

# Does Accounting and Finance Courses Enable Soft Skill Learning? A Mediation Study

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## Abstract

Accounting and finance courses are critical to any management programs as they are relevant to other vocational courses. Does these courses help in improving soft skills also? This is a question which is not much probed in literature and is the focus of the study. The objective of the research is to analyze the effect of two independent variables (interest of students and their educational/professional background) on the soft skill learning in accounting and finance courses under the mediating effect of readiness for the course and the technical learnings from the course. The research is based on a survey of respondents from three stakeholders (students, faculty and professionals) and uses regressions to analyze single variable and multi variable mediations. The study found a suppression effect of interest of students on soft skill learning in the presence of technical learning. Also, soft skill learning was found to be positively affected by educational/professional background of students, readiness of students to take the course and technical learning, taken together. The findings of the study would enable business schools to prepare a better curriculum for enhanced learning in accounting and finance courses, which ultimately affects the three stakeholders.

**Keywords:** business education, accounting courses, finance courses, mediation analysis, learning

## 1. Introduction

The attitude and perceptions of learners in current times are imperative aspects in the teaching learning process. An effective performance evaluation structure is essential to foster student learning. Over the years evaluation methods have evolved from its traditional role of communicating performance assessment to an analysis based report card, even forecasting grades for students. For the effectiveness of a management course it becomes very imperative to understand the variables that are affecting it. Accounting and finance courses are integral and essential to any management program and thus learning in these course is critical to success of such programs. Some of the previous attempts to study variables in this context are, role of Information and Communication Technology by Wells, DeLange and Fieger (2008); difficulty levels of finance courses by, Krishnan et. al. (1999); gender related issues by Henebry and Diamond (1998) and the role of amusement and entertainment by Ardalan (1998). Also, Maceacharn and Roshto (2010) focused on homework, Tanner and Cudd (1999) focused on communication skills, Wygal and Stout (2015) surveyed best teaching practices for accounting course, Beierlein (2013) analyzed the educational background of finance students, McWilliams and Pantalene (1994) focused on managers perspective of such courses while Berry and Farragher (1987); Cooley and Heck (1996) focused on course content and topics. Pritchard et al. (2004) found that students of accounting and finance courses have similar skills compared to the students of subjects such as Marketing and Management.

An increase in roles of related parties (stakeholders) enhances student's learning experience and overall performance in a course, Halawi et. al. (2009). The three important stakeholder of the teaching-learning process in a management institute are faculty, student and industry. Needham (1978) states that in a teaching-learning process, the teacher and the student operate in a dynamic relationship which aims to optimize individual satisfaction. The current set of students have a volatile behavioral temperament. They rarely read newspapers and books, they are impatient and goal oriented, they tend to dislike busywork, learn by doing and are used to instant feedback (Sweeney 2007). McWilliams & Pantalene (1994) suggest that 65% of the curriculum in a management program should be devoted to business courses and the remainder be allocated amongst liberal arts and Science courses.

## 2. Theoretical Construct

Education, being an interdisciplinary subject of study, has been studied in various context previously, including teaching and learning in accounting and finance courses. Ming et al. (2009) found that students demonstrated positive attitudes toward the effectiveness of the finance subjects and that the students indicated that the finance degree courses are able to enhance their analytical, computer, communication, interpersonal, and language skills. Maceacharn & Roshto (2010) studies homework efforts and found it significantly and positively related to performance, Buckless et.al. (1991) found that males outperformed females in accounting courses, contrary to (Mutchler et .al. 1987) who found otherwise. Gracia & Jenkins (2003); Naser & Peel ( 1998) found that previous educational background of accounting enhance performance in future accounting courses.

Specifically to this study, intention to obtain a business degree (Gul & Fong, 1993) and previous knowledge of accounting (Gul & Fong, 1993; Lai, 1994) were found as significant predictors of student performance. Lai (1994) found that gender do not contribute significantly to performance variability. Students opting for a non-accounting degree tend to perform poorly in undergraduate accounting courses relative to other courses (Wooten, 1998). This study tries to analyze if the educational background of students is significant to learning in accounting and finance courses. Saljo (1979) found that mature students (based on age) are more likely to show higher motivation in accounting whereas Bartlett et al. (1993) report that younger students tend to show higher performance in accounting courses. As a variable, Noxel & Cheek (1988); King & Kotrlid (1995) found a positive effect of interest of students on the academic performance. We use interest of students as an exogenous independent variable which affects soft skill learning.

There have been previous studies focused on learning in accounting and finance courses [see Grover et.al.(2009); Beierlein (2013)] but hardly any studies were found which studied the contribution of these courses in enhancing soft skills of students. The study is novel in this context of soft skills learning and also that it is based on the premise that the perspective of the stakeholders (the faculty, the students and corporates) is critical to the teaching-learning process. The study is also novel in using multi variable mediation analysis in this context.

The research considers the impact of two independent variables ['interest of students' (see Noxel & Cheek,1988; King & Kotrlid,1995) and 'type of background' ( see Gul & Fong,1993;Lai,1994)] on soft skill learning [see Ming et. al. (2009)], in the presence of mediation variables ['preparedness and readiness of students' ( see Maceacharn & Roshto, 2010) and 'technical learning (Ahmad & Elshaabany (2020); Halawi et. al. (2009)].

## 3. Literature Review

Learning as a subject of study has ample related studies in management and interdisciplinary areas. Ahmad & Elshaabany (2020) found eight factors affecting the teaching –learning process in accounting and finance courses. These factors are course content; course enrichment; benefits; practicality; pedagogy; course structure; group work and student expectations. Warner & Simmons (2015) recommend that unofficial standardized mid-term evaluations increase end of semester evaluations and student's satisfaction. Weinberg et al. (2009) found that the student evaluations are positively related to current grades but unrelated to learning if current grades are controlled and that there is a weak relationship between learning and marks if the students are ignorant of learning. A timely informal midterm feedback is a positive experience for the students, Warner & Simmons (2015).

As per (McWilliams & Pantalene, 1994), industry suggests that within financial studies, important topic are working capital management, capital budgeting and financial institutions/markets. Grover et al. (2009) highlighted the importance of quantitative knowledge and suggested that pretesting may improve performance in the introductory finance courses (contrary to Beierlein, 2013). Grover et al. (2009) found that the performance in finance courses is affected by performance in prerequisite courses. Beierlein (2013) focused on gender and found that women students with higher verbal scores in arts and education majors are less likely to take the finance course, while men with business and social sciences majors are more likely to take the course. Also, he found that women demonstrated less interest in personal finance than men.

Interest of students (Mean score=4.6, Coefficient of variation =16%): The motivation to take a course and interest in a course can be read synonymously and is represented as an exogenous variable in the study. (Mutchler, et al., 1987; Tyson, 1989) focus on gender and argue that female students are more motivated and interested than male students. Females were also found to be more committed to learning and achievements, Sheard (2009). As a variable, Noxel & Cheek (1988); King & Kotrlid (1995) found a positive effect of interest of students on the academic performance.

Readiness of students (Mean score= 3.28, Coefficient of variation =34%): This variable highlights the readiness,

preparedness and efforts of students in accounting and finance courses and is used as a mediating variable in the study. This is also one of the less explored variable in the context of accounting and finance education with contrary findings, if any. The effectiveness of study efforts and readiness for the courses could vary among students depending on their approach to learning, such as surface, deep or achieving concepts, (Biggs, 1978). While Michaels & Miethe (1989) reported a direct relation in this context, Fejgin (1995) could not find a significant relation between student success and efforts. Davidson (2002) found that accounting performance is affected by deep-study approach and obtaining high grades is generally preceded by efforts and readiness.

Background of students (Mean score= 0.5, Coefficient of variation =103%): The educational and professional background of students is relevant to technical learning in accounting and finance courses and we use this dummy variable as an exogenous and independent variable in the study to explain soft skill learning in these courses. Fields (2013) found that pretesting scores are highly indicative of performance in intermediate finance courses. A student's performance in related courses in the past is a significant factor in prediction models for advanced programs [Cohn, 1972; Simpson & Sumrall, 1979; Schaffer & Calkins, 1980]. Some studies also found that students with practical accounting knowledge or work experience perform better than others (Jackling & Anderson, 1998; Koh & Koh, 1999). The previous knowledge of accounting was found as significant predictors of student performance in accounting courses (Gul & Fong, 1993; Lai, 1994).

Soft skills (Mean score= 3.74, Coefficient of variation =20%): This endogenous variable is used as a dependent variable in the study and is hardly studied previously in literature in the context of accounting and finance courses. The underlying premise is that these technical courses are integral to management professionals and they have multiple benefits, including development of analytical and communication skills of the students. Harb & El-Shaarawi (2007) found that the most important factor that affected students' performance in accounting courses was their competence in English language.

#### 4. Research Methodology

The objective of the research is to analyze the effect of two independent variables (interest of students & educational/professional background) on the soft skill learning in accounting and finance courses under the mediating effect of readiness and technical learning. The research considers the perspective of three major stakeholder in this teaching-learning process (faculty, students and the professionals from the corporate sector). A survey was conducted to collect data from the three types of respondents (stakeholders) during the 2018 calendar year. The questionnaire was prepared by the author based on literature and included 30 items. The survey instrument included questions with a Likert's scale ranging from 1 to 5, varying from strongly disagree to strongly agree, respectively. Face validity of the questionnaire was done based on suggestions from two experts and subsequently it was used for data collection. About 100 usable responses were collected using a convenience sampling technique. The reliability statistics of the sample (Cronbach's Alpha) was found to be 0.77 (acceptable as per Cronbach, 1951). Here, a dummy variable has been used as a proxy to represent 'nature of professional/educational background' (Finance background is 1 while Non Finance background is 0).

In the survey, there were six questions which pertained to learning and the average response scores of these six questions were used as a proxy score representing 'technical learning' while a similar average score of two questions on (analytical skill and communication skill) has been used as a proxy for 'soft skill learning' (dependent variable). Although the sample in this research includes Indian students, the focus of the research is management education and the learnings of the same are relevant to institutions across the globe, including Middle East.

The analysis included analysis of basic statistics, correlation analysis, linear regression (Gul & Fong, 1993; Lai, 1994) and mediation analysis. SPSS 20.0 software was used for analysis.

A 'mediator' variable is related to independent variable (IV) and a dependent variable (DV) and explains (mediates) the relationship between them (Chart1). Single and multiple mediation analysis has been in the study as per chart 1 where the regression coefficients ( $\alpha, \beta, \gamma$ ) should be significant to carry forward with mediation analysis based on equation 1.

$$\text{Soft Skill Learning} = \text{Constant} + \alpha^1 * \text{Independent variable} + \gamma^1 * \text{Mediating variable} \quad (1)$$

If in equation 1,  $\gamma^1$  is found significant while  $\alpha^1$  becomes insignificant, then it can be concluded that mediating variable is mediating the effect of independent variable on the dependent variable. Also, if  $\alpha^1 < \alpha$ , it implies that partial mediation is taking place or if  $\alpha^1 = 0$ , then it is understood that full mediation is happening, Baron & Kenny (1986).

The mediation effect is calculated as follows:

$$\text{Total effect (for single or multivariable mediation)} = a \tag{2.1}$$

$$\text{Total mediating effect (for single mediating variable)} = a - \alpha^1 = \beta * \gamma \tag{2.2}$$

$$\text{Total mediating effect (for multi mediating variables)} = a - \alpha^1 = \beta^1 * \gamma^1 + \beta^2 * \gamma^2 \tag{2.3}$$

$$\text{Proportion mediated} = \text{Total mediating effect} / \text{Total effect} = [\alpha^1 + (\beta_i * \gamma_i)] / a \tag{2.4}$$

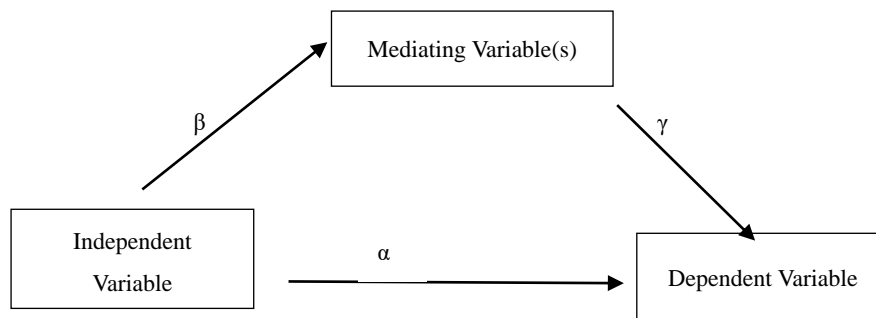
The product of coefficient test is conducted to test the robustness of the mediation, which is deemed valid if  $a - \alpha^1 = \beta_i * \gamma_i$ . Here, and in equation 2.4, ‘i’ indicates number of mediating variables.

Also, Sobel’s test [Baron & Kenny (1986); Sobel (1982)] is conducted to further test the significance of mediation. It is done using an inbuilt model as available on [www.quantpsy.org](http://www.quantpsy.org) which uses mathematical model ‘a’ as the statistical model (MacKinnon & Dwyer, 1993) where  $S_a, S_b > 0$

$$z\text{-value (Sobel’s test)} = a * b / \text{SQRT}(b^2 * s_a^2 + a^2 * s_b^2) \tag{a}$$

In the context of this paper, the model ‘a’ and chart 1 uses  $a = \beta, b = \gamma, S_a = \text{Standard Error}(\beta), S_b = \text{Standard Error}(\gamma)$

Chart 1. Graphical Representation of the Mediation Process (Author’s Interpretation)



(Source: Author’s illustration)

### 5. Data Analysis

The research has a specific objective, to understand the mediating effect of two variables (technical learning and readiness) on the relationship of professional/educational background of students and interest of students on the intended soft skill learning in finance and accounting courses.

*Analysis of summary statistics:* Analyzing, the demographics of the sample, it was found that 75% of respondents are Male, 70% are married and 80% belong to salaried category. The respondents were found to be mostly educated and professionally qualified. About 57% of respondents are from finance background as a student, faculty or corporate person, 56% of respondents are academics, 37% are from industry and 7% are students. Considering the income of respondents, the highest annual income category (more than 10 Lakhs) was also the largest group (36%) in income category.

Analyzing the responses to individual questions, it was observed that about 85% of respondents agreed that a finance faculty should be rewarded differently from a faculty from other domains, 88% of the respondents agreed that group work helps in learning, 87% agree that real life examples and cases helps the learning process, 93% respondents, agreed that interest of a student is important in learning ,77% agree that pre reads are important for learning, 89% agreed that making the class entertaining helps learning, 85% agreed that ethics should be a part of such courses, 92% agree that these courses improve analytical skills, 81% are of the opinion that these courses help to do better job, 85% feel that learnings from these courses are very helpful and handy and 24% disagree that these courses are difficult. Also 46% disagree and only 28% agree that a male faculty teaches better than a female faculty and 85% agree that research helps a faculty to a do a better job of teaching. A major category of respondents, strongly disagreed (37%) in comparison to who strongly agreed (6%) that male students perform better than a female students in accounting and finance courses.

Using coefficient of variation (CV), it was found that maximum agreement was to the issue that technology helps in teaching-learning and the maximum disagreement was found in response to the question that male faculty teaches better than a female faculty.

**Table 1.** Summary Statistics of the Variables (Source: Author's calculation)

	Mean	CV
Background	0.49	103%
Readiness	3.28	34%
Interest	4.59	16%
Technical Learning	4.09	14%
Soft skill Learning	3.74	20%

Analyzing table 1, the least variation in responses was found in technical learning (14%), followed by interest (16%) indicating of a common pattern in responses while the maximum variation was found in educational background (103%), followed by readiness (34%) indicating that the diversification in sample is unbiased and a good fit for analysis. All four independent variables (Table 2) were found to be positively and significantly correlated with soft skill learning indicating that if background of a student changes from non-financial to financial and if technical learning is more, the soft skill enhancement would also be better.

**Table 2.** Correlations (Spearman's Rho values) (Source: Author's calculation)

	Background	Readiness	Interest	Technical Learning
Soft Skill Learning	.444**	.260**	.218*	.355**

\*\* Correlation is significant at the 0.01 level (2-tailed).  
\* Correlation is significant at the 0.05 level (2-tailed).

*Mediations Analysis:* The soft skill learning variable is considered as dependent variable in all the regressions while independent variables and mediation variables keeps on changing as per the analysis.

*Mediation 1 (Single variable mediation):* Independent variables is 'interest of students', mediating variable is 'technical learning' and dependent variable is 'learning of soft skills'.

Analyzing bivariate linear regressions, interest of students was found to have a significant effect on technical learning (p-value =0,  $R^2=25\%$ ,  $\beta=0.4$ ) and on soft skills learning (p-value =0.08,  $R^2=3\%$ ,  $\alpha=0.18$ ). Also, technical learning was found to significantly affect soft skill learning (p-value =0,  $R^2=12\%$ ,  $\gamma=0.46$ ). Subsequently, multivariate linear regression was conducted as equation 3.

$$\text{Soft Skill Learning} = \text{Constant} + \alpha^1 * \text{Interest of students} + \gamma^1 * \text{Technical learning} \quad (3)$$

$$\text{Soft Skill Learning} = 1.86 - 0.004 * \text{Interest of students} + 0.46 * \text{Technical learning} \quad (3.1)$$

Studying equation 3.1 for mediation analysis, it was found that it is a case of suppression as technical learning acted as a suppressor variable (coefficient becomes negative) while mediating the effect of interest of students on soft skill learning ( $\alpha=0.18$ ,  $\alpha^1= -0.004$ , p-value=0.97), although the regression was found significant ( $R^2=12\%$ , p-value=0.02). Thus, proportion mediated was calculated as 102% (mediating effect/total effect) and the mediation (suppression) is found valid through product of coefficient test ( $\alpha - \alpha^1 = 0.184$ ,  $\beta * \gamma = 0.184$ ). The Sobel's test (p-value=0.001) for this mediation was also found significant indicating that interest of students and technical learning significantly affect soft skill learning.

*Mediation 2 (Single variable mediation):* Independent variables is 'Educational/professional background', mediating variable is 'technical learning' and dependent variable is 'learning of soft skills'.

Analyzing bivariate linear regressions, educational/professional background of respondents was found to have a significant effect on technical learning (p-value =0,  $R^2=11\%$ ,  $\beta=0.38$ ) and on soft skills learning (p-value =0,  $R^2=21\%$ ,  $\alpha=0.7$ ). Also, technical learning was found to significantly affect soft skill learning (p-value =0,  $R^2=12\%$ ,  $\gamma=0.46$ ). Subsequently, multivariate linear regression was conducted as equation 4.

$$\text{Soft Skill Learning} = \text{Constant} + \alpha^1 * \text{background} + \gamma^1 * \text{Technical learning} \quad (4)$$

$$\text{Soft Skill Learning} = 1.99 + 0.56 * \text{background} + 0.35 * \text{Technical learning} \quad (4.1)$$

Studying equation 4.1 for mediation analysis, it was found that technical learning mediated the effect of educational background on soft skill learning ( $\alpha=0.7$ ,  $\alpha^1=0.56$ , p-value=0) and the regression was found significant ( $R^2=27\%$ , p-value=0). Thus, proportion mediated was calculated as 20% (mediating effect/total effect) and the mediation could not be confirmed through the product of coefficient test ( $\alpha - \alpha^1=0.14$ ,  $\beta * \gamma=0.17$ ). The Sobel's test

(p-value=0.04) for this mediation was also found significant indicating that 'background of students' and technical learning significantly affect soft skill learning.

*Mediation 3 (Single variable mediation):* Independent variables is 'Educational/professional background', mediating variable is 'readiness of students' and dependent variable is 'learning of soft skills'

Analyzing bivariate linear regressions, educational/professional background of respondents was found to have a significant effect on readiness of students (p-value =0.06,  $R^2=4\%$ ,  $\beta=0.45$ ) and on soft skills learning (p-value =0,  $R^2=21\%$ ,  $\alpha=0.7$ ). Also, readiness of students was found to significantly affect soft skill learning (p-value =0,  $R^2=9\%$ ,  $\gamma=0.2$ ). Subsequently, multivariate linear regression was conducted as equation 5.

$$\text{Soft Skill Learning} = \text{Constant} + \alpha^1 * \text{background} + \gamma^1 * \text{Readiness} \quad (5)$$

$$\text{Soft Skill Learning} = 2.83 + 0.61 * \text{background} + 0.19 * \text{Readiness} \quad (5.1)$$

Studying equation 5.1 for mediation analysis, it was found that readiness of students mediated the effect of educational background on soft skill learning ( $\alpha=0.7$ ,  $\alpha^1=0.61$ , p-value=0) and the regression was found significant ( $R^2=26\%$ , p-value=0). Thus, proportion mediated was calculated as 13% (mediating effect/total effect) and the mediation effect is found valid through the product of coefficient test ( $\alpha - \alpha^1=0.09$ ,  $\beta * \gamma=0.09$ ). The Sobel's test (p-value=0.12) for this mediation was found as not significant indicating an insignificant mediation effect.

*Mediation 4 (M 3 ulti variable mediation):* Independent variables is 'Educational/pr006F is 'learning of soft skills'.

Analyzing bivariate linear regressions, educational/professional background of respondents was found to have a significant effect on readiness of students (p-value =0.06,  $R^2=4\%$ ,  $\beta^1=0.45$ ), on technical learning (p-value =0.002,  $R^2=11\%$ ,  $\beta^2=0.38$ ) and on soft skills learning (p-value =0,  $R^2=21\%$ ,  $\alpha=0.7$ ). The readiness of students was found to significantly affect soft skill learning (p-value =0.003,  $R^2=9\%$ ,  $\gamma^1=0.2$ ) while technical learning was also found to significantly affect soft skill learning (p-value =0,  $R^2=12\%$ ,  $\gamma^2=0.46$ ). Subsequently, multivariate linear regression was conducted as equation 6.

$$\text{Soft Skill Learning} = \text{Constant} + \alpha^1 * \text{background} + \gamma^{11} * \text{Technical learning} + \gamma^{22} * \text{Readiness} \quad (6)$$

$$\text{Soft Skill Learning} = 1.57 + 0.49 * \text{background} + 0.33 * \text{Technical learning} + 0.174 * \text{Readiness} \quad (6.1)$$

Studying equation 6.1 for multivariate mediation analysis, it was found that readiness of students and technical learning mediated the effect of educational background on soft skill learning ( $\alpha=0.7$ ,  $\alpha^1=0.49$ , p-value=0.002) and the regression was found significant ( $R^2=32\%$ , p-value=0). Thus, the proportion mediated was calculated as 30% (mediating effect/total effect) and the mediation effect could be confirmed mildly through the product of coefficient test ( $\alpha - \alpha^1=0.21$ ,  $\beta^1 * \gamma^1 + \beta^2 * \gamma^2=0.26$ ).

## 6. Conclusion

The research aimed to study the impact of accounting and finance courses on soft skills of respondents using mediation analysis. 'Interest of students' and 'professional/educational background' of respondents was considered as independents variables while technical learning and readiness of students were considered as mediating variables. Three single variable mediation and one multi variable mediation was conducted and it was found that the later (equation 6.1) explained 32% of the variance, highest amongst all the four mediation analysis. All the four mediation equations and all regression coefficients (except 'interest of students' in mediation 1) were found significant and positive. Soft skill learning was found to be positively affected by background, readiness and technical learning taken together. Also, it was found that readiness of students and technical learning mediated the effect of educational background on soft skill learning with a mediation effect of 30%.

Soft skill learning was found to be positively and significantly correlated with other study variables (Table 2), indicating that if background ( $r = 0.44$ ) of a student changes from non-financial to financial and if technical learning ( $r = 0.36$ ) is more, the soft skill enhancement would be more for students.

While studying mediation (equation 3.1), a case of suppression was observed where technical learning acted as a suppressor variable (coefficient of independent variable 'interest' became negative,  $\alpha^1=-0.004$ ) to effect soft skill learning . Thus, if the focus is technical learning then the interest of students will have a negative effect on soft skill learning through accounting and finance courses.

*Implications:* The findings of the study would enable business schools to prepare a better curriculum for enhanced learning in accounting and finance courses. Considering the mediating effect of technical learning on soft skill learning, the effect is negative for interest of students and positive for educational/professional background of the

students.

Overall, this study provides a forecasting model (equation 6.1) for soft skill learning (32% explained variance) which can be used by policy makers and academic administrators.

*Limitation and future scope:* Although the variables used as proxy for technical learning and soft skills learning are different still there may be some overlapping of perceptions in mapping the scores for these variables. The study can be replicated on a larger sample and an exclusive sample of stakeholders.

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