Original Article

Providing vocational skills and academic knowledge to the professional building appraisers of the future

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Simon Mclean
is a practicing Chartered Building Surveyor and Senior Lecturer in Building Surveying at Sheffield Hallam University.

Correspondence: Simon Mclean, Sheffield Hallam University, UK
E-mail: S.N.McLean@shu.ac.uk

ABSTRACT This article looks at educating and training building appraisers of the future. It outlines a different form of building appraisal, where those engaged in the surveying are actually the clients, and the recipient of the report facilitates the survey's outcomes. By establishing the preference of three of the four stakeholders to surveying education for incorporation of vocational skills training, as well as academic learning, the author justifies the use of simulated surveying instructions to meet these dual requirements. The article focuses on a case study of one such simulation carried out with the final-year undergraduate Building Surveying students at Sheffield Hallam University. Pedagogy is proposed and justified using established enquiry-based learning techniques, and vocational instruction taken from published works on professional building surveying. Requirements of a professional surveyor are established from one of the stakeholders', the Royal Institution of Chartered Surveyors, code of practice guidelines and by using feedback from clients obtained from an academic survey. Specialist legal advice with regard to surveyor negligence and contractual obligation is applied. Details of the property, the surveys undertaken and the methodology employed by the learners on site are described. Outcomes from the surveys are evaluated to form conclusions about whether this form of building appraisal successfully delivers both vocational and academic learning, and consequentially whether such surveys should become more commonplace.

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INTRODUCTION

There is to become a movement away from state-sponsored higher education in England, towards learner funding through higher student tuition fees (BBC, 2010). These measures impact directly on those intending to become professional building appraisers. This is because the professions that undertake building appraisals, such as surveying, architecture, construction, building engineering, structural engineering, law, facilities management, real estate management, to name but a few, are all controlled by professional bodies. These mostly require entrants to their institutions to have completed

an accredited course in higher education. As the soon-to-become major funders of such education, the learner and their current and future employers may have a greater part to play in deciding what outcomes these courses should deliver. The educational establishments offering vocational courses in a much more competitive market may feel a greater need to provide what the fee payers require.

Currently, there are four stakeholders in professional surveying education: the education provider, the learner, the professional body and future employers. Feedback obtained by the author from undergraduate building surveying students and feedback gained from decades of meeting surveying employers suggest that learners value opportunities to gain vocational skills alongside academic learning, and that employers value these skills and take heed of evidence of graduates having undertaken prior vocational tasks, when recruiting (Mclean, 2010). In addition, professional bodies generally operate a vocational competence-based assessment policy for admitting candidates to professional membership. Candidates who commence this competency training with prior experience of industrial practice do so at a position of advantage.

With three of the four stakeholders ideally looking for vocational training, as well as academic learning, it appears likely that the use of actual surveys will become more commonplace in surveying education. One method that has been used to teach workplace skills in vocational courses such as medicine and property focused education is enquiry-based learning. Enquiry-based learning is described by the Centre for Excellence in Enquiry-Based Learning (CEEBL), as an environment where the process of enquiry is owned by the student. They go on to state that the process involves a scenario being set, supported by a facilitator, which allows students to identify their own issues and questions (CEEBL, 2009). Self-directed study as required by enquiry-based learning is believed by many educationalists to be a superior form of teaching in comparison with traditional classroom methods. The reasoning being a belief that the things a learner has discovered through experience are more likely to be retained (Park *et al,* 2003). One feature of enquiry-based learning is that it might involve a small-scale investigation involving fieldwork, and a case study adapted to meet the disciplinary contexts (CEEBL, 2009). In property-based education terms, this could be a field-based survey undertaken to support simulated vocational activity, but is nonetheless still an authentic survey. This creates an unusual situation where the surveyor doing the survey is in fact the client, and the facilitator of the activity, while commissioning and receiving the resultant technical report, is in fact the one tasked to produce the training outcomes. This is achieved by means of a simulated client brief, completion of which requires learners to practice the use of vocational surveying and reporting skills.

A brief description of such a simulation is provided. This simulation is chosen because the students are final-year building surveyors, mostly with aspirations of working in practice within a few months. In addition, some of the students are studying part time and have employers who are investing in their eventual professional status. This simulation is run as part of an established pedagogy for delivering enquiry-based learning using a '*small scale investigation involving field work and a case study adapted to meet the disciplinary contexts*' (CEEBL, 2009).

The client brief from the stakeholders is that participants gain experience of working to professional building surveying standards, without facing the challenge of the industrial consequences of failure (Mclean, 2010). Learners practice performing building surveys in an industry-adopted and organised manner, practice focusing observations made on site to the specific needs of a client brief and practice recording data using standard building appraisal tools. These tools include a damp meter, distance meter, sound meter, thermal

imaging device, hydrometer, surveyor's rod, flexible and steel tapes and digital camera. Participants also work with others while preparing and undertaking their surveys. To provide evidence of meeting the educational outcomes, contractually complete, client-focused survey reports prepared to currently accepted surveying industry formats are submitted by each participant.

SKILLS TRAINING OUTCOMES

The skills training brief is divided into three parts. These are professionally conducted while surveying, practical and technical surveying skills and professional report writing. The main underpinning skill is that of being able to focus recording and reporting towards the needs of an identified client, and being able to identify the impact of applicable statutory obligations on those client needs (Glover, 2009). Although a current pedagogy is available through the National Vocational Qualifications courses for assessing performance in a work-based activity (Greatorex and Shannon, 2003), this kind of assessment is outside of the descriptors laid down for undergraduate assessment. Therefore, academic assessment is based on establishing outcomes that can be demonstrated through a vocational document. This is the production of a client-focused building survey report written to meet a supplied client brief.

Professional Conduct is an essential part of a professional survey. It is vital that the learner adheres to strict ethical codes of practice, even during simulated activity. The RICS have made protection of the public, the profession and the reputation of the RICS as its key objectives (RICS, 2009). This is highlighted in the RICS competencies that completion of level one competencies require teamwork, level two require communication and negotiation and level three require adherence to the conduct rules and professional practice, (RICS, 2006). Not all the code of conduct issues can be incorporated into a building survey as skills training. The full list of code of conduct issues is shown below in Table 1.

Although not all assessable, these seven codes were stressed upon the learners through tuition and policed by the facilitator. Similar codes are provided by the educational institution for adherence by all who work and study at the university (SHU, 2010).

Professional performance training in respect of meeting client expectations was derived from the work of Professor Mike Hoxley. Using research based on contact with clients, Professor Hoxley produced a 26-point weighted scale for assessment of client perceptions of the service they received from construction professionals (Hoxley, 2000). Four issues were cited as having the greatest client importance with ratings of over 0.8. These were: provides solutions that are technically correct, is always polite to me, has knowledge and

Table 1: RICS codes of conduct

1. *Act honourably* and never put your own gains above the welfare of your clients or those to whom they have a professional responsibility. Always consider the wider interests of society in your judgements
2. *Act with integrity*, and be trustworthy in all that you do – never deliberately mislead whether by withholding or distorting information
3. *Be open and transparent in your dealings*, and share the full facts with your client, making things as plain and intelligible as possible
4. *Be accountable for all your actions*, take full responsibility for your actions and do not blame others if things go wrong
5. *Know and act within your limitations*, and be aware of the limits of your competence, and do not be tempted to work beyond these. Never commit to more than you can deliver
6. *Be objective at all times*, and give clear an appropriate advice. Never let sentiment or your own self interest cloud your judgement
7. *Always treat others with respect*, and never discriminate against others

Source: RICS (2006).

competence to solve my problems and has similar views of things that are important to me (Hoxley, 2000). Using this research, the author concentrated on guiding learners towards the professional skills of producing a strong client focus to technical reporting, being able to apply technical observations to the client's needs and expectations and applying current statutory obligations to the client's ability to meet them. Learner assimilation of these skills could be assessed through the resultant building survey report (Mclean, 2010).

Technical recording skills

The building chosen was of a more simplistic construction form than typical framed commercial buildings. Although the space was heavily divided, access was easily available to elements of the construction, such as columns, floor slabs, cladding fixings and ceilings. The building had two stairwells, which afforded a view into the construction form, and many areas where the structure had been exposed. The examples of defects covered many areas of typical building failure, without over challenging the novice pathologist, or creating an unsafe working environment. These included rainwater water ingress, condensation, degradation of decorative surfaces, concrete degradation, service failure, obsolescence of components, user damage, corrosion of metals, timber decay, pest-control issues and failure of exterior detailing. This afforded a varied technical experience and opportunity for learners to research many aspects of building pathology, without extending the weaker students too far beyond their technical level, and consequentially creating excessive challenge (Mclean, 2010). Technical recording ability, rather than depth of technical experience, was assessed from the report.

Report writing skills

The final element of learning is report-writing skills. It was reported by Hollis and Bright that failures in communicating important defects can sometimes be attributed to poor reporting (Hollis and Bright, 1999). As stated by Staveley, although the professional building surveyor should view the facts of a survey impartially, they are also charged to favour the interests of their client (Staveley, 1998). Reports are graded by how they focused the technical information towards the needs and requirements stated in the client brief (Hollis, 2005). This tests the learner's skill of evaluation of features and defects observed on site, and an ability to report on how they might impact on the client. The report should focus on the client with those issues that directly impact on the client dominating the report, and those of little importance to the client gaining only fleeting mention. One client's deal-breaking defect is irrelevant to another and a happy point for negotiation for another. The skill tested is knowing which type of client the brief relates to (Ilott, 2005), and this is something that elevates the chartered surveyor beyond just technical surveying.

It is essential that a professional surveyor protects both the client and the profession (RICS, 2010). The report must therefore be an irrefutable representation of the agreement established between surveyor and client (Wilson, 2006). Reports submitted gained credit for including appropriate terms of business and clearly stated limitations and caveats (Wilson, 2006). Professional reports that show ambiguity in their purpose can become part of a future action against the surveyor, and the learner needs to ensure that their report is competent and contractually correct (Wilson, 2006). Wilson stresses the importance of including all express terms within the report, using comprehensive terms

of business section (Wilson, 2006). Submitted reports, which do not include such express terms, will be downgraded to show the learner how important this issue will become in practice life.

The ideal professional reports will not only be written in a language befitting the surveyor's professional status, but also in a language understandable by a layman client (Glover, 2009). Such reports need to be well organised, presented to a profession-enhancing standard and make use of appropriate mediums of presentation such as photographs, maps, floor plans and so on. Grading will reflect how much of the requirements for professional building surveying and the resultant client report the learner has assimilated.

While providing a form of assessment, the survey report also affords a way of teaching a final valuable skill to prospective building surveyors. A surveyor must not make comments that cannot be fully substantiated (Ilott, 2005). Professional surveying negligence does not wholly relate to making an error, provided that error is made reasonable (Wilson, 2006). A surveyor viewing a roof from ground level cannot be expected to pick up defects hidden from view. However, if that surveyor was to pronounce that roof to be in good condition, in spite of not being able to closely inspect it, and if there were to be such hidden defects, that diagnosis might be considered negligent (Wilson, 2006). Where such potential overstating of condition appears in submissions, this is used, by means of feedback, to illustrate the errors of this approach to the learner. The teaching method for this skill is to allow the student to make the overstatement and then explain the reasons why it might be professionally unsound. This works on the educational theory that things that a learner has discovered through experience are more likely to be retained (Park *et al*, 2003), and for the professional building surveyor this is an absolutely vital lesson to learn (Wilson, 2006).

THE BUILDING

There are four requirements for a successful industrial simulated building survey (Mclean, 2010). These are that the building should be secure and safe to work in. The work should be realistic and set at a level that the student can relate to at their level of expertise. The activity should be discreetly supported by the facilitator, and students should have full access to required knowledge and supporting materials (Mclean, 2010). The building chosen was a hall of residence building taken out of service 12 months previously (Figures 1 and 2), (Figure 3). The building was safe for students to be in, had fully functioning fire alarms, lighting and sanitation. All furnishings and personal effects had been removed, leaving an empty building with access to all but the lift and central plant room. For health and safety reasons, student access to the roof was excluded, and the tutor provided a general condition appraisal of it for use by all learners.

Built in the late 1950s, the building is of *in situ* concrete box-frame design. Typical of such early framed buildings, spans between structural columns are short, making it ideal for a spatial plan of small enclosed rooms, but less suitable for modern open-plan accommodation. Cladding mostly comprises pre-cast concrete panels, brick infill panels and single-glazed window panels mounted on a steel frame (Figure 4). Some of the single-glazed steel casements in rooms previously used as living space have been replaced by UPVC double-glazed units. The original glazed cladding is fixed to the frame using steel cramps with spacers used to accommodate inaccuracies in the frame. Floors are of simple reinforced *in situ*-concrete slab construction, the upper of these forming the roof. There are no air-conditioning facilities, purely a space-heating regime using hot

Figure 1: Marshall halls of residence this way.

Figure 2: The building (front elevation).

water pumped from a district heating system. The accommodation comprises six identical floors. The only variation is that floors first, third and fifth contain a warden's self-contained flat, whereas second, fourth and sixth utilise that space as a communal laundry area. Access between floors is reached by a service lift, which was not operating for health and safety reasons, and two open stairwells. Student accommodation comprises single-celled bedsit rooms with one communal kitchen and one communal toilet/shower block per floor.

Figure 3: The building rear elevation.

Figure 4: Close up of cladding to rear elevation.

CONDITIONS FOUND ON SITE

The building is showing signs of requiring maintenance consistent with its age. Areas of cladding are failing, and corrosion can be discovered on some of the fixings and original window frames. Elements such as glazing fail to meet current BREEAM standards, and in places casements no longer function. Many suffer from cracked glazing. In addition, the steel cladding frame is showing signs of corrosion. Evidence of failing seals can be noted across the building. One of the large stairwell-glazed panels is allowing significant water ingress, which is creating ponding of rainwater at the base of the glazing panel and consequential internal damage and condensation. Some spalling of concrete detailing could create a potential health and safety issue as it overhangs a walkway (Figure 5). The lightening conductor is becoming detached from the building. Water ingress through brick infill panels is causing eruptions of salts on the faces of internal walls in some of the upper rooms (Figure 6), and a general lack of insulation in the panels is generating

Figure 5: Concrete degredation creating an Health & Safety issue.

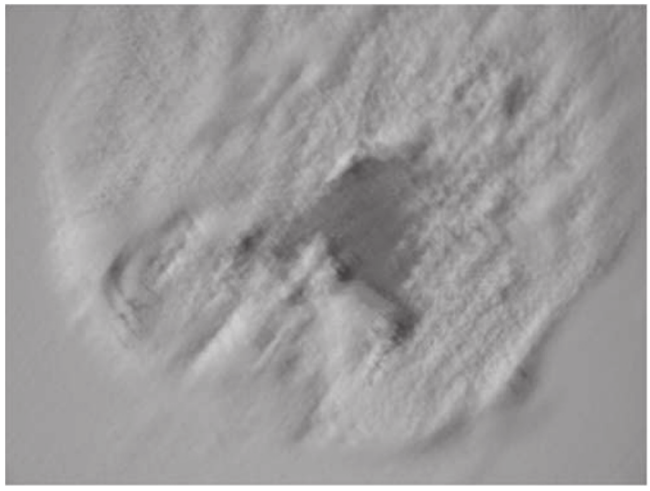

Figure 6: Water ingress causing salt damage to plasterwork.

condensation related damage to decor in some rooms. Lack of insulation between floor and ceiling panels allows substantial sound transfer, and potential heat losses. Flat roof coverings had been repaired in the past and are showing evidence of ponding and moss growth, but not failure (Figure 7). Internal decor is poor with evidence of substantial amounts of previous resident-generated damage and graffiti (Figure 8). Failure of water services can be noted with evidence of past leakage (Figure 9), and the pipe lagging does not meet current standards, offering the potential for future problems in the now unheated space. Remnants of food make the building attractive to rodents, although no evidence of such can be noted. Significant numbers of wasp carcasses evidence the presence of a nearby nest.

Despite the volume of potential defects, the building is of simplistic form, the defects obvious and easily accessible and the building is secure and safe. Under guidelines already established for the success of simulations as part of an enquiry-based learning exercise, the building is considered ideal.

Figure 7: Ponding and moss growth to flat roof areas.

Figure 8: User damage (Graffitti).

TASKS

The students were provided with a choice of four client briefs. Each brief was designed to require a basic condition survey, plus one element of required research. The first required students to conduct a development survey on behalf of a client wishing to refurbish the accommodation into a short-term stay hostel. The second required appraisal of the warden's flats in terms of works required to meet current decent homes standards for rented accommodation. The third involved a systematic appraisal

Figure 9: Damage to ceiling caused by service failure.

of condition, in line with the terms of a concluded keep in repair lease, with recommendations to the tenant regarding potential dilapidation liabilities, taking into account possible effects of diminution. The fourth was a condition survey with recommendations for a planned maintenance regime based around purely maintaining the asset value of the building. Each task required the learner to research an area of building surveying competency. The first required knowledge of the specialist statutory obligations faced by those who run hotels and hostels. The second required a good working knowledge of the Decent Homes Standards and ability to procure minor works contracts. The third required a working knowledge of the terms of the Landlord and Tenant Act 1929 in respect of lease terms leading to dilapidations liability and the mitigating impact of diminution. The final brief required the learner to research the production of a planned maintenance regime under the terms of British Standard (BS) ISO 15 686 (2000–2008). General skills required across all tasks included the professional conducting of surveying activity, and the specific focus of survey findings to each specific client brief, as advocated by the RICS (RICS, 2006).

METHOD OF SURVEYING

Students were prepared for the work through prior activity, academic lectures and access to supporting material. Client briefs were issued well ahead of the activity to allow thorough preparation. Equipment such as damp meters, distance meters, sound meters, hygrometers, thermal imaging equipment, tapes and rods were made available. Students were encouraged to work in small groups to prevent any from becoming isolated and over challenged by any aspect of the surveying work (Mclean, 2010). Students generally used paper-based recording methods and digital cameras, although some used electronic recording equipment. The building was chosen so as not to require surveyors to wear special protective clothing and equipment; however, students still worked under the terms of a prescriptive risk assessment report (Glover, 2009).

OUTCOMES

Outcomes were assessed by the grading of a submitted building survey report written to industry-accepted formats. Element A required the production of a report that was

professionally presented, made appropriate use of available presentation medium and was properly organised. Element B required the learner to record the technical information in a logical manner. Credit was given for the focusing of technical information and the resultant recommendations to the client profile contained in the brief. Use of industry-accepted phrases and language was also assessed in this section. Element C required the report to be contractually sound with appropriate terms of business summary and strongly stated, survey limitations and conditions. Credit was awarded for reports that met their client's expectations fully, and the benchmark for first-class excellence was industry acceptability of the report.

The academic outcome was successful. It was apparent, however, that the experience level of the group was quite mixed, with a number of students producing work that evidenced significant industry practice; however, this was mostly in a Local Authority or similar context. Parity was kept across the group as such students, while producing superior levels of recording, found greater challenge in focusing on a variable client brief, and upon conceptualisation of the consequences of producing reports for a client and not an employer who would not sue and therefore would not require the report to fully cover the surveyor contractually (Wilson, 2006).

ASSESSMENT OF VOCATIONAL OUTCOMES

Meeting the vocational outcomes is assessed in two ways. This is by evaluation of the outcomes achieved from the submitted survey reports and by feedback of client satisfaction from three focus groups of participant learners. Using professional judgement, the author produced the following evaluation of the reports submitted. Of the 52 participants, 51 submitted work; of those 51, 21 learners were deemed to have produced reports, which were either at or very close to being commercially acceptable. These would mostly only require minor modification, and were all complete client-focused reports. A further 24 learners produced work with significant areas of excellence, but which required additions or modification of certain elements to become commercially acceptable. The main area noted in this band was a failure to target the report adequately to meet the stated client's needs, or to produce reports that are professionally and contractually secure. In terms of learner level, these reports still represented fine academic efforts. Four learners produced work, which met the academic criteria but fell far short of being commercially acceptable. These were generally weak and mostly insubstantial submissions with significant omissions. It would be unlikely that these reports could be improved to become commercially acceptable. Two learners failed to produce work that met even minimum academic pass standards. When compared with previous exercises of this type, facilitated by the author, these results compared well, and in terms of a general undergraduate teaching and assessment exercise the academic grades obtained reflected an excellent set of results.

Feedback from three focus groups, containing 36 of the 52 participants, confirmed the enthusiasm of the learners for this kind of activity, and for learning workplace skills. The use of a choice of client briefs was valued and students stated that being able to choose a topic to research was useful in terms of their professional aspirations and it prevented over challenge. No participant stated that they had felt over challenged, but all believed that the activity was challenging. In support of previous surveys of final-year building surveying undergraduates, all those in the focus group intended to become chartered building surveyors, and all felt that higher education, particularly in the final year, should include vocational skills where possible. Students thought that the activity was enjoyable and valuable. It was perceived as being of greater value than purely classroom-based

teaching. Most learners thought they had learned or improved upon valuable workplace skills. Consensus favoured more of this type of assessed activity. Many learners thought that consequential to the outcomes being assessed, they had worked harder and learned more. Use of on-campus buildings offered more than one access time and allowed learners to fit practical work in to a crowded academic timetable.

CONCLUSION

The provision of vocational skills training in addition to academic knowledge is a preference of at least three of the four identified stakeholders to surveying education. This can be provided using the well-tested and researched method of enquiry-based learning, and can be undertaken using an actual building appraisal, undertaken by a simulated client brief. The resultant client report can be used as an academic submission to assess whether learners have met the outcomes of both academic learning and assimilation of vocational skills. One such exercise undertaken at Sheffield Hallam University, through surveying a vacant commercial building on campus, was found to be suitable to use to assess the potential success of this approach. The outcomes chosen were demonstrated as being appropriate, as the skills to be taught were established using published works on building surveying practice, legal issues relating to competence and negligence, professional body guidelines and employed the established pedagogy for enquiry-based learning. The survey described within this article was an actual building appraisal undertaken by the learners. The outcomes supported current research output by the author, and other practitioners of enquiry-based learning such as CEEBL, that this method of teaching prospective building appraisers is a sound one. In terms of a learning experience, analysis of submitted survey reports indicated that many learners had assimilated all or most of the vocational skills to be practiced. Feedback from focus groups showed that the learners are positive about this kind of activity. The data produced on site, albeit for a simulated client, proved that this truly was an authentic appraisal of the property. Given the likely changes in funding for providing the graduate education required by building appraisers to enter professions, it is likely that learner and employer pressure will lead to more surveys being undertaken for purely educational purposes.

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