

The skill-set of trainee auditors¹

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Abstract

This research examines the skills that practitioners, academics and students think are important for trainee auditors to have to engage upon a successful auditing career. The research is based on the educational theory of experiential learning, situated learning, information-processing theory and conversationalist theory. These theories suggest that graduates expecting to go into the profession: (i) should have had some concrete experience within their degree programmes upon which to understand the techniques that they will be expected to use once they have been recruited on to a training programme; (ii) that they should have learned basic constructs upon which new learning can be applied and built upon; and (iii) should have been taught to communicate, critically examine and question the facts that are presented to them in each situation. This study investigates the teaching methods that are used at universities and how auditing can be taught to develop these skills and meet the criteria that are essential to future auditors.

Key words: transferable skills, audit education, learning cycle, educational theory

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Summary

This paper examines the skills that trainee auditors need to acquire by the time that they have completed their university studies and their professional training contracts. Audits require an understanding of risk and an assessment of systems and controls within an organisation. Auditors often rely upon audit manuals that contain rules and procedures. However, the performance of an effective audit may require more than just a rigid observance of these rules. The teaching that occurs during a university degree and subsequent professional training needs to instil in putative auditors a deeper sense of learning (Marton and Saljo, 1976) that often requires an active participation in this learning. However, audit and accountancy are often perceived to comprise of numbers and mathematics which tends to lead to a “surface” or format approach to learning (Lucas, 2001).

In practice, auditors learn through instruction and experience when they actually perform audits, known as situated learning (Lave, 1988). This is a form of experiential learning (Kolb, 1984), where knowledge that has already been assimilated is applied in practice. For example, accounting and auditing standards may have been subject to a cognitive learning process and are then applied in a practical situation of an audit. This type of learning has its origins of apprenticeships, and essentially this is the method by which many auditors may learn their trade or profession. The audit process also requires team work, group decisions and judgement. The exercise of judgement comes from past experience and from a process of category knowledge where items of knowledge are related to each other and linked together. This follows the

information processing theory of Miller (1959) as it relates to audit situations (Bonner et al., 1997).

This paper tries to establish which skills are necessary for auditors to have acquired once they have completed their training and how these skills can be achieved during a university degree. The research was conducted by interviewing a number of academics, trainee auditors and audit practitioners. In addition, several questionnaire surveys were sent out to academics, students, trainees and practitioners. This paper reports these findings.

To enable potential auditors to gain these skills, university courses need to be made meaningful (Libby 1991). Academics are trying to do this by bringing in “real life” examples to their courses through the use of videos, case studies and problem solving examples, thus enhancing the typical teaching methods of lectures and small group workshops (Dennis, 2003). The necessary skills for auditors are often acquired through participation and by “doing,” and these are often included on university courses, mimicking the experience that is gained on real audits. Lecturers also encourage their students to ask questions, as this is a very necessary part of conducting an audit. Thus, university courses are perceived as complementing professional training, where the latter are more technical and cover the “how,” but university courses allow more critical analysis and reflection, covering a broader range of topics that include both practice and theory. The learning acquired at university is useful in later audit careers where prior category knowledge is used for making judgements and critical thinking is necessary for making the correct decision.

The knowledge base of auditors also needs to be quite wide. Some of the most important topics to learn include risk, materiality, fraud, analytical review and independence; there was a striking similarity of the importance of these topics across all four cohorts to the questionnaire survey. The essential skills for an auditor to possess were interviewing, asking questions, applying common sense and having a healthy scepticism.

The skill-set of trainee auditors

Introduction

The auditing profession recruits many university graduates each year in the UK, and spends a great deal of resources on training these raw recruits to work in the audits of client companies. The inherent skill-set of these graduates is of great importance to the profession, as new trainees who already have some of these skills will be faster, cheaper and easier to train. This study examines the key skills that accountants and auditors claim are needed to become a successful auditor, and examines whether, and how, these requirements are being met by university accounting educators.

Literature Review

The purpose of an audit has changed over time (see for example Hines, 1988; Puxty, Sikka and Willmott, 1994), but the techniques of auditing are generally accepted to include an assessment of risk (Helliard et al. 1996), a review of the systems and key controls, followed by an evaluation of the internal control system, and the planning of the substantive procedures that will be required to form an audit opinion. As Brown (1979) states:

“The review of internal control is the starting point of the audit and the results of that review the basis for determining the extent of testing required.” (p13-14)

Many accountancy and finance courses at universities include the study of audit. Those that are fully accredited degrees by the professional bodies are required to teach auditing as part of the degree structure (See for example http://www.icas.org.uk/site/cms/download/caed_syllabus2004.pdf). However, a

fundamental problem in teaching auditing at an undergraduate level may be how to teach the topic to help students develop a more holistic understanding of auditing.

In the professional setting, Bonner and Walker (1994) investigated the development of auditors and their understanding of their jobs. Bonner and Walker identified two types of instruction: (i) “how-to rules” that were lists of steps, or procedures, that were to be followed; and (ii) “understanding rules”, which were also lists of steps, but were accompanied by an explanation of each step and how all the steps related together. Bonner and Walker were concerned because audit firms mainly used audit manuals that contained a large number of rules and staff often performed audit tasks using these rules alone. Thus, auditors were only using declarative knowledge, such as how an audit was to be conducted, without any procedural knowledge of why each task was appropriate.

However, the researchers found that even understanding rules were not enough, and that feedback was an essential part of an auditor’s training. Bonner and Walker (1994) suggested that without any “outcome” or “explanatory” feedback, even extensive practice and experience would not result in a real understanding of auditing. The researchers found that practice and some instruction, together with explanatory feedback, increased an understanding of auditing and procedural knowledge. “How-to rules,” alone however, did not aid the development of an understanding of auditing, and many audit firms often relied solely upon these “how to rules.” A deeper understanding of the purpose of an audit was often lacking, reflecting the “deep” and “surface” learning debate of Marton and Saljo (1976).

Marton and Saljo's (1976) seminal work discussed two students' approaches to learning which they classified as either a "deep" or a "surface" approach, where the "deep" approach to learning was defined as:

"students construct[ing] their own meaningful interpretation of the content by integrating it into pre-existing knowledge"
([http://www.tedi.uq.edu.au/Teaching/TutorTraining/deep Surface.html](http://www.tedi.uq.edu.au/Teaching/TutorTraining/deep%20Surface.html)).

A "surface" approach to learning was, in contrast, where students memorised lists or learned by rote with no intention to understand. Students who favoured the "deep" learning approach were more likely to read extensively around a given topic and to be able to discuss the topic in depth (Biggs, 1989). However, students might adopt different learning approaches in different situations. The topic that was being taught, or the manner in which the topic was taught, might change the learners' approach from a "deep" approach to the arguably less desirable "surface" approach (Ramsden, 1985). Marton and Saljo (1976) believed that the key to encouraging a "deep" approach to learning was for the students to have an active participation in their learning. However, more recent work has discussed the usefulness of "surface" learning, especially in the context of Chinese students (see for example Lucas and Meyer, 2005)

Auditing generally encourages the acquisition of procedural and conceptual knowledge that may affect the approaches to learning often demonstrated by accountancy students (Beattie et al., 1997). As Caldwell, Weishar and Glezen (1996) state:

"Introductory accounting students commonly view accounting as a course where they are required to learn the rules, apply them, and get the correct answer." (p18).

Students' perceptions of accountancy topics are that they are about numbers and mathematics, which in itself may lead students to adopt a "surface" approach to learning, as Lucas, (2001) notes:

"They approach their learning of accounting assuming that it is a subject where they do not need to think about concepts, where they can 'fit things in' and where the financial statements lack inherent meaning and are seen solely as the end product of the application of a technique." (p178)

Lucas defined this attitude to learning, where the student focused on passing the examinations, as a "format" approach to learning, and she continues:

"It was found that those students who focused on passing the subject took a very particular form of surface approach: this is termed a 'format' approach to learning since the students focus on the format of the financial statements rather than on any inherent meaning." (p169).

Those students who showed a "deep" approach to learning attempted to relate what they learned to their goal, be it a career in a related area, or more generally, a desire to learn.²

A study on audit knowledge by Libby (1995) suggested that auditors acquired knowledge "primarily through instruction and experience"; and that it was through the act of actually performing an audit, coupled with meaningful or applied instruction, that an auditor could really acquire an understanding of auditing. Libby (1995) defined audit learning in terms of educational theory, citing Kolb's (1984) learning cycle, where the concrete experiential learning phase on an audit formed the basis for the observation and reflection that was applied on future audit engagements.

This echoed Rogers (1951) who had earlier defined two styles of learning, cognitive (meaningless) and experiential (significant). Cognitive learning corresponded to academic knowledge, such as learning a vocabulary or the multiplication tables or

audit rules; experiential learning referred to the application of knowledge such as learning about accounting and auditing standards in order to conduct an audit.

In more recent times, the educational theory of experiential learning has become typified by Kolb's (1984) cycle of experiential learning which he defined as "the process whereby knowledge is created through the transformation of experience" (p38). Within the learning cycle a student (or trainee auditor) passes through several phases: concrete experience; reflective observation; abstract conceptualization; and active experimentation before turning full circle back to a concrete experience phase.

As Loo (2002) notes:

"Learning is conceived as a four-stage cycle starting with concrete experience which forms the basis for observation and reflection upon experiences. These observations are assimilated into concepts and generalisations about experiences which, in turn, guide new experiences and inter-actions with the world." (p350)

There has been concern that Kolb's primary phase of concrete experience is often missing in university audit courses, as Siegel, Omer and Agrawal (1997) note that:

"Experiential learning can be an important instrument in improving the teaching effectiveness in auditing. Experiential educational theory recommends that students be moved through all four steps of the learning cycles. In auditing courses the initial learning phase, concrete experience, is most often missing." (p224)

Further, Courtis and Zaid (2002) also noted that lack of practical training was an "important early employment problem" (p. 329). Audit courses arguably should, therefore, provide this "concrete experience" phase, but this relies on a teaching strategy that will allow students to engage with practical problems (Lucas, 1997). Further, learning may be a function of the context in which it appears, and conform the theory of situated learning (Kearsley, 1994). Lave (1988) considered that learning was a gradual process, where a participant moved from being a beginner to becoming

an expert. Latter exponents of situated learning referred to this as an “apprenticeship,” or an on-the-job style of learning (Brown et al., 1989) which is how most trainee auditors learn their skills. Further, McLellan (1996) argued that situated learning, through an apprenticeship or coaching, resulted in collaboration and reflection that were necessary elements of an auditor’s skill-set. Freire (1998) had also emphasised the importance of dialogue and in particular the dialogue that facilitated people working with each other in a team.

The importance of working with others is highlighted in the work by Reckers and Schultz (1993) that shows that the judgement of small groups is much more successful and adheres more closely to the guidance given in Auditing Standards, than the judgements of individuals working alone. Similarly, Johnson (1994) also examined group decisions in a separate study on auditor memory and found that groups demonstrated a far more accurate recall of previous evidence than auditors who worked alone.

The use of judgment is a fundamental part of the audit process, but requires prior audit experience to be able to carry it out effectively. Novice, or student, auditors seldom have the knowledge to detect any underlying problems and tend to base their judgement solely on audit evidence. Experienced auditors are more likely to look at the audit implications and the plausibility of any possible causes of their findings and base their judgements on this. Ho & May (1993) claimed that this ability to consider the conjunction of events, and their plausibility, resulted in the detection of unexpected relationships and, therefore, achieved better audit opinions. Such audit judgements may also be affected by ‘category knowledge’ which relates to the ability

to form sets of knowledge and to group objects, or ideas, meaningfully (Schunn, 1999) together. Thus, some information may trigger an auditor to recall other information that may be relevant to making that opinion. Further, past experience may be used to respond to a new situation (Rehder & Hastie, 2004) complementing Miller's (1959) Information Processing theory of learning. Thus, a new piece of information may have similarities to an event in the past and this past event may be relevant to the current audit opinion.

The ability to classify and group data develops with time and experience, and novice auditors may be held back from learning from their early audit experiences as they are unlikely to have the necessary category structure within which to store their experiences (Bonner, Libby & Nelson, 1997). However, Bonner et al. (1997) found that category knowledge could be learned before actually conducting an audit, and that this category knowledge improved during training. Thus, if novice auditors were provided with instructions on category knowledge before performing any audits, then their decision-making performance could improve.

However, the ability of trainees in performing their audit work was questioned by Chung and Monroe (1999) who demonstrated that opinions inherited from superiors resulted in a tendency to only look for information to support that opinion and to discount any evidence that suggested it was incorrect. Decision-makers, however, need to consider all the information that is gathered in the audit process and to make decisions based on that evidence. Seeking evidence that only confirms an initial view or opinion is flawed and the ability to look for information that challenges an initial assumption should be developed at an early stage.

In terms of how this skill development might be encouraged, Brown and Goulding (1993) surveyed the teaching methods that were used in accountancy degree programs and found that lecturers relied on traditional methods of teaching such as formal lectures and seminars which were less likely to develop these skills. Craner and Lymer (1999) noted that this was especially true of more professionally-oriented modules such as auditing or tax.

To introduce more meaningful teaching methods Libby (1991) suggested that case studies could be used in teaching “to illustrate real-world institutions and practices” (p195) as noted by the AECC:

“Students’ involvement should be promoted by methods such as cases, simulations, and group projects.” (p250, 1992)

Campbell and Lewis (1991) identified the potential of using case studies to show students that accountancy was not just a “dry number-crunching discipline that [could] be mastered only by memorising a myriad of rules” (p278) and that:

“Cases can be used to create interest, incorporate real world situations, and reveal accounting to be a discipline involving judgement” (p279).

Further, Hassell, Dunlop & Lewis (1996) claimed that a case study approach to learning about internal audit could be a “useful aid to enhancing competence development” (p35). They also found that skills relating to communication, reasoning and problem-solving were the most important skills to learn for auditors. Curtis and Zaid (2002) also found that communication issues were a serious source of problems for accounting graduates. Case studies can also develop and improve judgmental skills and analytical reasoning, encourage research and the ability to probe for

information, manipulate data and analyse information (Campbell & Lewis, 1991; Drake, 1999; Davies, 2000).

The above discussion highlights that there are a number of educational theories that relate to auditing skills. First, experiential learning advocates bringing practical experience to the learning situation, and although this is most obviously relevant to professional training, it may also be possible to incorporate this into an undergraduate education, particularly through the use of case-studies. Second, situated learning theory is most relevant to professional training where trainees learn on the job, although work placement schemes on undergraduate programmes incorporate this style of learning. However, there may be other ways to incorporate situated learning into degree courses. Third, a form of Socratic dialogue can be encouraged both in a professional and academic context. The ability to work in a team and to ask questions can assist in questioners making better audit judgements and sounder decisions. Finally, information processing theory relies on category knowledge which can be part of a university education, where the knowledge gained on a degree course could later be used in a professional auditing context.

This research has several research objectives: (i) to examine the current state of audit teaching in UK universities; (ii) to identify what the differences are between teaching auditing in the profession and at university; and (iii) to assess what types of teaching are best suited to subjects such as auditing, using the theories outlined above.

Research Method

The first research method used in this study comprised interviews that were conducted with academics, audit practitioners and audit trainees. These interviews were then followed by questionnaire surveys that were sent to the academics, practitioners and trainees. A further survey was undertaken of students at a UK university.

Interviews

Ten semi-structured interviews were conducted with academics in a range of ages covering both pre- and post-1992 universities in England, Wales and Scotland and both genders. Some interviewees were members of ICAS, ICAEW and ACCA³; the length of service in academia ranged from eleven to sixteen years; and there was a mixture of those that taught auditing and those that did not. Seven trainees at different professional firms, and at various stages in their training contracts with a variety of professional bodies, and eight partners and managers in a variety of professional settings were also questioned. A summary of the interviewees is in Table 1. The interviews lasted for one to two hours and were taped. Detailed notes were also taken.

Insert Table 1 – Interviewees

The questionnaire surveys

A postal questionnaire survey was sent to a group of academics selected from the *British Accounting Review Research Register* (Helliard, Gray & Monk, 2002) in December 2002.⁴ As the questionnaire was lengthy, two versions were prepared, each with some identical questions and some unique questions (Helliard, Power, Sinclair & Lonie, 2001). Questionnaire A was sent to half of each of the three groups with the remaining half of each group receiving Questionnaire B. A first mailing was sent out

in December 2002 with a follow-up in February 2003 and a 40 per cent response rate was achieved.

Both versions of the questionnaire comprised four sections: (i) background information - including the age of the respondent, gender, type of institution, and qualifications; (ii) wide-ranging educational issues; (iii) the use of computers in education; and (iv) general comments. In addition, the audit academics had a further section asking specifically about audit teaching. Most of the questions were on a five-point Likert scale, where strong agreement/very important was rated '1' and strong disagreement/little importance was rated '5'. A few questions asked for a set of variables to be ranked in order of importance, and the remaining questions had a set of variables where respondents were asked to indicate the likelihood of them being used in their teaching.

A questionnaire survey was also undertaken of all final year students at a university studying the auditing module, over the two years, 2002/3 and 2003/4. The students were requested to complete a questionnaire at the beginning of the module, and a second questionnaire at the end of the module. Most questions were on a five-point Likert scale, where strong agreement/very important was rated '1' and strong disagreement/little importance was rated '5'. Some questions required the students to rank a list of items and the remaining questions were binary.

Finally, in the autumn of 2003, 1971 questionnaires were posted to accountants and ICAS trainee accountants. Of these, 321 replies were received, resulting in a response rate of 16.2%, which is average for this sort of study (Table 2). Most of the questions

were in the form of a five-point Likert scale, with some open-ended questions at the end of the questionnaire inviting respondents to note any comments relating to these points.

Insert Table 2 about here

Current audit teaching

Interviewees and questionnaire respondents were asked about their preferred learning and teaching methods. All of the academic interviewees, except one⁵, reported that the delivery methods for teaching in their institutions were a mixture of formal lectures and small group work. The reliance on formal lecturing as the main teaching delivery mechanism was because of necessity, with a lack of time, funds and other resources to do otherwise. This “talk and chalk” attitude was reflected by some of the respondents. For example, interviewee A stated that: “My lectures are traditional. I walk in, talk for an hour, walk out.” The main purpose of lectures was to introduce the subject or to give an overview of a topic, as noted by interviewee F who said that: “The benefit is that it will introduce you to a subject area.” Lectures were fair to the students because all the students shared the same experience and felt comfortable.

Interviewee B claimed that:

“A lecture is a very good way of disseminating information and I think that the value-added depends upon the quality of the lecturer...It’s a system that students are used to and to a certain extent they feel comfortable with that.”

The academic interviewees indicated that it was the small group teaching that allowed far more innovation and interaction and would be more desirable if time and money allowed. The students generally were able to participate much more in smaller classes, as interviewee G explained: “What we find is workshops are less formal so students are more eager to talk.” Interviewees mentioned a variety of methods that were often

experiential in nature and were used within a learning cycle that they applied to encourage student participation and student interaction, echoing the work of Kolb (1984).

One method of introducing variety for students was the use of commercial videos, which were specifically mentioned as a way of bringing “real world” aspects to the teaching and consolidating knowledge from the lectures. As interviewee A noted:

“What I’ve used over the last couple of years is the Price Waterhouse Coopers set of videos called Excellence in Audit. They follow an audit all the way through from the first approach to the firm to give a budget, talking to the management, all the way through to the end.

And interviewee A noted:

“They [the videos] are Television Education news. There are about three or four good videos, which have got little case studies, examples of frauds, systems, that sort of thing. I use the ICAEW Auditor at Risk video, that’s worked very well at the start of the course this year. I have used the Cable Co. Chronicles, I think I used them for a couple of years, and I’ve stopped using them now, but I might go back. They are usually about 20 minutes. Obviously I’ll gear the lecture round elements that are in the video, but what you normally find is that the video links on from something I’ve done in previous lectures so it’s consolidation on the particular themes.”

The use of case studies was another popular way of trying to bring some kind of experiential aspect of teaching to the course. Whereas the video approach was used to consolidate teaching, case studies seemed to be used more to encourage students’ participation, and was often teamed with working in groups, as noted by interviewee

F:

“Tutorials are based on this case study approach whereby they have to work in teams and they’ve got set tasks per week and these are varied on occasions whereby [the students] will be given additional information perhaps one week that might change [the students’] course of activity.”

When asked about an ideal teaching delivery method, if time and money was no object, the consensus of the academic interviewees was an overwhelming preference for more case study work, as noted by interviewee D: “If I had sufficient time then I think that I would do it all by case study.”

The academic questionnaires (Table 3) asked about the use of teaching methods, and it was clear that formal lectures and small group work were the most popular teaching devices. Respondents to the academic questionnaire A were asked to indicate whether they used, would consider using, or would not use, a list of nine teaching methods. Over half of the academics used case studies and interactive lectures, which supports the findings from the interviews. The student questionnaire reflected the same questions as those asked of the academics and, as shown in Table 4, lectures and small group work were the most common forms of teaching expected by the student.

Tables 3 and 4 about here

The students’ rating of other teaching aids were all positive, apart from the use of bulletin boards and chat boards (Table 5), which might have been because students were not used to using these in a teaching context. The academics’ ratings of these same aids were similar to the student responses, as shown in Table 5, with only bulletin boards and chat rooms having no support for their usefulness in teaching⁶.

Table 5 about here

The academic respondents and students were also given a list of 14 statements about learning and teaching and they were asked to indicate whether they agreed or disagreed with these statements on a five point Likert scale (Table 6). There was strong agreement, by the academics with a mean of 1.45, and students with a mean of 1.86 that students learned by participation, linking to the strong emphasis in the

literature of both experiential learning (Kolb, 1984) and the more immersive style of learning typified by a “deep” approach to learning (Marton & Saljo, 1976). Further, learning was done best by “doing”, supporting the statement that “... to do is to understand” (with a mean of 1.92 for students and 2.09 for academics). The academics and students agreed that a lecture was a passive learning environment, but were ambivalent that lectures encouraged only memorization rather than “deep” learning. Students also thought that learning from other students could be useful, but lecturers were not so supportive of this.

Insert Table 6 about here

To explore further which aspects of teaching and learning were useful, academics were asked to indicate which of five activities they tried to encourage in their students (Table 7). Encouraging students to ask questions dominated, followed closely by both learning by doing and learning by feedback. However, respondents did not often try to include activities where students could learn by working together. The audit and education groups were more likely to try to include feedback opportunities into their teaching supporting the audit literature that suggests that auditors use explanatory feedback as part of their learning vocabulary (Bonner & Walker, 1994).

Table 7 about here

Academic versus a Professional Education

Responses about the differences between education for a professional accountancy qualification and tertiary education were sought from the practitioner and trainee interviewees. Interviewee L (trainee) saw the two as linked, with professional education “a continuation [of] the journey....with the ultimate goal in mind [of

becoming a professional]” whilst interviewee S (practitioner) echoed this idea in claiming that:

"A university education should be expansive. Professional education should, by definition, be very much focused on what you mean to do.... the knowledge base andthe way the profession works, including its ethics".

Further, interviewee M (trainee) claimed that:

"It's a lot harder to do well. I've never worked as hard [possibly because] there seems to me to be more need to do well and concentrate and do whatever [is required] in the professional one".

Trainees who had accounting or business degrees found the content of professional and university education fairly similar, whilst two trainees and two practitioners specifically mentioned that a professional education “is much more like being at school” (interviewee P, trainee). The employment pressure alluded to above by interviewee M was expanded on by interviewee Q (trainee) who highlighted the "need to push yourself when it's your job" as exam failure at the professional level had a "stigma attached" to it and might even result in the loss of employment. Practitioners and trainees also identified the time constraints associated with a professional education that were significantly less apparent during university study.

There was far more agreement between the academic interviewees on the differences between an academic and a professional education. Professional training was more technical, with a tighter focus and a direct link to the professional examinations. In contrast, academic interviewees considered that a university education should: encourage critical reflection; involve the study of more theory; create the opportunity to examine current research issues; and to read academic journal papers. Interviewee A (academic) summed up the difference as: “We can be more critical, we can be more conceptual.” This view was shared by interviewee F (academic) who remarked: “You

should get a wider spectrum in a university education” and interviewee J (academic) who added: “Universities take students to a higher level of understanding.” Interviewee I (academic) echoed this perceived difference and stated: “I don’t think a professional course tends to teach critical issues.”

The differences between professional and academic courses were not seen as a problem, rather the two were seen to be complementary, not competitive, as reflected by interviewee B (academic):

“I see their professional training as the extension of what we do.”

Interviewee H (academic) took this view even further and suggested that a university education in auditing and accounting would result in a practitioner who had a more holistic view of the profession.

“I think what you provide in the university education is a grounding support for them to be a reflective practitioner”

Although the differences between a university education and a professional education were not seen as a problem, academics were aware that there were differences in some of the skills and topics required by academics and the employers of accounting graduates. Interviewee I (academic) summed up this feeling wryly:

“I think most practitioners would like ready-made assistants who could just pop out.”

In general a university education was seen as providing a broader overview of a subject, and more importantly, it was seen as encouraging a critical perception of accounting and auditing. In contrast, professional courses were seen as very specific; with Interviewee E describing professional courses as “blinkered”. The accepted view by the academics was that a professional course was necessary to be able to actually

undertake an audit, and that a University course should encourage students to think about the “why” of an audit rather than the “how”.

The practitioner interviewees were asked about the idea of contrasting professional and university education and whether they thought that there should be a difference between auditing as studied at university, and as studied as part of a professional qualification. Most practitioners responded in the same vein as interviewee S:

" [Audit education] should be more expansive at university.....fleshing the box out, challenging orthodoxy and coming up with new ways"

whilst interviewee T (practitioner) claimed that lack of opportunity of practical experience meant that:

"[t]here's no point in universities trying to teach specific audit procedures ..The main thingat university is the concept".

Similarly, interviewee Q (trainee) found that "at university, it's just a case of: that's black, that white, that's it" and that learning concepts in this way meant that she was better placed to handle the problems she subsequently encountered in practice, than if she had tried to grapple with both fundamental ideas and practical issues at the same time. In contrast however, interviewee O (trainee) felt that her university experience of studying audit had largely comprised a discussion of wider issues, whilst:

"I definitely would have benefited from some sort of process [understanding of the business cycle and how a company works]"

Types of teaching best suited to audit careers

The practitioner trainees highlighted that the key to successful learning was to be active in their learning. Interviewee K (trainee) stated that “you’ve got to do it yourself” when discussing how to develop presentation and debating skills, whilst interviewee P claimed that her best class by far happened:

“every other week [when] we had a two hour workshop which was really practical ... you had two hours of discussing in groups and doing short presentations and brainstorming.”

Self-direction was an issue highlighted by interviewee Q (trainee) who found “tutorials much more useful” together with computer-based learning (CBL) such as EQL as this enabled each student “to work at [their] own pace”. The need to integrate a practical element into the audit teaching was a keenly held belief for most of the lecturers, as interviewee A (academic) stated:

“I think that although we have an obligation to look at theoretical and conceptual issues, it makes no sense to the students unless they can put some sort of practical handle on it.”

Related to this idea of work experience, or a practical element to a degree programme, was the question of whether an academic course such as auditing should only cover the theory or whether it should also teach students how, for example, to carry out an audit in practice. It was apparent that an ideal course should cover both the practical and theoretical aspects of auditing, although theory was seen as the guiding force in teaching, as noted by interviewee E (academic):

“I think a theoretical underpinning is very important so you don’t make a mess but you learn by doing an awful lot”

and interviewee I:

“They can’t cope with concepts without getting some cognitive stuff to get their teeth into”

The inclusion of a practical element was supported by interviewee D (academic), who pointed out:

“If you overlook the practical side they are not really getting the whole picture.”

Interviewee H agreed that some practical element was necessary, by saying: “Enough practical stuff to bring the concepts home”

The two questionnaires that were sent to the audit group of academics asked lecturers specifically about the teaching devices that were used in their audit lectures. As the lack of a practical element in university audit teaching was an issue of concern that had been raised in the literature (Seigel et al. 1997), the academic respondents were asked to indicate how useful they thought practical experience, ranging from guest lectures to case studies to a period of work experience, would be to aid students' understanding of auditing. Table 8 shows that case studies were seen to be an important feature of audit classes, especially in tutorials, but that they featured also for use by groups outside the classroom.

Insert Table 8 about here

The students were also asked to indicate how useful an aid to understanding they thought they would find practical experience, ranging from guest lectures to case studies to a period of work experience (see Table 9). The use of case studies in tutorials also received strong support with students supportive of group work as well as individual study in tutorials. The use of paper-based case studies had the lowest mean response, but it was difficult to be certain whether this indicated that the students found a paper based case study most helpful, or simply that students considered it to be more likely that any case would be paper-based rather than video or computer based. The students were less supportive of working outside class time, particularly if they were expected to work alone.

Insert Table 9 about here

The practitioner and trainee questionnaire specifically asked about how trainees are encouraged to learn about auditing and develop their audit understanding. Table 10 shows that the respondents thought that trainees in their firms were taken through a learning process where they were encouraged to think and ask questions about audit

in order to build their understanding. The practitioners also thought that audit courses should feature both practice and theory.

Insert Table 10 about here

The accountancy lecturers surveyed in this study generally agreed that the profession expected an accountancy graduate to have a thorough grounding in double entry book-keeping but that in most degree courses this was covered very early on in the degree, often in the first year, but was not covered again in later years, perhaps resulting in graduates with less book-keeping know-how than employers expected. However, a practitioner interviewee said that he hoped that universities did not focus on teaching book keeping as they had more valuable teaching to do and his Big 4 firm was better placed to teach book keeping.

One of the questions in the academic questionnaire investigated the sort of auditing topics that might be covered on an audit course. These ranged from the legal liability of auditors through to ethics and down to detailed tests such as bank reconciliations and stock counts. The audit group were asked to rank the importance of 37 potential audit topics to be included in audit courses (Table 11). The question asked about an ideal audit course, not the actual course respondents taught, but it is likely that those topics that were ranked highest were in fact actually taught in their audit courses. Independence was the highest ranked topic, followed by the various types of risk and fraud. Analytical review was also ranked high, with a mean of 1.61 and a standard deviation of 0.72 indicating that most of the respondents had ranked this as very important or important. Planning and reviewing the audit was also ranked highly with a mean of 1.74 and a standard deviation of 0.75.

Insert Table 11 about here

Students were also asked to indicate their understanding of the same 37 audit terms (Table 11). This was over a three-point scale where: 1 indicated definite understanding; 2 indicated vague understanding; and 3 indicated no understanding of the term. Median scores for each topic are reported together with the percentage of students who indicated that they definitely understood the term (score =1). Rankings are assigned on this basis. The list of audit terms was presented in both the pre- and the post-module questionnaire. A comparison was made with the terms that the audit group of academics thought should be taught on an ideal audit course. Interestingly “independence” was rated as the most important topic to be taught by the audit academics and was the audit term that ranked joint second in understanding by the students after they had completed the audit module at the university. The “top ten” of important topics as ranked by the academics also showed some similarities to the post-module understanding. Audit risk, control risk and materiality were in the students’ “top ten” of understanding. Detection risk, inherent risk, fraud and professional ethics and legal liability were still within the student top twenty. Ninety per cent of the students ranked “audit reports” as an audit term they definitely understood, giving it the highest ranking, whereas the academics ranked this at position 12 in importance of teaching the topic. Further, “evidence” was rated in position 10 by the academic respondents, but was well down the student ranking, with only 38 per cent indicating that they understood the term. “Stock counts” which was ranked joint second by the students was deemed to be 33rd in importance by the academics. Thus, it would appear that in the audit module at the university all but one topic (evidence) out of the top ten, as selected by academics, were covered in

sufficient depth for the students to indicate confidence in their understanding of the terms by the end of the teaching.

The practitioners and trainees questionnaire also asked about the same set of 37 audit topics (Table 12) Most items on the list were rated as important by these respondents, apart from flowcharts and the organisation of the profession which had neutral responses, and four items that practitioners disagreed should be taught on university audit courses: non-audit services; auditing history; the fee-setting process; and advertising and marketing by firms. Top of the list of importance was audit risk, including control risk and inherent risk, analytical reviews, materiality, auditing standards, independence and professional ethics.

Insert Table 12 about here

As there were so many items listed in Tables 11 and 12 a principal components analysis of the data was performed⁷. There were 7 factors that accounted for all of these items, irrespective of which group had answered the question and these can be grouped as follows: systems audits versus substantive audits; the audit environment including legal liability and non –audit services; detailed testing; the different types of audit, including information systems and internal audit; the regulatory environment, including UK and international standards; financial awareness and an understanding of basic accounting; and other factors such as collusion, or advertising and marketing by firms.

Lecturing interviewees found that conceptual knowledge, useful for making judgements, was often a stumbling block for many of their students. In most of the audit courses the students were very capable of dealing with the numerical aspects of

their learning but the area that students tended to struggle with was the theoretical concepts. Interviewee H noted:

“I think the biggest problem with auditing is them getting the conceptual whole and I think it’s a huge huge problem for them, the notion of the entirety of an audit.”

The trainee and practitioner interviewees were asked which, if any, were the most important aspects of auditing and, thus, what specific skills they perceived as being required for audit work. Once again, a series of insightful answers was elicited. Three practitioner interviewees (T, V, W) identified interviewing skills and the ability to build a relationship with the client as key, whilst three (U, X, W) focused on the audit work itself in terms of planning and “doing the testing itself” (Interviewee X) and “analyzing data” (Interviewee P). Three of the trainees (K,L,Q) focused on the nature of the audit itself, why evidence was necessary and how things were tested.

However, interviewee O (trainee) commented that: “these are life skills” which, although fundamental to audit practice, were unlikely to be able to be taught in a classroom. In terms of the important practical aspects of auditing, interviewees again highlighted a range of fundamental issues such as “common sense,” getting on with clients and not irritating them.

Another area of importance for the practitioners was an understanding of what was being done and a healthy scepticism. For example, interviewee X stated that:

“The most important thing is that you actually understand the issue and what you are doing and why you are doing it...The main thing is really a thoroughness and understanding of what you are doing... and hence, knowing what you need to do to complete it”

whilst interviewee Z highlighted the importance of:

“An appropriate scepticism and a sceptical mind ... you always have to be curious .. suitably professionally sceptical [but balanced so that the client trusts you]”.

The interviewees were asked if there were any specific areas of audit work that trainees consistently found difficult. Three trainees (M,O,Q) identified the same issue as specified by interviewee Q: “not knowing **why** I am doing something” as posing particular problems. This was elaborated on by interviewee O (trainee):

“Anyone can sit there and tick through a sample but what takes a lot more understanding and effort is when you look at a company’s controls, understanding that they mitigate the risks... or going into a company and looking at their computer systems and understanding how each transaction gets entered onto that system, how the reconciliations work, because it’s not tangible – that’s harder... I would’ve benefited from ... having more experience of a company and how a company runs”.

A yet wider perspective was offered by interviewee P (trainee) who had found that “big corporation politics was the hardest thing to come to terms with” in her experience. Interviewee P recommended that there were certain skills that trainees had to learn that could only be learnt by practical experience, such as interviewing.

Transferable Skills for an audit career

There has been a lot of discussion about the skills that are needed by employers, and how universities need to ensure that the instruction that students receive can be transferred into the skills necessary for working life (Burke et al., 2005). The academic respondents were shown a list of 16 transferable skills and asked to indicate their importance. However, rather than focusing on audit specific skills, the academics were asked to rank the importance of these skills to students after graduation (Table 13). All 16 skills were very highly rated, scoring mean responses of below 3 (neutral). Analytical skills and written skills were the highest ranked. Oral communication skills, which are possibly assessed the least in university accountancy and finance

courses, were the next most important. This seemed somewhat contradictory as less than half of the responding lecturers had used student presented seminars as part of their teaching strategy. Although teamwork, persistence and lateral thinking were lowest in ranking, they were still important with means of 1.72, 1.78 and 1.81, on a five-point Likert style scale, where a 1 indicated that the skill was important.

The academics were also asked to rank the importance of these same skills from an employer's perspective rather than those needed by graduates. Analytical and communication skills were still deemed to be important, but teamwork was seen as much more important to prospective employers. This could suggest that even amongst academics there is a gap between the skills that they think are important for the students to have, and the skills that they think employers actually want.

Table 13 about here

The students were also asked to indicate how important they believed a list of 17 general transferable skills would be for conducting an audit. Both of the student questionnaires included this list (Table 14). The students' tended to focus on information and saw the collecting and disseminating of information as useful skills. This was associated with some reasoning and evaluation of the information, either analytical, or logical, or critical. After the module, the importance of being able to listen had increased and the need for problem-solving was seen as less important.

Table 14 about here

The practitioners were also asked whether universities should try to develop these key skills. Clearly, the practitioners thought that all these skills should be taught at university, with the exception of persistence where there were mixed views. There were some common perceptions between what the academics thought practitioners

wanted and those the practitioners actually wanted, such as analytical skills that were ranked very highly by academics and practitioners. However, there were some differences in ranking. For example, practitioners ranked presentation skills as second in their list of what universities should teach. The academics ranked this 8th and data collecting skills were ranked 12th by the academics, but 5th by the practitioners. However, practitioners ranked oral communication skills much lower than the academics who thought that this was the top skill that practitioners wanted. Thus, there appeared to be a mis-match in the ranking of key skills between the two cohorts, although they were all rated as essential.

Table 15 about here

In general, audit courses seemed to be constrained by the need for the course to gain professional exemption and the desire to create employable students. However, although there was a belief that a university education should give a student a positive advantage in the job market, lecturers did not seem very focused on helping their students to acquire employer friendly skills. Communication skills were mentioned by all of the interviewed lecturers as a key skill an employer would look for in a graduate, but there was little evidence that communication skills, particularly oral communication, were included in their courses. Although students were required to make either solo or group presentations within their audit course, these were unlikely to be assessed and, perhaps more importantly, the students were not encouraged to see presentations as a valuable life skill. This appeared to be the same for other employable skills. Although all lecturers cited several “transferable skills” as important, this importance was not passed on to the students. In some cases the skills were either not actually included in their teaching as students were expected to

already have the necessary skills. In other cases, there were opportunities to acquire, or polish, transferable skills, but the students were not explicitly told that they were learning a life skill. Integration of information technology skills tended to fall into both categories. It was generally assumed that by the final year students would have learnt how to use word processors, spreadsheets and presentation software, but few lectures actually encouraged students to further develop these skills. As more and more professional firms use computer software to carry out all their planning and reporting during audit it would seem logical for universities to encourage a higher use of computing within their audit courses.

Conclusion

The findings of this research have shown that lectures and small-group workshops are the main teaching methods used at universities, but that case-studies, videos and other resources are also welcome. Academics and students believe that students often learn better by actually “doing” things, rather than just listening or memorizing; and also if they are encouraged to ask questions and think more critically. This critical aspect of the learning process was also one that was a difference between an academic and a professional education. A professional education was seen as being mainly learning technical knowledge; a university education developed the critical thinking skills so necessary to a professional career.

Thus, within audit education, learning through experience and reflecting on past experience may result in a deeper learning experience, where the relevance of the subject becomes evident and creates an interest in the subject (Sharma 1997). Experiential learning, active learning, action-orientated learning and problem-based learning are all methods prevalent in the literature. This has resulted in the use of case

studies, videos, computerized simulations, virtual factories, and games with students in an attempt to improve their understanding by using “concrete experience” and by attempting to “situate” learning within the world view of students

From the above it is clear that there is scope to introduce material into the classroom that can meet the needs of academics, students, trainees and practitioners. The educational theories of experiential learning, situated learning, conversationalist theory and information-processing can all add to improving the teaching of auditing at an undergraduate level. Thus, educators need to think more about how all of these theories can be used to improve the skill-set of trainee auditors.

Notes

1. The authors would like to thank The Institute of Chartered Accountants of Scotland for the funding of this project and the interviewees and questionnaire respondents that gave their time.
2. However, more recent work, particularly with Asian students, the so-called ‘paradox of the Chinese learner’ (Marton, Dall’Alba and Tse. 1993, p. 15) discovered that understanding could be gained through a memorization technique. Meyer (1997, 2000) found evidence that some learners memorized information, then studied and reflected on it and could then restate the memorized facts in their own words. The memorization formed the first stage of understanding. Even the idea of rote learning could not be assumed to be devoid of understanding. There was some indication that the mechanical process of learning by rote, without comprehension, might be a first stage in attempting to learn and understand a difficult concept such as a scientific formula (Meyer, 2000; Dahlin and Regmi, 1995). It may be that in accounting education, some students find the rules difficult to understand and may adopt a more surface approach to memorize or even rote learn these rules and then learn how to use them and thus understand them.
3. CIMA and CIPFA were not included as these two institutes do not concentrate so heavily on audit responsibilities, and a visit to Ireland to cover ICAI members was not considered necessary as their views were deemed to be similar to those of ICAS and ICAEW.
4. Those selected came from stratified groups that either: (i) taught auditing or had a research interest in auditing; (ii) had a research interest in accounting education or in the use of computers in teaching; or (iii) comprised a random sample of other accounting academics in the UK. For the first two groups, all academics in the Research Register were included, thus no sampling was necessary. These three groups are labelled audit, education and random hereafter.
5. One of the interviewees worked in an organisation where all teaching was done by distance learning.
6. However, the overall ranking was different, with lecturers rating reading lists and overhead slides/power point presentations higher than the students and these were the only significant differences when a Mann Whitney *U* test was performed.
7. Details of this can be obtained from the authors on request.

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Table 1 Panel A- Academic interviewees

Interviewee	Gender	Pre/Post 1992	Location	Teaching Experience	Audit Lecturer	Audit Experience
A	Male	Pre	England	15 years	Yes	7 years
B	Female	Post	Scotland	12 years	No	Training
C	Female	Post	Scotland	11 years	Yes	6 years
D	Female	Pre	Scotland	14 years	Yes	30 + years
E	Male	Post	England	13 years	Yes	None
F	Female	Post	Wales	12 years	Yes	8 years
G	Female	Post	Wales	12 years	No	None
H	Female	Post	England	16 years	Yes	10 years
I	Female	Post	Scotland	11 years	Yes	8 years
J	Male	Pre	England	18 years	No	4 years

Table 1 Panel B–Trainee interviewees

Interviewee	Gender	Degree	University	Professional Body	Training Firm
K	Female	Maths	Edinburgh	ICAEW	Small
L	Male	Business Administration	Keele	ICAEW	Small
M	Male	Psychology	Durham	ICAS	Big 4
N	Male	Accountancy	Dundee	CIMA	Small Industrial
O	Female	Accountancy & Finance Management Science &	LSE	ICAS	Big 4
P	Female	Accounting	Southampton	ICAEW	Big 4
Q	Female	Accountancy	Glasgow	ICAS	Big 4

Table 1 Panel C–Practitioner Interviewees

Interviewee	Gender	Professional Body	Firm	Position in Firm
S	Male	ICAEW	Big 4	Partner
T	Male	ICAEW	Small	Manager
U	Male	ICAEW	Small	Partner
V	Female	ICAS	Big 4	Manager
W	Male	ICAEW	Big 4	Manager
X	Female	ICAEW	Big 4	Manager
Y	Female	CIPFA	Local Authority	Manager
Z	Male	ICAS	Big 4	Partner

Table 1 Panels A to C summarises the individuals that were interviewed as part of this study.

Table 2 –Response rate of Questionnaire Respondents

Groups	Total number sent	Number responded	Response rate
Academics			
Audit	142	56	39%
Accounting Education/ IT researchers	183	79	43%
Random	146	55	38%
Students			
Pre-module	137	137	100%
Post module	113	113	100%
Practitioners/Trainees	1971	321	16%
Total	2692	761	28%

Table 2 summarises the response rate of the various questionnaires used in this study.

Table 3 -The use of teaching methods by sample groups (Audit/Education/Random)

	Currently use %			Would consider %		
	Audit	Education	Random	Audit	Education	Random
Formal lectures	92.3	82.5	95.7	0.0	0.0	0.0
Interactive small group work	84.0	76.9	87.0	4.0	7.7	4.3
Formal small group work	80.0	77.8	73.9	8.0	0.0	8.7
Case Studies	60.0	60.0	54.5	4.0	10.0	13.6
Interactive lectures	50.0	46.2	65.0	33.3	15.4	25.0
Student presented seminars	48.0	34.2	43.5	0.0	13.2	13.0
Instructional videos	45.8	27.0	30.0	12.5	10.8	20.0
Self-study assisted by EQL	21.7	20.6	17.6	52.2	35.3	41.2
Self-study assisted by CD-ROM	13.6	16.7	10.5	63.6	61.1	57.9

This Table highlights which teaching methods are used by the three academic groups.

Table 4 – Students’ expectations of teaching methods before taking the audit module

	Number	Mean	Std. Dev	p_value
Formal Lectures	136	1.73	.64	0.000
Interactive Tutorials	136	1.83	.69	0.000
Formal Tutorials	133	2.22	.94	0.000
Interactive Lecture	135	2.35	.92	0.000
Computer Workshops	135	2.64	.93	0.000
Business game	136	2.83	.98	0.057
Self study using EQL	135	2.97	.93	0.783
Self study using CD-Rom	136	3.00	.95	1.000
Instructional Video	134	3.17	.88	0.026
Student presented seminars	137	3.34	1.12	0.000

This Table demonstrates the teaching methods that students expected on their audit course.

Table 5 –Students’ and academics’ perceptions of the usefulness of other teaching aids

	Students			Academics		
	Number	Mean	Std. Dev	Number	Mean	Std. Dev
Worked examples	137	1.37	0.52	1.42	0.77	
Case studies	136	1.58	0.58	1.69	0.75	
Handouts to supplement lecture	135	1.58	0.62	2.09	1.05	
Handouts of PowerPoint/overheads	137	1.84	0.94	2.30	1.14	
Overhead projector slides	137	1.88	0.55	1.94	0.92	
PowerPoint presentations	136	1.93	0.71	2.37	1.16	
Online copies of lecture notes	137	1.98	1.02	2.46	1.15	
Annotated reading lists	137	2.04	0.81	2.08	0.98	
Web page references	137	2.24	0.89	2.37	0.85	
Lecturer’s use of the board	137	2.35	0.81	2.13	1.07	
Instructional CD-ROMs	136	2.69	0.99	2.81	0.97	
Videos / TV programmes	136	2.76	1.00	2.58	0.99	
Bulletin boards/Chat rooms	135	3.08	0.89	3.16	1.18	

This Table highlights the usefulness of other teaching aids as perceived by students and academics.

Table 6 – Academics’ and students’ responses to statements about teaching and learning

	Pre-module questionnaire			Post-module questionnaire			Academic		
	Mean	Rank	p-value	Mean	Rank	p-value	Mean	Rank	p-value
Student participation is important for student learning	1.86	2	.000	1.90	3	.000	1.45	1	.000
Handouts, videos, computer-presentations etc may supplement lectures	1.81	1	.000	1.91	4	.000	1.64	2	.000
Students expect their lecturer to be the main disseminator of knowledge	2.16	6	.000	1.87	2	.000	1.74	3	.000
Lecturers discuss the key issues and answer key questions	2.23	7	.000	2.17	7	.000	1.84	4	.000
Students learn best by doing and not by listening to others describing	2.39	10	.000	2.25	9	.000	1.85	5	.000
Lecturers offer overviews of a topic or a theme in that subject	2.13	4	.000	2.01	6	.000	1.97	6	.000
“To hear is to forget, to see is to remember, to do is to understand”	1.92	3	.000	1.89	1	.000	2.09	7	.000
Textbooks are not usually sufficient to enable students to learn on their own	2.57	12	.000	2.53	12	.000	2.20	8	.000
Students have an attention span of about 20 minutes	2.34	8	.000	2.18	8	.000	2.26	9	.000
A lecture ensures that all students have access to the same information	2.10	5	.000	1.99	5	.000	2.33	10	.000
A lecture is usually a passive learning environment	2.39	10	.000	2.38	10	.000	2.56	11	.000
Learning from other students is like ‘the blind leading the blind’	3.34	8	.000	3.22	13	.026	2.94	12	.539
A lecture encourages the memorisation of facts, not “deep” learning	2.89	14	.191	2.70	14	.001	2.99	13	.924
A lecture is useful for teaching to students with different levels of ability	2.58	12	.000	2.50	11	.000	3.02	14	.829

This Table analyses the usefulness of teaching and learning practices as perceived by students and academics.

Table 7 - Activities encouraged by lecturers by sample group (Audit/Education/Random)

	Always include %				Sometimes include %			
	Audit	Education	Random	Total	Audit	Education	Random	Total
Get students to ask questions	65.4	63.4	60.9	63	34.6	31.7	34.8	33
Learning by doing	46.2	65.9	54.1	57	53.8	34.1	41.7	42
Learning by feedback	52.0	35.0	47.8	43	44.0	52.5	47.8	49
Note-making vs note-taking	32.0	26.8	36.8	31	25.0	39.0	36.8	42
Learn by working together	44.0	27.5	20.8	30	44.0	67.5	75.0	63

This Table shows the responses to the types of activities that academics encourage.

Table 8– Academics views on audit teaching devices

	Mean	Std dev	p-value	Num
Use of case-studies done in groups in tutorial	1.42	0.70	.000	26
Use of paper based case-studies in tutorials	1.46	0.81	.000	26
Use of video based case-studies in tutorials	1.62	0.80	.000	26
A period of work experience	1.62	1.10	.000	26
Guest lectures from professional auditors	1.81	1.17	.000	26
Use of case-studies in small groups outside the classroom	1.88	1.07	.000	26
Use of case-studies done individually in tutorial	1.96	1.04	.000	26
Use of computer-based case-studies in tutorials	2.08	0.98	.000	26
Use of case studies outside the classroom where students work alone	2.15	1.08	.001	26
Use of a game where students can compete against each other	2.15	1.41	.005	26

Table 8 shows the teaching methods used by academics on their audit courses.

Table 9 – Students’ perceptions on how practical experiences could help to understand auditing

	PANEL A				PANEL B			
	Pre-module questionnaire				Post-module questionnaire			
	Mean	Std dev	p-value	Num	Mean	Std dev	p-value	Num
A period of work experience	1.70	0.68	.000	137	1.54	0.59	.000	113
Use of paper based case-studies in tutorials	1.98	0.49	.000	137	2.00	0.67	.000	112
Use of case studies in groups in tutorials	2.00	0.56	.000	137	2.07	0.65	.000	113
Guest lectures from professional auditors	2.16	0.92	.000	137	2.44	1.01	.000	113
Use of computer-based case studies in tutorials	2.44	0.83	.000	137	2.55	0.99	.000	113
Use of case-studies in small groups where students work on their own outside the classroom	2.46	0.84	.000	137	2.62	0.97	.000	113
Use of video based case-studies in tutorials	2.54	0.83	.000	137	2.61	1.07	.000	113
Use of case studies done individually in tutorials	2.59	0.87	.000	136	2.67	0.90	.000	109
Use of case studies outside the classroom where students work individually	2.65	0.86	.000	137	2.07	0.65	.000	113
Use of some kind of game where students can compete against each other	2.83	1.02	.068	137	2.82	1.22	.126	112

Table 9 highlights students’ perceptions about how practical experience can help to understand auditing.

Table 10 Practitioners views on trainees’ learning

	No	Mean	Std Dev	p-value
Trainees are encouraged to build on their knowledge by applying it to new and unfamiliar situations	313	2.08	0.832	0.000
Trainees are encouraged to discuss the audit plan rather than simply follow it	312	2.47	1.087	0.000
Auditors perform tasks for which they have not been specifically trained by applying knowledge from elsewhere.	311	2.72	1.088	0.000
Auditors make intuitive decisions and later try to determine how they came to make that decision	310	3.55	1.006	0.000

This Table shows the importance that practitioners give to trainees' learning.

Table 11 - Ranking of audit terms for student understanding and for importance in teaching

	Pre-module			Post-module			Academics	
	Rank	Median	%	Rank	Median	%	Rank	Mean
Advertising and marketing by audit firms	21	2	19.7	35	2	41.1	41	3.82
Analytical review procedures	32	2	10.1	32	2	45.1	14	1.61
Assurance services	28	3	13.0	40	2	23.9	30	2.35
Audit reports	4	1	58.0	1	1	90.3	12	1.52
Audit risk	20	2	21.2	4	1	86.7	7	1.35
Auditing history	N/a	N/a	N/a	N/a	N/a	N/a	29	2.30
Auditing Standards (International)	23	2	18.2	33	2	44.6	23	2.04
Auditing standards (UK)	19	2	24.6	22	1	66.1	11	1.52
Auditor change	24	3	14.5	27	1	57.5	28	2.27
Auditor concentration	41	3	3.6	41	2	21.2	32	2.71
Bank reconciliations	7	1	52.9	5	1	83.9	40	3.73
Batch and processing controls	15	2	27.0	31	2	46.0	38	3.23
Collusion	35	3	7.2	34	2	41.6	27	2.22
Compliance testing	25	2	14.5	23	1	65.8	19	1.78
Computer auditing	22	2	18.8	17	1	70.5	17	1.74
Control accounts	8	2	49.6	18	1	70.5	37	3.00
Control risk	31	2	10.9	8	1	78.6	2	1.30
Corporate governance	13	2	37.2	25	1	58.4	13	1.57
Debtors circularisation	36	3	6.5	10	1	76.8	31	2.70
Detection risk	33	3	10.1	12	1	76.1	5	1.39
Evidence- types, sources, working papers	30	3	12.3	36	2	38.1	10	1.48
Fee setting procedures	34	3	8.0	38	2	26.8	34	2.87
Flowcharts	6	1	55.1	24	1	62.5	36	3.00
Fraud	3	1	60.9	14	1	74.3	4	1.35
Gearing/Leverage	2	1	61.6	27	1	57.5	35	2.91
Independence	11	2	39.9	2	1	89.4	1	1.04
Information systems auditing	14	2	35.0	6	1	82.9	22	2.04
Inherent risk	12	2	37.7	13	1	75.2	3	1.35
Internal auditing	27	2	13.8	25	1	58.4	N/a	N/a
Internal control evaluation	26	2	13.9	30	2	48.7	15	1.65
Legal liability of auditors	18	2	24.8	16	1	71.7	8	1.43
Materiality	16	2	25.5	9	1	77.0	9	1.43
Non audit services	40	3	4.4	29	1	53.1	24	2.04
Organisation of the profession	38	3	5.1	37	2	33.6	25	2.13
Planning and reviewing	17	2	25.5	20	1	67.0	18	1.74
Professional ethics	9	2	48.6	15	1	73.5	6	1.39
Rotation of auditors	29	3	13.0	21	1	66.4	26	2.22
Sales and Purchase ledgers	1	1	68.1	11	1	76.4	39	3.38
Sampling	10	2	42.0	7	1	79.6	21	2.00
Stock counts	5	1	56.2	2	1	89.4	33	2.74
Subsequent events review	39	3	5.1	38	2	26.8	20	1.96
Substantive Testing	37	3	5.8	19	1	68.1	16	1.65

This Table shows how the academics and students rated various audit topics.

Table 12 Practitioners' views on audit topics that should be taught

	No.	Mean	Std dev	p-value
Audit risk	309	1.34	0.657	0.000
Analytical review procedures	309	1.50	0.796	0.000
Materiality	307	1.53	0.733	0.000
Auditing standards (UK)	309	1.59	0.812	0.000
Control risk	309	1.59	0.744	0.000
Inherent risk	310	1.62	0.766	0.000
Evidence – types, sources and working papers	309	1.67	0.875	0.000
Professional ethics	308	1.73	0.833	0.000
Independence	309	1.73	0.847	0.000
Fraud	308	1.78	0.832	0.000
Auditing standards (International)	308	1.79	0.919	0.000
Audit reports	308	1.82	0.894	0.000
Planning and reviewing the audit	308	1.85	0.987	0.000
Detection risk	306	1.86	0.809	0.000
Compliance testing	307	1.88	0.850	0.000
Substantive testing	308	1.89	0.994	0.000
Corporate governance	307	1.94	0.902	0.000
Internal control evaluation	309	1.94	0.872	0.000
Control accounts	308	2.07	1.028	0.000
Sampling	309	2.08	0.960	0.000
Subsequent events reviews	307	2.13	0.963	0.000
Information systems auditing	309	2.14	0.879	0.000
Computer auditing	308	2.19	0.882	0.000
Bank reconciliation	309	2.21	1.137	0.000
Legal liability of auditors	307	2.24	1.040	0.000
Collusion	308	2.28	0.883	0.000
Sales and Purchase ledgers	307	2.34	1.082	0.000
Batch and processing controls	306	2.34	0.959	0.000
Stock counts	309	2.37	1.066	0.000
Internal auditing	308	2.40	0.923	0.000
Debtors circulation	309	2.56	1.060	0.000
Assurance services	305	2.59	0.918	0.000
Gearing/Leverage	308	2.74	1.410	0.002
Auditor change	307	2.75	0.922	0.000
Auditor concentration	299	2.77	0.872	0.000
Rotation of audit partners	308	2.79	0.982	0.000
Organisation of the audit profession	308	2.96	1.068	0.489
Flowcharts	310	3.03	0.975	0.642
Non-audit fee services	309	3.15	1.069	0.013
Auditing history	307	3.20	1.058	0.001
Fee setting process	309	3.40	1.026	0.000
Advertising and marketing by audit firms	304	3.90	0.990	0.000

This Table highlights the importance that practitioners give to various audit topics.

Table 13– Academics’ ranking of transferable skills

	% using in audit courses successfully	% would not want to use	Needed by graduates			Needed by employers		
			No.	Mean	Std. Dev	No.	Mean	Std. Dev
Analytical skills	78.6%	3.6%	90	1.19	0.67	94	1.68	0.86
Written communication skills	71.4%	3.6%	90	1.19	0.65	95	1.71	0.98
Oral communication skills	55.6%	11.1%	90	1.23	0.69	95	1.48	0.92
Problem solving	60.0%	8.0%	89	1.36	0.74	93	1.89	0.89
Critical reasoning skills	50.0%	7.7%	90	1.38	0.79	95	2.05	0.95
Basic computer use (wp, spreadsheets, email)	30.0%	60.0%	90	1.48	0.78	95	1.95	0.89
Listening skills	47.6%	9.5%	90	1.52	0.77	95	2.41	0.92
Numeracy	28.6%	57.1%	90	1.52	0.77	95	1.86	0.87
Self study/research skills	59.3%	7.4%	89	1.57	0.80	94	2.61	0.98
Time management	36.4%	22.7%	90	1.59	0.83	95	2.05	0.94
Presentation skills	54.2%	20.8%	90	1.62	0.79	94	1.99	0.85
Planning skills	45.8%	25.0%	90	1.67	0.85	95	2.19	0.83
Teamwork	65.4%	11.5%	89	1.72	0.78	95	1.82	0.93
Persistence	26.3%	26.3%	90	1.78	0.90	95	2.49	0.82
Data/information collecting skills	30.0%	20.0%	89	1.80	0.87	95	2.33	0.82
Lateral thinking	26.1%	13.0%	89	1.81	0.84	95	2.54	0.95

Table 13 shows how academics ranked transferable skills between those needed by graduates and those needed by employers.

Table 14 – Students’ views of the skills useful for auditing

	PANEL A				PANEL B			
	Pre-module Questionnaire				Post-module Questionnaire			
	Num	Mean	Std. Dev	p_value	Num	Mean	Std. Dev	p.value
Information collection	220	1.70	.74	.000	114	1.51	.65	.000
Communication skills	273	1.76	.76	.000	156	1.53	.59	.000
Logical thought processes	274	1.80	.68	.000	156	1.56	.60	.000
Analytical reasoning	274	1.80	.68	.000	156	1.58	.55	.000
Critical reasoning	275	1.87	.75	.000	155	1.81	.70	.000
Problem solving	275	2.02	.76	.000	156	1.86	.73	.000
Lateral thinking	275	2.09	.72	.000	156	1.85	.65	.000
Listening Skills	275	2.09	.82	.000	156	1.68	.59	.000
Interpersonal & social skills	276	2.11	.87	.000	155	1.83	.74	.000
Persistence	273	2.15	.79	.000	156	1.85	.68	.000
Effective writing	276	2.27	.90	.000	156	2.21	.82	.000
Pragmatism	269	2.53	.73	.000	153	2.47	.75	.000
Public speaking	275	2.78	.93	.000	156	2.53	.82	.000
Neat handwriting	274	3.05	.99	.397	156	2.96	.96	.679
Drawing diagrams/graphs	274	3.06	.95	.282	156	2.60	.98	.000
Crossword solving	276	3.59	1.18	.000	153	3.47	1.09	.000
Drawing pictures	275	3.69	.90	.000	153	3.39	.98	.000

Table 14 shows how students ranked the importance of transferable skills for a career in auditing.

Table 15 Practitioners' views on whether universities should encourage the development of transferable skills

	Should universities teach this	
	Yes	No
Analytical skills	290	13
Presentation skills	286	12
Written communication skills	270	26
Basic computer skills	269	30
Information collection	263	27
Problem solving	253	29
Planning skills	252	38
Critical reasoning	242	44
Oral communication	241	52
Time management	236	56
Self Study skills	232	58
Teamwork	230	56
Numeracy	226	60
Lateral thinking	207	78
Listening Skills	200	85
Persistence	141	135

This Table shows whether practitioners think that a range of transferable skills should be taught by universities