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Alignment between accounting graduates' competencies and workplace needs: Neo- correspondence perspective and meta-analysis

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Abstract.

This study explores and examines the essential skills for different levels of accounting students in their educational experience. Based on the literature on accounting student skills, it is expected for accounting students to acquire and develop certain skills in conjunction with the developments in the business and technology environment. The study uses the neo-correspondence theory to guide the research theoretical and analytical procedures. It is argued that there is a gap between the current skills that accounting students acquire and the marketplace requirements. Therefore, this study provides empirical evidence based on 34 selected studies that have discussed the various skills for a different level of accounting students with different perceptions using a meta-analysis technique. All perspectives were considered, such as students, employers, educators, accounting professions, and stakeholders. In addition, the results of this study are based on the analysis of previous studies that used surveys as a data collection method to collect the data on accounting skills from different perspectives. The Researchers stated four categories for skills which are: intellectual and technical, personal, interpersonal, and professional skills. Based on this research results, the most rated skill is basic computer skills, which fits under the intellectual and technical skills category. This paper provides implications for accounting educators, employers, and students.

Keywords: accounting education accounting skills, accounting students, curriculum, student's perception.

1. Introduction

With a gradually changing technology environment, accounting students must be equipped with the right skills and attributes (Jackling & De Lange, 2009; Kavanagh & Drennan, 2008; Lim, Lee, Yap, & Ling, 2016; Usoff & Feldmann, 1998; Alshurafat et al., 2019; Uwizeyemungu, Bertrand, & Poba-Nzaou, 2020; Alshurafat et al., 2020). To overcome all challenges due to these changes, accounting students must acquire the most advanced skills, traits, and knowledge through their education (Coady, Byrne, & Casey, 2018). Universities



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

have a vital role in developing the essential skills for accounting students by emphasizing the need for such skills on the accounting curricula (Awayiga, Onumah, & Tsamenyi, 2010). Accounting educators should enhance the accounting curriculum effectiveness by providing the relevant skills to the workplaces. Moreover, accounting educators should enable the students to apply the required skills (Nokhal & Ismail, 2014).

However, there is an increased gap between accounting education output and accounting practice (Ahmed, 2019; Majzoub & Aga, 2015). The primary reason for this gap is that the business environment worldwide is changing while accounting education is not keeping pace with these changes and developments (Apostolou, Dorminey, Hassell, & Rebele, 2015, 2016, 2017, 2018; Majzoub & Aga, 2015). Many studies have identified these gaps with the skills that the work field requires for accounting students (Coady et al., 2018). Based on the neo-correspondence theory, this study will determine these skills using meta-analytic statistical methods.

2. Literature and theoretical framework

There are many empirical studies on accounting skills (Uyar and Çavuşoğlu 2020; Smith, Maguire, and Han 2018; Usoff and Feldmann 1998). According to Al Mallak, Tan, and Laswad (2020), among all skills for accounting students, the most rated skill based on their analysis were the deductive analysis and professional skepticism skill that is linked to the concept of forensic accounting. In contrast, Kunz and De Jager (2019) stated that technical and functional skills are the most ranked skill based on surveys' responses. On the other hand, Hassall, Joyce, Montano, and Anes (2001) stated that quantitative skills such as the professional accounting model are more important than other technical skills.

The neo-correspondence theory refers to the educational theory that seeks the relationship between universities and the marketplace (Nicolescu & P[acaron]un, 2009). The correspondence theory defines universities' social connections to consider the work field requirements and adjust the curriculum accordingly. Correspondence theory also emphasizes the "hidden curriculum," referring to the relationship between educators and their students to generate work attitudes and skills (Saunders & Machell, 2000). Among classes and tasks, educators might develop skills that are not obligated to the students in their curriculums, such as communication skills. This study will investigate the required skills that graduates must master to fit in the workplace using the correspondence theory.

3. Methodology

The study adopts meta-analysis methodology to synthesis a piece of empirical evidence based on the prior empirical studies on accounting studies. Meta-analytic studies present empirical evidence using statistical methods to collect and analyze prior empirical evidence from the literature (Borenstein, Hedges, Higgins, & Rothstein, 2011; Hedges, 1992; Lipsey & Wilson, 2001; Rosenthal & DiMatteo, 2002). This method helps the researchers to explore all prior empirical evidence on accounting skills to build new knowledge over the existing knowledge (Gellin, 2003). This study holds an in-depth literature review that discussed the most



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

critical skills graduates need in the accounting workplaces. The step as per this study requirement is customized into five steps process as shown in figure 1.

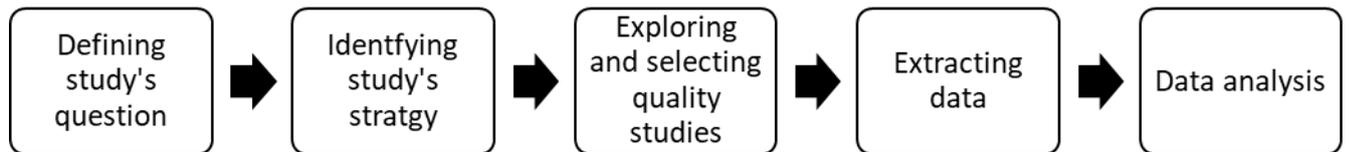


Figure 1: Research Steps

3.1 Research question

Accounting students must acquire many necessary skills to solve complexity in the work field (Berry & Routon, 2020). The skill mixtures are essential for accounting students, which employers are demanding as essential requirements (Jackling & De Lange, 2009). Based on these fundamentals, the following research question is developed:

What are the primary required skills that accounting students must acquire to cope and fit in the work field?

This study will set out the skills that accounting students must develop due to the rapidly changing environment, whether technological or non-technological.

3.2 The search strategy

The researchers started by searching for the studies that are relevant for accounting skills topic using keywords string. The keywords and keywords string encompassed [accounting] and [skill*]; [accountant* characteristic*]; [accounting competency*]; [accounting and knowledge]; [accounting and ability*] and [accounting and trait *]. Multiple online databases were searched to find the most relevant journals that publish articles on the study matter. There were seven online databases used, including EBSCO host, Emerald, JSTOR, SAGE journals, Taylor & Francis, SpringerLink, and Science Direct. Each database resulted in many research studies were chosen based on exclusion and inclusion criteria.

As a next step in the study search strategy, all Studies were analyzed to identify the number of selected studies from the databases. All studies containing surveys as a data collection method were selected, and the rest were excluded. Since this research used the meta-analytic approach as a methodology, all data in the selected surveys must be statistically analyzed. The process of selecting the studies was not limited to a time period. Therefore, the selected studies were distributed over the span of 31 years, from 1989 to 2020. The first published study that fit all inclusion and exclusion criteria was published in 1989 by the Accounting Education Journal (Damitio & Schmidgall, 1989). In addition, the last paper published, which fit the criteria of inclusion and exclusion, was published in 2020 by Accounting Research Journal (Wetmiller & Barkhi, 2020).



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

Table 1: Distribution of publications over the online database

Database	Retrieved articles	Selected articles
Emerald	684	12
Taylor & Francis	409	7
JSTOR	995	0
EBSCO Host	476	6
ScienceDirect	518	1
SAGE	79	2
SpringerLink	219	6
Total	3380	34

3.3 Exploring and selecting quality studies

As mentioned before, the researchers used multiple searching chains in all selected seven databases. The total result from all databases was 3380 papers. Subsequently, the researchers selected the most relevant studies based on the article's title and abstract to ensure each article's relevancy. Then the studies were reduced to 34, while other articles were excluded by the exclusion criteria. All data relating to the selected articles from the various databases were extracted in an excel sheet to keep the data ordered and categorized. The articles are indexed after each database, with the keywords used, search results, article topic, method, authors, and publishing year. The researchers used inclusion and exclusion criteria for further analysis of the articles. These criteria were developed to evaluate the quality of the studies that this research used. Only the studies that meet the inclusion criteria were included, otherwise, were eventually excluded.

Inclusion Criteria

- Studies discussed one or more of the accounting required skills.
- Studies used the survey method to collect the statistical analysis of the accounting skills.
- Studies took at least one perspective under consideration (students' perspectives, educators' perspectives, employers' perspectives, and stakeholders' perspectives).

Exclusion Criteria

- Studies that did not use the survey as a method for data collection and analysis.
- Articles that were not from good reputation sources or journals.
- Duplicate studies from different online databases.
- Studies addressed the survey without statistical analysis for the results.
- Non-English language studies.
- Books, magazines, theses, dissertations, conference papers, and working papers.



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

3.4 Meta-analytical procedure

The selected articles discuss the findings of the accounting skills in a statistical technique. The researchers collected all survey data and converted all different Likert scale ratings for a standard scale. The researchers homogenized all Likert scale data into a reverse scale. The formula used to transform 7 points, 4 points, and 10 points scale is the Stretch Linear for Scale Homogenization (De Jonge, Veenhoven, & Arends, 2014). The researchers excluded all surveys that analyzed the data into regression and other variables without focusing on the skills ranking.

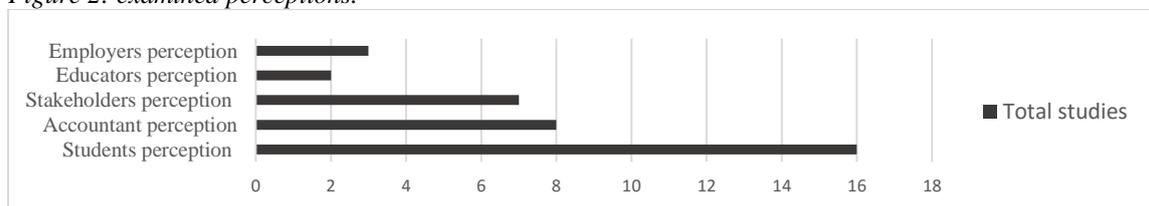
4. Results

The studies selecting process focused on two types of data (1) the articles' characteristics and (2) the meta-analysis of the results of the article. The following subsection demonstrates the research results in relation to each data type.

4.1 Characteristics of the selected articles

The articles' characteristics describe the selected studies' information, including the participants' details, year, country, and publishing journal. All studies must be from a good reputation journal and written in a formal appearance. The main aim of the selected studies is to understand the skills that accounting students must acquire. Therefore, the chosen paper must consist of the accounting skills for undergraduates and postgraduates accounting students. The researchers selected the articles that only consist of a survey method to collect the skills that accounting employers require. The selected articles contained surveys done by employers, accounting students, educators, or stakeholders. As shown in figure 2, all the articles from different perceptions were included since all perspectives are essential to understand accounting skills. Some articles discussed two perceptions for graduates and employers (For example, Nicolescu & Păun, 2009).

Figure 2: examined perceptions.



The selected published articles were distributed over the period from 1989-2020. **Error! Reference source not found.** shows that 2020 was the peak year as the authors were interested in the subject, with a complete publication of 7 papers. Therefore, this finding reflects the current importance of this research topic. However, from 2002 to 2006, the trend did not take place between the scholars. The period from 2014 to 2016 shows a normal distribution. The growing interest started from 2017 until 2020 (Al Mallak, Tan, & Laswad, 2020; Oussii & Klibi, 2017).

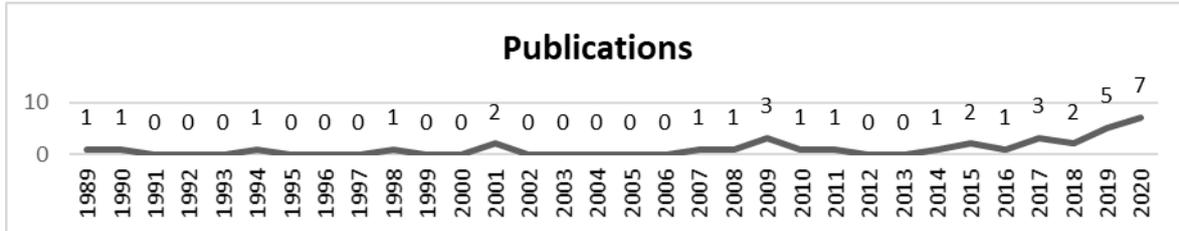


8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

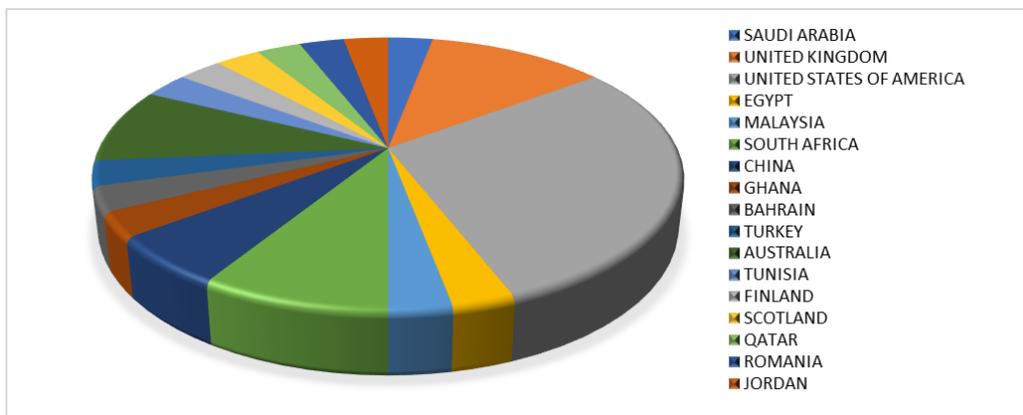
19-21 MARCH, 2021

Figure 3: distribution of the selected papers over the years of publication



As far as the articles organized and contextualized, the researchers found that the articles are mostly from the United States of America (USA), assigning ten papers as the highest number of publications. Then the United Kingdom came in second place with four articles published, as shown in figure 4. The researchers found 29% of the selected papers were made for the American context, which is the highest proportion of the total articles. Moreover, the United Kingdom was 12%, while Australian studies recorded 9%.

Figure 4: distribution of publications by countries.



The researchers found 19 academic journals in the process of searching online databases. Based on the papers' distribution by journals, 34 articles were distributed in different journals. The Journal of Accounting Education has the highest percentage of selected articles by 15%, with five papers from different time periods. In the second rank, the Advances in Accounting Education Journal, Industry and Higher Education Journal, Journal of Accounting & Finance, and Journal of Financial Reporting and Accounting have 9% with three articles published in each journal as shown in table 2. The rest of the studies were scattered between other journals.

Table 2: distribution of publications by journals

Journal	Number of publications	Percent %	References
Accounting Forum journal	1	3%	(Awayiga, Onumah, & Tsamenyi, 2010)
Advances in Accounting Behavioral Research Journal	1	3%	(Meixner, Bline, Lowe, & Nouri, 2009)



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

Advances in Accounting Education Journal	3	9%	(Brink & Stoel, 2019) (Holt, Burke-Smalley, & Jones, 2017) (Johnson, Schmidt, Teeter, & Henage, 2008)
American Journal of Business	1	3%	(Gabric & McFadden, 2001)
Asian Review of Accounting Journal	1	3%	(Al Mallak, Tan, & Laswad, 2020)
Contemporary Issues in Audit Management and Forensic Accounting Journal	1	3%	(Uyar & Çavuşoğlu, 2020)
E-Journal of Business Education and Scholarship of Teaching Journal	2	6%	(Warwick & Howard, 2015) (Usoff & Feldmann, 1998)
Higher Education, Skills and Work-Based Learning Journal	2	6%	(Reyad, Al-Sartawi, Badawi, & Hamdan, 2019) (Neneh, 2019)
Industry and Higher Education	3	9%	(Osmani, Hindi, Al-Esmail, & Weerakkody, 2017) (Hassall, Joyce, Montano, & Anes, 2001) (Kunz & De Jager, 2019)
Journal of Accounting & Finance	3	9%	(Oswick, Barber, & Speed, 1994) (Smith, Maguire, & Han, 2018) (Krikorian, Patterson, Geringer, & Stratemeyer, 2020)
Journal of Accounting Education	5	15%	(Papageorgiou & Callaghan, 2020) (Douglas & Gammie, 2019) (Jackling & De Lange, 2009) (Schafer, Cleaveland, & Schafer, 2020) (Farag & Elias, 2016)
Journal of Business & Accounting	1	3%	(Ahadiat & Martin, 2015)
Journal of Financial Reporting and Accounting	3	9%	(Rahman, Abdullah, Agus, & Rahmat, 2007) (Nokhal & Ismail, 2014) (Oussii & Klibi, 2017)
Journal of Studies in Educational Policy	1	3%	(Räty, Komulainen, Harvorsén, Nieminen, & Korhonen, 2018)
Journal of Teaching in International Business	1	3%	(Stivers, Veliyath, Joyce, & Adams, 2010)
Tertiary Education and Management	1	3%	(Nicolescu & Păun, 2009)
Business Communication Quarterly	1	3%	(Jones, 2011)
SAGE Open journal	1	3%	(Maali & Al-Attar, 2020)
Hospitality Education and Research Journal	2	6%	(Damitio & Schmidgall, 1989) (Damitio & Schmidgall, 1990)
Total	34	100%	

4.2 Meta-analysis results

Based on the used methodology of meta-analysis, the researchers gathered all skills into four categories of skills. As stated in table 3, the four categories are intellectual and technological skills, personal skills, interpersonal and communication skills, and professional skills. Each category consists of a list of skills extracted from previous article data. The table shows the mean and the standard deviation for each skill with the maximum and the minimum figure. In addition, the researchers ranked each skill from the highest to the lowest mean in the same category.

Table 3: meta-analysis results



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

Skills	Rank	Mean	Max	Min	SD	Number of articles	Participants number
Intellectual and technological skills							
Basic computer skills (emails, data entry, documentations)	1	4.49	4.69	4.14	0.00	1	249
Data analysis	2	4.22	4.79	3.5	0.44	9	47523
Critical analysis	3	4.2	4.5	3.8	0.34	4	2608
Using information technology	4	4.08	4.79	3.24	0.44	16	7369
Data- synthesis (innovation thinking)	5	3.74	3.74	3.74	0.00	1	4745
Personal skills							
Time management	1	4.20	4.7	3.873	0.43	3	5197
Apply the fundamental ethical principles	2	4.05	4.44	3.66	0.55	6	1167
Other personal skills	3	4.01	4.31	3.68	0.26	4	881
Self-learning	3	4.01	4.31	3.677	0.26	5	6990
Professional skepticism	4	3.31	3.31	3.31	0.00	1	350
Interpersonal and communication skills							
Active listening and understanding	1	4.29	4.70	3.87	0.58	3	802
Influence others	1	4.29	4.70	3.87	0.58	2	438
Communication skills	2	4.18	4.51	3.3	0.36	8	3083
Other interpersonal skills	3	4.12	4.40	3.71	0.29	4	1553
Negotiate and manage conflicts	4	3.84	4.24	3.43	0.57	2	528
Teamwork skills	5	3.83	4.42	1.59	0.83	12	3498
Planning skills	6	3.80	3.80	3.80	0.00	1	180
Research skills	6	3.80	3.80	3.80	0.00	1	462
Writing skills	7	3.46	4.3	1.66	0.95	6	1525
Oral communication	8	3.19	3.94	1.56	1.12	4	1347
Professional skills							
Decision making	1	3.98	4.50	3.38	0.46	4	1350
Interpretation of financial statements	2	3.93	4.06	3.80	0.18	2	394
Other professional skills	3	3.92	4.07	3.77	0.21	2	860
Apply knowledge to new situations	4	3.89	4.13	3.44	0.23	8	6261
Working independently	5	3.79	3.79	3.79	0.00	1	178
Quantitative skill	6	3.53	3.85	3.01	0.45	2	935
Leadership skills	7	3.48	4.2	1.96	0.73	10	2420

In the first category, basic computer skills (emails, data entry, documentation) has been ranked first with a mean of 4.49 and 249 participants. The data analysis has the second rank in which nine different articles discussed the skill with a mean of 4.22 and 6523 participants. In contrast, the data synthesis skills were the last skills on the ranking scale with a mean of 3.74 and 4745 participants. The skills intellectual and technological skills category is one of the main aims of educators in developing accounting skills (Douglas & Gammie, 2019). The personal skills category lists five skills, and the essential skill ranked at first was time management identified by three articles and 5197 participants with a mean of 4.20. Educators indicate that accounting



8th International Conference on New Ideas in MANAGEMENT, ECONOMICS & ACCOUNTING

BUDAPEST, HUNGARY

19-21 MARCH, 2021

students lack personal skills even they are the most important skills in the work field, such as time management and professional skepticism (Maali & Al-Attar, 2020).

For the interpersonal and communication skills category, there are ten skills, two skills that take the highest mean among other skills, which are active listening and influencing others. Besides, most articles have emphasized teamwork skills, with 12 articles and 3498 participants. This finding is consistent with Nicolescu & P[acaron]un (2009), who have defined that teamwork is an important skill for students to acquire from employers' perceptions. The professional skills category listed seven different skills, which are the most skills employers seek since these skills indicate the proficiency level of each previous skill category in accounting students (Al mallak et al., 2020). For the professional skills, the first required skill is the decision-making skills based on one article with a mean of 3.98 and participants 1350. Furthermore, ten articles out of 34 have discussed leadership skills as important skills with a mean of 3.48 and 2420 participants. Leadership skills are essential due to the high need for accounting employees to be involved and lead other employees (Usoff & Feldmann, 1998).

5. Conclusion

In this paper, the researchers adopt the meta-analysis approach to address accounting students' required skills before entering the work field. The meta-analysis technique covered different skills to be acquired by students based on 34 selected articles. The neo-correspondence theory draws the framework for this research and guides the theoretical and analytical procedures. The meta-analytical combined wide perceptions such as educators, employers, accounting professionals, and students in different levels. The study aims to find the skills that will align the accounting students with the workplace needs. This study points out the misalignment between accounting students' skills and the workplace requirements attributed to the curricula. Nonetheless, the results of this paper consist of a proportion of data from a larger sample. The paper will benefit many readers, such as accounting students, employers, curriculum designers, educators, and stakeholders. It is recommended for future researchers to extend the examination and focus on how to develop each skills category for an accounting major.

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19-21 MARCH, 2021

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BUDAPEST, HUNGARY

19-21 MARCH, 2021

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