

EDUCATION FOR ACTUARIAL QUALITY MUST DEVELOP MORE THAN TECHNICAL COMPETENCE

By MW Lowther, WJ McMillan and F Venter

ABSTRACT

This paper is located in the field of actuarial professional education. It draws on current literature and empirical evidence to argue the need for developing generic ‘normative’ capabilities and values 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 and values 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 were collected from three sources: interviews with stakeholders; documentary evidence regarding current education of actuaries and accountants; and advertisements for employment of newly 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, attention must be given to technical, normative and organisational learning. The paper then reviews normative capabilities and values for actuaries. Thereafter, educational considerations for the development of normative capabilities and values 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 education; 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 argue the need for the development of generic cross-field capabilities and values in the actuarial profession. These capabilities and values are referred to as ‘normative’ in this paper.

1.2 The term ‘normative’ is used by Lowther & McMillan (2006) in grouping the various aspects of professional practice into cognitive, normative and organisational strands. This understanding is derived from Bellis (2000) and has been used by the Actuarial Society of South Africa (‘Actuarial Society’) to sub-divide its Continuing Professional Development requirements¹ In these requirements, the normative strand is described as the manner in which each actuary undertakes to deliver the technical skills. Other writers variously refer to these as ‘professional’, ‘professionalism’, ‘delivery’, ‘generic’ or ‘soft’ skills.

1.3 The term ‘capability’ has been chosen because, unlike ‘skills’, ‘competences’ or ‘attributes’, it highlights the qualities of growth and progression, which are at the heart of education. Walker (2006) and Sen (1999) use the term ‘capability’ to explain human development, highlighting what education enables people to do and to be.

1.4 The term ‘values’ has been used, noting the distinction drawn by Lowther & McMillan (op. cit.) between conduct and values—that values apply in the grey areas where required conduct has not been adequately defined.

1.5 It has been suggested that the term ‘normative’ should be limited to the classification of values (such as commitment to integrity) and exclude capabilities (such as ability to negotiate). This suggestion resonates with definitions of normative theory (e.g. Thomson, 2003). However, while noting the merits of the suggestion, the authors prefer not to create a fourth category of aspects of professional practice, both for simplicity and because this research is intended to contribute to the education of actuaries in South Africa, where the three-category classification has been adopted by the Actuarial Society.

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

- the Actuarial Society intends to offer its own qualification from 2010;
- 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,

1 Continuing Professional Development Requirements of the Actuarial Society of South Africa, Actuarial Society, 2007, unpublished

transparency, accountability and trustworthiness in professions (O'Neill, 2002; Goford, 2003).

Regarding the first point, the education programme for the Actuarial Society's qualification will need to be relevant for the South African context, while at the same time be acceptable internationally. Regarding the last point, Morris (2005) has highlighted the issue for the actuarial profession; literature indicates that improvement in the quality of members' normative capabilities has a direct relationship to the promotion of trust in a profession (Financial Reporting Council (FRC), unpublished; Hannah et al., 2004; Levinson et al., 1997; Mellor & Milgrom, 1996; Stewart, 1995; Lester & Smith, 1993).

1.7 The paper examines three themes of normative education for actuaries: the intended purpose of an education programme, the range of capabilities and values 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 were 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 request; and
- recent advertisements for the employment of nearly or newly qualified actuaries were obtained from the Actuarial Society.

1.8 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, attention must be given to technical, normative and organisational learning. The paper then reviews normative capabilities and values for actuaries. Thereafter, educational considerations for the development of 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. Detailed curriculum planning is beyond the scope of this paper.

2. METHODOLOGY

In this section, the methodology of the research is described. For ease of understanding, the numbering system in sections 3, 4 and 5 mirrors the numbering of this section.

2.1 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. (It is noteworthy that, internationally, no journal of actuarial education appears to exist, whereas the researchers identified at least five journals in each of engineering, accounting, medical and nursing education. Is this an indication that actuarial education is under-theorised?) Three sets of data were then collected and analysed in the light of the themes of best practice that emerged from the literature.

2.2 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 education, both in the actuarial profession locally and internationally, and with regard to other professions.

2.3 INTERVIEWS

The second data-set consisted of fourteen semi-structured interviews carried out in South Africa and the United Kingdom 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 and values necessary for effective actuarial practice.

2.4 EMPLOYMENT ADVERTISEMENTS

The third data-set comprised 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 the normative capabilities and values that employers state they seek in nearly or newly qualified actuaries.

3. **THEME 1: THE PURPOSE OF PROFESSIONAL EDUCATION**

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

3.1 LITERATURE REVIEW

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

3.1.2 Although the groundbreaking study of Bell et al. (1998) outlined the

general principles of actuarial science, no mention was made of the contribution that normative capabilities and values might make to the delivery of a service of quality. However, ten years later, and after the report of Morris (2005), the FRC (op. cit.), whilst defining actuarial practice as a professional discipline around the development, use and interpretation of models, identifies communication and ethics as key ‘drivers’ of actuarial service of quality. The FRC emphasises the importance of education in the development of these drivers or capabilities and values.

3.1.3 Goford et al. (2001) define the goal of an actuarial education programme as being ‘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 and values that were envisaged by the Faculty and Institute of Actuaries (F&IA) in a Vision and Values statement (F&IA, unpublished d). This position echoes that of Dewey (1916)—as reported in Merino (2006)—that education through occupation must acknowledge the full intellectual and social meaning of the vocation, requiring instruction in the history and social obligations of a discipline, as well as training in science, economics, civics and politics. Merino sees technical learning without ethical constraints as a threat to society.

3.1.4 Dumbreck (unpublished), Shepherd (unpublished b) and Bellis & Felipe (unpublished) hold similar positions with regard to professional education, emphasising the need to develop both technical and normative capabilities and values. Lowther & McMillan (op. cit.) argue that a curriculum for professional education should develop all the capabilities and values that are required to fulfil the commitments that a profession chooses to offer the public.

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

3.1.6 The call for the development of normative capabilities and values 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. (op. cit.), concerns were raised about the broadening of actuarial education to include additional normative capabilities such as business skills and communication. Professor A.D. Wilkie called for an increase in the depth, rather than breadth, of education. Professor H.R. Waters noted the main threat to the profession was lack of technical capability. Professor D.C.M. Dickson warned that a reduction in technical content would reduce the profession to a business consultancy role.

3.1.7 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 and values could be developed later, in the workplace.

3.1.8 Lyn et al. (unpublished) suggest a resolution of the apparent tension

between technical and normative learning. 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 and the development of values.

3.2 DOCUMENTARY EVIDENCE

3.2.1 The documentary evidence provides insights into current assumptions regarding the purpose of professional education. The actuarial education systems for Australia, the UK, India, the 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, unpublished a) 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.

3.2.2 The International Actuarial Association (IAA) recently approved an international education syllabus up to associate level as a guideline to the many national actuarial associations worldwide (IAA, unpublished). 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 that offer more normative education locally, there is clearly a debate as to whether normative education should be a requirement in all countries. This could be driven by differing national conceptions of a profession (Bellis, *op. cit.*) or by the perceived need for newly formed professions in developing countries to concentrate on creating technical expertise (Phantumvanit, 1996). Bellis & Felipe (*op. cit.*) warn that the prescription of a global curriculum has the danger of ignoring local needs and attitudes.

3.3 INTERVIEWS

3.3.1 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 being to develop 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 the development of normative capabilities and values was essential before entering the workplace.

3.3.2 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.

3.4 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.

3.5 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, attention must be given to technical and normative learning. 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 and values should take in a professional’s lifelong learning career, and whether less normative education is required in developing countries or those with a high degree of regulation.

4. THEME 2: THE RANGE OF CAPABILITIES AND VALUES

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

4.1 LITERATURE REVIEW

4.1.1 This section records all the normative capabilities and values outlined in the literature. In their exposition of the concept of professionalisation, Lowther & McMillan (op. cit.) point out that a national actuarial association will, implicitly or explicitly, choose a subset of these capabilities and values to offer to their public.

4.1.2 Lowther & McMillan (op. cit.) provide a useful framework for clustering the various capabilities and values required for the delivery of professional service. Drawing on Bellis (op. cit.), 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; and
- 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 actuarial service of quality, Lowther & McMillan (op. cit.) argue that the strands should provide structure to the professional education programme.

4.1.3 Lowther & McMillan (op. cit.) distinguish between capabilities and values. They describe a code of conduct as a list of specific behaviours that can be identified and must be exhibited (for example, the Highway Code). On the other hand, ethics is seen as a set of values practised by an organisation, which should meet the expectations of stakeholders. Ethics apply in the grey areas where right and wrong are debatable—that is, where required conduct has not been adequately defined.

4.1.4 Certain normative aspects are clearly capabilities (for example, the ability to negotiate) and others are clearly values (for example, a commitment to

integrity). Other aspects may lie somewhere on a continuum between capability and values—or each aspect could be thought of as being part capability and part value (for example, the ability to maintain confidentiality and a commitment to maintain confidentiality). It is important for educators to explore these two facets of normative aspects, but it is beyond the scope of this paper to delineate the exact boundary or interface between them.

4.1.5 For the normative strand, a variety of capabilities and values emerge from the literature. Table 1 summarises these. For completeness, technical and organisational capabilities and values have also been included in that table. The table suggests clusters of related capabilities and values so as to facilitate curriculum planning.

Table 1: Capabilities and values emerging from the literature²

Strand	Cluster	Capability or Value
Cognitive	Technical	– ability in pre-actuarial numeracy (mathematics, statistics, economics, etc), actuarial topics, information technology, regulatory environment, technical judgment
Normative	Life skills	– ability to organise, analyse, identify, solve, self-manage, initiate, anticipate, adapt, decide, see the big picture, research; be flexible, critical, creative, rigorous, strategic – commitment to lifelong learning, engagement with diversity and national context
	Interpersonal and communication	– ability to resolve conflict, negotiate, present and defend, listen, write, make useful decisions, peer-review, work in a team – commitment to advise without deciding, disclose uncertainties; be transparent, reliable
	Business management	– ability to delegate, motivate, lead, manage people; strategic planning, entrepreneurship, vision, business acumen
	Ethical and professional	– ability to avoid conflicts of interest, comply with legal requirements, comply with professional guidance – commitment to integrity, objectivity, confidentiality, due care, independence, accountability, public interest, social responsibility, ethical business, whistle-blowing, courage, ethical judgment, scepticism, reflective practice
Organisational	Professionalisation	– ability to know and contribute to the structures of the profession – commitment to reflection on the profession

2 IFAC, unpublished a; Goodwin, unpublished; Shepherd, 2007; Shepherd, unpublished a; Lowther & McMillan, 2006; Thomson, 2006; F&IA, unpublished c; Gribble, unpublished; Asher, 2002; Lyn et al., op. cit.; Pemberton, 1999; Asher, 1998

4.1.6 As is evident from the table, a considerable number of capabilities and values emerge from the literature as desirable. However, there are those who contest whether all these capabilities should be included in an education programme. DeWald & McCann (1999) argue that, to be realistic and effective, only a limited number of capabilities should be taught or values developed. It is self-evident that certain normative elements will be of greater or lesser importance depending on the role of the actuary. However, it should be possible to identify a minimum set common to all roles.

4.2 DOCUMENTARY EVIDENCE

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

4.2.2 As mentioned in ¶3.2.2, the IAA is in the early stages of developing international education standards. At present, a core pro-forma syllabus up to associate level is being finalised. With regard to normative capabilities and values, 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.

4.2.3 The Society of Actuaries has a ‘decision-making and communication’ course, which is one of the last components that a fellowship candidate will complete. The module begins with a review of the actuarial control cycle, and then covers business and communication skills and decision-making. The Institute of Actuaries of Australia has an intensive five-day residential ‘commercial actuarial practice’ course, synthesising cognitive and normative elements.

4.2.4 The Actuarial Society of South Africa hosts localised versions of three of the courses of the F&IA which include some normative capabilities and values. These are business awareness, model documentation analysis and 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’ courses and specific communication and business courses.

4.2.5 The F&IA requires a minimum period of work experience before qualification, during which it is required that specified normative capabilities and values are developed in authentic contexts (F&IA, unpublished c). The international accounting profession has a similar requirement (IFAC, unpublished a) as do many other professions.

4.2.6 The University of Waterloo in Canada offers undergraduate actuarial students ‘co-operative education’ (University of Waterloo, unpublished). Co-operative learners intersperse four months of lectures with four-month work terms. During these work terms, students undertake a variety of job responsibilities and are expected to develop new work-related skills. During the work terms, students complete a series of professional development courses in areas such as project management, critical analysis, problem solving, conflict resolution and communications, using everyday situations from the work environment.

4.2.7 Whilst it is clear from the above documentary evidence that normative

capabilities and values are being developed in the actuarial profession world-wide, there is less evidence of a systematic mapping of capabilities and values 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, unpublished a).

4.3 INTERVIEWS

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

4.3.2 Life skills were raised as a topic for the curriculum in six of the fourteen interviews. Capabilities sought included time management, prioritising, 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 judgement, 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.

4.3.3 Interpersonal and communication capabilities were raised as important 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 counter-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.

4.3.4 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.

4.3.5 The development of ethical values and professional conduct was raised by ten of the fourteen interviewees as important for actuarial practice of quality. 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 the teaching of a framework for ethical decision-making would be a practical solution. An academic with a special interest in ethics noted that the longer the exposure, the better, in that sensitivity develops 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.

4.4 EMPLOYMENT ADVERTISEMENTS

4.4.1 The employment advertisements elicited the normative capabilities that employers of ‘nearly or newly’ qualified actuaries state they seek. The sixteen advertisements called for specific skills at the frequencies stated in Table 2.

Table 2: Frequency of calls for specific skills in employment advertisements

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

4.4.2 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 values as a pre-requisite for employment—perhaps this was taken for granted, or is an example of the greater contestation in practice of ‘values’ as opposed to ‘capabilities’.

4.5 CONCLUSION

The literature supplied a list of capabilities and values that could contribute to the delivery of professional quality. In the professionalisation process, a national actuarial association may choose to offer a subset of these capabilities and values to their public. The literature further suggested that these capabilities and values 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 and values 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

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

5.1 LITERATURE REVIEW

This section outlines four issues that emerge from the literature:

- Substantial bodies of knowledge exist regarding the education of professionals in specific normative capabilities and values.
- This education should be undertaken collaboratively by actuaries and normative experts.
- This education should take place throughout undergraduate and professional life.
- Properly conceptualised workplace learning is essential.

5.1.1 SUBSTANTIAL BODIES OF KNOWLEDGE EXIST

5.1.1.1 In the literature of professional education of dentists, doctors and accountants, curriculum studies abound regarding the teaching of normative capabilities and values—for example, communication (Conn, 2008; Grant, 2004; Rynes et al., 2003; Wardrope, 2002; Munter, 1999), ethics (Sipe, 2007; IFAC unpublished b, c; Mintz, 2006; Merino, 2006; Pagnattaro, 2005; Swanson, 2005; Jennings, 2004; Armstrong et al., 2003; Kohlberg, 1981), business skills (Schmidt & Richter, 2006; Rynes et al., 2003;), thinking skills (Crittenden & Woodside, 2007), and life skills (Gerhardt, 2007; Rynes et al., 2003). There is therefore no need for curriculum planners to start from scratch.

5.1.1.2 In particular, the substantial IFAC (unpublished c) project on ethics education illustrates the contested nature of values as opposed to capabilities, and the more dialectic educational methods that might be used. The London-based Institute of Business Ethics has also developed education guidelines for ethics in business.

5.1.2 NORMATIVE EDUCATION SHOULD BE UNDERTAKEN COLLABORATIVELY

The advantage of teaching each normative capability and value as an individual subject is that subject experts design and implement the programme (Grant, op. cit.; Wardrope, 2002). 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 (ibid.). The disadvantage of teaching each normative capability and value as an individual subject is that the capabilities and values 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 learning in their profession (Young, 1998). Similarly, there are advantages and disadvantages in using only an integrated approach to the teaching of normative capabilities and values. The advantages include being able to ‘practise’ normative capabilities in authentic technical application contexts (Townsend et al., op. cit.). 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 and values in addition to technical capabilities (Merino, 2006; Grant, op. cit.; Munter, 1999). While a pragmatic approach might be to provide normative education both in dedicated modules where the theoretical component of the normative capabilities and values 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.

5.1.3 NORMATIVE EDUCATION SHOULD OCCUR THROUGHOUT UNDERGRADUATE AND PROFESSIONAL LIFE

5.1.3.1 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 & Greenhalg, 2001; Aldred et al., 1998; Townsend et al., *op. cit.*). In that case, they argue, normative capabilities and values need to be initiated in the early years of professional education, and developed throughout the individual's professional lifetime (Fraser & Greenhalg, *op. cit.*). This implies three periods of development: undergraduate, working but not yet qualified, and post-qualification.

5.1.3.2 Furthermore, decisions about what to teach and 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 and values in the workplace if the building blocks of these capabilities have not been developed from the very first encounter with the professional field (Bertolami, *op. cit.*; Townsend et al., *op. cit.*). This literature indicates that components of all normative capabilities and values 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.

5.1.4 PROPERLY CONCEPTUALISED WORK-BASED LEARNING IS ESSENTIAL

5.1.4.1 The literature suggests that work-based experience provides a significant context for the learning and practice of normative capabilities and values (Burke, 2007; Billet, 2006; Felstead et al., 2005; Billet, 2004; Australian National Training Authority, unpublished; Billet, unpublished). 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., *op. cit.*; Australian National Training Authority, *op. cit.*).

5.1.4.2 However, spontaneous workplace learning has the potential, if not organised and adequately conceptualised, to be haphazard in comparison with development that is mentored, practised, and assessed (Billet, 2006; Felstead et al., *op. cit.*; Billet, 2004). Best practice for structured workplace learning would be a 'capstone' (Burns, 2006; Jervis & Hartley, 2005; Shepherd, unpublished b; Huber & Hutchings, 2004; Henscheid, unpublished). 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 and values in the real context of the workplace environment.

5.1.4.3 While arguably best practice, the literature warns that both the use of

workplace as a learning context (Billet, 2006; Felstead et al., op. cit.; Billet, 2004; Australian National Training Authority, op. cit.; Billet, unpublished) and the capstone approach (Jervis & Hartley, op. cit.; Burns, op. cit.; Shepherd, unpublished b) are challenging to implement effectively. Workplace learning of quality depends on a number of factors (Billet, 2006), including the availability of mentors to support students, the professional and technical calibre of the mentors, the willingness of the students to learn, support from management and the availability of appropriate learning challenges at places of work. Thus, a capstone work-based learning programme synthesising normative and technical education needs to be planned to ensure the best possible learning opportunities.

5.1.4.4 A team approach to the planning and implementation of workplace learning is advocated (Burns, op. cit.; Jervis & Hartley, op. cit.; Shepherd, unpublished b). Expertise from the various subjects ensures that specific capabilities and values are developed and assessed, while the team approach supports appropriate integration (Jervis & Hartley, op. cit.). The capabilities and values that the education programme should develop must be explicitly defined (Billet, 2006; DeWald & McCann, 1999). Activities need to be planned sequentially to practise and develop these capabilities (Billet, 2006; DeWald & McCann, op. cit.). Appropriate assessment activities need to be designed so as to evaluate the student's competence (IFAC, unpublished d; Jervis & Hartley, op. cit.; Shepherd, unpublished b; DeWald & McCann, op. cit.). 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.

5.2 DOCUMENTARY EVIDENCE

5.2.1 The documentary evidence provides insights into current practice of the teaching of normative capabilities. The International Federation of Accountants has established guidelines for workplace learning, methodology for the teaching and assessment of ethics, and detailed procedures for assessment (IFAC, unpublished a, b, c). The communications course for actuarial students at the University of Cape Town explicitly integrates communicative capability into the business context (University of Cape Town, unpublished).

5.2.2 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, unpublished a, b). The work-based skills course includes detailed instructions to learners and mentors regarding the types of skill sets to practise 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 and values in a technical setting was evident.

5.2.3 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.

5.3 INTERVIEWS

5.3.1 The interviews highlighted opinions regarding normative education, 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.

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

5.3.3 With regard to workplace learning, the quality of workplace mentors was highlighted by two people, five made suggestions for integrating normative and technical education and four mentioned the fact that normative and technical competence is perfected only in the workplace.

5.4 EMPLOYMENT ADVERTISEMENTS

While the employment advertisements had little to say about effective education, they revealed employers' assumptions about the capabilities and values of their prospective employees. The majority of advertisements directed 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, practised and assessed in the early years, at university.

5.5 CONCLUSION

A survey of the literature indicates that teaching of normative capabilities and values 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 and values need to be developed, contextualised, practised 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 education 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’.³ An Education and CPD Board has already begun to plan the technical and normative curricula. In order for the normative 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 argues that the intended purpose of professional education is to prepare the professional to deliver a service of quality. For this delivery to be achieved, attention must be given to technical, normative and organisational learning. Therefore, while the cornerstones of ‘maintaining high standards, international recognition, local relevance and accessibility’ (Actuarial Society, 2007) remain necessary, they are not sufficient. Ensuring service of quality through effective technical and normative education is paramount.

6.3 To this end a sub-committee to govern the provision of normative education needs to be formed. This sub-committee needs to be given a mandate to ensure effective normative education, rather than merely to deliver a selection of courses. The membership of the committee accordingly needs to include experienced educationalists, as well as 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 decide which of the normative capabilities and values it wishes to include in its education programme, and at what stage or stages of lifelong professional development. These capabilities and values then need to be mapped to particular courses. In this process, attention would need to be given to the principles of effective education outlined in Section 5 above:

- normative education is best undertaken collaboratively by actuaries and normative experts;
- normative education should occur throughout undergraduate and professional life; and
- properly conceptualised work-based learning is essential.

6.5 A possible application of these principles of best practice to the new South African actuarial qualification is illustrated in Figures 1 and 2. Figure 1 schematically represents the programme of learning in the Actuarial Society’s 2008 interim curriculum, which is similar to that of the F&IA. The various courses are classified by content (i.e. technical or normative) and by provider (i.e. university or the profession).

3 University Accreditation Policy of the Actuarial Society of South Africa, ECPD Board, Actuarial Society, 2007, unpublished

Figure 1: Schematic Overview of the Actuarial Society’s 2008 Interim Curriculum

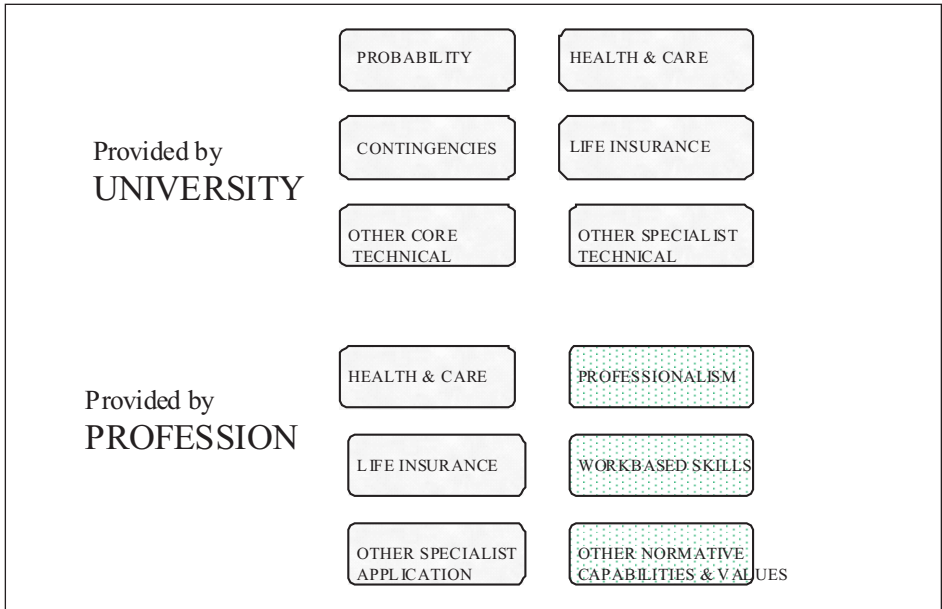
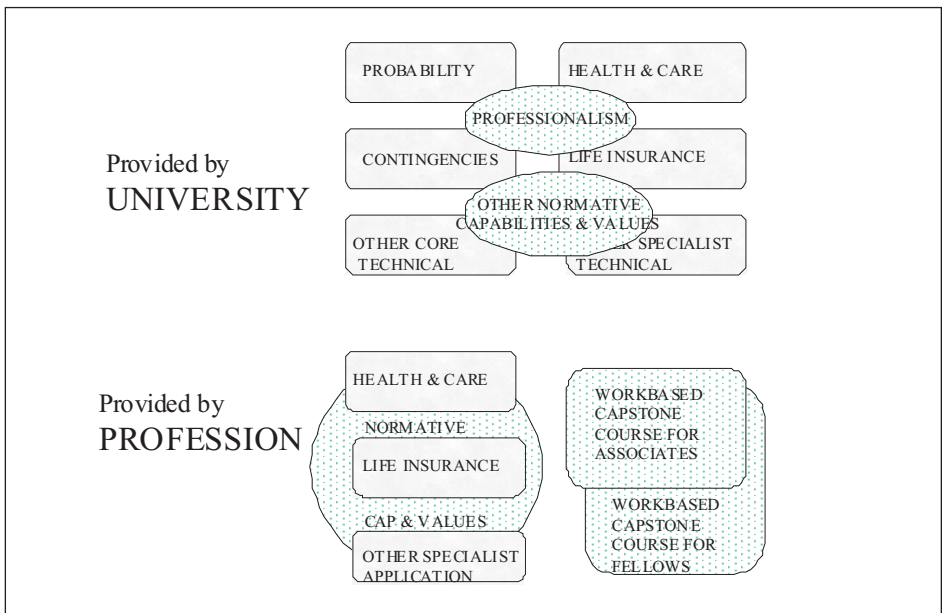


Figure 2: Schematic Overview of the Actuarial Society’s Curriculum if best practice recommendations are implemented



6.6 The implications of applying the best-practice principles are illustrated in Figure 2. The normative education sub-committee and the technical curriculum sub-committee will jointly need to plan for the integration of normative capabilities and values 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 and values into the technical subjects that are taught at undergraduate level. Since the universities will need to provide the basic normative education, it will no longer be necessary for the Actuarial Society to offer such courses as communication and business awareness in their current form. Drawing on the literature and empirical evidence, the authors find that the Actuarial Society needs to 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. The authors suggest that, for a period of six to eighteen months, a cohort of candidates 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 would need to 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 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 recognition of associate membership (with the title 'actuary') after completion of all but the specialist examinations. It is envisaged that all senior students would participate in the capstone programme, whether they intend to complete associateship or fellowship. 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 and values is expected on qualification as an associate. A further capstone appropriate for the additional service responsibilities would 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 the new curriculum;
- tension between the Actuarial Society's accreditation requirements for undergraduate normative education and the academic freedom of universities;
- access for students not following a university course;
- access for students living outside 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); and
- 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. The actuary needs to develop a wide range of technical, normative and organisational capabilities and values. This conclusion has been used to specify requirements 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 service of quality, thus promoting trust in the profession.

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