

EDUCATING FOR ACTUARIAL QUALITY

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ABSTRACT

This paper is located in the field of actuarial professional education. It draws on current literature and empirical evidence to suggest best practice for teaching generic ‘normative’ capabilities in the actuarial profession. The paper examines three themes of normative education for actuaries – the intended purpose of an education programme, the range of capabilities to be developed, and educational ‘best practice’. A literature review of normative education in various professions provided a theoretical framework for data analysis, and for making recommendations. Data was collected from three sources – interviews with stakeholders; documentary evidence regarding current education of actuaries and accountants; and advertisements for employment of nearly or newly qualified actuaries. The paper draws on the literature and the empirical evidence to argue that the purpose of an actuarial education programme is to ensure the delivery of a service of quality. For this delivery to be achieved, both technical and normative capabilities need to be developed. The paper then suggests normative capabilities for actuaries. Thereafter, educational considerations for developing these capabilities are discussed. The paper concludes by drawing on the study to outline principles to guide curriculum planning for the normative component of the new South African actuarial qualification.

KEYWORDS

actuarial education; professional education; normative capability; curriculum planning

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1. INTRODUCTION

1.1 This paper is located in the field of actuarial professional education. It draws on current literature and empirical evidence to suggest best practice for teaching normative capabilities in the actuarial profession. The term ‘normative’ is used by Lowther and McMillan (2006) in grouping the various aspects of professional practice into cognitive, normative and organizational strands. The normative strand describes the manner in which actuaries undertake to deliver their technical capabilities. Walker (2006) and Sen (1999) use the term ‘capability’ to highlight human development, foregrounding what education enables people to do and to be. Other writers variously refer to these as ‘professional / professionalism / delivery / generic’ ‘skills / competences / attributes’.

1.2 The research discussed in this paper has been prompted by a number of converging imperatives, including that:

- the Actuarial Society of South Africa (‘Actuarial Society’) intends to offer its own qualification from 2010. This education programme will need to be relevant for the South African context, while at the same time be acceptable internationally;
- internationally, lifelong professional education is being conceptualised using educational principles to ensure effective learning; and

- there is a worldwide trend for consumers and regulators to demand openness, transparency, accountability and trustworthiness in professions (O’Niell, 2002; Goford, 2003). Morris (2005) has highlighted this issue for the actuarial profession. Literature indicates that improvement in the quality of members’ normative capabilities has a direct relationship to the restoration of trust in a profession (FRC, 2008; Hannah et al, 2004; Levinson et al, 1997; Mellor & Milgrom, 1996; Stewart, 1995; Lester & Smith, 1993).

1.3 The paper examines three themes of normative education for actuaries – intended purpose of an education programme, the range of capabilities to be developed, and educational ‘best practice’. A literature review of normative education in various professions provides a theoretical framework for data analysis, and for making recommendations. Data was collected from three sources:

- interviews were conducted with a range of stakeholders including actuarial students, employers of actuaries, employed, self-employed and academic actuaries, clients, regulators, and a representative of the profession;
- documentary evidence regarding normative education of actuaries and accountants was obtained from websites and by requests; and
- recent advertisements for the employment of nearly or newly qualified actuaries were obtained from the Actuarial Society.

1.4 The paper draws on the literature and the empirical evidence to argue that the purpose of an actuarial education programme is to ensure the delivery of a service of quality. For this delivery to be achieved, both technical and normative capabilities need to be developed. The paper then suggests normative capabilities for actuaries. Thereafter, educational considerations for developing these capabilities are discussed. The paper concludes by drawing on the study to outline principles to guide curriculum planning for the normative component of the new South African actuarial qualification.

2. METHODOLOGY

2.1 In this section, the methodology of the research is described. For ease of understanding, the numbering system in the next three sections mirrors the numbering of this section.

2.2 LITERATURE REVIEW

The primary source of information regarding best practice in professional education was literature sourced from academic journals and other publications in the fields of curriculum studies, higher education, professional education, and studies of education in specific professions including actuarial, accounting, business management, dentistry, engineering, law and medicine, predominantly but not entirely from the English-speaking world. Three sets of data were then collected and analysed in the light of the themes of best practice that emerged from the literature.

2.3 DOCUMENTARY EVIDENCE

The first data set was documentary evidence regarding the provision of professional education in the actuarial, accounting, law and medical professions, mainly in the English-speaking world. Programme outcomes and course outlines were obtained by personal request and from websites. This data set was chosen to provide insights into current practice in normative capability education, both in the actuarial profession locally and internationally, and with regard to other professions.

2.4 INTERVIEWS

The second data set consisted of fourteen semi-structured interviews carried out in South Africa and the UK by the first author. The interviewees were purposively (Barbour, 2001; Giacomini & Cook, 2000) selected to represent a range of stakeholders in the delivery of actuarial work. In some cases, colleagues were interviewed together. The interview subjects consisted of one actuarial student, one employer of actuaries, two employed actuaries, one self-employed actuary, two representatives of clients, four academic actuaries, four people involved with actuarial education, two regulators, and one representative of the profession. (Where interviewees qualified in more than one category, they have been categorised by main interest.) This data set was chosen to elicit broad opinion from stakeholders regarding the normative capabilities necessary for effective actuarial practice.

2.5 EMPLOYMENT ADVERTISEMENTS

The third data set was an analysis of the sixteen advertisements for employment for actuarial students circulated by the Actuarial Society during the first half of 2008. This data set was chosen to elicit information regarding the normative capabilities expected by employers of newly or newly qualified actuaries.

3. THEME 1 – THE PURPOSE OF PROFESSIONAL EDUCATION

3.1 In this theme, the literature, and documentary, interview and advertisement evidence will be used to outline the purpose of an actuarial education programme.

3.2 LITERATURE REVIEW

3.2.1 Drawing on the literature, this section highlights that the purpose of professional education is to prepare the professional to deliver a service of quality.

3.2.2 Goford et al (2001) define the goal of an actuarial education programme as ‘to prepare actuaries to deliver a service of quality appropriate to their clients’. For the training of UK actuaries, they advocate an actuarial education programme that develops the technical, communication, ethics and other capabilities that were envisaged by the Faculty and Institute of Actuaries (‘F&IA’) in a Vision and Values statement (F&IA, 2000).

3.2.3 The Financial Reporting Council (‘FRC’) (FRC, 2008) defines actuarial practice as a professional discipline around the development, use and interpretation of models. They identify technical skills, communication and ethics as key ‘drivers’ of quality actuarial service. They emphasise the importance of education in the development of these ‘drivers’ or capabilities.

3.2.4 Dumbreck (2006), Shepherd (2005) and Bellis and Felipe (2002) hold similar positions with regard to professional education, emphasising the need to develop both technical and normative capabilities. Lowther and McMillan (2006) argue that a curriculum for professional education should develop all the capabilities that are required to fulfil the commitments that a profession chooses to offer the public.

3.2.5 This understanding is echoed for the education of accounting professionals. Waddock (2005) believes accounting education is fundamentally about ethics. And Merino (2006) argues further that it was to the detriment of the profession in the USA that it ignored over a century of calls for the broadening of accounting education to include the teaching of normative capabilities.

3.2.6 The call for the development of normative capability has raised unease from some of those who are concerned with the development of technical capability. In the published commentary included in Goford et al (2001), concerns were raised about the broadening of actuarial education to include additional normative capabilities such as business skills and communication. Prof. Wilkie called for an increase in the depth, rather than breadth, of education. Prof. Waters noted the main threat to the profession as lack of technical capability. Prof. Dickson warned that a reduction in technical content would reduce the profession to a business consultancy role.

3.2.7. Similar concerns have been raised in the field of business education. Rynes et al (2003) report on the crisis of legitimacy for behavioural coursework in business education. They describe how the employers of their research cohort primarily sought technical skills in graduate employees, arguing that normative capabilities could be developed later, in the workplace.

3.2.8 The apparent tension between education for technical and for normative capability is resolved by Lyn et al (2002). They argue that not all technical capabilities need to be developed in the early stages of professional education as, in an era of lifelong learning, technical capabilities should be developed throughout an actuary's career. This argument implies that space can be made in the curriculum for the teaching of normative capabilities.

3.3 DOCUMENTARY EVIDENCE

3.3.1 The documentary evidence provides insights into current assumptions regarding the purpose of professional education. The actuarial education systems for Australia, UK, India, USA and South Africa, as well as the international accounting education standards, all include substantial aspects of normative education, in addition to technical education. The education standards of the International Federation of Accountants ('IFAC') (IFAC, 2008) echo the literature, in stating that the goal of accounting education is to produce competent professional accountants capable of making a positive contribution over their lifetimes to the profession and the society in which they work.

3.3.2 The IAA recently approved an international education syllabus up to Associate level as a guideline to the many national actuarial associations worldwide (IAA, 2007). Only one of the ten subjects ('professionalism') is not of a technical nature. Given that some members of the IAA Education Committee come from national actuarial associations which offer more normative capability education locally, there is clearly a debate as to whether normative capability education should be a requirement in all countries. This could be driven by differing national concepts of a profession (Bellis, 2000) or by the perceived need for newly formed professions in developing countries to concentrate on creating technical expertise (Phantumvanit, 1996). Bellis & Felipe (2002) warn that prescribing a global curriculum has the danger of ignoring local needs and attitudes.

3.4 INTERVIEWS

3.4.1 The interviews indicated the opinions of a variety of stakeholders regarding the purpose of actuarial professional education. All the interviewees described the purpose of actuarial education as developing more than merely technical capability. However, opinions were varied regarding the level of emphasis that needed to be placed on normative education. On the one hand, one academic felt that university was too early to introduce normative capabilities, and an employer cautioned about trying to produce a mature professional rather

than just providing a foundation. On the other hand, another academic spoke of the success of their ‘whole actuary’ approach with undergraduates, and another held that normative capabilities were essential before entering the workplace.

3.4.2 Some educators pointed out that the ‘wider fields’ of actuarial practice made curriculum planning more difficult. One pointed out that there can be no single set of normative capabilities that all actuaries would need. It was seen as unrealistic – and unnecessary and inefficient – to expect every actuary to be ‘Superman’ in all capabilities.

3.5 EMPLOYMENT ADVERTISEMENTS

The employment advertisements revealed the capabilities expected by employers of ‘nearly or newly’ qualified actuaries. All but one of the advertisements asked for more than technical skills from prospective employees.

3.6 CONCLUSION

The literature indicated clearly that the purpose of professional education is to prepare the professional to deliver a service of quality, and that in order to do this, both technical and normative capabilities need to be developed. The evidence from all three sets of data reveals broad agreement in current practice. However, there is debate over the precedence that education for technical versus normative capabilities should take in a professional’s lifelong learning career, and whether fewer normative capabilities are required in developing countries or those with a high degree of regulation.

4. THEME 2 – THE RANGE OF CAPABILITES

4.1 In this theme, the literature and the data are used to suggest the range of normative capabilities that actuaries may need in order to deliver a quality service.

4.2 LITERATURE REVIEW

4.2.1 This section records the normative capabilities outlined in the literature.

4.2.2 Lowther and McMillan (2006) provide a useful framework for clustering the various capabilities required for the delivery of professional service. Drawing on Bellis (2000), they suggest that the capabilities can be grouped into three strands

- cognitive: the actuary’s technical skills
- normative: the manner in which each actuary undertakes to deliver the technical skills
- organisational: the professional body, which the members task with ensuring that the skills are delivered in the agreed manner and with participation in public debate.

Since these strands underlie the delivery of quality actuarial service, Lowther and McMillan (2006) argue that the strands should provide structure to the professional education programme.

4.2.3 For each strand, a variety of capabilities emerge from the literature. Table 1 summarises these capabilities (IFAC, 2008; Goodwin, 2007; Shepherd, 2007a; Shepherd, 2007b; Lowther & McMillan, 2006; F&IA, 2004; Gribble, 2003; Lyn et al, 2002). The table suggests clusters of related capabilities so as to facilitate curriculum planning.

TABLE 1		
Strand	Capability cluster	Capability
Cognitive	Technical	Pre-actuarial numeracy (maths, stats, economics, etc), actuarial topics, IT, regulatory environment
Normative	Life skills	Ability to organise, analyse, identify, solve, self-manage, initiate, anticipate, adapt, decide, see the big-picture; be flexible, critical, creative, rigorous, strategic, committed to and capable of lifelong learning; research skills; engagement with diversity/national context
	Interpersonal & communication	Ability to resolve conflict, negotiate, present and defend, listen, write, advise without deciding, disclose uncertainties; be transparent, reliable; decision-usefulness, peer assessment, teamwork
	Business management	Ability to delegate, motivate, lead, manage people; strategic planning, entrepreneurship, vision, business acumen
	Ethical	Integrity, objectivity, confidentiality, due care, independence, accountability, public interest, social responsibility, ethical business, conflicts, professional and legal compliance, whistleblowing, courage, judgment, scepticism, reflective practice
Organisational	Professionalisation	Structures of / contribution to the profession

4.2.4 As is evident from the table, a considerable number of capabilities emerge as desirable from the literature. However, there are those who contest whether all these capabilities should be included in an education programme. De Wald & McCann (1999) argue that, to be realistic and effective, only a limited number of capabilities should be taught.

4.3 DOCUMENTARY EVIDENCE

4.3.1 The documentary evidence provides insights into current practice with regard to the development of normative capabilities.

4.3.2 The International Actuarial Association is in the early stages of developing international education standards (IAA, 2007). At present, a core pro-forma syllabus up to Associate level is being finalised. With regard to normative capabilities, this syllabus only includes a so-called ‘professionalism’ subject, which aims to develop awareness of the meaning of professionalism, the importance of professionalism in the work of an actuary and the professionalism issues that may arise in the course of that work.

4.3.3 The Society of Actuaries has a ‘Communication and Business Awareness’ course, which is one of the last components that a fellowship candidate will complete. The course covers the actuarial control cycle, business and communication skills and decision making. The Institute of Actuaries of Australia has an intensive 5-day residential ‘Commercial Actuarial Practice’ course, synthesising cognitive and normative elements.

4.3.4 The Actuarial Society of South Africa hosts localised versions of three of the courses of the F&IA which include some normative capabilities. These are Business Awareness, Model Documentation Analysis & Reporting, and Professionalism. Most South

African students first complete an actuarial degree at university. The universities offer varying quantities and qualities of normative capability education, such as parts of the ‘Introduction to Actuarial Science’ course and specific communication and business courses.

4.3.5 The F&IA requires a minimum period of work experience before qualification, during which specified normative capabilities are required to be developed in authentic contexts (F&IA, 2004). The international accounting profession has a similar requirement (IFAC, 2008) as do many other professions.

4.3.6 While it is clear from the above documentary evidence that normative capabilities are being developed in the actuarial profession world-wide, there is less evidence of a systematic mapping of capabilities to the goal of the education programme. This can be contrasted to the international accounting profession where there is a clear mapping from the stated goal of the education programme, through the different standards to specific capabilities (IFAC, 2008).

4.4 INTERVIEWS

4.4.1 The interviews revealed broad opinion from stakeholders regarding the normative capabilities essential for effective actuarial practice.

4.4.2 Life skills were raised as a topic for the curriculum in six of the fourteen interviews. Capabilities sought included time management, prioritizing, dealing with new situations, dealing with uncertainty, chairing a meeting, seeing the big picture, identifying essential issues, and applying quick reasonability checks. An academic reported that his undergraduate course specifically developed thinking skills, problem solving and judgment, while a student from a different university also believed that thinking skills were developed whilst undertaking difficult technical subjects. An employer in a large organisation pointed out that the company had its own development programme for some of these skills. This observation was echoed by an independent actuary who noted that the classroom can never prepare one fully for real life.

4.4.3 Interpersonal and communication capabilities were raised in eleven of the fourteen interviews. There was general agreement that the ‘quality actuary’ needed to be an effective communicator. This capability should include understanding the needs and context of the audience, and being intelligible to a non-technical listener. A client and an employer highlighted the need for actuaries to be able to argue a case, as well as to be able to concede in the face of convincing contra-evidence. Another client highlighted the need for actuaries to be able to express themselves simply, both in discussion and in writing, so as to avoid miscommunication and obfuscation. Academics at two of the institutions believed that the communication courses at their institutions were effective – although a recent graduate of one of the institutions called for more applied coursework.

4.4.4 Business management was raised as a necessary capability by six of the fourteen interviewees. One employer saw this capability as a speciality for only some actuaries. He felt therefore that this capability should not be part of the general training, and could be outsourced for those interested. Two academics at one university argued that the F&IA Business Awareness course was unnecessary for their students as that university already offers a high business science content.

4.4.5 The development of ethical capability was raised by ten of the fourteen

interviewees as important for quality actuarial practice. Two interviewees spoke of the difficulty of changing a behaviour such as being able to stand up to an employer. One interviewee suggested that there was only a limited set of ethical principles, and teaching a framework for ethical decision making would be the most practical way of developing capability. An academic with a special interest in ethics noted that the longer the exposure, the better, in that sensitivity and capability develop over time. Some academics indicated that they integrated ethics into other courses. A client called for teaching to discourage professional arrogance. The same client highlighted the need to teach actuaries to recognise and manage conflicts of interest.

4.5 EMPLOYMENT ADVERTISEMENTS

The employment advertisements indicated the normative capabilities expected by employers of ‘nearly or newly’ qualified actuaries. The sixteen advertisements called for specific skills at the frequency stated in Table 2.

TABLE 2		
Strand	Capability cluster	Frequency %
Cognitive	Technical	100
Normative	Life skills	75
	Interpersonal	62
	Communication	94
	Business management	19
Organisational	Ethical	0
	Professionalisation	0

From the table it is evident that employers privilege effective communication almost as much as technical capability. Life and interpersonal skills are also highly rated. Only a fifth of the employers required business management capability. It is noteworthy that no employers listed ethical capability as a pre-requisite for employment.

4.6 CONCLUSION

The literature supplied a list of capabilities that are necessary for the delivery of professional quality. It further suggested that these capabilities need to be mapped against the goals of a professional education programme. The evidence from the data indicated that a wide range of normative capabilities are sought by employers, recognised as important by stakeholders, and taught by professions internationally. However, these are not always neatly mapped to a mission statement.

5. THEME 3 – EFFECTIVE EDUCATION

5.1 In this theme, the literature and the empirical evidence are used to outline educational principles for achieving the goals of professional education.

5.2 LITERATURE REVIEW

5.2.1 This section outlines four issues that emerge from the literature:

- substantial bodies of knowledge exist regarding the education of professionals in specific normative capabilities
- this education should be collaborative, by actuaries and normative experts
- this education should take place throughout undergraduate and professional life

- properly conceptualised workplace learning is essential.

5.2.2 Substantial bodies of knowledge exist

In the literature of professional education of dentists, doctors and accountants, curriculum studies abound regarding the teaching of normative capabilities – for example, communication (Conn, 2008; Grant, 2004; Rynes et al, 2003; Wardrope, 2002; Munter, 1999), ethics (Sipe, 2007; IFAC, 2007; IFAC 2006; Mintz, 2006; Merino, 2006; Pagnattaro, 2005; Swanson, 2005; Jennings, 2004; Armstrong et al, 2003), business skills (Schmidt & Richter, 2006; Rynes et al, 2003;), thinking skills (Crittenden & Woodside, 2007), and life skills (Gerhardt, 2007; Rynes et al, 2003). In some cases, relevant Institutes have developed educational guidelines – such as the London-based Institute of Business Ethics. There is therefore no need for curriculum planners to start from scratch.

5.2.3 Normative education should be collaborative

The advantage of teaching each normative capability as an individual subject is that subject experts design and implement the programme (Grant, 2004; Wardrope, 1999). The assumption is that these teachers are best equipped to make decisions about what should be included in the curriculum and how it is best taught (Grant, 2004; Wardrope, 1999). The disadvantage of teaching each normative capability as an individual subject is that the capabilities are not integrated into the professional field in which they will be used (Barrows, 1998; Finucane et al, 1998; Townsend et al, 1997). Students often fail to see the point of such a subject as they do not understand the relevance of what they are learning, or how they are going to be able to apply the normative capability in their profession (Young, 1998). Similarly, there are advantages and disadvantages of using only an integrated approach to teaching normative capabilities. The advantages include being able to ‘practice’ normative capabilities in authentic technical application contexts (Townsend et al, 1998). However, there is critique that professionals are not experts in the fields of, for example, communication or ethics, and they are therefore not able adequately to teach or assess those capabilities in addition to technical capabilities (Merino, 2006; Grant, 2004; Munter, 1999). While a pragmatic approach might be to teach normative capabilities both in dedicated modules where the theoretical component of the normative skills can be taught, and in integrated contexts (Breier & Wildschut, 2006), the literature signals that ‘best practice’ would be collaborative teaching by actuaries and normative experts.

5.2.4 Normative education should occur throughout undergraduate and professional life

5.2.4.1 Many educators of professionals argue that learning is a lifelong activity, not something that is merely learnt at university and assessed through formal and professional examinations (Fraser et al, 2001; Aldred et al, 1998; Townsend et al, 1997). In that case, they argue, capabilities need to be initiated in the early years of professional education, and developed throughout the individual’s professional lifetime (Fraser et al, 2001). This implies three periods of development – undergraduate, working but not yet qualified, and post-qualification.

5.2.4.2 Furthermore, decisions about what to teach when are informed by assumptions about how people learn and how they apply what they have learnt in real contexts (Bertolami, 2004). Literature suggests that it is unreasonable to expect senior students in professional programmes to learn and appropriately apply normative capabilities in the workplace if the building blocks of these capabilities have not been developed from the very first encounter with the professional field (Bertolami, 2004; Townsend et al, 1997). This literature indicates that

components of all normative capabilities required by the graduate actuary should be taught from the first year as an undergraduate at university, and not left to the years immediately prior to Fellowship. This early introduction is of particular significance for novice actuarial students, who, unlike law or medical students, are likely to have only a vague understanding of what actuaries actually do in the workplace.

5.2.5 Properly conceptualised work-based learning is essential

5.2.5.1 The literature suggests that work-based experience provides the best context for learning and practicing normative capabilities (Burke, 2007; Billet, 2006; Felstead et al, 2005; Billet, 2004; Australian National Training Authority, 2003; Billet, 2001). The culture of organisations provides spontaneous contexts that develop communication, problem-solving, teamwork, information technology, ethical practice and entrepreneurial skills (Billet, 2006; Felstead et al, 2005; Australian National Training Authority, 2003).

5.2.5.2 However, spontaneous workplace learning has the potential, if not organised and adequately conceptualised, to be haphazard in terms of the capabilities that are mentored, practiced, and assessed (Billet, 2006; Felstead et al, 2005; Billet, 2004). Best practice for structured workplace learning would be a ‘capstone’ (Burns, 2006; Jervis & Hartley, 2005; Shepherd, 2005; Huber & Hutchings, 2004; Henscheid, 2000). A capstone course sets out to integrate prior learning in the field, and would provide actuarial students with opportunities to synthesise their technical and normative capabilities in the real context of the workplace environment.

5.2.5.3 While arguably best practice, the literature warns that both the use of workplace as a learning context (Billet, 2006; Felstead et al, 2005; Billet, 2004; Australian National Training Authority, 2003; Billet, 2001) and the capstone approach (Jervis & Hartley, 2005; Burns, 2006; Shepherd, 2005) are challenging to implement effectively. Quality workplace learning depends on a number of factors (Billet, 2006), including the availability of mentors to support students, the professional and technical calibre of the mentor, the willingness of the student to learn, support from management and appropriate learning challenges being available at the place of work. Thus, a capstone work-based learning programme synthesising normative and technical capabilities needs to be planned to ensure the best possible learning opportunities.

5.2.5.4 A team-approach to planning and implementing workplace learning is advocated (Burns, 2006; Jervis & Hartley, 2005; Shepherd, 2005). Expertise from the various subjects ensures that specific capabilities are developed and assessed, while the team-approach supports appropriate integration (Jervis & Hartley, 2005). The capabilities that the education programme should develop must be explicitly defined (Billet, 2006; DeWald & McCann, 1999). Activities need to be planned sequentially to practice and develop these capabilities (Billet, 2006; DeWald & McCann, 1999). Appropriate assessment activities need to be designed so as to evaluate the student’s capability (IFAC, 2004; Jervis & Hartley, 2005; Shepherd, 2005; DeWald & McCann, 1999). Billet (2006) emphasises further the importance of training the workplace mentors in appropriate teaching and assessment methodologies since they will be in daily contact with the capstone students.

5.3 DOCUMENTARY EVIDENCE

5.3.1 The documentary evidence provides insights into current practice in terms of the teaching of normative capabilities. The International Federation of Accountants has established guidelines for workplace learning, methodology for teaching and assessing ethics, and detailed procedures for assessment (IFAC, 2008, 2007, 2006). The Communications course for actuarial

students at the University of Cape Town explicitly integrates communicative capability into the business context (University of Cape Town, School of Management Studies Professional Communication Unit, 2007).

5.3.2 In the F&IA curriculum, some integration of normative and technical education is implicit in the Business Awareness, Model Documentation and Work-Based Skills courses (F&IA, 2007, 2008). The Work-Based Skills course includes detailed instructions to learners and mentors regarding the types of skill sets to practice and assess. However, no particular curriculum is prescribed. The Institute of Actuaries of Australia and the Society of Actuaries both require senior students to undertake a short capstone programme. However, no example of a workplace capstone module that requires full integration and assessment of all normative capabilities in a technical setting was evident.

5.3.3 Another aspect of effective education concerns the background of the teachers. The Actuarial Society currently requires the involvement of actuaries in the delivery of the normative courses that it offers on behalf of the F&IA.

5.4 INTERVIEWS

5.4.1 The interviews highlighted opinions regarding the teaching of normative capability, and came mainly from the academics. One interviewee noted the importance of quality of education, two highlighted the importance of quality of teachers, and the importance of appropriate teaching and assessment activities was mentioned by three.

5.4.2 Considering normative education, four interviewees advocated explicit teaching of normative capabilities, and one highlighted that normative education should influence behaviour. Two interviewees believed that, to succeed, normative capabilities should be taught both alone and integrated into practice. The early teaching of normative capabilities and the need for teachers of normative capabilities to have specific expertise was mentioned by two subjects.

5.4.3 Regarding workplace learning, the quality of workplace mentors was highlighted by two people, five made suggestions for integrating normative and technical capabilities and four mentioned the fact that normative and technical capabilities are only perfected in the workplace.

5.5 EMPLOYMENT ADVERTISEMENTS

While the employment advertisements had little to say about effective education, they revealed employers' assumptions about the capabilities of their prospective employees. The majority of advertisements targeted at nearly or newly qualified Fellows expected normative capabilities such as 'excellent interpersonal skills' and 'excellent communication skills, both written and verbal' already to be in place. This suggests that the basic capabilities need to be developed, contextualised, practiced and assessed in the early years, at university.

5.6 CONCLUSION

A survey of the literature indicates that teaching of normative capabilities might best be done collaboratively by actuaries and normative experts, take place throughout undergraduate and professional life, and be properly conceptualised in all periods. The documentary evidence shows some progress in actuarial education towards this goal. The suggestions from interviewees regarding effective education echoed best practice. The advertisements suggest that basic capabilities need to be developed, contextualised, practiced and assessed in the early

years, at university

6. IMPLICATIONS FOR SOUTH AFRICA, 2010

6.1 In order to become a Fellow member of the Actuarial Society, a candidate must have passed the examinations of the F&IA or similar examining actuarial society. The Actuarial Society already presents, on behalf of the F&IA, localised versions of their normative and organisational capability courses. However, the Actuarial Society is now preparing to offer its own actuarial education system from 2010. The ‘cornerstones’ of the proposed system are reported to be ‘maintaining high standards, international recognition, local relevance and accessibility’ (Actuarial Society, 2007). An ‘Education and CPD Board’ has already begun to plan the technical and normative curricula. In order for the normative capability education to be presented in a scientifically sound manner, the research reported in this paper was commissioned. This research delineates ‘best practice’ in curriculum planning for the normative component of the new South African actuarial qualification.

6.2 Section 3 above motivates that the intended purpose of professional education is to prepare the professional to deliver a service of quality, and, in order to do this, both technical and normative capabilities need to be developed. Therefore, while the cornerstones of ‘maintaining high standards, international recognition, local relevance and accessibility’ (Actuarial Society, 2007) remain necessary, they are not sufficient. Ensuring quality service through effective technical and normative education is paramount.

6.3 A sub-committee to govern the provision of normative capabilities should be formed. This sub-committee would, in effect, be the Board of Directors of a College of Professional Education, and should think of itself as such. This sub-committee should be given a mandate to plan and deliver effective normative education, rather than merely delivering a selection of courses. The membership of the committee should accordingly include experienced educationalists, and stakeholders of actuarial quality such as clients, employers and actuarial academics. Amalgamation of the sub-committee with the Actuarial Society’s existing CPD sub-committee could also be considered. This would ensure a single vision for lifelong normative education.

6.4 Taking expert advice as required, and consulting stakeholders, the sub-committee will need to confirm which of the normative capabilities it wishes to include in its education programme. These capabilities should then be mapped to particular courses. In this process attention should be given to the principles of effective education outlined in Section 5 above:

- Normative education is best taught collaboratively by actuaries and normative experts
- Normative education should occur throughout undergraduate and professional life
- Properly conceptualised work-based learning is essential.

6.5 These principles imply a change from current practice. Firstly, normative capabilities should be taught collaboratively. Secondly, normative capabilities need to be developed from the first year as an undergraduate. These changes will have a number of implications:

- The normative education sub-committee and the technical curriculum sub-committee will jointly need to plan for the integration of normative capabilities into technical subjects.
- Where this is not already done, universities will need to plan for collaborative teaching by actuaries and normative experts, including the sequential integration of

normative capabilities into the technical subjects that are taught at undergraduate level.

- Since the universities will need to teach the basic normative capabilities, it will no longer be necessary for the Actuarial Society to offer such courses as ‘Communication’ and ‘Business Awareness’ in their current form.

6.6 Drawing on the literature and empirical evidence, the researchers recommend that the Actuarial Society offer a work-based capstone course. This course would integrate what is currently known as Work Based Skills with aspects of the current Communication, Model Documentation and Professionalism courses. A cohort approach, lasting for a period of six to eighteen months, is suggested. During this period, senior students would engage in structured classroom and online seminars, individual research, and work-based activities, all designed pedagogically to achieve the technical, normative and organisational outcomes. The candidates’ performance should be assessed in a variety of authentic contexts. The Institute of Actuaries of Australia and the Society of Actuaries already offer courses which have features of a capstone approach.

6.7 It is envisaged that all senior students participate in the capstone programme, whether they intend to complete Associateship or Fellowship¹. At the recent IAA meetings in Quebec, it was envisaged that Associate membership might become the standard for ‘general practitioner’ actuaries in the future, with only some Associates going on to become ‘specialists’. It is clear from this conception of an Associate, that a full range of quality delivery capabilities is expected on qualification as an Associate. A further capstone appropriate for the additional service responsibilities should be required of Fellowship candidates.

6.8 It is acknowledged that many practical issues will need to be addressed. These include

- transition arrangements from the old to new curriculum
- access for students not following a university course
- access for students out of the metropolitan areas
- paid and volunteer human resources in the profession
- human resources and organisational issues at the universities
- budget (which includes income from courses as well as expenditure)
- development of educational competence in, and quality assurance of, actuarial educators.

7. CONCLUSION

The paper has drawn on literature and empirical evidence to argue that best practice in actuarial education will prepare the professional to deliver a service of quality. Both technical and a wide range of normative capabilities need to be developed. This framework has been used to make recommendations for the new South African actuarial qualification. It is acknowledged that there are serious challenges to implementing the proposal. However, the literature indicates that effective education has the potential to support actuaries in the delivery of quality service, thus restoring trust in the profession.

¹ There has been a recent development in the membership structure of the Actuarial Society (mirroring a similar development in the UK, Australia and elsewhere). This is the promotion of Associate membership (with the title ‘actuary’) after completion of all but the specialist examinations.

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REFERENCES

- Aldred, S. E., Aldred, M. J., Walsh, L. J. & Dick, B. (1998). Implementing problem-based learning into professional and dental education, *Journal of Dental Education* **62**(9) 644–649
- Armstrong, M. B., Ketz, J. E. & Owsen, D. (2003). Ethics education in accounting: moving toward ethical motivation and ethical behaviour, *Journal of Accounting Education* **21** 1–16
- Actuarial Society. (2007). *University accreditation policy of the Actuarial Society of South Africa*. Unpublished: ECPD Board
- Australian National Training Authority. (2003). *What makes for good workplace learning*. Adelaide: National Centre for Vocational Education Research Ltd. Available <http://www.ncver.edu.au/research/core/cp0207.pdf>
- Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: a case of the tail wagging the dog?, *British Medical Journal* **322** 1115–1117
- Barrows, H. S. (1998). The essentials of problem-based learning, *Journal of Dental Education* **62**(9) 630–633
- Bellis, C. & Felipe, M. A. (2002). *Actuarial education in 2002 and beyond: a global perspective*. Presentation delivered at the 27th ICA Conference, Cancun. Available actuaries.org/EVENTS/congresses/Cancun/ica2002_author/c/clare_bellis.htm
- Bellis, C. (2000) Professions in society, *BAJ* **6**(2) 317–364
- Bertolami, C. N. (2004). Why our ethics curricula don't work, *Journal of Dental Education* **68**(4) 414–425
- Billet, S. (2006). Constituting the workplace curriculum, *Journal of Curriculum Studies* **38**(1) 31–48
- Billet, S. (2004). Workplace participatory practices. Conceptualising workplaces as learning environments, *Journal of Workplace Learning* **16**(6) 312–324
- Billet, S. (2001). *A critique of workplace learning discourses: Participation in and continuity of practice*. Paper presented at 9th Annual International Conference on Post-compulsory Education and Training. Surfers Paradise Park Royal, Queensland, Australia, 3 – 5 December
- Breier, M. & Wildschut, A. (2006). *Doctors in a divided society. The profession and education of medical practitioners in South Africa*. Cape Town: HSRC
- Burke, D. D. (2007). Service learning: Opportunities for legal studies in business, *Journal of Legal Studies Education* **24**(2) 129–163
- Burns, C. S. (2006) The evolution of a graduate capstone accounting course, *Journal of Accounting Education* **24** 118–133
- Conn, C. E. (2008). Integrating writing skills and ethics training in business communication pedagogy: A resume case study exemplar, *Business Communication Quarterly* **7**(2) 138–151

- Crittenden, V. & Woodside, A. G. (2007). Building skills in thinking: toward a pedagogy in metathinking, *Journal of Education for Business* **83**(1) 37–43
- DeWald, J. P. & McCann, A. L. (1999). Developing a competency-based curriculum for a dental hygiene programme, *Journal of Dental Education* **63**(11) 793–804
- Dumbreck, N. J. (2006). *Raising our game*. Address by the President of the Institute of Actuaries to the Institute of Actuaries, 25 September
- F&IA. (2008). *Actuarial education: work-based skills*. Available http://www.actuaries.org.uk/display_Page.cgi?url+/students/wbs.html
- F&IA. (2007). *Subject CT 9: Business Awareness Module. Syllabus for the 2007/ 2008 Examinations*.
- F&IA. (2004). *Work-based skills: Student document*. Available http://www.actuaries.org.uk/data/assets/pdf_file/0010/27874/wbs_student.pdf
- F&IA. (2000). *Vision and values of the actuarial profession*.
- Felstead, A., Fuller, A., Unwin, L. Ashton, D., Butler, P. & Lee, T. (2005). Surveying the scene: Learning metaphors, survey design and the workplace context, *Journal of Education and Work* **18**(4)359–383
- Finucane, P. M., Johnson, S. M. & Prideaux, D. J. (1998). Problem-based learning: its rationale and efficacy, *Medical Journal of Australia* **168** 445–448
- FRC. (2008). *Discussion paper – Promoting actuarial quality*. Available www.frc.org.uk
- Fraser, S. W. & Greenhalgh, T. (2001). Complexity science. Coping with complexity: educating for capability, *BMJ* **323** 799–803
- Gerhardt, M. (2007). Teaching self-management: The design and implementation of self-management tutorials, *Journal of Education for Business* **83**(1) 11–17
- Giacomini, M. K. & Cook, D. J. (2000). Users' guides to the medical literature. XXIII. Qualitative research in health care. A. Are the results of the study valid?, *Journal of the American Medical Association* **284**(3) 357–362
- Goford, J. (2003). Address by the President of the Institute of Actuaries: Thinking and behaviour, *BAJ* **9**(1) 1–33
- Goford, J., Bellis, C. S., Bykerk, C. D., Carne, S. A., Creedon, S., Daykin, C. D., Dumbreck, N. J., Ferguson, D. G. R., Goodwin, E.M., Grace, P. H., Henderson, N. S. & Thornton, P. N. (2001). Principles of the future education strategy, *BAJ* **II** 221–273
- Goodwin, E. (2007). *Actuarial Society of South Africa education project: report following visit, October 30 – November 5*. F&IA: Internal report
- Grant, T. (2004). Assessing and teaching capability, *Business Communication Quarterly* **67**(4) 412–429
- Gribble, J. D. (2003). *Actuarial practice and control: Objectives and capabilities. Research Paper Number 105*. University of Melbourne: Centre for Actuarial Studies
- Hannah, A., Millichamp, C. J., & Ayers, K. M. S. (2004). A communication skills course for undergraduate dental students, *Journal of Dental Education* **68**(9) 970–977
- Henscheid, J. M. (2000). *Professing the disciplines: An analysis of senior seminars and capstone courses*. Monograph No. 30. Columbia, SC: University of South Carolina
- Huber, M. T. & Hutchings, P. (2004). *Integrative learning: Mapping the terrain*. Washington: Association of American Colleges and Universities and the Carnegie Foundation for the Advancement of Teaching
- IAA (2007). *International Actuarial Association - Subtopics to support education syllabus*. Working document: IAA Education Committee
- IFAC. (2008). *International Education Standards 1 – 8*. International Education Standards Board. Available www.ifac.org/Members/Downloads/International_Education_Standards_1-8.pdf

- IFAC. (2007)). *International Education Practice Statement 1: Approaches to developing and maintaining professional values, ethics and attitudes*. International Education Standards Board. Available www.ifac.org
- IFAC. (2006). *Approaches to the development and maintenance of professional values, ethics and attitudes in accounting education programmes*. International Education Standards Board. Available www.ifac.org
- IFAC. (2004). *International Education Paper for Professional Accountants: Assessment Methods*. International Education Committee. Available www.ifac.org
- Jennings, M. M. (2004). Incorporating ethics and professionalism in accounting education and research: A discussion of the voids and advocacy for training in seminal works in business ethics, *Issues in Accounting Education* **19**(1) 7–26
- Jervis, K. J. & Hartley, C. A. (2005). Learning to design and teach an accounting capstone, *Issues in Accounting Education* **20**(4) 311–339
- Lester, G. W. & Smith, S. G. (1993). Listening and talking to patients. A remedy for malpractice suits?, *Western Journal of Medicine* **158**(3) 268–272
- Levinson, W., Roter, D. L., Mullooly, J. P., Dull, V. T. & Frankel, R. M. (1997) Physician-patient communication. The relationship with malpractice claims among primary care physicians and surgeons, *The Journal of the American Medical Association* **277**(7)
- Lyn, C. D., Palandra, M. T. & Daykin, C. D. (2002). *Actuarial education: The business element*. Presentation delivered at the 27th ICA Conference, Cancun
- Lowther, M. & McMillan, W. (2006). Planning lifelong professionalisation learning for actuaries, *South African Actuarial Journal* **6** 1–18
- Mellor, A. C. & Milgrom, P. (1996). Dentists' attitudes toward frustrating patient visits: relationship to satisfaction and malpractice complaints, *Journal of Public Health Dentistry* **56** 6–11
- Merino, B. D. (2006). Financial Scandals: Another clarion call for educational reform – A historical perspective, *Issues in Accounting Education* **21**(4) 363–381
- Morris, D.(2005). *Final report on the Actuarial Profession*. HMSO
- Mintz, S. M. (2006). Accounting ethics education: Integrating reflective learning and virtue ethics, *Journal of Accounting Education* **24** 97–117
- Munter, M. (1999). Whacking WAC, *Business Communication Quarterly* **62**(1) 108–111
- O'Neill, O. (2002). *A question of trust: BBC Reith Lectures*. Cambridge University Press: Cambridge
- Pagnattaro, M. A. (2005). International legal and ethical considerations at Pfizer, Inc., *The Journal of Legal Studies Education* **22**(2) 169–197
- Phantumvanit, P. (1996). Dental curriculum development in developing countries, *Journal of Dental Education* **60**(9) 783–786
- Rynes, S., Quinn Trank, C., Lawson, A. M. & Ilies, R. (2003). Behavioural coursework in business education: Growing evidence of a legitimacy crisis, *Academy of Management Learning and Education* **2**(3) 269–283
- Schmidt, S. L. & Richter, A. (2006). Course formats for teaching management consulting, *Journal of Education for Business* **82**(1) 56–62
- Sen, A. (1999). *Development as freedom*. Oxford: Oxford University Press
- Shepherd, J. (2007a). Knowledge or skills ... or both?, *Actuary Australia*, March:18 - 19
- Shepherd, J. (2007b). *What actuaries need to do: Developing the capabilities*. Presentation delivered at 'Adventures in Risk' Conference of Institute of Actuaries of Australia, Christchurch, New Zealand, 23 – 26 September

- Shepherd, J. (2005). *Hurdling or learning? An evaluation of the Australian actuarial qualification process*. Presented at the Institute of Actuaries of Australia, 2005 Biennial Convention, 8 – 11 May
- Sipe, S. R. (2007). Maximising student learning through Enron: The ultimate B-Law case study, *Journal of Legal Studies Education* **24**(2) 325–337
- Stewart, M. A. (1995). Effective physician-patient communication and health outcomes: a review, *Canadian Medical Association Journal* **152**(9) 1423–1433
- Swanson, D. L. (2005). Business ethics education at bay: Addressing a crisis of legitimacy, *Issues in Accounting Education* **20**(3) 247–253
- Townsend, G. C., Winning, T. A., Wetherell, J. D. & Mullins, G. A. (1997) New PBL dental curriculum at the University of Adelaide, *Journal of Dental Education* **61**(4) 374–387
- University of Cape Town, School of Management Studies Professional Communication Unit (2007). *Study Guide: BUS1034S – Professional Communication for Actuarial Science Honours*
- Waddock, S. (2005). Hollow men and women at the helm. Hollow accounting ethics, *Issues in Accounting Education* **20**(2) 145–150
- Wardrope, W. J. (2002). Department chairs' perceptions of the importance of business communication skills, *Business Communication Quarterly* **65**(4) 60–72
- Walker, M. (2006). Towards a capability-based theory of social justice for education policy-making, *Journal of Education Policy* **21**(2) 163–185
- Young, N. A. (1998). Problem-based learning: using cases to drive the learning process, *Journal of Dental Education* **62**(3) 235–241