicious of younger conservators' claims of proficiency.

5 Icon (The Institute of Conservation), 'PACR Accreditation Frequently Asked Questions', p. 3, http://icon.org.uk/system/files/pacr_faq.pdf (accessed 13 April 2016).

6 John Whitmore, *Coaching for Performance* (London: Nicholas Brealey, 1996), 101.

7 See https://en.wikipedia.org/wiki/Tacit_knowledge (accessed 13 April 2016).

8 Tim Kautz et al., 'Fostering and Measuring Skills: Improving Cognitive and Non-cognitive Skills to Promote Lifetime Success', *OECD Education Working Papers* No.110 (Paris: OECD Publishing, 2014), <http://www.oecd.org/edu/cei/Fostering-and-Measuring-Skills-Improving-Cognitive-and-Non-Cognitive-Skills-to-Promote-Lifetime-Success.pdf> (accessed 13 April 2016).

9 Joyce Hill Stoner, 'The Education and Training of Art Conservators: Teaching the Triptych of Practice, History and Science', in *11th Triennial Meeting, Edinburgh, Scotland, 1–6 September, 1996: Preprints* (ICOM Committee for Conservation), ed. Janet Bridgland (London: Earthscan, 1996), 134–9.

This article is specifically about the development of practical skills, which fall into the cognitive category whether they are conscious or subconscious. There may be predispositions that are hard-wired into all humans, and there may be aptitudes that some lucky people are born with. But between infancy and a university education, there are many opportunities for practical skills to be developed, neglected or stifled.

Attitudes to working with your hands

Discouraging attitudes toward people who want to develop manual skills are apparent at all stages of education. This may not be a conscious anti-skill stance but a mixture of risk aversion, class discrimination, academic snobbery and economic opportunism. These add up to what may seem to be a conspiracy. The snobbery extends to conservators, many of who resent any element of their professional education being compared to an apprenticeship or their expertise being described as craftsmanship.

Manual dexterity is encouraged in very young children. Modelling and painting are seen as natural ways of developing motor skills as well as the non-cognitive skills of sitting quietly and behaving socially. However, once the making involves the use of tools, concerns for safety overrule any desire to teach specific skills. From childhood right through to graduation, the use of computers is seen as a safe alternative to interacting with the material world. It also has the side-benefit of releasing workshop space and avoiding the expense of equipment and its maintenance. This is despite the assertion that:

‘education in and through craft contributes to cognitive development and engages learners. Through engagement with materials and ideas, it develops creativity, inventiveness, problem-solving and practical intelligence.’¹⁰

¹⁰ Crafts Council, ‘Introduction’, in *Our Future is in the Making: An Education Manifesto for Craft and Making* (2014), <http://www.craftscouncil.org.uk/what-we-do/education-manifesto/> (accessed 13 April 2016).

Simon Ofield-Kerr, vice-chancellor of the UK’s University for the Creative Arts (UCA), says:

‘Sewing, ceramics, metalwork, woodwork and crafts are all on the wane as digital disciplines take hold and resources become scarcer ... My sense, when I go into schools, is that it’s all become very flat, it’s become a 2D world. Young people are becoming incredibly confident in their use of digital, and that’s wonderful. But they’re not getting the experience of how the material world around them is fabricated and developed.’¹¹

¹¹ Simon Oldfield-Kerr quoted in Rachel Williams, ‘End of the Creation Story? Design and Craft Subjects Decline in Schools’, *The Guardian*, 11 February 2014, <http://www.theguardian.com/artanddesign/2014/feb/11/design-craft-subjects-decline-in-schools> (accessed 13 April 2016).

In 2010 Michael Gove, UK Secretary of State for Education, spoke about the urgency of reforming and revaluing practical education. He said that for decades practical learning for children has been seen by the educational establishment as a poor second-best to academic study.¹² However UK Government education policy does not seem to have reacted to the warning. The Department for Education has suggested that state-run schools should limit the number of allowable subjects for study by children between ages 14 and 16. Such a limited choice of subjects has, in turn, been criticised by education professionals as it would:

¹² Michael Gove quoted in John Hayes, ‘“The Craft so Long to Lerne”: Skills and their Place in Modern Britain’ (speech delivered at the Royal Society of Arts, 26 October 2010), <https://www.gov.uk/government/speeches/the-craft-so-long-to-lerne-skills-and-their-place-in-modern-britain> (accessed 13 April 2016).

‘mean a reduction in the opportunities for pupils in many state schools to study a wide range of arts subjects, including design and technology, as well as their access to high quality vocational qualifications.’¹³

¹³ Alison Critchley, Blog, January 2016, <https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2016/01/blog-ebacc-consultation-response>, (accessed 13 April 2016).

Even the word ‘vocational’, doing something you feel ‘called’ to do, is a target for snobbery. This is felt in ‘the damaging gulf between the academic and vocational’ discussed by educationist Alan Smithers.¹⁴ In the last quarter of the twentieth century technical colleges were turned into universities to hide this gulf. The newly formed universities began to favour academic

study rather than nurture the development of manual skill. In 2014 the UK's then 'skills minister' Matthew Hancock announced the creation of new further education colleges to return to the apprenticeship and technical college model, promising 'parity of esteem' and 'restoring faith in vocational qualifications'.¹⁵

Furthermore, in 2014 The Crafts Council, a body founded 'to advance and encourage the creation and conservation of works of fine craftsmanship', published a manifesto aimed at changing the government's attitude to making and craft in schools. In the six years between 2007 and 2013 student participation in craft-related courses aimed at 14–16 year-olds had fallen by 25%. In higher education, the number of craft courses fell 46%. Among many proposals to the government was the demand that there should be parity in the scores awarded to different subjects in the framework by which a school's success is judged. At the time of writing, there is a disincentive to teach craft-based subjects because they don't score so well.¹⁶ The new technical colleges will be taking students from schools where the number of allowable subjects available to 14–16 year-olds has been limited in line with this performance framework.

In 2015, the Warwick Commission released its report *Enriching Britain: Culture, Creativity and Growth*, which highlighted 'major concerns that the educational system is not focussing on the future needs of the Cultural and Creative Industries and the broader needs for innovation and growth in the UK'.¹⁷ The report concluded that 'there is a general agreement within the Cultural and Creative Industries and industry more broadly that the Government's focus on Science, Technology, Engineering and Maths (STEM) should include the Arts (STEAM)'.

Conservation at college

Although Icon recognises routes other than college education to achieving accreditation, the popular assumption is that studying for a university degree is an essential step. Toward the end of the twentieth century the conservation profession took a path that promoted the academic above the practical. In 1992 Robert Ferguson, an education specialist who advised UK conservation bodies, distinguished between 'education', which would lead to the desired qualities in conservators, and 'training', which leads to standardised responses rather than individual thinking.¹⁸ The aspiring conservator should not expect any 'training' at university.

The standard of graduates turned out by university conservation courses has been criticised for almost as long as the courses have been in existence.¹⁹ Since the nature of conservation courses has been constantly changing it is reasonable to continue to question the capabilities of the new graduates. One obvious observation is that courses attempt to fit more into the curriculum and yet the time from start to graduation has not increased.

The ICOM-CC document 'The Conservator-Restorer: A Definition of the Profession' insists that, at all stages of training, major emphasis should be placed on practice.²⁰ Yet the percentage of time dedicated to developing manual skills has been declining. Kate Seymour, Head of Education at Stichting Restauratie Atelier Limburg (SRAL), Maastricht, summarises the situation:

'The craft of restoration has developed to achieve professional status through the embedding of teaching "practice" within an academic framework. This more scholarly approach is often seen by those working in the field as a movement away from perfecting hand-skills at an early stage of training. This may be considered inevitable, as "practice" receives fewer allocated hours within aca-

14 Alan Smithers, 'Labour's Targets are Missing the Point', *Times Educational Supplement*, 29 November 2002.

15 Matthew Hancock MP, 'Ending the Divides between Academic and Vocational Education, and Work and Training' (speech delivered at Plaisterers' Hall, London, 30 April 2014), <https://www.gov.uk/government/speeches/matthew-hancock-speaks-about-improving-vocational-education> (accessed 13 April 2016).

16 Crafts Council, *Our Future is in the Making*, Section 1.

17 Warwick Commission, *Enriching Britain: Culture, Creativity and Growth* (University of Warwick, 2015), <http://www2.warwick.ac.uk/research/warwickcommission/futureculture/finalreport> (accessed 13 April 2016).

18 Robert Ferguson, 'Trends in Conservation Education and Training: War of Words or Words of War?', *Museum Management and Curatorship* 11 (1992): 411–8.

19 Marcelle Scott, 'Contribution to "Conservation Matters—What Do You Think?"', *AICCM National Newsletter* 112 (2009): 19.

20 The International Council of Museums—Conservation Committee (ICOM-CC), 'The Conservator-Restorer: A Definition of the Profession' (1984), <http://www.icom-cc.org/47/about-icom-cc/definition-of-profession> (accessed 14 April 2016).

21 Kate Seymour, 'Balancing Knowledge and Practice through Repetition and Reflection', *CeROArt* (2014), <http://ceroart.revues.org/4238> (accessed 14 April 2016).

22 Jeremy Hutchings, 'Educating the Conservator-Restorer. Evaluating Education Delivery in Terms of the New ECCO Competence Framework for Access to the Profession—The Oslo University Case Study', in *ICOM-CC 16th Triennial Conference, Lisbon, 19–23 September 2011*, ed. Janet Bridgland, ICOM Committee for Conservation (Lisbon: Critério-Produção Grafica, Lda., 2011).

23 Cf. Institute of Archaeology's Department of Conservation Studies, <http://www.ucl.ac.uk/archaeology/studying/courses/ARCLG122>; The Courtauld Institute, <http://courtauld.ac.uk/research/sections/conservation-and-technology>; and Textile Conservation course at the University of Glasgow, <http://www.gla.ac.uk/postgraduate/taught/textileconservation/> (all accessed 3 April 2016).

demic curricula, giving way to more theoretical modules, and a broader "skill set" expected of the practicing conservator.²¹

Respondents were united in the view that not enough time was given to development of practical skills. A senior textile conservator said 'this is a fundamental flaw, always has been'. The head of a large private practice said this was 'a critical issue we are hitting with almost all our graduates'. A senior metalwork conservator described the level of practical skill demanded on entry and then taught on degree and Masters courses as 'negligible'.

In 2011 Jeremy Hutchings, then of the University of Oslo and a committee member of the European Confederation of Conservator-restorers' Organisations (ECCO), wrote that:

'It is now widely accepted that the minimum level of education required to enter the profession is a period of full-time study in conservation-restoration of no less than five years at a university.'²²

The stipulation of five years full time study of conservation under the overview of a university is at odds with what is the norm in the UK. Three years of Masters level study at the Institute of Archaeology is advertised as 'preparation for professional practice in conservation'. The three-year course at the Courtauld Institute is deemed to 'equip students with the specialist skills and knowledge for a professional career in the conservation of easel paintings'. Graduates from the two-year textile course at Glasgow University 'are qualified to go on to a post-training internship or directly into the workplace as a textile conservator in a museum or other institution around the world'.²³ None of these post-graduate courses stipulates a first degree in conservation. However they do all require some evidence of manual dexterity.

The output of the courses will depend on the standard of the intake. In the USA great attention is paid to practical skills at the point of selection. Jonathan Thornton, a professor at Buffalo State Art Conservation Department, says:

'Here at Buffalo we take the portfolio seriously, and look for fine hand skills, caring less about artistic talent. Also, students have often been headed for a particular speciality before they come here, and have accumulated appropriate skills.'

Barbara Appelbaum, a New York-based art conservator in private practice, agrees:

'The process by which students here are accepted into the programs is so torturous, I find it hard to imagine that people with no hand skills could get in. Most of them intern in more than one conservation lab even before they start school, which should filter out the klutzes.'

For some UK courses the lack of hands-on experience at secondary school is overcome by taking older candidates seeking a career change; the necessary skills having been acquired as a hobby, at evening classes (where these still exist) and short courses, or from related trades. Paul Tear from Buckinghamshire New University says:

'it has only been in the last five years that we have seen students coming straight from school ... If the students showed potential and demonstrated a good level of manual dexterity we would take them onto the BA programme, knowing that the first year was an intensive skill building programme across a broad range of furniture based activities. For the MA programme we would have the interviewee in for a whole day and get them to undertake a number of skills based exer-

cises, again, to gauge their manual dexterity. For those students who did not make the grade, we advised them to go away for a year to undertake either some short courses, a City & Guild course in carpentry, joinery or furniture making and then come back the following year. To their credit, many did take our advice and returned to undertake the course.'

Sadly the furniture courses at this university have now closed, further reducing the number of overtly practical degree courses in the UK. Other higher degree courses are looking for research potential and may not be so insistent on a high level of specialist practical skill for their intake.

The nature of university education in the UK is changing. As the experience becomes more expensive the students are seen as very demanding customers in a commercial transaction. The goals become more short-term and teaching time is taken up with imparting skills that can immediately be transferred to any work situation, theoretically making the student instantly employable. It is not certain that the existing courses fully endorse the idea that the development of specialist manual skills is a necessary part of the transition from school to the work place. Hands-on experience is deemed to have a value as a teaching aid. One lecturer said that practical experience was useful to demonstrate decision-making options. One student was grateful for 'supervised engagement with problem solving'.

Michele Marincola, Director of the Institute of Fine Arts, New York, thinks that the expectations of the profession may be too high:

'The burden cannot rest with the graduate programs to complete a conservator. We're in the business of teaching students the skills to enable them to continue learning ... We're really here to set up critical thinking—to teach students how to ask the right questions and where to go to get answers to them.'²⁴

Mary Brooks, at that time working at the UK's Textile Conservation Centre, writes that these intellectual and transferable skills are what is needed in the employment context. In addition to traditional interventive skills employers want project management skills for designing and implementing preventive approaches. Employers desire communication and report writing skills and problem solving ability.²⁵ Colin Pearson, then Professor of Cultural Heritage Conservation at the University of Canberra, has suggested that the effective conservator also needs professional and basic life skills, which should be incorporated into curricula and assessed as core competencies.²⁶ New technologies also demand curriculum time. The Buffalo State Art Conservation Program has an international reputation for the time dedicated to practical work, but Jonathan Thornton notes that 'the science and imaging curriculum does cut into the time students have to learn treatment'.

Between education and employment

It is possible that skills, not fully established at college because of pressure of time, may have a chance to develop in some sort of internship or fellowship. This may take place towards the end of the course or immediately afterward. Many courses rely on placements in the real world of work for this practical experience.

Paul Tear explains:

'yes, I do think that pressure on syllabus content in current university training does not allow enough time to develop good practical skills. But it is possible to supplement the syllabus with additional activities that broaden the student experience and improve their practical skills, ... In our case these are live projects in museums and historic houses that take the students out of the University, working in a real environment, individually and as part of a team, working to a brief.'

²⁴ Michele Marincola, 'A Lifetime of Learning: A Discussion about Conservation Education', in *Conservation Perspectives—The GCI Newsletter 18.3* (Los Angeles: The Getty Conservation Institute, 2003), http://www.getty.edu/conservation/publications_resources/newsletters/18_3/dialogue.html (accessed 15 April 2016).

²⁵ Mary M Brooks, 'Education and Experience: Re-evaluating Learning in Conservation', in *Defining and Measuring Effectiveness in Education and Training: Proceedings of the Interim Meeting of the ICOM-CC Working Group on Training in Conservation and Restoration, 16–18 April 1998, Vantaa, Finland*, ed. Kathleen Dardes (Vantaa: Evtel Institute of Art and Design, 1999), 34–48.

²⁶ Colin Pearson, 'Competency Standards for Conservation and Their Assessment: Are They Applicable to Conservation Training?', in Dardes, *Defining and Measuring*, 77–96.

Ksynia Marko of the UK's National Trust textile conservation studio writes:

'Our 3 year post graduate internship seems to work really well. People come with the theory and are then immersed in practical work and have to compile a report and portfolio after the first and second years. They are considered a fully-fledged part of the team in their third year.'

The success of placements obviously depends on the length of time and the nature of the host. Some institutions are less likely to be able to provide supervised training. The changing nature of museum conservation means that interns may find much of their time is spent exposed to hands-off activities. Where there is an opportunity for hands-on work, the full time staff may be too stretched to provide a structured programme that allows development of manual skill. A remark from a student blog about the difference between the college lab and a placement in a museum is very telling:

'The need to develop hand skills and experience meant I was encouraged to undertake complicated treatments. This contrasts to some degree with my experience at a working institution ...'²⁷

The highly successful and much-praised Icon internships are not exclusively dedicated to the development of practical skills. The Icon website explains 'Work experience in management and business skills is as valid as practical conservation work'.

²⁷ Examples of student placement blog entries can be found at <https://uclconservation.wordpress.com> (accessed 8 May 2016).

Contrast with another field

Comparison of the 'education' of conservators with the 'training' given in other professions may provide indications of a need for a change of direction.

It is true that not all conservators need to develop expert-level hands-on skills. Practical intervention is only one aspect of the whole field of conservation. Similarly, surgery is only a small part of the medical profession's activities. The ICOM_CC document, 'The Conservator-Restorer: A Definition of the Profession', draws a comparison between conservation and surgery:

'The conservator-restorer works on the object itself. His work, like that of the surgeon, is above all a manual art/skill. Yet, as in the case of the surgeon, manual skill must be linked to theoretical knowledge and the capacity simultaneously to assess a situation, to act upon it immediately and to evaluate its impact.'²⁸

²⁸ ICOM-CC, 'The Conservator-Restorer'.

This tallies with how surgeons see themselves:

'Surgery always has been, and always will be, a craft speciality. The acquisition of psychomotor skills is, therefore, essential, but this must be done on the background foundation of adequate knowledge of other skills such as communication and clinical judgement.'²⁹

²⁹ W. E. G. Thomas, 'Teaching and Assessing Surgical Competence', *Annals of The Royal College of Surgeons of England* 88, no. 5 (2006): 429–32, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1964676/> (accessed 15 April 2016).

It is recognised that a light touch is only achieved through experience but mere experience may not simply be the answer; experience can mean making the same mistake over and over again. Gradual progression that is closely supervised is essential. Those who teach surgery are practitioners who teach by example and are not ashamed to use the words 'training' or 'craft'.

J. W. Rodney Peyton, a surgeon with a longstanding commitment to education, has described the necessary stages of teaching and learning a procedure.

1 Demonstration of the skill at full speed with little or no explanation.

- 2 Repetition of that skill with full explanation, encouraging the learner to ask questions.
- 3 The demonstrator performs the skill for a third time, with the learner providing the explanation at each step and being questioned on key issues ... the demonstrator provides necessary corrections. This step may need to be repeated several times until the demonstrator is satisfied that the learner fully understands the skill.
- 4 The learner carries out the skill under close supervision describing each step before it is taken.³⁰

This degree of meticulous supervision does not appear to be the norm in university courses or museum placements.

Can skills be lost?

One impetus for this research was the comment from a senior museum conservator, 'I get to do so little practical work these days that I have lost the confidence to tackle complex conservation projects'. Sandra Smith, Head of Conservation at London's V&A Museum, writes in her 2008 paper on strategies to maintain conservation standards and expertise that:

'Maintaining expertise in complex and investigative practical conservation and undertaking research requires forethought, planning and a generosity to share expertise with others. There will be times when these currently underutilized skills will be needed ...'³¹

This raises the question of what can be lost if museum skills are underused.

It is said that the ability to ride a bike, once learned, is never forgotten. The skills are at two levels. The first level involves mastery of staying upright and keeping moving, learning to steer and to stop. The second level includes negotiating traffic and getting where you want to go. The first level soon becomes tacit, the necessary actions and adjustments do not enter the conscious mind. The second level involves interaction with the environment and reaction to changed circumstances. Some of the basic commonsense rules, like not crossing a busy junction without looking, become automatic and not overtly conscious. Following such rules relies on conscious appreciation of the immediate environment. This calls for the necessary movement between intuitive and analytical approaches mentioned in the 'dealing with complexity' column of Table 1. In a conservator this ability to switch between different modes means that it is perfectly possible to treat every case as different yet carry out much of the prior assessment and the treatment in an automatic fashion. Old age and less frequent cycling may not affect the tacit skills of keeping upright and keeping going but may make the mounting and dismounting less steady. The journey may take longer and seem more hazardous, as the intuitive assessment of the environment is lost and the analytical process is overwhelmed by consideration of the risks.

This phenomenon has been noted in conservation. In an article about the value of intuition in practical conservation, John Hook, an art conservator in Australia, argues that:

'There are many senior people who think that practical conservation should only be performed "risk-free". This is debatable. As the field of conservation has become more complex, many practitioners have become less confident, or willing, to weigh up the many factors involved and slip into a kind of stasis.'³²

³⁰ J. W. Rodney Peyton, *Teaching and Learning in Medical Practice* (Rickmansworth: Manticore Europe, 1998), 174–7.

³¹ Sandra Smith. 'Access at Any Cost? Strategies to Maintain Conservation Standards and Expertise in the V&A', in *Conservation and Access: Contributions to the London Congress 15–19 September 2008*, ed. David Saunders, Joyce H. Townsend and Sally Woodcock (London: International Institute for Conservation of Historic and Artistic Works, 2008), 205–8.

³² John Hook. 'Reflections on the Early Years of Professional Practice: Intuition, Craft and Risk', in *Paintings Conservation in Australia from the Nineteenth Century to the Present: Connecting the Past to the*

Future, ed. Carl Villis and Alexandra Ellem (Melbourne: Australian Institute for the Conservation of Cultural Material Inc., 2008), 138.

Karen Vidler, a book conservator, remarked that knowledge of bookbinding history and structures and conservation techniques seem to be more easily retained and refreshed than the physical activities in practical conservation:

‘While learning and refining practical skills my body was altered during the process. The most significant change being my brain telling my shoulders, arms and hands this is how you for example “pare leather”, or “shape a paper repair” until it seems almost absorbed at a cellular level.’

But during periods where she did limited bench work in institutional conservation jobs she found the need to remind her body of the learned skills. Observing the people she has taught she notes:

‘it seems to me it takes about 3–5 years (depending on level of basic training and years of practical experience) before a conservator of books loses confidence to perform practical skills and the ability to demonstrate these skills to the less experienced conservators they manage. Even when they occasionally undertake small conservation treatments there seems a hesitation about undertaking practical work.’

The tacit appreciation of how to handle materials, and to hold and use tools efficiently, is sometimes known as ‘muscle memory’. Penny Jenkins, a paper conservator for more than 30 years, says:

‘I think you lose “muscle memory” after two weeks away from the bench. You can get it back after a few days. A career break of a year or more—can truly undermine confidence and hand skills. It can take months to get back.’

She expands on the stasis described by John Hook above:

‘After a break from handling items—I think many conservators do a lot of “staring” at objects, hoping they will self improve on their own. They use distraction techniques in order to build confidence. On top of all the reading around and testing of materials—it’s important to rearrange the scalpels, and tidy the sink before turning on the tap ...’

The estimate of two weeks for the maximum break you can take before the loss of intuition and confidence becomes detectable occurs fairly frequently. Several respondents who recognised this short-term loss gave this figure. The author asked a number of acquaintances who use manual skills in other disciplines: dentist, chiropractor and hairdresser. All said ‘two weeks’. The same figure also occurs in scientific studies of surgery. During robot-assisted surgical operations every move of the surgeon’s hands is measured and timed. This allows assessment of the deterioration of skills over time. It was found that skills could be maintained by one hour’s practice every two weeks. Robotic surgical skills degraded rapidly in newly trained surgeons after four weeks’ inactivity.³³

There was however a large variation in the respondents’ assessment of time needed to lose skills in the long term. Some didn’t seem to understand the question, others thought there were specific reasons why they had noticed no change. Ksynia Marko said:

‘Whilst I hardly do any bench work now, I have never lost my confidence in terms of practical skills or problem solving. I suppose I have an innate feeling for textiles and a sense of why something behaves as it does and what works and what doesn’t.’

Another textile conservator remarked that on return after a long break she had lost the knack of colour matching. Yet another textile conservator remarks ‘I can say that, for me, confidence is lost long before anything happens to my actual work skills’.

33 L. M. Guseila et al., ‘Training to Maintain Surgical Skills during Periods of Robotic Surgery Inactivity’, *International Journal of Medical Robotics* 10, no. 2 (2014): 237–43, <http://www.ncbi.nlm.nih.gov/pubmed/24357199> (accessed 16 April 2016); Eric L. Jenison et al., ‘Robotic Surgical Skills: Acquisition, Maintenance, and Degradation’, *Journal of the Society of Laparoendoscopic Surgeons* 16, no. 2 (2012): 218–28, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3481234/> (accessed 16 April 2016).

The ethical dimension

Respondents noted a general decline in the amount and complexity of interventions in museums. Robert Payton, until recently Head of Conservation at the Museum of London, kept careful records of the use of time in his department and reports that:

‘If we compare the amount of time that the department worked on practical conservation related work in the 1990s it averaged around 50–60%. By 2012–13 this was down to 21%. In the same time period the amount of time spent on collection care was the reverse—on average <5% in the 1990s and up to 24% in 2012–13.’³⁴

There are many reasons for the readily observed change in conservators’ activities over the last few decades, such as the need to correct the poor state of museum storage and the idea that preventive conservation is less risky and more economically efficient than intervention. Involvement in the active ‘public programme’ sees conservators used as condition checkers and couriers.

Daniel Cull, preventive conservation co-ordinator for the UK’s Historic Royal Palaces, provides more examples of how conservators spend their time these days. He believes that:

‘conservation as a profession has gained (or more accurately now explicitly includes) a MASSIVE amount of skills—whether it’s stuff like documentation, use of databases, photography, photogrammetry, bio-chemistry, analytical chemistry, material physics, entomology, or the more mundane such as use of Auto-CAD, reading legal documents, technical drawing, understanding the intricacies of legal frameworks such as CITES, or skills such as using wikis, basic html ...’

There are some who suspect more subtle causes such as the over-enthusiastic use of ethical principles: ‘It is my belief that “minimum intervention” is an institutional ploy to save money and to cover up a lack of skills’;³⁵ ‘The principle of “minimal intervention” is an easy crutch to use to camouflage inability to make any decision’;³⁶ ‘Preventive conservation is a great “cop out” for those who do not have the science basis or practical skill to carry out successful treatment of difficult, unstable, or “unreadable” objects’.³⁷

The drive for minimal intervention can create an aversion to the notion of restoration. Two respondents reported that recent graduates were almost reduced to tears when, at interview, they were faced with the option that an object might be restored. The students’ tutors must bear some responsibility for inculcating such a prejudice.

One respondent writes:

‘Unfortunately for conservators like me, ethics get in the way of soldering and bashing things back into shape so we don’t get much practice, and continued practice is essential—the skills I joined with (and hoped to develop) have slowly waned.’

Generic ethical principles such as minimal intervention, reversibility and unwillingness to destroy historic information might explain this situation in some instances but should not lead to a blanket ban. The ethical principle that a conservator should not attempt to perform the task without the necessary skill is more relevant. The respondent quoted above later added that the need for hot-work on museum objects was very rare and it would be inappropriate to apply it without the confidence gained from regular practice. Once a procedure becomes rare it becomes ethical not to pursue it, and then there is no need to teach it.

³⁴ Robert Payton, ‘Benchmark to Benchmarking: The Changing Face of Conservation and Collection Care at the Museum of London’ (unpublished paper presented at the British Library Collection Care Conference: Evolution or Revolution: The Changing Face of Collection Care, 14–15 October 2013).

³⁵ Jonathan Ashley-Smith quoted in Frank Hassard, ‘Continuing Professional Development and the Surrender of Culture to Technology in the Field of Heritage’, in *15th Triennial Conference, New Delhi, 22–26 September 2008: pre-prints*, ed. Janet Bridgland (Paris: ICOM Committee for Conservation, Paris, 2008), 95–101.

³⁶ Hook, ‘Reflections on the Early Years of Professional Practice’, 138.

³⁷ David Hallam, ‘Contribution to “Conservation Matters—What Do You Think?”’, *AICCM National Newsletter* 117 (2011): 14.

The future

The hypothesis that there is a risk requires that there is something valuable that might be lost and that there are credible mechanisms and pathways that could increase the probability of that loss. If interventive skills of a high level will not be needed in the future then nothing valuable will be lost.

None of the respondents believed that the need for intervention would disappear. 'To put it bluntly, objects fall apart and get broken and they need to be fixed.' Some were adamant that an obsession with preventive conservation was obscuring the need for intervention. One book conservator remarks 'Boxing things and storing them in good conditions is great; but a box does not magically repair material that is falling apart'. Ian McLeod, a conservation scientist, says 'no amount of preventive conservation can remove the creases from a crushed textile'.³⁸ Christine Sitwell, paintings conservation adviser to the National Trust, an organisation famous for its minimal intervention policy, says that repairing the damaging effect of past treatments such as cradling and the natural deterioration of existing linings and adhesives means that remedial treatment will continue to be necessary.

Are there enough skilled people around? The Icon document 'Conservation Labour Market Intelligence 2012–13' sought information from all organisations employing conservators and all self-employed conservators in the UK.³⁹ It identified skills shortages for interventive conservation in the specialist areas of archives, books, clocks and scientific instruments, furniture, gilding, metals, modern materials, paintings, paper, photographic materials, stained glass, stone and wall-paintings, textiles and time-based media. These are skills that the organisations thought they needed, but the assumption was that the skills already existed somewhere and could be bought in, or that the gap could be filled by existing training.

Many fear that the people needed to do the training will soon not be available. Jonathan Thornton says of the impending retirements of staff teaching on the Buffalo course, 'We hope that the culture of this grad. program is well enough established to survive the retirements, but we know that those that follow us will necessarily have less experience'. In 2011 David Hallam, metals conservator and conservation scientist, wrote:

'I welcome the eventual return to a less "non interventative" approach as the fashion cycle progresses in the next 20 years or so. I hope those with hand skills survive long enough to hand them on to the coming generations.'⁴⁰

Five years further on, he reports 'Recently we have seen systematic moves to remove the older more experienced practical conservators under the guise of renewal and improving efficiency'.

MaryJo Lelyveld, current president of the Australian Institute for the Conservation of Cultural Materials (AICCM), completed a masters degree in strategic foresight in 2013. She predicts that much will be lost as the individuals to whom current skills and knowledge are tied, retire. She points out that culturally we are far from the Japanese 'living national treasure' model.⁴¹ A more positive scenario she suggests is the idea of a few global specialists who are on call whenever a tricky procedure is needed.

There is a concern that by abandoning the unique selling point of conservation, which is making a lasting and noticeable difference to the heritage, the profession will make itself less valued and possibly more dispensable. Jonathan Thornton warns: 'Conservators run the risk of making themselves irrelevant to curators and administrators if they focus only on preventive conservation and administration'. David Thurrowgood, conservator at the Queen Victoria Museum and Art Gallery in Melbourne, writes:

'perhaps the current tendency to not replace retiring conservators, and certainly not to actively grow departments, provides clues in the necessary

38 Ian MacLeod, 'Contribution to "Conservation Matters—What Do You Think?"', *AICCM National Newsletter* 117 (2011): 11.

39 Kenneth Aitchison, *Conservation Labour Market Intelligence 2012–13* (London: Institute of Conservation, 2013).

40 Hallam, 'Conservation Matters', 2011.

41 'Living National Treasure' is a term originating in Japan, but now used elsewhere, denoting individuals certified as 'Preservers of Important Intangible Cultural Properties'. Individuals who have attained high levels of mastery in certain skills are designated by government as preservers of these skills in order to ensure their continuation. Since 2002 Unesco has published 'Guidelines for the Establishment of National "Living Human Treasures" Systems', cf. <http://www.unesco.org/culture/ich/doc/src/00031-EN.pdf> and [https://en.wikipedia.org/wiki/Living_National_Treasure_\(Japan\)](https://en.wikipedia.org/wiki/Living_National_Treasure_(Japan)) (accessed 12 May 2016).

reconceptualising of the profession ... The problem for the profession is that by this process we demonstrate reduced value as an identifiable and essential component of cultural heritage management.⁴²

Conclusion

Even if the UK government does succeed in reforming and revaluing early education and creating parity of esteem between the academic and the practical, there will be a cohort of students who have been deprived of a pragmatic sense of the material world and the desire to sense and manipulate real things using hand and eye. There are indications that post-graduate education is not set up to develop practical skill without the expectation of substantial post-qualification internships. The opportunity for such prolonged and closely supervised internships is limited. There are enough signs to suggest that practical skills are currently underused in large organisations and undersupplied in smaller ones. The skilled individuals needed for training will retire, voluntarily or otherwise. In times of economic uncertainty succession planning becomes more difficult. There is a danger that through lack of enquiry and over-reliance on simple readings of ethical principles, the people within the profession will lose one of the main attributes that people outside the profession think is a valuable asset. And in the long run the objects will lose out.

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Abstract

This paper describes an investigation into the potential causes of a qualitative and quantitative decline in the practical skills needed for interventive conservation. A persistent attitude that practical skills are of a lower status than academic achievements presents itself at all stages of a potential conservator's development. In recent decades the manner in which conservators are employed within museums and other heritage organisations has changed. Skilled intervention rarely achieves a high priority. This lack of activity is often justified by an unquestioning interpretation of conservation ethics. Skills that may become necessary in the future are not being maintained. The idea that some objects might one day benefit from physical intervention is sidestepped.

Résumé

« Le risque d'une diminution des compétences pratiques en restauration »

Cet article décrit une enquête sur les causes possibles d'une baisse qualitative et quantitative des compétences pratiques nécessaires à l'intervention de restauration. Une tendance persistante vers des compétences pratiques d'un niveau inférieur à celui des réalisations académiques se présente à toutes les étapes de l'évolution potentielle du restaurateur. Au cours des dernières décennies, la manière dont les conservateurs sont employés dans les musées et autres organisations patrimoniales a changé. Une intervention habile obtient rarement une priorité élevée. Ce manque d'action est souvent justifié par une interprétation inconditionnelle de l'éthique de conservation. Les compétences qui peuvent devenir nécessaires à l'avenir ne sont

⁴² David Thurrowgood, 'Contribution to "Conservation Matters—What Do You Think?"', *AICCM National Newsletter* 117 (2011): 10.

pas entretenues. L'idée que certains objets pourraient un jour bénéficier d'une intervention physique est éludée.

Zusammenfassung

„Das Risiko des Verfalls praktischer Restaurierungsfähigkeiten“ Dieser Artikel beschreibt eine Untersuchung der möglichen Gründe für einen qualitativen und quantitativen Verfall der praktischen Fähigkeiten, die nötig sind, um eine Restaurierung auszuüben. Eine durchgängig vorhandene Vorstellung, dass diese praktischen Fähigkeiten einen niedrigeren Status haben als akademische Fähigkeiten, macht sich in jedem Karriereabschnitt eines Restaurators bemerkbar. Während der letzten Jahrzehnte hat sich die Art, mit der Restauratoren in Museen eingestellt werden, grundlegend geändert. Guter handwerklicher Intervention wird selten ein hoher Stellenwert beigemessen. Es wird oft durch eine rigide Interpretation der Restaurierungsethik gerechtfertigt wenig aktiv einzugreifen. So werden Fähigkeiten, die für die Zukunft Relevanz haben könnten, nicht gepflegt—die Vorstellung, dass einige Objekte eines Tages eventuell von physischer, restauratorischer Bearbeitung profitieren könnten, wird ignoriert.

Resumen

“El riesgo de una disminución en las habilidades prácticas de conservación”

En este artículo se describe una investigación sobre las posibles causas de la disminución en calidad y cantidad de las prácticas necesarias para la conservación interventiva. Durante todas las etapas del posible desarrollo de los conservadores nos encontramos con una actitud persistente de que las técnicas y habilidades prácticas son de un estatus inferior al de los logros académicos. En las últimas décadas ha cambiado la manera en que se emplean los conservadores dentro de los museos y otras organizaciones del patrimonio, y ya rara vez es prioridad la intervención experta. Esta falta de acción es justificada muchas veces por una interpretación incuestionable de la ética de conservación. No se están manteniendo las habilidades técnicas que podrían llegar a ser necesarias en el futuro, descartando la idea de que algún día algunos objetos podrían beneficiarse de la intervención física.

摘要

因保存修复实技下滑所带来的风险

本文介绍了针对干预性保护实技需求在质量和数量上下滑的潜在原因的调查结果。在潜在修复师职业发展的各个阶段一直存在着一种观念——实际操作技能的地位往往低于其学术上的成就。近数十年里，很多博物馆和其他文物遗产机构已改变了对修护师们的雇佣方式和态度。技巧娴熟的干预性操作基本上不会被作为优先考虑的雇佣条件，而这种职场上的不足往往被不经细想的行业道德规范解读所忽略。很多在未来或许不可或缺的技能未被传承下去。文物有一天会因干预性实际操作而受益的观念正渐渐被人们淡忘。

Biography

Jonathan Ashley-Smith ACR, PhD, FIIC studied chemistry to post-doctoral level. He joined the Victoria and Albert Museum as a scientist and conservation apprentice in 1973. Between 1977 and 2002 he was Head of the Conservation Department. In 1994 he was awarded a Leverhulme fellowship to study risk methodology which eventually led to the book *Risk Assessment for Object Conservation*, published in 1999. He left the V&A in 2004 and has since worked as a freelance teacher, research supervisor and consultant. He was a partner in the European project *Climate for Culture 2009–2014*.

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