

Skills Acquisition Shortfall: A Study of Professional Accounting Education

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Abstract

Previously, there was a paucity of empirical literature to illustrate the educators' performance of professional accounting institutions in Pakistan. Therefore, this research investigates the skills acquisition shortfall in professional accounting institutes of Pakistan. In this regard, independent sample *t*-test and principal component analysis is employed to draw statistical findings. Out of the 35 investigated skills, 24 skills were found to be undeveloped in students for employment purposes benchmarked against employers' expectations. Further, this research has proposed a skills acquisition framework comprising of 6 components of skills. These components of skills now could be viewed as a skills acquisition framework from professional accounting education perspective.

Keywords: Skills acquisition shortfall, accounting education, competence, employers, educators

1. Introduction

Since the early 1960's, human capital theory has been the most influential economic theory of the western world, used for framing government policies for education reforms to enhance people's employability. In this regard, Fitzsimons (1999) stated:

In terms of structural reform, under Human Capital Theory the basis for nation state structural policy frameworks is the enhancement of labour flexibility through regulatory reform in the labour market, as well as raising skill levels of additional investment in education, training and employment schemes, and immigration focused on attracting high-quality human capital. (p. 1)

To date available literature reports that investment in human capital in the form

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of knowledge and skills through education has a significant impact on individuals, organizations and the country's overall economic growth (Blundell, Dearden, & Meghir, 1999). Under human capital theory economists regard education as an economic good which is a means of providing utility on consumption and serves as an input for the production process of other goods and services. Hence, considering this, many governments around the world are now concerned with higher education system to enhance the capability of their human stock for enhanced productivity. For example, UK's HM Treasury (2000) stated:

Human capital directly increases productivity by raising the productive potential of employees. Improving skills and human capital are important in promoting growth, both as an input to production and by aiding technological progress. This has been recognized both in endogenous growth theory and also in empirical studies comparing growth in different countries. (p. 26, 32)

But due to the dominance of economic and political powers in the 21st century, it has been noticed that the higher education programs have been influenced more by the 'social efficiency ideology' in 'curriculum theory' than others (Russell, 2014). The 'social efficiency ideology' intends to design an education curriculum to maximize the 'social utility or productivity' of an individual for a societal future (Schiro, 2012). This phenomenon seems more apparent in professional accounting education where teachers are considered as a "technicians" with a responsibility to teach 'skills' to students that make students more fit for employment (Russell, 2014). In this regard, Lessenger and Salowe (2001) depicted the 'social efficiency ideology', by relating employable skills to a quality education system, cited by Schiro (2012) as, "a quality education system is an absolute essential to the economic, political, and social welfare of the United States... there is a consensus that students need employable skills for the new economy" (p. 79). Higher education institutions are considered as a mediating agent between the loosened boundaries between government and businesses (Morley, 2001) and employability of graduates (human stock) is an aim that governments around the world want to achieve by bringing about various reforms to their higher education systems (Yorke, 2006). This interest in employability through creation of skills in professional education reflects part of human capital theory (Yorke, 2006) and the aim of this research. This paper specifically aims to focus on skills acquisition shortfall in professional accounting education benchmarked against employers' expectation; give rise to the following research objective (RO1) evaluating differences in perception between the two audiences (accounting educators and employers):

RO1: What are the perceptual dissimilarities between accounting educators and employers in terms of skills, competence expected to be developed in students?

Further, this research also aims, in part, to redress determination of employment related skills in groups which are pertinent for professional accounting education; giving rise to second research objective:

RO2: What is the grouping of skills-acquisition from the perspective of professional accounting education?

The rest of the paper is organized as follows: Section 2 presents the literature reviewed; Section 3 discusses the methodology; analysis and discussion of results are presented in Section 4; Section 5 concludes the paper.

2. Literature Review

Gati (1998) stated if employment related skills don't develop in accounting students, this limits the opportunities for them to secure future employment. In the UK, this apparent shortfall is exacerbated by a skills-acquisition policy centered upon obtaining qualifications, first and foremost, with the acquisition of employment related skills being limited by that focus (see Knight & Yorke, 2003; Yorke, 2006). Comparatively, in Pakistan, there is a paucity of evidence either way. And yet, various organizations, such as state departments and professional bodies, together with individual researchers, have repeatedly emphasized the need to expand skills acquisition in higher education institutions as a means of promoting graduate employability (see Cranmer, 2006; Quality Assurance Agency, 2007; Coopers & Lybrand, 1998; Hillage & Pollard, 1998; Dearing report, 1997; Council for Industry and Higher Education, 1996; Department of Trade and Industry, 2005).

The rallying cry for greater skills acquisition is present, above, and yet the reality is that there is no definitive list of skills or even a standard categorization among the various disciplines (see McQuaid & Lindsay, 2005; Jones & Sin, 2003; Wellman, 2010; Business Industry Higher Education Collaboration Council, 2007). The accounting discipline is no exception (see Jones & Sin, 2003; Kavanagh, Hancock, Howieson, Kent, & Tempone, 2009; Hassall, Joyce, Montaña, & Anes, 2005; International Federation of Accountants, 2008; Albrecht & Sack, 2000).

Accounting students and employers both consistently 'valued' employment related generic skills acquisition (see Kavanagh & Drennan, 2008; Hassall et al., 2003), however, from an employer's perspective, students were consistently reported in the literature as being inadequately prepared for the workplace in terms of possessing the necessary skills for that domain (see Awayiga, Onumah, & Tsamenyi, 2010; Willcoxson, Wynder, & Laing, 2010). Further, the literature demonstrates that accounting academics are the ones who are identified as being primarily responsible for the nurturing of such absent skills in students (Kavanagh et al., 2009; Hassall et al., 2005).

And yet it is also clear that academics are failing to equip students with an adequate set of employment related skills necessary for professional accounting career (see Lin, Xiong, & Liu, 2005; Kavanagh & Drennan, 2007; Awayiga et al., 2010; Willcoxson et al., 2010; Bui & Porter, 2010; Jackling & Watty, 2010; Kavanagh et al., 2009). So, a necessary first step in redressing this situation is to identify the relevant skills in the accounting domain. There are bound to be contextual limitations in this regard too (see, Bui & Porter, 2010, De Lange, Jackling, & Gut, 2006; Kavanagh & Drennan, 2007; Millner & Hill, 2008) and not all of the identified skills in one context would necessarily be transferable to another contextual setting (Campbell, 2010).

There is a substantial amount of literature on skills development, and the limitations thereof, in developed countries such as the United Kingdom, New Zealand, Australia, America, and Canada (see Jackling & Keneley, 2009; Harvey & Bowers-Brown, 2004; Confederation of British Industry, 2009; Australian Chamber of Commerce and Industry, 2002; Kavanagh & Drennan, 2007; Kavanagh et al., 2009; Milner & Hill, 2008; Accounting Education Change Commission, 1990; Institute of Chartered Accountants in England and Wales, 2010; Hassall et al., 1999, 2001, 2003, 2005; Montano, Donoso, Hassall, & Joyce, 2001; De Lange et al., 2006; Albrecht & Sack, 2000; Sin & Jones, 2003; Certified Practising Accountants, 2008; Gray & Collison, 2002; Quality Assurance Agency, 2007; Bui & Porter, 2010). However, in contrast, there is a paucity of similar literature from the underdeveloped Asian countries such as Pakistan, India, Indonesia, Thailand, Taiwan, and the Philippines. It is time this position changed. That said, such studies provide a welcome general starting point (see Table 1) to our investigation even though there are considerable variations in the skills deemed to be pertinent from an employers' (accounting practitioners) perspective (see Table 2) and an academic (accounting educator) perspective (see Table 3).

Table 1: Variability of Generic Skills in Accounting Discipline

Jones and Sin (2003)	IFAC (2008)	Albrecht and Sack (2000)
Routine Skills:	Intellectual skills:	Accounting Software
Report writing	The individual's ability to locate, obtains, organize and understand information from human, print and electronic sources	Appreciation of cross cultural diversity
Computer literacy	The capacity for inquiry, research, logic and analytic thinking, power of reasoning, and critical analysis	Business Decision Modelling

Analytic and design skills:	The ability to identify and solve unstructured problems in unfamiliar settings	Change Management
Identify, find, evaluate, organise and manage information and evidence		Company Promotion
Initiate and conduct research	Technical and functional skills:	Computer Literacy (I can use)
Analyse, reason logically, conceptualise issues	Numeracy (mathematical and statistical applications) and IT proficiency	Computer Technology (Systems)
Solve problems and Construct arguments	Decision modelling and risk analysis	Continuous Learning
Interpret data and reports	Measurement and reporting	Creativity
Engage in ethical reasoning	Compliance with legislative and regulatory requirements.	Critical Thinking
		Cross Cultural Appreciation
Appreciative skills:	Personal skills:	Cross Cultural communication
Receive, evaluate and react to new ideas	Self-management	Cultural Sensitivity
Adapt and respond positively to challenges	Initiative, influence and self-learning	Customer Service Orientation
Make judgements derived from one's own value framework	The ability to select and assign priorities within restricted resources and organize work to meet deadlines	Decision Making
Think and act critically	The ability to anticipate and adapt to change	Entrepreneurship
Know what questions to ask	Considering the implications of professional values ethics and attitudes in decision making	Ethics
Engage in lifelong learning	Professional scepticism	Flexibility
Recognise one's own strengths and limitations		Foreign Language
Appreciate ethical dimensions of situations	Interpersonal and communication skills:	Good Citizenship
Apply disciplinary and multi-disciplinary perspectives	Work with others in a consultative process, to withstand and resolve conflict	Independent Thought

Appreciate process of professional adaptation and behaviour	Work in teams	Inter-disciplinarity
	Interact with culturally and intellectually diverse people	Interpersonal
Personal Skills:	Negotiate acceptable solutions and agreements in professional situations	Leadership
Commitment to think and behave ethically	Work effectively in a cross-cultural setting	Listening
Flexibility in new/different situations	Present, discuss, report and defend views effectively through formal, informal, written and spoken communication	Logical Argument
Act strategically	Listen and read effectively, including a sensitivity to cultural and language differences.	Measurement (able to quantify)
Thinking and acting independently		Negotiation
To be focused on outcomes	Organizational and business management skills:	Oral Communication
Toleration of ambiguity	Strategic planning, project management, management of people and resources, and decision making	Problem Solving
Creative thinking	The ability to organize and delegate tasks, to motivate and to develop people	Professional Attitude
	Leadership	Project Management
Interpersonal skills:	Professional judgment and discernment.	Reading for Understanding
Listen effectively		Research
Present and discuss and defend views		Resource Management
Transfer and receive knowledge		Risk Analysis
Negotiation skills (with people from different backgrounds and with different value systems)		Risk Propensity
Understanding group dynamics		Self-Motivation

Collaboration skills (with colleagues)		Self-Promotion
		Social Justice
		Strategic Management
		Teamwork
		Technical Bookkeeping
		Tenacity
		Values
		Work Ethic
		Written Communication

Table 2: Examples of Skills Identified by Employers

Hassall et al. (1999, 2001, 2003, 2005)	Kavanagh et al. (2009)	Montano et al. (2001)	CPA (2008)
Communication skills	Communication skills	Communication skills	Routine skills
Group Working Skills	Presentation skills	Stress management skills	Analytic skills
Problem Solving Skills	Teamwork skills		Appreciative skills
Pressure and Time Management Skills	Good interpersonal skills		Personal skills
Information Technology skills	Fit organisations ethos		Interpersonal skills
Other Skills, Values and Knowledge	Self-management skills		
	Initiative and enterprise skills		
	Technological competence		
	Planning and organising skills		

Table 3: Examples of Skills Identified by Educators

Kavanagh and Drennan (2007)	Tan, Fowler, & Hawkes (2004)
Problem Solving skills	Problem solving skills
Personal and Strategic Management skills	Thinking skills
Routine Accounting skills	Listening skills
Citizenship skills	Quantitative skills
Cultural Sensitivity	Speaking skills
Work Ethics	Writing skills
Personal and Appreciative skills	Microcomputer skills
	Reading skills
	Management skills
	Social skills
	Marketing skills

2.1. Target Audience

A closed ended questionnaire based approach was used. In the early stages of the research we used the literature (as in Tables 1 – 3) and an interview based consultation process to identify those employments related skills necessary for inclusion in the questionnaire. That consultation was directed towards two target audiences (accounting educators and employers):

- a. Educators; academics teaching in professional accounting institutes of Pakistan

In Pakistan, there are five accounting bodies providing certified accounting education, that is, the Institute of Chartered Accountants of Pakistan (ICAP); the Institute of Cost and Management Accountants of Pakistan (ICMAP); the Institute of Certified Public Accountants of Pakistan (ICPAP); the Society of Accounting Education (SOAE) and the Pakistan Institute of Public Finance Accountants (PIPFA). These professional bodies have 37 registered education centres across the country to provide professional accounting education. Unfortunately, unlike developed countries, in Pakistan there is no database available, providing information regarding number of educators working in accounting educational institutes (For example, in New Zealand - Wiley Directory of Accounting provides information about all available accounting academics). Therefore, pragmatically it was impossible to survey all educators, especially when the exact population size is not known. Therefore, in this research for the purpose of data collection, the targeted sample size was determined by observing the requirements of the analytical techniques that has been used (that are, Independent sample t-test and Principal Component Analysis). In total, 460 questionnaires were

distributed among educators (academics teaching at the professional accounting institutes). Further follow-on calls have been made to head (Principal/director/dean) of the institutes to request them to help in the collection of the questionnaires circulated among their faculty members. In response, 201 usable questionnaires were returned. Unusable questionnaires were half filled questionnaires.

b. Employers; accounting practitioners working in professional organisations of Pakistan

From the employers' perspective, the only list of professional organisations that are registered with accounting educational bodies are 170 auditing firms registered as training partners (for student articleship). Similarly, like educators there is also no database available, providing information regarding the number of accounting practitioners working in these auditing firms in Pakistan. In total, 1020 questionnaires were distributed among accounting practitioners at the organizations (auditing firms) where they work. In response, 204 usable questionnaires were returned. Unusable questionnaires were half filled questionnaires.

See Table 4 representing demographic details (gender, age, work experience, position, professional education and general academic qualification) from the respondent groups (accounting employers and educators).

Table 4: Representing the Demographic Details of the Respondents

Demographic	Category	Employers group	Educators groups
Gender	Male	199 (97.5%)	188 (93.5%)
	Female	5 (2.5%)	13 (6.5%)
Age	20-24 years	~	3 (1.5%)
	25-35 years	132 (64.7%)	144 (70.1%)
	36-44 years	63 (30.9%)	52 (25.9%)
	45-54 years	8 (3.9%)	5 (2.5%)
	55- above	1 (0.5%)	~
Experience	Less than a year	~	2 (1%)
	1-3 years	~	131 (65.2%)
	4-7 years	48 (23.5%)	44 (21.9%)
	8-10 years	113 (55.4%)	19 (9.5%)
	11 years and more	43 (21.2%)	5 (2.5%)

Position	Top level executive	26 (12.7%)	N/A
	Middle level executive	165 (80.9%)	N/A
	Others	13 (6.4%)	N/A
	Full time academic	N/A	57 (28.4%)
	Part time academic	N/A	144 (71.6%)
Participants who had Professional accounting education	Yes	204 (100%)	35 (17.4%)
	No	---	166 (82.5%)
General academic qualification	Higher Secondary School Certificate	96 (47.1%)	16 (8%)
	Bachelor degree	99 (48.5%)	91 (45.3%)
	Master degree	9 (4.4%)	64 (31.8%)
	Masters of Philosophy	---	30 (14.9%)
	Doctorate	---	---

3. Methodology

In this research for the collection of data a closed ended questionnaire based approach was used.

In this research when we refer to a 'skills acquisition shortfall' that shortfall arises from the investigation of 'the perceptual differences in the level of skills that educators expect students to acquire by the time they graduate' and 'those skills which employers perceive the graduates should possess when they enter the profession'. This implies measuring the views on competence of 5-point Likert scale (1 No competence ...5 High competence) from accounting employers and educators separately. Thus, there were two sets of a questionnaire: one evaluating the views from the educators' perspective, while the other from the employers. Later the views from both respondent groups were combined to investigate the overall 'skills acquisition shortfall'.

Initially, in order to develop a questionnaire, survey instrument included a list of skills adopted by prior literature (such as Jones & Sin, 2003; Hassall et al., 1999, 2001, 2003, 2005; International Federation of Accountants, 2008; American Institute of Certified Public Accountants, 1998; Albrecht & Sack, 2000; Kavanagh & Drennan, 2007, 2008; Kavanagh et al., 2009; Lin et al., 2005; Jackling & Keneley, 2009). But as Jones (2010) stated individuals from different disciplines define skills differently. Therefore, the adopted list of skills from prior literature (as stated above) were revised to include a skills description through the cognitive interviews process (3 interviews from educators and 3 interviews from employers). This step was important for the common understanding of the survey instrument respondents. Appendix 1 shows

the list of skills with their description that were used in the surveyed questionnaire.

For analysis of RO1 the collected data from the respondent groups complies normal distributed assumption and, as such, Independent sample t-test was used. Conversely, for analysis of RO2, Principal Component Analysis (PCA) with a Varimax rotation was performed in respect of the data collected from the employers' group only.

4. Analysis and Results

From Table 5, one can see the values of the independent sample t-test for each of the 35 evaluated skills (6th column from the left). Out of the 35 skills, 11 skills (values without **) were found to have statistically insignificant differences (values without **), which means the respondent groups (employers and educators) shared similar views over such skills. It follows that the remaining 24 skills (values with **)

Table 5: Representing the results of Independent Sample t-test with Competence Mismatch Score

S. No	Skills terminologies	Employers Competence score (representing Mean value)	Educators Competence Score (representing Mean value)	RO1 Competence mismatch (representing gap)	Independent Sample t-test (Significance level at 5%)
1	Decision making	3.91	3.44	.472	.000**
2	Financial risk analysis	3.61	3.38	.228	.012**
3	Financial accounting	4.23	4.24	-.013	.870
4	Information technology competence	3.48	3.30	.172	.087
5	Critical thinking	4.02	4.00	.020	.814
6	International global perspective	3.96	3.78	.171	.053
7	Legal regulatory perspective	4.02	3.92	.104	.217
8	Marketing/clients focus	3.00	1.97	1.020	.000**
9	Problem solving	3.76	3.58	.181	.068
10	Leadership	3.16	2.27	.892	.000**
11	Project management	3.40	2.25	1.151	.000**
12	Think and behave ethically	2.94	2.60	.336	.001**
13	Flexibility and adaptability	3.29	2.18	1.114	.000**

14	Strategic management	3.19	3.06	.132	.176
15	Independent thinking	2.96	2.62	.347	.000**
16	Focused on outcome	3.47	3.40	.071	.451
17	Tolerate ambiguity	2.79	1.79	1.003	.000**
18	Think creatively	3.38	2.45	.937	.000**
19	Listen effectively	3.34	2.84	.503	.000**
20	Presentation skills	3.47	2.49	.976	.000**
21	Negotiation skills	3.32	2.42	.897	.000**
22	Understanding group dynamics	2.89	1.99	.904	.000**
23	Communicate in written format	3.35	3.31	.040	.687
24	Communicate orally	3.40	2.51	.889	.000**
25	Engage in lifelong learning	2.96	1.96	.996	.000**
26	Inter or multidisciplinary perspective	3.63	3.43	.197	.047**
27	Teamwork	3.53	2.79	.743	.000**
28	Ability to analyse and reason logically	3.99	3.52	.479	.000**
29	Personal attributes	3.03	2.07	.965	.000**
30	Work effectively in diversified cultural settings	2.77	1.86	.914	.000**
31	Self-initiative	3.20	2.16	1.039	.000**
32	English language	3.59	2.64	.949	.000**
33	Statistics	3.41	3.45	-.031	.763
34	Cost and management accounting	4.13	4.01	.122	.159
35	Economics	3.13	2.75	.377	.000**

** Independent sample T-test is statistically significant at 0.05 alpha level.

In independent sample t -test, if the sig (2-tailed) value is greater than 0.05 then it means that the mean difference between two groups' value is statistically insignificant. This can be interpreted as the mean difference between group 1 (G1) and group 2 (G2) values is by chance, therefore accept null hypothesis ($H_0: G1=G2$). However, if the sig (2-tailed) value is less than 0.05 then it means that the mean difference between the two group values is statistically significant. This can be interpreted as the mean difference between the group 1 (G1) and group 2 (G2) is not by chance, therefore reject the null hypothesis and accept alternative hypothesis ($H_1: G1 \neq G2$) (Laerd Statistics, 2013).

were found to have significant differences, which means the respondent groups (employers and educators) do not share similar views over such skills.

From Table 5, for the employers group, one can see that the mean score regarding the skills ranges from 2.77 (work effectively in diversified cultural settings) to 4.23 (Financial accounting). In contrast, for the educators group, the mean score ranges from 1.79 (Tolerate ambiguity) to 4.24 (Financial accounting). One can see the mismatch in competence scores from Table 5 (4th column from the left) that is, representing the shortfall of accounting educators in developing the skills in students desired by accounting employers. In considering the independent sample t-test values (values

Table 6: Representing the Categorisation of Skills Considering the Results of Independent Sample t-test with Competence Mis-match Score

	Category 1 – Insignificant differences Skills having insignificant differences – the perceived competence expected to be developed in students by educators coincides with the competence expected by employers for the purpose of employment.		Category 2 – Significant differences Skills having significant differences – the perceived competence expected to be developed in students by educators does not coincide with the competence expected by employers for the purpose of employment.	
S. No.	List of 11 Generic skills	Mismatch competence score	List of 24 Generic skills	Mismatch competence score
1	Financial accounting	-.013	Inter or multidisciplinary perspective	0.197**
2	Statistics	-0.031	Financial risk analysis	0.228**
3	Critical thinking	0.020	Think and behave ethically	0.336**
4	Communicate in written format	0.040	Independent thinking	0.347**
5	Focused on outcomes	0.071	Decision making	0.472**
6	Legal regulatory perspective	0.104	Economics	0.377**
7	Cost and management accounting	0.122	Ability to analyse and reason logically	0.479**
8	Strategic management	0.132	Listen effectively	0.503**
9	International global perspective	0.171	Teamwork	0.743**

10	Information technology competence	0.172	Leadership	0.892**
11	Problem solving	0.181	Negotiation skills	0.897**
12			Communicate orally	0.889**
13			Understanding group dynamics	0.904**
14			Work effectively in diversified cultural settings	0.914**
15			Think creatively	0.937**
16			English language	0.949**
17			Personal attributes	0.965**
18			Presentation skills	0.976**
19			Engage in lifelong learning	0.996**
20			Tolerate ambiguity	1.003**
21			Marketing/clients focus	1.020**
22			Self-initiative	1.039**
23			Flexibility and adaptability	1.114**
24			Project management	1.151**

** Independent sample T-test; competence mismatch score is statistically significant at 0.05 alpha level.

in 6th column), the skills items were classified into two categories in Table 6, that is, Category 1 (Insignificant differences) and Category 2 (Significant differences).

Having identified significant differences in perception between the two groups (employers and educators) regarding generic skills development, the analysis focuses next on RO2. This objective was directed towards the development of a framework outlining the main employment-related skills that educational institutes should be focused upon in order to, arguably, improve employability amongst their students.

In order to conduct an appropriate principal component analysis (PCA) Norusis (1992) recommends the use of the Kaiser-Meyer-Olkin (KMO) test and the Bartlett test of Sphericity first. In this study, the KMO was 0.816, which was greater than 0.5 and as such this suggests the observed data is suitable for PCA (see Tabachnick & Fidell, 2007). Further the value of Bartlett's test of Sphericity 'sig' value was 0.000 indicating that there exists a statistically significant correlation among the observed variables

(items). Therefore, the data is suitable for PCA (see Hair, Black, Babin, Anderson, & Tatham 2006). Then the communality for each of the observed items (skills) was evaluated. All of the 35 observed items (skills per Table 5) in this study were showing communality greater than 0.4 (40%), which means none of the observed items (skills) represents a weak correlation. Therefore, none of the observed items (skills) were removed from the items list and all of them were considered for the analysis. Table 7 shows the total variance explained by each component extracted as a result of PCA. Only the number of components that contribute to an Eigenvalue of greater than 1 were significant. As a consequence, only first 6 components were retained and the remainder of the components were discarded. An inspection of the plotted

Table 7: Total Variance Explained^a

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.123	23.208	23.208	8.123	23.208	23.208	4.798	13.708	13.708
2	4.115	11.758	34.966	4.115	11.758	34.966	4.219	12.053	25.761
3	3.036	8.675	43.641	3.036	8.675	43.641	3.980	11.370	37.131
4	2.833	8.093	51.735	2.833	8.093	51.735	3.278	9.366	46.498
5	2.261	6.461	58.196	2.261	6.461	58.196	2.849	8.140	54.638
6	1.485	4.244	62.440	1.485	4.244	62.440	2.731	7.802	62.440
7	.979	2.797	65.237						
8	.961	2.747	67.984						
9	.875	2.501	70.485						
10	.830	2.372	72.857						
11	.803	2.294	75.151						
12	.722	2.064	77.215						
13	.673	1.924	79.139						
14	.644	1.840	80.979						
15	.586	1.674	82.652						
16	.559	1.599	84.251						
17	.499	1.425	85.676						
18	.468	1.339	87.015						
19	.442	1.264	88.278						
20	.423	1.209	89.487						

21	.367	1.049	90.536						
22	.364	1.039	91.575						
23	.336	.959	92.533						
24	.322	.921	93.454						
25	.282	.807	94.261						
26	.265	.757	95.018						
27	.259	.741	95.759						
28	.230	.657	96.415						
29	.225	.644	97.060						
30	.214	.610	97.670						
31	.197	.564	98.234						
32	.193	.550	98.784						
33	.174	.497	99.281						
34	.146	.416	99.697						
35	.106	.303	100.000						

Extraction Method: Principal Component Analysis.

a. Only cases for which group = Employers are used in the analysis phase.

line (Scree-plot) also confirmed 6 components. These 6 components cumulatively explained 62.440% of the total variance (see column 'cumulative %' in Table 7).

Lastly, Table 8 represents the rotated pattern matrix that displays the six-component solution. Loaded components psychometrists suggest omitting the items having a loading of less than 0.4 (Churchill, 1979). This is because psychometrists believe that such items reveal a weak correlation with the loaded components. Therefore, such items have been deleted from the component matrix because they have a negligible effect on the loaded components. Thus, items that are loaded equal to or less than 0.4 within this research were deleted from the rotated pattern matrix (see Table 8). In

Table 8: Rotated Component Matrixa,b

	Component					
	1	2	3	4	5	6
Presentation skills	.759					
Project management	.724					
Creative thinking	.713					
Information technology competence	.708					
Focused on outcomes	.707					

Inter or multi-disciplinary perspective	.701					
Financial risk analysis	.653					
Economics	.634					
Statistics	.629					
Teamwork		.845				
English language		.829				
Listen effectively		.806				
Communication in written format		.790				
Oral communication		.765				
Negotiation skills		.661				
Ability to analyse and reason logically			.736			
Legal regulatory perspective			.727			
Problem solving			.717			
Critical thinking			.712			
Decision making			.681			
Cost and management accounting			.671			
International global perspective			.644			
Financial accounting			.632			
Leadership				.790		
Marketing/clients focus				.769		
Understanding group dynamics				.761		
Strategic management				.737		
Self-initiative					.782	
Flexibility and adaptability					.751	
Personal attributes					.737	
Engage in lifelong learning					.735	
Think and behaves ethically						.793
Work effectively in diversified cultural settings						.761
Tolerate ambiguity						.714
Independent thinking						.560
Cronbach alpha (α)	.883	.802	.848	.855	.832	.815

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

b. Only cases for which group = Only Employers are used in this analysis phase.

Table 8, the rotated pattern matrix shows the loaded items in 6 components, ranging from 0.560 to 0.845 component loading, which satisfy the minimum component loading criteria presented by Churchill (1979).

Once the components have been extracted, one can determine the extent to which the items (skills) in a component are loaded. In this study, for all of the extracted 6 components, Cronbach's alphas were more than 0.7 and, therefore, they were all in the acceptable range from an internal consistency point of view (see Table 8). Thus, as a result of Principal Component Analysis, Table 9 in this analysis shows the 6 extracted components are those that are required in terms of skill-based education for accounting employment purposes.

Table 9: Representing the Six Extracted Components of Skills Based on the Results of Principal Component Analysis

Component 1/ Appreciative skills	Component 2/ Interpersonal skills	Component 3/ Technical and Functional skills	Component 4/Organisational and Business management skills	Component 5/Personal skills	Component 6/Professional skills
Presentation skills	Teamwork	Ability to analyse and reason logically	Leadership	Self-initiative	Think and behaves ethically
Project management	English language	Legal regulatory perspective	Marketing/clients focus	Flexibility and adaptability	Work effectively in diversified cultural settings
Creative thinking	Listen effectively	Problem solving	Understanding group dynamics	Personal attributes	Tolerate ambiguity
Information technology competence	Communication in written format	Critical thinking	Strategic management	Engage in life-long learning	Independent thinking
Focused on outcomes	Oral communication	Decision making			
Inter or multi-disciplinary perspective	Negotiation skills	Cost and management accounting			

Financial risk analysis		International global perspective			
Economics		Financial accounting			
Statistics					

Six sets of skills are presented in Table 9, which educators can use in order to improve skills acquisition for accounting employment purposes. As such, RO2 is validated.

5. Conclusion

This research brings a new theoretical perspective on skills acquisition from the perspective of the professional accounting institutes. Professional accounting institutes are quite different to the universities where most of the research regarding skills development has been conducted previously (see Kavanagh & Drennan, 2007; 2008, Kavanagh et al., 2009, Jackling & Keneley, 2009). These differences relate to funding structure, employment policy, reward system, curriculum development, examination systems, and students' intake criteria. These differences suggest a different level of 'skills acquisition shortfall' from the context of professional accounting institution's perspective when compared with universities. Further, this argument is augmented by Greatbatch and Lewis (2007) who argued that, "generic employability skills and attributes are context sensitive, which is to say they may vary in detail between different work contexts" (p. 7), and Jackling and Keneley (2009) who stated that, "A key argument for embedding skill development into the teaching program is that the development of such skills is more relevant when placed within the context of the discipline under study" (p. 10).

Hence, this research offers a unique theoretical understanding regarding 'skills acquisition shortfall' from professional accounting institutions perspective and not from universities promoting accounting education in their academic programs. In response to RO1, out of the 35 investigated skills in this research, 24 skills were where accounting educators failed to develop skills in students, as expected by employers. Arguably, this pedagogical shortfall reflects 'skills acquisition shortfall' which can be remedied by giving special attention to skills where a statistically significant level of the gap has been noticed among educators' performance and employers' expectations (Category 2 in Table 6).

The findings of RO2 in this research has also an important implication for accounting curriculum perspective. Most of the individuals generally have a belief that

accounting education is mathematical in nature. Thus, resulting, declining accounting institutes enrolment rates. This aspect is well documented in the accounting literature (see Kullberg et al., 1989; Felton, Buhr, & Northey, 1994; Hermanson et al., 1996; Marriott & Marriott, 2003; Wells, 2006; ICAA, 2002; Jackling & Calero, 2006). This false belief is implied because of the lack of knowledge regarding accounting education. This false belief can be remedied through the findings of RO2 (see Table 9), that is, extracted 6 components of skills. Now, these 6 components of skills could be viewed as a skills acquisition framework from the context of accounting job-market. Additionally, those universities which are planning to start accounting degrees can also take initial guidance from this skill acquisition framework in the design of their academic programs.

5.1 Recommendations for Future Research:

In consideration to future research, education institutions should have regard to the views and expectations of students as they are an essential part of the education system (Jackling & Keneley, 2009). De Lange et al. (2006) has also acknowledged the students as a key stakeholder in the learning process. Hence in alignment with the continuity of this research, in future, consideration should be given to reporting the students' views, especially over the constituents of performance gap.

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Appendix 1: Skills with Description Along with Scales that have been Used Within the Questionnaire For Survey Purpose.

For each of the skills listed below, please:

- (1) State the skills competence level that is expected from a student to possess for employment at the time of certification.
- (2) Considering teaching practices, state the students' competence level that will be developed in real by the end of professional accounting program.

S. N	Skills	(1- For Employers)skills competence level required to get employment at entry level 1(No competence) ~~~~~ 5(High competence)	(2- For Educators)Skills competence level that will be developed in real by the end of professional accounting program 1(No competence) ~~~~~ 5(High competence)
1	Decision making: having the ability to conceptually structuralize the situation and select one amongst available options.	1 2 3 4 5	1 2 3 4 5
2	Financial risk analysis: having the ability to assess the factors that may jeopardize the project such as knowing how to conduct ratio analysis, portfolio management, NPV, IRR, cost benefit analysis, sensitivity analysis etc.	1 2 3 4 5	1 2 3 4 5
3	Financial accounting: concerned with the study of reporting the financial transactions and the preparation of financial statements.	1 2 3 4 5	1 2 3 4 5
4	Information technology competence: having the ability to use computer softwares such as knowing MS Office, Peachtree, UBS etc.	1 2 3 4 5	1 2 3 4 5
5	Critical thinking: having a sight to see things beyond its apparent meaning and not accepting anything until proven with logical reasoning or through some evidence.	1 2 3 4 5	1 2 3 4 5

6	International global perspective: Knowledge and understanding of international financial reporting standards and of current developments in the accounting profession.	1 2 3 4 5	1 2 3 4 5
7	A legal regulatory perspective: knowledge of the legal structure of the state such as corporate law, taxation and auditing standards.	1 2 3 4 5	1 2 3 4 5
8	Marketing/clients focus: customer care orientation such as knowing marketing tactics in order to deal with clients.	1 2 3 4 5	1 2 3 4 5
9	Problem solving: coming up with a practical and feasible solution to a problem.	1 2 3 4 5	1 2 3 4 5
10	Leadership: having the ability to manage a group of people such as assigning tasks, giving directions, keeping staff motivated and make them answerable.	1 2 3 4 5	1 2 3 4 5
11	Project management: having the ability to establish and run new projects.	1 2 3 4 5	1 2 3 4 5
12	Think and behave ethically: professional behavior of accountants must be according to accounting code of ethics.	1 2 3 4 5	1 2 3 4 5
13	Flexibility and adaptability: be flexible and adaptable to changing environment in official routine activities.	1 2 3 4 5	1 2 3 4 5
14	Strategic management: concerned with the study of understanding organisation strategic requirements such as knowing porter's 5 forces, SWOT analysis, price differentiation strategies, product development, market penetration etc.	1 2 3 4 5	1 2 3 4 5
15	Independent thinking: having independent professional judgment.	1 2 3 4 5	1 2 3 4 5
16	Focused on outcomes: ability to focus on objective and subjective outcomes such as meeting financial targets and deadlines.	1 2 3 4 5	1 2 3 4 5

17	Tolerate ambiguity: having the ability to ignore annoying routine activities in official environment.	1 2 3 4 5	1 2 3 4 5
18	Think creatively: coming up with new and more effective solutions to old problems.	1 2 3 4 5	1 2 3 4 5
19	Listen effectively: listen attentively and understanding what others are saying.	1 2 3 4 5	1 2 3 4 5
20	Presentation skill: appropriately present your point of view in official meetings.	1 2 3 4 5	1 2 3 4 5
21	Negotiation skill: making others understand what you are saying and convincing them to a point where both parties arrive at agreement.	1 2 3 4 5	1 2 3 4 5
22	Understanding group dynamics: while working in group understanding others work potential, attitude, emotions, and patience level.	1 2 3 4 5	1 2 3 4 5
23	Communicate in written format: having the ability to draft inter office memos and letters.	1 2 3 4 5	1 2 3 4 5
24	Communicate orally: having ability to speak fluently, using appropriate tone to address your boss and subordinates.	1 2 3 4 5	1 2 3 4 5
25	Engage in lifelong learning: attending professional development programs for self-learning.	1 2 3 4 5	1 2 3 4 5
26	Inter or multidisciplinary perspective: while doing accounting considering others disciplinary perspective such as strategic management, corporate law and taxation etc.	1 2 3 4 5	1 2 3 4 5
27	Teamwork: having the ability to collaborate with colleagues to resolve conflicts while working in group.	1 2 3 4 5	1 2 3 4 5
28	The ability to analyse and reason logically: supporting your arguments with theoretical analysis or objective or subjective reasoning process.	1 2 3 4 5	1 2 3 4 5

29	Personal attributes: having confidence, identifying own strengths and weaknesses, motivation level, self-promotion and self-management etc.	1 2 3 4 5	1 2 3 4 5
30	Work effectively in diversified cultural settings: understanding cultural norms and values to work in diversified culture or multinational firms.	1 2 3 4 5	1 2 3 4 5
31	Self-initiative: taking the work responsibility on your own while considering work environment dynamics.	1 2 3 4 5	1 2 3 4 5
32	English language: having the ability to read, write, listen and speak in English.	1 2 3 4 5	1 2 3 4 5
33	Statistics: study of the collection, organization, analysis, interpretation, and presentation of data such as knowing how to conduct regression analysis, correlation, chi-square, t-test, and hypothesis testing etc.	1 2 3 4 5	
34	Cost and management accounting: study of the accounting information to managers within organizations, to provide them with the basis to make informed business decisions such as knowing budgeting techniques, costing, accounting for labor, and accounting for overheads etc.	1 2 3 4 5	1 2 3 4 5
35	Economics background: analyzing the production, distribution and consumption of goods and services such as knowing how to measure GDP, GNP, demand and supply curve, equilibrium, and price elasticity etc.	1 2 3 4 5	1 2 3 4 5

