

The employers' priorities : vocational skills and capabilities for management accountants

HASSALL, Trevor, JOYCE, John, ARQUERO-MONTANO, Jose and DONOSO- ANES, Jose Antonio

Available from Sheffield Hallam University Research Archive (SHURA) at:

<https://shura.shu.ac.uk/11702/>

This document is the Published Version [VoR]

Citation:

HASSALL, Trevor, JOYCE, John, ARQUERO-MONTANO, Jose and DONOSO-ANES, Jose Antonio (2001). The employers' priorities : vocational skills and capabilities for management accountants. *Industry and Higher Education*, 15 (6), 421-429. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

The employers' priorities

Vocational skills and capabilities for management accountants

Trevor Hassall, John Joyce, Jose Luis Arquero Montano and Jose Antonio Donoso Anes

There has been increasing pressure on the providers of higher education to align courses with the needs of employers. Surveys have documented the importance of developing a broad range of vocational skills. However, priorities must be established, based on the demands of the workplace, within this identified skills gap. The first section of this paper identifies the need for the development of vocational skills in general, and then specifically in the area of management accounting. The second section presents the views of employers of management accountants on the relative importance of a specified set of vocational skills, and the level of these skills exhibited by graduates and recently qualified management accountants. These measures are then combined in a 'weighted importance indicator' to indicate the skills that are most in need of development.

Trevor Hassall and John Joyce are with the School of Business and Finance, Sheffield Hallam University, City Campus, Howard Street, Sheffield S1 1WB, UK. Tel: +44 114 225 5047. Fax: +44 114 225 5085. E-mail: t.hassall@shu.ac.uk. Jose Luis Arquero Montano and Jose Antonio Donoso Anes are with the Universidad de Sevilla, Spain.

The pressures to increase student numbers and simultaneously lower unit costs in higher education have led to a focus on quality. Various definitions of quality have been proposed, but perhaps the concept of 'fitness for purpose' has gained the most widespread acceptance. If this customer-focused view of quality is applied to higher education, it is then necessary to identify the 'customers' of higher education. Employers became the focus of attention primarily as one of these identified customers, but also as a surrogate for other interested parties. Surveys of the opinions of employers in the UK, such as those by Roizen and Jepson¹ and Brennan and Mcgeever,² indicated that they considered graduates to be unprepared for employment and lacking in vocational skills. There have been several government initiatives in this area. *Higher Education: A New Framework*,³

published in 1991, outlined proposals to improve the links between higher education and employers. Other UK initiatives, such as Enterprise in Higher Education (EHE) and the 'Education for Capability' project of The Royal Society of Arts (RSA), focused on specific aspects of vocational skills development.

Accounting education

The concerns relating to vocational skills, and ultimately their impact on the employment prospects of students, have been mirrored in the occupational area of accounting. Professional and academic associations, primarily in the USA, have made public their views of the desired profile of the professional accountant (see Appendix 1).

One of the most interesting outcomes of these statements has been the increasing relevance accorded to a set of non-accounting capabilities and skills. These capabilities and skills have come to be regarded as 'essential' because, as stated by the Education Committee of the International Federation of Accountants (IFAC),⁴ they enable the professional accountant to make successful use of the knowledge gained through education. The identified capabilities can be grouped as follows:

- *Communication skills.* This group of skills includes graduates' ability to present and defend their views and the results of their own work orally or in writing, in formal or informal settings. Also included is the capability to locate, obtain, organize and use information from printed, human or electronic sources.
- *Ability to work in groups (interpersonal skills).* These skills enable the professional to interact with other people, to work effectively as a member of a team, to delegate tasks, to motivate other people, to resolve conflicts, and, if necessary, to assume leadership.
- *Problem solving skills.* This grouping is concerned with the ability to solve complex and unstructured problems in unfamiliar settings in a creative way. It also includes the capability of choosing among alternatives using logical abstract thinking. Some of the published statements – for example, those by Arthur Andersen & Co *et al*⁵ and IFAC⁶ – also included group work and pressure management in this skills group.

The views emanating from the above reports are the results of evidence from surveys of interested groups who expressed their opinions on particular skills (see Appendix 2). However, this empirical support has been criticized by Poe and Bushong,⁷ Davis and Sherman⁸ and Mathews⁹ for being predominantly focused on auditors, and because there was little reference to the thoughts and views of management accountants, who are primarily industry-based. This concern led our research group and the Chartered Institute of Management Accountants (CIMA) to develop the present study. CIMA, one of the six chartered accountancy bodies in the UK, is the only one that specializes in management accounting. Its education and training requirements are designed to produce qualified chartered management accountants. The qualification focuses on management accounting and financial management rather than on financial accounting or auditing. The CIMA qualification is not designed to allow its members to perform the role of statutory auditor, and so CIMA members do not

compete with members of the other chartered bodies in this employment arena. The vast majority of CIMA members are employed in the business sector.

Methodology

A questionnaire was sent to 950 employers of management accountants in the UK. The questionnaire contained a listing of 22 skills and personal attributes that had been identified as important by the previous research in this area. The vocational skills and capabilities are listed in Table 1. The 22 personal

Table 1. Vocational skills and capabilities desired in qualified accountants.

Communication skills	
C ₁	Present and defend points of view and outcomes of their own work, in <i>writing</i> , to colleagues, clients, and superiors.
C ₂	Present and defend points of view and outcomes of their own work, <i>verbally</i> , to colleagues, clients, and superiors.
C ₃	Use of visual aids in presentations.
C ₄	Listen effectively to gain information and to understand opposing points of view.
C ₅	Critically read written works, making judgements on their relevance and value.
Group working skills	
G ₁	Work with others in teams.
G ₂	Organize and delegate tasks.
G ₃	Assume leadership positions when necessary.
Problem solving skills	
P ₁	Identify and solve unstructured problems.
P ₂	Find creative solutions.
P ₃	Integrate multidisciplinary knowledge to solve problems.
P ₄	Perform critical analysis.
Time management	
T ₁	Organize the workloads to meet conflicting demands and unexpected requirements.
T ₂	Organize the workloads to recognize and meet tight, strict, and coinciding deadlines.
T ₃	Select and assign priorities within coincident workloads.
Information technology	
I ₁	Use relevant software.
I ₂	Knowledge of information sources.
Other skills, values and knowledge	
O ₁	Have a commitment to lifelong learning.
O ₂	Ability to develop methods of effective learning.
O ₃	Awareness of social and ethical responsibilities.
O ₄	Have knowledge of the accounting profession.
O ₅	Have a comprehensive and global vision of the organization.

attributes were arranged into six groups: 'communication' (5 items), 'group working' (3), 'problem solving' (4), 'time management' (3), 'information technology' (2) and 'other skills' (5).

The employers were asked, based on their experience, to score each of the attributes on an eleven-point scale in three separate classifications:

- the importance for a qualified Management Accountant;
- the skill level exhibited by a graduate; and
- the skill level exhibited by a newly qualified accountant.

After completing their undergraduate degrees, students enter the vocational area of management accounting as 'graduates'. After undertaking further studies and passing the examinations of the relevant professional body they are, for the purposes of this study, referred to as 'newly qualified accountants'.

An analysis of the mean scores for 'importance' gives information on the skills that employers identify as necessary for a qualified management accountant to perform his or her duties. The analysis of the scores reported for the skill level actually exhibited indicates those skills for which performance is, in the opinion of employers, not adequate. However, an analysis that could indicate the areas most in need of training and development actions would be more informative. Training efforts should be directed so as to act on those specific skills that are considered to be important but for which performance is below average. A statistic that allows the joint analysis of both these characteristics is the *weighted importance indicator*, or the indicator of priority (IP).

The IP weights the importance score of each individual skill by the mean of the scores for the skill levels exhibited (for all skills) divided by the score for the level exhibited for that individual skill. Consequently the IP will, given the same importance score for two skills, be higher for the one that has a lower exhibited performance level score. Therefore the IP statistic indicates the priority of a particular skill in terms of the necessity to concentrate on its development. The formula is as follows:

$$IP_{gi} = \text{imp}_i \frac{\overline{\text{exhib}_g}}{\text{exhib}_{gi}}$$

At the margin, a skill with a low importance score and a low exhibited level could have a higher IP score than a skill with a higher importance score. However, very low importance scores combined with low exhibited scores will not gain high IP scores.

Profile of respondents

Responses were received from 214 of the 950 employers contacted. Of these, 82.7% and 81.2%, respectively, had responsibility in their organization for training personnel and for the selection of new staff. The profile of the respondents was as follows:

- 78.5% were male, 21.5% were female;
- 66.4% were graduates, 33.6% were non-graduates; and
- the age range was 29–59 years (mean age: 40 years).

The sizes of the organizations in which the respondents worked were broken down as:

- fewer than 25 employees – 5.6%;
- 25–250 employees – 15.4%;
- more than 250 employees – 79.0%.

Results

Qualified accountant

The questionnaire asked employers to rate, on a scale of 0 (very low) to 10 (very high), the importance of specified vocational skills and capabilities for a fully qualified management accountant. The mean scores reported by the employers for the importance of each of the listed skills are shown in Table 2. The table also shows the resulting rank order of the skills.

The means of the scores reported range from 7.19 to 8.91, and have an overall mean of 8.22. These scores show that the employers thought that all the vocational skills cited on the questionnaire were important, and so all these skills are relevant to this study. In practice, if an item obtained a very low score on the importance rating then its inclusion in the decision making should be questioned.

It can be seen that communication and time management skills dominate the table. Group working skills are also highly valued (two of the three specified skills are above the mean). None of the skills or capabilities from the group 'Other skills, values and knowledge' came above the overall mean score. This is surprising, given that skills such as 'lifelong learning', 'effective learning' and 'ethics' are currently in vogue.

Graduates

The employers were also asked to report on a scale of 0 (very low) to 10 (very high), with 5 representing 'just acceptable', the level of each skill they had seen exhibited by graduates working as management accountants. These scores and the importance scores were then used to calculate the weighted importance indicator (IP score) and the resulting IP ranking. These

Table 2. Mean scores for the importance of specific skills for qualified management accountants.

		Mean score	Rank
C ₂	Present and defend points of view and outcomes of their own work, <i>verbally</i> , to colleagues, clients, and superiors.	8.91	1
C ₁	Present and defend points of view and outcomes of their own work, in <i>writing</i> , to colleagues, clients, and superiors.	8.77	2
T ₃	Select and assign priorities within coincident workloads.	8.77	3
T ₂	Organize the workloads to recognize and meet tight, strict, and coinciding deadlines.	8.76	4
C ₄	Listen effectively to gain information and to understand opposing points of view.	8.73	5
G ₁	Work with others in teams.	8.68	6
T ₁	Organize the workloads to meet conflicting demands and unexpected requirements.	8.52	7
I ₁	Use relevant software.	8.49	8
P ₁	Identify and solve unstructured problems.	8.46	9
G ₂	Organize and delegate tasks.	8.33	10
P ₃	Integrate multidisciplinary knowledge to solve problems.	8.28	11
O ₅	Have a comprehensive and global vision of the organization.	8.15	12
G ₃	Assume leadership positions when necessary.	8.13	13
P ₄	Perform critical analysis.	8.12	14
P ₂	Find creative solutions.	8.07	15
C ₅	Critically read written works, making judgements on their relevance and value.	7.93	16
O ₁	Have a commitment to lifelong learning.	7.87	17
O ₃	Awareness of social and ethical responsibilities.	7.70	18
O ₄	Have knowledge of the accounting profession.	7.68	19
I ₂	Knowledge of information sources.	7.67	20
O ₂	Ability to develop methods of effective learning.	7.54	21
C ₃	Use of visual aids in presentations.	7.19	22

are shown in Table 3. The table is presented in the same rank order as Table 2 (that is, the importance of the skill for a management accountant) to facilitate discussion.

The means of the scores for the levels of skills exhibited by graduates ranged from 4.52 to 6.86, with an overall mean of 5.55. Several of the skills are rated as below, or only just, acceptable.

The scores and analysis in Table 3 indicate that employers acknowledge that graduates entering management accounting have good information technology skills. This is evidenced by the high scores given for the exhibited skills of being able to 'use relevant software' and having 'knowledge of information sources'. The two skills ranked by the employers as the most important for a qualified management accountant (oral and written communication skills), were not highly exhibited by graduates: the mean score obtained for each of these skills was 5.37. This score is below the overall mean, but is at the 'just acceptable' level. The other major area identified as important by employers was 'time management'. They scored the ability of graduates in this area also at the 'just acceptable' level. The lowest scores were given to 'have a knowledge of the accounting profession' and 'have a comprehensive and global vision of the organization'.

As explained earlier, the IP score indicates the priority of an individual skill in terms of the necessity to concentrate on its development. For graduate entrants the IP analysis identified the priority area for development as 'have a comprehensive and global vision of the organization'. The next priority area is time management: the three individual skills in this area have the second, third and fourth IP rankings. The other clear priorities are interpersonal communication skills and the group working skill 'organize and delegate tasks'. The area for which there is the least perceived need for immediate development in graduate entrants is information technology.

Newly qualified management accountants

The questionnaire then asked the employers to report the level of each skill that they had seen exhibited by newly qualified management accountants on a scale of 0 (very low) to 10 (very high), with 5 representing 'just acceptable' (as for the graduates). The results, shown in Table 4, indicate that in all areas the skill level was above the 'just acceptable' level. The means of the scores ranged from 5.93 to 7.66 with an overall mean of 6.44.

The results show that employers acknowledge that newly qualified management accountants have good

Table 3. Level of skills exhibited by graduates and the resultant IP scores and ranking.

		Level exhibited	IP score	IP rank
C ₂	Present and defend points of view and outcomes of their own work, <i>verbally</i> , to colleagues, clients, and superiors.	5.37	9.20	6
C ₁	Present and defend points of view and outcomes of their own work, in <i>writing</i> , to colleagues, clients, and superiors.	5.37	9.06	7
T ₃	Select and assign priorities within coincident workloads.	5.10	9.55	4
T ₂	Organize the workloads to recognize and meet tight, strict, and coinciding deadlines.	5.08	9.57	2
C ₄	Listen effectively to gain information and to understand opposing points of view.	5.64	8.59	11
G ₁	Work with others in teams.	5.96	8.07	15
T ₁	Organize the workloads to meet conflicting demands and unexpected requirements.	4.95	9.55	3
I ₁	Use relevant software.	6.86	6.87	19
P ₁	Identify and solve unstructured problems.	5.62	8.35	12
G ₂	Organize and delegate tasks.	4.92	9.39	5
P ₃	Integrate multidisciplinary knowledge to solve problems.	5.14	8.93	8
O ₅	Have a comprehensive and global vision of the organization	4.52	10.00	1
G ₃	Assume leadership positions when necessary.	5.16	8.73	10
P ₄	Perform critical analysis.	5.41	8.33	13
P ₂	Find creative solutions.	5.54	8.09	14
C ₅	Critically read written works, making judgements on their relevance and value.	5.95	7.40	18
O ₁	Have a commitment to lifelong learning.	6.41	6.81	20
O ₃	Awareness of social and ethical responsibilities.	5.72	7.47	17
O ₄	Have knowledge of the accounting profession.	4.84	8.80	9
I ₂	Knowledge of information sources.	6.83	6.23	22
O ₂	Ability to develop methods of effective learning.	6.36	6.57	21
C ₃	Use of visual aids in presentations.	5.29	7.54	16

information technology skills, as evidenced by their ability to use relevant software and their knowledge of information sources. The average of the mean scores for the level of communication skills exhibited was 6.35, which is below the overall mean but above the 'just acceptable' level. The other major area identified as important by employers was 'time management': the level exhibited by the newly qualified management accountants was approximately the same as the overall mean. The rating given to the skill level 'have a comprehensive and global vision of the organization' was the lowest of the scores given for the skills exhibited by the newly qualified accountants, but it ranked 12th in level of importance. Employers, surprisingly, did not attach a high importance level to problem solving skills for fully qualified accountants and reported their ability level in this respect as only slightly above the 'just acceptable' level.

The IP levels indicate that the key area for future development for newly qualified management accountants is communication skills. Oral, writing and listening skills were ranked as the first, second and fourth priorities. The third priority identified was the

requirement for employees to have a comprehensive and global vision of the organization. Perhaps this perceived lack of vision indicates why many newly qualified accountants are encouraged to widen their education by taking an additional course, such as an MBA. There is still concern, indicated by their relative ranking, about the need for time management skills to be developed.

Comparison of results

Table 5 shows the comparison of IP rankings for graduate entrants and newly qualified management accountants. The table indicates that, of the eleven areas that received the higher IP rankings for graduates, ten are still viewed as areas that should be prioritized for development in newly qualified management accountants. The development of a comprehensive and global vision of the organization has moved down the rankings from first to third as a result of an increase in the exhibited level score. This may well be the result of a planned exposure to the ways of the organization, or simply of the fact that the graduate has acquired on-the-job experience.

Table 4. Level of skills exhibited by newly qualified management accountants.

		Level exhibited	IP score	IP rank
C ₂	Present and defend points of view and outcomes of their own work, <i>verbally</i> , to colleagues, clients, and superiors.	6.34	9.05	1
C ₁	Present and defend points of view and outcomes of their own work, in <i>writing</i> , to colleagues, clients, and superiors.	6.32	8.93	2
T ₃	Select and assign priorities within coincident workloads.	6.46	8.74	7
T ₂	Organize the workloads to recognize and meet tight, strict, and coinciding deadlines.	6.51	8.66	9
C ₄	Listen effectively to gain information and to understand opposing points of view.	6.38	8.82	4
G ₁	Work with others in teams.	6.66	8.39	13
T ₁	Organize the workloads to meet conflicting demands and unexpected requirements.	6.23	8.81	5
I ₁	Use relevant software.	7.66	7.14	20
P ₁	Identify and solve unstructured problems.	6.34	8.60	11
G ₂	Organize and delegate tasks.	6.18	8.68	8
P ₃	Integrate multidisciplinary knowledge to solve problems.	6.08	8.76	6
O ₅	Have a comprehensive and global vision of the organization.	5.93	8.84	3
G ₃	Assume leadership positions when necessary.	6.06	8.63	10
P ₄	Perform critical analysis.	6.30	8.30	14
P ₂	Find creative solutions.	6.13	8.48	12
C ₅	Critically read written works, making judgements on their relevance and value.	6.32	8.08	15
O ₁	Have a commitment to lifelong learning.	6.56	7.73	17
O ₃	Awareness of social and ethical responsibilities.	6.51	7.61	18
O ₄	Have knowledge of the accounting profession.	7.01	7.05	21
I ₂	Knowledge of information sources.	7.24	6.82	22
O ₂	Ability to develop methods of effective learning.	6.48	7.48	19
C ₃	Use of visual aids in presentations.	5.93	7.80	16

Table 5. IP rankings for graduates and newly qualified management accountants.

		IP graduate	IP newly qualified	Importance
O ₅	Have a comprehensive and global vision of the organization.	1	3	12
T ₂	Organize the workloads to recognize and meet tight, strict, and coinciding deadlines.	2	9	4
T ₁	Organize the workloads to meet conflicting demands and unexpected requirements.	3	7	7
T ₃	Select and assign priorities within coincident workloads.	4	5	3
G ₂	Organize and delegate tasks.	5	8	10
C ₂	Present and defend points of view and outcomes of their own work, <i>verbally</i> , to colleagues, clients, and superiors.	6	1	1
C ₁	Present and defend points of view and outcomes of their own work, in <i>writing</i> , to colleagues, clients, and superiors.	7	2	2
P ₃	Integrate multidisciplinary knowledge to solve problems.	8	6	11
O ₄	Have knowledge of the accounting profession.	9	21	19
G ₃	Assume leadership positions when necessary.	10	10	13
C ₄	Listen effectively to gain information and to understand opposing points of view.	11	4	5

Not unsurprisingly, the ninth-ranked item for graduates, 'have knowledge of the accounting profession' was ranked 21st at the newly qualified level. At the newly qualified level the importance of problem solving skills is reinforced by the inclusion of 'identify and solve unstructured problems' as the eleventh-ranked IP score. Specific individual skills and groups of skills are identified as priorities for development: key areas indicated by employers at both graduate and accountancy training levels are time management, communication, and group working skills.

The employers were also asked to indicate their views (0=complete disagreement, 10=complete agreement), on specific statements concerning the development of vocational skills and capabilities. Their responses are summarized in Table 6. These responses again indicate the importance they place on vocational skills and capabilities. There is clear agreement that a wider range of personal skills is necessary in the workplace to complement the specific technical knowledge of, in this case, management accounting. This is confirmed by the importance given to vocational skills and capabilities in the recruitment process. The employers show high levels of agreement with the statement that universities should give consideration to employers' requirements. There is also agreement that the development of vocational skills and capabilities should be an explicit goal of university education. There is less agreement concerning the extent to which universities actually incorporate their requirements into syllabus design.

Conclusions

There is evidence of demands both internationally and nationally to develop a broader range of vocational

skills in graduates as a preparation for employment. UK employers have indicated the need for higher education to modify their course design and development processes to rectify the imbalance between technical subject knowledge and vocational skills. Resource constraints will mean that it will be impracticable to focus on the immediate development of a broad range of vocational skills. Consequently, there is a need to establish priorities.

This paper has investigated the vocational area of accounting and specifically management accounting. The published literature reflects the national and international concern that graduates need a broader range of vocational skills. The results of this survey reinforce the importance of vocational skills and capabilities to the employers of management accountants – and therefore to management accountants themselves.

The use of the weighted importance indicator enabled the identification of priorities for the development of vocational skills needed in the workplace. Priorities were identified for both employers and higher education. For employers, the integration of graduates and newly qualified management accountants into the specific context of the organization concerned is identified as being of particular importance. Key areas to be targeted for future development, by both higher education and accountancy training, are time management, communication and group working skills.

Notes and references

- ¹J. Roizen and M. Jepson, *Degrees for Jobs: Employer Expectations of HE*, SRHE/NFER-Nelson, Guildford, 1985.
- ²J. Brennan and P. McGeever, *CNAA Graduates: Their Employment and Their Experience After College*, CNAA Development Services, No13, 1987.
- ³*Higher Education: A New Framework*, HMSO, London 1991.
- ⁴International Federation of Accountants, Education Committee, *IEG 9 Prequalification Education: Assessment of Professional Competence and Experience Requirements of Professional Accountants*, IFAC, New York, 1996.
- ⁵*Perspectives on Education: Capabilities for Success in the Accounting Profession*, Arthur Andersen & Co, New York, 1989.
- ⁶*Op cit*, Ref 3.
- ⁷C.D. Poe and J.G. Bushong, 'Let's stop pretending all accountants are alike', *Management Accounting*, August 1991, pp 66–67.
- ⁸S.W. Davis and R. Sherman, 'The Accounting Education Change Commission: a critical perspective', *Critical Perspectives on Accounting*, Vol 7, 1996, pp 159–189.
- ⁹M.R. Mathews, 'An examination of the work of the Accounting Education Change Commission, 1989–1992', *Accounting Education*, Vol 3, No 3, 1994, pp 193–204.

Table 6. Employers' perspectives on vocational skills and capabilities.

Professional accountants <i>only</i> need technical knowledge to perform accounting duties successfully.	1.84
In personnel selection these skills are given at least the same value as the accounting knowledge.	7.37
Universities when designing new syllabuses <i>should</i> pay attention to workplace requirements.	7.66
The development of these skills <i>must be an explicit goal</i> of university education.	6.79
Universities when designing syllabuses <i>do</i> pay attention to workplace requirements.	4.99

The authors gratefully acknowledge the help and cooperation given by the Chartered Institute of Management Accountants.

Appendix 1

Published statements

Organization	Year	Publication
American Accounting Association	1986	Bedford Report (<i>Future Accounting Education: Preparing for the Expanding Profession</i>)
American Institute of Certified Public Accountants	1987	<i>Future Issues Paper</i>
American Institute of Certified Public Accountants	1988	<i>Education Requirements for Entry Into the Accounting Profession</i> (Review of Albers Report)
American Institute of Certified Public Accountants	1992	<i>Academic Preparation to Become a Certified Public Accountant</i>
Arthur Andersen & Co <i>et al</i>	1989	<i>Perspectives on Education: Capabilities for Success in the Accounting Profession</i>
Accounting Education Change Commission	1990	<i>Position Statement No 1: Objectives of Education for Accountants</i>
International Federation of Accountants	1994	<i>2000 and Beyond. A Strategic Framework for Prequalification Education for the Accountancy Profession</i>
International Federation of Accountants	1996	<i>IEG 9: Prequalification Education, Assessment of Professional Competence and Experience Requirements of Professional Accountants</i>
Albrecht and Sack, American Accounting Association, American Institute of Certified Public Accountants, Institute of Management Accountants, Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, Price Waterhouse Coopers	2000	<i>Accounting Education: Charting the Course Through a Perilous Future</i>

Bibliographic references:

- Accounting Education Change Commission, 'Objectives of education for accountants: Position Statement No 1', *Issues in Accounting Education*, Vol 5, 1990, pp 307–312.
- Albrecht, W.S., and Sack, R.J., *Accounting Education: Charting the Course Through a Perilous Future*, Accounting Education Series Volume 16, American Accounting Association, 2000.
- American Accounting Association Committee on the Future, Content, and Scope of Accounting Education, 'Future of accounting education: preparation for the expanding profession', *Issues in Accounting Education*, Vol I, No 1, 1986, pp 169–195.
- American Institute of Certified Public Accountants, Future Issues Committee, *On Achieving Changes in Accounting Education*, AICPA, New York, 1987.
- American Institute of Certified Public Accountants, *Education Requirements for Entry into the Accounting Profession*, Review of the Albers Report, AICPA, New York, 1988.
- American Institute of Certified Public Accountants, *Academic Preparation* (1992) to International Federation of Accountants, Education Committee, *2000 and Beyond: A Strategic Framework for Prequalification Education for the Accountancy Profession in the Year 2000 and Beyond*, IFAC, New York, 1994.
- Arthur Andersen & Co, *Perspectives on Education: Capabilities for Success in the Accounting Profession*, Arthur Anderson & Co, New York, 1989.
- International Federation of Accountants, Education Committee, *2000 and Beyond: A Strategic Framework for Prequalification Education for the Accountancy Profession in the Year 2000 and Beyond*, IFAC, New York, 1994.
- International Federation of Accountants, Education Committee, *IEG 9: Prequalification Education, Assessment of Professional Competence and Experience Requirements of Professional Accountants*, IFAC, New York, 1996.

Appendix 2

Opinion survey

Skill	Reference	Group	Result
Communication	Gingras (1987)	Professional accountants	82% consider these skills as 'very important' and 78% indicate that integrated development within accounting classes is an advantage.
	Novin and Pearson (1989)	Chartered professional accountants	At least 'quite important' for 90%.
	Novin <i>et al</i> (1990)	Chartered management accountants	At least 'quite important' for 90%.
	May, Windal and Silvestre (1995)	Academics	90% support greater emphasis within the accounting curriculum for these skills.
Interpersonal skills	Bhamornsiri and Guinn (1991)	Auditors	Of increasing importance with career progression.
	Gersich (1993)	Auditors	Considered as the most important in their job.
Problem solving skills	Novin and Pearson (1989)	Chartered professional accountants	At least 'quite important' for 95%.
	Novin <i>et al</i> (1990)	Chartered professional accountants	At least 'quite important' for 97%.
	May, Windal and Silvestre (1995)	Academics	96 % consider that students must be able to solve unstructured problems requiring multiple information sources.

Bibliographic references:

- Bhamornsiri, D., and Guinn, R.E., 'The road to partnership in the "Big Six" firms: implications for accounting education', *Issues in Accounting Education*, Vol 6, No 1, 1991, pp 9–24.
- Gersich, F., *An Investigation of the Importance of Selected Knowledge Areas and Skills for a Public Accounting Auditing Career and the Extent of Academic Preparation as Perceived by Audit Seniors and Audit Managers*, UMI Services, Michigan, 1993.
- Gingras, R.T., 'Writing and the certified public accountant', *Journal of Accounting Education*, Vol 5, 1987, pp 27–137.
- May, G.S., Windal, F.W., and Sylvestre, J., 'The need for change in accounting education: an educator survey', *Journal of Accounting Education*, Vol 13, No 1, 1995, pp 21–43.
- Novin, A., and Pearson, M., 'Non-accounting-knowledge qualifications for entry level public accountants', *The Ohio CPA Journal*, 1989, pp 12–17.
- Novin, A. M., Pearson, M.A., and Senge, S.V., 'Improving the curriculum for aspiring management accountants: the practitioner's point of view', *Journal of Accounting Education*, Vol 8, No 2, 1990, pp 207–224.