

Exploring Student Responses Regarding Most Difficult Coursework Prior to Financial and Managerial Accounting

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This exploratory study surveys students regarding what they consider to be the most difficult college course taken prior to both financial and managerial accounting. Students also provide insight as to what made those courses difficult. Financial accounting student responses point to math, economics, and natural science courses as being the most difficult. Top factors affecting course difficulty are the professor, course content, and workload. Managerial accounting student responses point to accounting, math, and natural science courses as being the most difficult. Top factors affecting course difficulty are content, professor, and workload.

INTRODUCTION

“It is impossible to over-estimate the importance of the introductory accounting course to the education of the business student” (Phillips, 2015, p. 25). In an interview Mark Rubin, department chair at Miami University, stated that objectives in both introductory financial accounting and introductory managerial accounting include critical thinking and business processes. He observed that some students possess the maturity required to acquire critical thinking skills, while many students approach the courses from a task-oriented perspective focused on finding the “correct” answer. The latter students did not engage in a thought process that included analysis, assessment, or decision making within a business issue (Jenkins & Rubin, 2011).

Preparedness of students has been an issue examined in past literature. This exploratory study was undertaken to get students’ perspective on coursework experienced prior to financial and managerial accounting. The intended goal was to gain insight as to what courses students find difficult and what are the perceived reasons that those courses are difficult. An expectation being that courses requiring analysis, reasoning, or critical thinking were likely to be mentioned by students. Critical thinking skills were found to be the best predictor of success in the introductory accounting course (Kealey, Holland, & Watson, 2005).

STUDENT PREPAREDNESS

“A student’s first year of college is vitally important for a number of reasons, not the least of which is the significant gain in learning and cognitive development associated with this period” (Reason, Terenzini, & Domingo, 2006, p. 149). The transition to college can be difficult for students. In addition, many professors feel that incoming students are often not prepared for the change (Brinkworth, McCann, Matthews, & Nordstrom, 2008). When surveyed 47% of high school seniors reported spending three or fewer hours per week studying. In contrast half of freshmen at four-year colleges reported spending more than 10 hours per week studying (McCarthy & Kuh, 2006). Schrader & Brown (2008) stated that understanding the past developmental experiences of freshmen college students puts colleges in a better position to enable freshman student growth and development. They found that prior researchers acknowledged that academic skills, social skills, learning strategies and thinking strategies play a significant role in academic success. The first year of college is critical not only for the content, but in laying a foundation for future academic success and academic persistence (Reason, Terenzini, & Domingo, 2006). Turner (2016) focused on perceptions of male students regarding factors that challenged or supported the transition to college. A key challenge raised by 94% of participants was ineffective study skills or study habits which left students unprepared for the rigor of college academics.

Time management is also critical to academic success. Self-regulated learning skills, a component of time management, in first year college students were found to be at a low level. In addition, a majority of students did not achieve their personal first semester grade point average (GPA) targets and then had a tendency to lower their GPA expectations (Thibodeaux, Deutsch, Kitsantas, & Winsler, 2017). In surveying first year students in Ireland, Surgenor (2013) found that students lacked insight regarding assessment. Students did not know how assessment would be used or how it would affect their learning. Students did have a concept of frequency of assessment, but not impact. Surgenor concluded that students continue to use learning techniques that were successful prior to college and fail to approach learning independently or autonomously. In addition, some students were found to believe that reading should be limited to resources specified in the syllabus.

FIRST ACCOUNTING COURSE

“The primary objective of the first course in accounting is for students to learn about accounting as an information development and communication function that supports economic decision-making” (The First Course in Accounting: Position Statement No. Two, 1992, p. 249). “Organic chemistry is to pre-medicine what the core courses in accounting and economics have become to business” (Jenkins & Rubin, 2011, p. 754). The failure rate in introductory accounting courses is too high in relation to other classes (Kealey, Holland, & Watson, 2005). Phillips (2015) refers to the “often dismal grades earned” (p. 26) in the introductory accounting course. She also reported that previous literature pointed to several performance factors in completing an introductory accounting course. Performance factors included math ability, critical thinking skills, cognitive style, GPA, gender, secondary education accounting studies, possessing a tolerance for ambiguity, internal locus of control, majoring in accounting, and prior experience in the college accounting course.

Logistic regression was applied to 2-year college data which indicated that factors associated with successful completion of the introductory accounting course included high school GPA, collegiate maturity, and completion of both math and English requirements at the college level (McCarron & Burstein, 2017). Clark & Sweeney (1985) applied discriminant analysis in forming an admissions policy for accounting majors. They used three student characteristics: 1) GPA after completing 45 semester credits, 2) grade in college math, and 3) grade in English composition. Their policy was 78% accurate in correctly placing students in the accounting major and 90% accurate in correctly rejecting students. Kealey, Holland, & Watson (2005) believed failure rates in introductory accounting could be reduced by either screening for an adequate level of critical thinking skills before entering the course or including the development of critical thinking skills within the course.

In surveying accounting students in a large lecture setting at an Irish university low levels of self-efficacy were found. Half of students were not confident or unsure about either raising or responding to questions during lectures. In addition these students were unsure about asking for help or feedback from professors. Over 40% of students were not confident in responding to or asking questions within tutorials. Reportedly 45% to 50% of students were not confident or unsure of their ability to create a study plan, manage their time for exam preparation, or generate additional study notes (Byrne, Flood, & Griffin, 2014).

Albrecht (2008) recommended twelve steps to pass accounting courses:

1. Know what the professor expects.
2. Be your own teacher.
3. Work hard from the first day.
4. Attend every class.
5. Take good notes.
6. Participate in class.
7. Read the textbook several times.
8. Look for patterns.
9. Do the homework.
10. Study with a friend.
11. Study long and hard for each exam.
12. Live healthfully.

MATH AND ACCOUNTING

“The main benefit of learning and doing mathematics is not the specific content; rather it's the fact that it develops the ability to reason precisely and analytically about formally defined abstract structures” (Devlin, 2003, p. 39). Similarity has been found between the analysis in mathematics and the analysis in accounting. Both areas of study involve reasoning sequentially starting with basic propositions and ending with “useful” conclusions (Griffin & Williams, 1962). Significant correlation was found between arithmetic reasoning skills and performance in introductory accounting (Fedoryshyn, O’Brien, Hintz, & Bosner, 2010).

Phillips (2015) found support for establishing a minimum standard of GPA and requiring successful completion of degree math requirements prior to entry to introductory accounting. Alcock, Cockcroft & Finn (2008) found students that successfully complete more advanced college mathematics performed significantly better in introductory business courses. Courses included accounting, finance, quantitative methods, information systems, and law. Although completing more advanced college mathematics was found to improve passing rates of introductory accounting, it was not found to improve passing rates in cost accounting. Overall prior academic performance or GPA was found to be the best single factor to predict academic performance (Crawford & Wang, 2014; Dockweiler & Willis, 1984; Duff, 2004; Jones, Kouliavtsev, & Ethridge, 2013; Smith, Therry, & Whale, 2012,).

RESEARCH DESIGN

Students enrolled in financial accounting and managerial accounting were surveyed on the first day of class. Financial accounting is the first (i.e. introductory) course. At this Midwest University it is a 200 level course, generally taken in the third semester. All business majors are required to take both financial accounting and managerial accounting. All business minors are required to take financial accounting. The majority of enrolled students are not declared as accounting majors. There are no course prerequisites to enroll in financial accounting, although students must complete 12 credits and earn a minimum GPA of 2.40 before enrolling. Financial accounting is a prerequisite to enroll in managerial accounting. Accounting majors are required to have a B or better average between both courses in order to enroll in

upper division courses. Non-accounting majors are required to have a C or better in financial accounting in order to enroll in upper division courses.

The first two survey questions asked students to self-report their academic standing and their gender. These two questions included options that students could circle in order to report status. For all other questions the student was provided space to write in the answer, no list of answers was provided for students to check off. Students self-reported their major. Students were asked what has been the most difficult course so far and what made that course difficult. In addition, students were asked what, if anything, have they heard about “this” course and what would make “this” course a difficult course.

RESULTS

158 surveys were collected from financial accounting students. Self-reported academic standing included 15 freshmen, 93 sophomores, 40 juniors, nine seniors, and one non-reported. Regarding gender 70 self-reported as female, 87 as male, and one non-reported. Regarding program major 19 self-reported their major as accounting, 139 self-reported primarily as business or information systems majors.

101 surveys were collected from managerial accounting students. Self-reported academic standing included three freshmen, 39 sophomores, 54 juniors, four seniors, and one non-reported. Regarding gender 44 self-reported as female, 57 as male. Regarding program major 13 self-reported their major as accounting, 86 self-reported primarily as business or information systems majors, and two non-reported.

**TABLE 1
RESPONSES BY COURSE**

	Difficult Course	Course Factors
Financial Accounting Students in Aggregate	Math 22.8% Science 17.1% Economics 14.5% Information Technology 8.2% Accounting 5.7% English 5.7% Sociology 5.1% Other 20.9%	Professor 22.8% Content 21.5% Workload 19.6% Information Recall 7.6 % Topic 8.2% No prior knowledge 4.4% Online 3.2% Other 12.7%
Managerial Accounting Students in Aggregate	Accounting 28.7% Math 20.8% Science 13.9% Information Technology 12.9% Economics 9.9% Other 13.8%	Content 30.7% Professor 22.8% Workload 16.8% Topic 8.9% Information recall 5.9% No prior knowledge 4.0% Other 10.9%

Table 1 ranks which course was the most difficult and what factors made the course difficult for both financial and managerial accounting students. The top three difficult courses for financial accounting students were Math (22.8%), Science (17.1%), and Economics (14.5%). The top three factors for financial accounting students were the Professor (22.8%), Content (21.5%), and Workload (19.6%).

The top three difficult courses for managerial accounting students were Accounting (28.7%), Math (20.8%), and Science (13.9%). The top three factors for managerial accounting students were Content (30.7%), Professor (22.8%), and Workload (16.8%).

Commonality between financial and managerial student responses include difficult course (Math and Science) and difficult course factors (Content, Professor and Workload). The Math and Science courses combine for 39.9% and 34.7% of the difficult course rank for financial and managerial students

respectively. It is notable that managerial accounting students rank accounting highest as the most difficult course. It is left for future study to determine if accounting is listed based on the course itself or due to being some of the most recent content taken. Combined the course factors of Content, Professor, and Workload account for 63.9% and 70.3% of difficulty for financial and managerial students respectively.

The data was then divided between responses by upper and lower classmen. Upper classmen included students self-reporting as junior or senior, lower classmen included freshmen and sophomores. Table 2 ranks which course was the most difficult and what factors made the course difficult for both upper/lower financial and managerial accounting students.

The top three difficult courses for lower classmen in financial accounting were Math (20.2%),

**TABLE 2
RESPONSES BY UPPER/LOWER CLASSMEN**

	Difficult Course	Course Factors
Financial Accounting Students – Lower Classmen	Math 20.2% Economics 16.5% Science 13.8% Information Technology 11.9% English 7.3% Sociology 6.4% Accounting 2.8% Other 21.1%	Professor 22.0% Workload 21.1% Content 20.2% Topic 8.3% Information Recall 6.4% No prior knowledge 6.4% Online 4.6% Other 11.0%
Financial Accounting Students- Upper Classmen	Math 26.5% Science 24.5% Accounting 12.3% Economics 10.2% English 2.0% Sociology 2.0% Other 22.5%	Content 24.5% Professor 24.5% Workload 16.3% Information Recall 10.2% Topic 8.2% Other 16.3%
Managerial Accounting Students – Lower Classmen	Accounting 22.0% Math 19.5% Economics 14.6% Science 14.6% Information Technology 9.8% Other 19.5%	Content 38.1% Professor 21.4% Workload 14.3% Topic 9.5% Information Recall 4.8% No prior knowledge 2.4% Other 9.5%
Managerial Accounting Students – Upper Classmen	Accounting 31.0% Math 22.4% Information Technology 15.5% Science 13.8% Economics 7.0% Other 10.3%	Content 25.9% Professor 24.1% Workload 19.0% Topic 8.6% Information Recall 6.9% No prior knowledge 5.2% Other 10.3%

Economics (16.5%), and Science (13.8%). The top three difficult courses for upper classmen in financial accounting were Math (26.5%), Science (24.5%), and Accounting (12.3%). It is logical to infer

that financial accounting students reporting accounting as the most difficult class were retaking the course. The top three factors for lower classmen in financial accounting were the Professor (22.0%), Workload (21.1%), and Content (20.2%). The top three factors for upper classmen in financial accounting find Content and Professor (both at 24.5%), and Workload (16.3%).

The top three difficult courses for lower classmen in managerial accounting were Accounting (22.0%), Math (19.5%), and Economics and Science (both at 14.6%). The top three difficult courses for upper classmen in managerial accounting were Accounting (31.0%), Math (22.4%), and Information Technology (15.5%). The top three factors for lower classmen in managerial accounting were Content (38.1%), Professor (21.4%), and Workload (14.3%). The top three factors for upper classmen in managerial accounting were Content (25.9%), Professor (24.1%), and Workload (19.0%).

Commonality between upper and lower classmen include difficult course (Math and Science) and course factors (Content, Professor, and Workload). Regarding difficult course Math and Science courses combine for 34.0% and 34.1% for financial and managerial lower classmen respectively and 51.0% and 36.2% for financial and managerial upper classmen respectively. Accounting becomes the highest ranked previous difficult course at 22.0% and 31.0% for both lower and upper classmen in managerial accounting respectively.

**TABLE 3
RESPONSES BY GENDER**

	Difficult Course	Course Factors
Financial Accounting Students – Female	Science 22.9% Math 20.0% Economics 14.3% Information Technology 8.6% Sociology 7.1% English 4.3% Accounting 2.8% Other 20.0%	Professor 25.7% Content 18.6% Workload 18.6% Information Recall 8.6% No prior knowledge 7.1% Topic 7.1% Online 2.9% Other 11.4%
Financial Accounting Students- Male	Math 24.1% Economics 14.9% Science 12.7% Accounting 8.1% Information Technology 8.0% English 6.9% Sociology 3.5% Other 21.8%	Content 23.0% Professor 20.7% Workload 20.7% Topic 8.0% Information Recall 6.9% Online 3.5% No prior knowledge 2.3% Other 14.9%
Managerial Accounting Students – Female	Accounting 31.8% Science 18.2% Economics 15.9% Math 15.9% Information Technology 9.1% Other 9.1%	Content 38.6% Professor 25.0% Information Recall 9.1% Workload 9.1% Topic 4.6% No prior knowledge 4.5% Other 9.1%

	Difficult Course	Course Factors
Managerial Accounting Students – Male	Accounting 26.3% Math 24.6% Information Technology 15.8% Science 10.5% Economics 5.3% English 3.5% Other 14.0%	Content 24.6% Workload 22.8% Professor 21.0% Topic 12.3% Information Recall 3.5% No prior knowledge 3.5% Other 12.3%

The data was then divided based on gender. Table 3 ranks which course was the most difficult and what factors made the course difficult for female and male financial and managerial accounting students.

The top three difficult courses for female students in financial accounting were Science (22.9%), Math (20.0%) and Economics (14.3%). The top three difficult courses for male students in financial accounting were Math (24.1%), Economics (14.9%) and Science (12.7%). The top three factors for female students in financial accounting were the Professor (25.7%), Content (18.6%), and Workload (18.6%). The top three factors for male students in financial accounting Content (23.0%), Professor (20.7%) and Workload (20.7%).

The top three difficult courses for female students in managerial accounting were Accounting (31.8%), Science (18.2%), and Math and Economics (both at 15.9%). The top three difficult courses for male students in managerial accounting were Accounting (26.3%), Math (24.6%), and Information Technology (15.8%). The top three factors for female students in managerial accounting were Content (38.6%), Professor (25.0%), and Information Recall and Workload (both at 9.1%). The top three factors for male students in managerial accounting Content (24.6%), Workload (22.8%) and Professor (21.0%).

Commonality between female and male students include difficult course (Economics, Math and Science) and course factors (Content, Professor, and Workload). Regarding difficult course Economics, Math and Science courses combine for 30.2%, 35.9% and 41.1% for financial and managerial female students respectively and 20.2%, 48.7% and 23.2% for financial and managerial male student respectively. Accounting becomes the highest ranked previous difficult course at 31.8% and 26.3% for both female and male students in managerial accounting respectively.

Students were asked what they had heard about the accounting course in which they were currently enrolled. Financial accounting students had heard that the course was hard (21.5%), had heard nothing (35.4%), or gave a variety of answers to the question. Managerial accounting students had heard that the course was hard (25.7%), had heard nothing (26.7%), or gave a variety of answers to the question.

Students were also asked what would make the current course difficult. Financial accounting students mentioned the professor (15.2%), math (3.2%), workload (13.9%), or responded with the same factor that they had reported regarding what made the previous course difficult (12.0%). Managerial accounting students mentioned the professor (5.9%), math (5.0%), workload (5.9%), or responded with the same factor that they had reported regarding what made the previous course difficult (21.8%).

DISCUSSION

The data was viewed in aggregate by course, by upper and lower class, and by gender. In all views Math, Economics, and Science were consistently listed as difficult prior courses. Students in managerial accounting consistently listed accounting as a difficult prior course. In regards to what made a course difficult students were consistent in all views that Content, Professor, and Workload were the primary difficult factors.

Content was coded differently from Topic. Student comments that mentioned Topic generally referred to the course as boring or an area in which they had no interest. Content was inferred to mean the subject of the course rather than the interest in the course. The students did not provide depth on their

meaning in using the term Content. It may infer that the material was more difficult than what was encountered in previous courses, but the true meaning is left for future study. Similarly Workload was raised by students as a contributing factor to a course being difficult. Again, this exploratory study was designed to collect student perceptions and deriving what factors made Workload a difficulty is left for a more in-depth future study.

Professor was consistently raised as a factor in making a course difficult. Gross, Lakey, Lucas, LaCross, Plotkowski, & Winegard (2015) examined the impact of relationship effects and professor effects on student evaluations. Relationship effects recognize that unique matches can occur between students and professors, which drive results that the professor is unusually effective for some students, but not for all students. Professor effects reflect an inter-rater agreement, which drive results that the professor is effective on average across all students.

Brown & Kosovich (2014) found a positive relationship between student enrollment and professor ratings on RateMyProfessor.com. One positive component was if the professor was listed as “easy”. They also found evidence that course scheduling influenced student enrollment into a specific section. Stonebraker & Stone (2015) also used RateMyProfessor.com as a public data source. They found that “easy” was three times the influence that age had on student perceptions. Students tended to rate older males higher than older females. This was especially true for math and science courses. They found no measureable relationship between age and student ratings for younger faculty. Ratings fell consistently as instructors grew older, although for professors rated “hot” age had no significant impact on course ratings.

Senko, Belmonte & Yakhkind (2012) found that the achievement goals of students affected the qualities that students desire in an instructor. They classified goals between mastery and performance. Students pursuing mastery goals preferred instructors who were stimulating and challenging intellectually. Students pursuing performance goals preferred instructors who would present material clearly and give clues regarding how to succeed.

Regarding what made a course difficult no dominant themes were discovered from the comments provided by students. Multiple students listing Math did mention complexity, recalling formulas, workload, or not good/not interested in subject. Multiple students listing Economics did mention terminology and hard to grasp concepts. Multiple students listing Science did mention memorization and hard or confusing concepts. Multiple students listing Accounting did mention lack of previous knowledge in subject, workload, and difficult concepts.

LIMITATIONS

Students at one Midwest University were surveyed regarding what has been the most difficult course so far and what made that course difficult. The results are not necessarily generalizable to a broader population of students. This is especially true as course sequence and courses required vary between universities. For example, students are more likely to take an introductory accounting course as a freshman at a private university.

The focus of this exploratory study was to identify prior difficult courses and difficulty components. Student responses raised Math, Economics, and Science as difficult courses and Content, Professor, and Workload as factors making the course difficult. Further study is required to explore each of these identified items in order to further define and gain understanding of student perceptions.

Requiring students to write in their responses to questions rather than providing a list to select from generated responses that were not uniform. Some students recalled and provided course numbers (e.g. ACCT 291), some provided the course title, and others provided a content area (e.g. English). The lack of uniformity required more coding of data. The benefit of students requiring a written response was avoiding “leading” student responses based on a provided list of course options. Instead of selecting what was provided, the student provided the response without guidance.

RECOMMENDATIONS

Both Phillips (2015) and Kealey et al (2005) refer to poor results in introductory accounting. Kerr & Krull (2017) found that students no longer possess the basic arithmetic skills required to address much of the accounting curriculum. Similar to mathematics and economics the study of accounting requires analysis, reasoning, and/or critical thinking.

This study brought to light that students find math, economics, and accounting difficult. Perhaps the work of Su, Ricci, & Mnatsakanian (2016) in mathematics can be applied to both economics and accounting.

A teacher that emphasizes reasoning, logic and validity gives their students access to mathematics as an effective way of practicing critical thinking. All students have the ability to enhance and expand their critical thinking when learning mathematics. Students can develop this ability when confronting mathematical problems, identifying possible solutions and evaluating and justifying their reasons for the results, thereby allowing students to become confident critical thinkers. Critical thinking and reasoning allows students to think about how they utilize their discipline of mathematical skills (i.e., they think about their method of thinking). Metacognition helps students to recognize that math is logical reasoning on solutions to problems (Su, Ricci, & Mnatsakanian, 2016, P. 190).

Phillips (2015) reported that for introductory accounting students, performance factors included math ability, critical thinking skills, cognitive style, and GPA among others. GPA was established previously in the literature review as the most important predictor of academic success. McCarron & Burstein (2017) found that completion of both math and English requirements was associated with success in the introductory accounting course. It would appear that either the introductory accounting course should include components that address the lack of required skills to be successful in the course or those skills need to have been developed in required prerequisite courses. The latter is consistent with Reason, Terenzini, & Domingo(2006) who stated that the first year of college is critical in laying the foundation for both academic success and academic persistence. It may also be consistent with Surgenor (2013) who concluded that students continue to use learning techniques that were successful prior to college.

Students may very well approach learning consistent with past practice until that approach is found to be unsuccessful. If students are unable to discern a required learning shift due to a change in workload or content then it may fall on the professor to incorporate structure or strategy to address the lack of skills students bring to the course. If the professor can be perceived to be the reason students find a course difficult, then perhaps the professor can become the reason students are successful.

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