

# Comparison of Academic Performance for Management Accounting: Prior and During the Covid-19 Pandemic

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## Abstract

Pandemic COVID-19 has disrupted most of the industries around the world including the education industry. In ensuring continuous education during the pandemic, online learning provides a platform to bridge the gap. Virtual method of learning provides a whole new experience not only for learners but also for educators. To bring conceptual elasticity, learners need to acquire the skills that are of major importance. Due to the evolving nature of the accounting discipline, as embodied in the curriculum, accounting educators are therefore demanded to change their teaching and assessment practices and to align with the new curriculum. Students also need to adapt to the changing nature of the learning environment where remote learning has become an emergency response of the pandemic. Indirectly, the crisis has amplified inequalities and also provided a unique opportunity to reimagine the traditional model of learning and pedagogical tools. Accordingly, this study examines whether there is any significant difference for students' performance in Management Accounting pre and during the COVID-19 pandemic. Using a series of t-tests with the performance of students being the dependent variable and the different batches being the main independent variable. Despite the fact that some studies conclude that the pandemic has negatively affected students, the findings of this study indicate the opposite. In fact, the performance of the students has improved. The results of this study are important to accounting academics in the period of post-COVID-19 era as online education could provide a strategic priority to enhance professional skills in the new information and communication technologies learning solutions.

**Keywords:** Academic Performance, COVID-19, Management Accounting, Teaching and Learning.

## **Introduction**

The onset of the COVID-19 global pandemic has led to fundamental change in our habits, norms, and ways of living. It has been suggested that “things will never be the same anymore”. The way teaching and learning being conducted at schools and universities are rapidly changing. The vast majority are moving towards online learning that includes online tutoring and practice programmes, posting videos and online meetings.

According to the United Nations (2020), the COVID-19 pandemic has created the largest disruption of education systems in history, whereby about 1.6 billion learners in more than 190 countries and all continents are being affected. The outbreak of the COVID-19 pandemic has dramatically shaped higher education system and has demonstrated a distinct rise of emergency changeover to e-learning (Keržič et al., 2021).

In the case of accounting education, sustainability accounting refers to the practice of measuring and reporting environmental impacts to various interested stakeholders. Sustainability improves the quality of lives and the key to a better future. Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs (United Nations, 1987). The 17 Sustainable Development Goals (SDGs) encompass 169 targets and 230 indicators are global goals that represent a holistic approach to achieving sustainable development for all.

Specifically, SDG number 4, Quality Education focuses on ensuring inclusive and equitable quality education and promotes lifelong learning opportunities for all. It is aimed by 2030, all youth and a substantial proportion of adults would achieve literacy and numeracy and all learners would acquire the knowledge and skills required to promote sustainability while appreciating cultural diversity.

Hence, the education system needs to be strengthened so that articulation and flexibility across levels and types of education can be effectively implemented. Hybrid learning enables mobilisation of alternative pedagogical resources from national and international platforms.

This paper examines whether there is any significant difference for students’ performance in Management Accounting pre and during the COVID-19 pandemic. Accordingly, it provides an important platform to understand the student performance so that they will have better employment opportunities.

Fast advances in technology and the move towards hybrid and online learning demand the students to be equipped with the required skills and knowledge. The framework for virtual learning to a large extent, depends on practical orientation on cognitive, emotional, and behavioural engagement (Louwrens and Hartnett, 2015). Accordingly, this paper provides an avenue to better understand the difference in students’ performance in Management Accounting between the traditional approach to teaching and the conventional ones.

The objective of this paper is to examine whether there is any significant difference for students’ performance in Management Accounting pre and during the COVID-19 pandemic. Indirectly, this paper would provide some insights into the pedagogical approach between the physical class and online learning.

In addition, this paper also looks into the students and lecturers perspective to gain better insights into the issue of change in teaching structure from face-to-face to online learning.

The paper is organised as follows. The next section reviews the role of accounting educators to shape and prepare future accountants. It also provides some overview into the pedagogical approach between the classroom learning and online learning. The third section describes the research methodology which is based on a quantitative approach that looks into the students' performance for Management Accounting subject. The main findings obtained are explored in the fourth section. Finally, discussions, conclusions, and limitations are elaborated in the final section. Recommendations are also made on the way forward for accounting education.

### **Literature Review**

This section presents the related literature on students' performance and accounting education. This also includes the synthesis of the gap for this study in terms of defined concept and operationalisation.

### **Students Performance**

There are various studies that examine students' performance from various perspectives. Some studies focus on the effectiveness of a change in teaching structure towards the performance of students in an introductory management accounting subject (Baird and Narayanan, 2010); while others look into the prediction of students' learning performances (Wong and Yip, 2020). This prediction enables early intervention being incorporated in the design of students activities to suit their skills and knowledge. Cheng and Ding (2021) examines the summative and formative assessment for introductory accounting subjects and the effect on students' engagement.

Performance is concerned with dimensions of quality assurance in learning. In measuring student academic performance, there are different varieties and scales used in the assessment. It also includes soft skill development and self-efficacy. The amount spent studying coupled with additional exercises could also improve academic performance (Plant et al., 2005). Additionally, some studies indicate that certain study habits are highly correlated with accounting grade and performance (Yu, 2011).

### **Accounting Education**

There are also studies that look into gender differences for the introductory accounting courses (Mutchler et al., 1986; Martinis et al., 2003). Applying the goal achievement theory, Huikku et al (2022) examine whether gendered patterns can be observed in first-year students' achievement goals in an introductory accounting course. The findings indicate that male students tend to adopt performance-approach goals. Hence, this suggests that masculinity in accounting plays a role and that male students are more competitive than their female counterparts and that their performance is driven by the desire to outperform others.

Basically, the role of accounting educators is to help students learn to become professional accountants. There are various studies that looked into the role of accounting educators (Gray et al., 1994; Ngwenya, 2014; Staubus, 1975; St Pierre et al., 2009; Zraa et al., 2011). However, due to the changing education requirements. Using his personal experience in teaching Management Accounting for 35 years, Böer (2000) provides insights into the role of educators

in shaping the future accountants. The management accounting has evolved from being a sole focus on costing (as in 1950s) to value creation (2000s onwards). The application of technology, spreadsheet and databases are a must. To do a better job at teaching management accounting, Böer (2000) suggests that the educators need to enhance their understanding of the major decisions made by the accountants. This is to ensure that they are better equipped to serve the needs of the students and also to ensure that important issues and critical decisions are continuously relevant.

Ayob and Selamat (2011) look into the determinants of poor students' performance in Management Accounting subject. They highlighted that the number of hours attending the lecture is an important factor that contributes to the performance. This indicates that absenteeism could contribute to negative performance. In addition, Ayob and Selamat (2011) also highlighted that pre-requisite subject is an important factor that contribute to the students' performance.

Arjomandi et al (2018) examine the impact and interplay between various factors associated with student engagement for both traditional and non-traditional students. Their empirical findings indicate that traditional and non-traditional students display quite different behaviour in some aspects of psychosocial influences, student engagement and proximal consequences. It also reveals that there is a strong connection between active teaching strategies and engagement for traditional students, however, the link is weak for non-traditional students.

### **Theory**

Achievement goal theory (AGT) is one of the most cited theories of motivation in education research (Anderman and Patrick, 2012; Huikku et al., 2022). This theory posits two major explanatory constructs or goal dimensions which are performance-approach goal orientation and a mastery-approach goal orientation (Dweck and Leggett, 1988). The former refers to the approach that focuses on the development of competence for its own sake (Elliot and McGregor, 2001) while the latter focuses on the motivation to learn for the sake of gaining the knowledge and mastering the topic. In other words, a performance-approach emphasis on doing better than other students while a mastery-approach emphasis on the learning itself and self-improvement to enhance the knowledge and abilities. By employing goal achievement goal theory, this study examines the students' performance in Management Accounting pre and during the COVID-19 pandemic.

### **Research Methodology**

This paper is designed to enable a comparison of the students' performance across two pandemic era – prior and during the pandemic COVID-19. The paper compares the results for students taking the Management Accounting paper. Topic coverage for the paper includes contract costing, process costing, marginal and absorption costing, cost-volume-profit analysis and budgeting. comparison involved evaluating the performance of students from different semesters taking the same subject.

Two modes of teaching which are face to face and online learning are compared. For control purposes, the continuous assessment and the final assessment rubrics and the level of

difficulty of the questions or the test specification table (i.e. based on bloom's taxonomy) remains the same for the two periods of comparison.

The students' performance is evaluated based on formative and summative assessments. The goal of formative assessment is to monitor the student performance and provide ongoing feedback so that continuous improvement can be made while the goal for summative assessment is to evaluate the students' performance at the end of the course against a certain benchmark. Accordingly, the assessment for the students taking this course includes quiz, assignment, tests and final examination.

The course duration is 14 weeks during which the students learn and gain experience with their assessments. 40 percent of the assessment lies in the formative assessment while 60 percent of the assessment is captured in the final examination.

4 semesters results obtained from classroom-based learning are compared with 4 semesters results obtained from online-based learning. Comparisons are made between the performance of students under the two different teaching structures. A series of t-tests with the performance of students being the dependent variable and the different batches or semesters being the main independent variable.

To gain further insights, interviews were conducted with the students to get their views on the subject matter. In addition, interviews with the lecturers teaching the subject were also conducted to provide a richer input and a deeper understanding of the students' performance.

## Results

This section presents the results of this study. Table 1 depicts the total 8 batches representing 8 different semesters for students taking Management Accounting. Batch 1 until Batch 4 are the students that experience online learning while Batch 5 to Batch 8 are those that go for physical classroom. The number of students that pass and fail the subjects are as per identified in Table 1.

Table 1

*The student performance over 8 semesters*

	ODL BATCH 1	ODL BATCH 2	ODL BATCH 3	ODL BATCH 4	F2F BATCH 5	F2F BATCH 6	F2F BATCH 7	F2F BATCH 8
	SEM FEB-22	SEM JUL-21	SEM FEB-21	SEM JUL-20	SEM DEC-19	SEM JUN-19	SEM DEC-18	SEM JUN-18
<b>PASS</b>	200	41	248	29	237	38	303	72
<b>FAIL</b>	11	6	6	0	16	2	6	9
<b>TOTAL</b>	211	47	254	29	253	40	309	81

*Legend: ODL = open distance learning, F2F = Face-to-face learning.*

*SEM = Semester*

It can be noticed that the number for each alternate batch is more or less the same. This is because the university has two intakes during a year. A July intake is the main one as the students enter university right after the SPM (*Sijil Pelajaran Malaysia*). Accordingly, there is a huge number of students for this batch. However, for the second intake during the year, the number of students is relatively small. The second intake are to accommodate the overwhelming demand for tertiary education.

Figure 1 presents the percentage of students who pass and fail the course. Overall, the percentage of students who pass the course is much higher than the ones who fail.

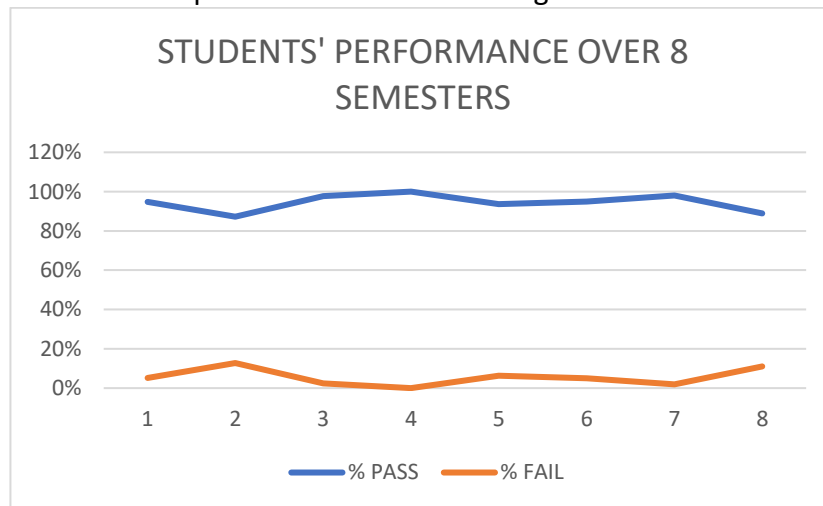


Figure 1: The students’ performance for Management Accounting course over 8 semesters

Table 2

*T-test result comparing ODL and F2F*

	N	Mean	S.D	Mean Difference	t-value	Sig
ODL	541	73.48	15.47	0.93	1.082	0.140
F2F	683	72.55	14.53			

Table 2 reports an analysis of the students’ performance between the online learning and face-to-face learning over 8 semesters of which 4 semesters are for the online learning (ODL) while the remainder are for the face-to-face learning (F2F). There are altogether 541 students for the ODL and 683 students for the F2F. The means for the students’ performance for ODL and F2F are 73.48 percent and 72.55 percent respectively. While the standard deviations for ODL and F2F are 15.47 and 14.53 respectively. Surprisingly, the t-test result indicates that there is no significant difference ( $p\text{-value} > 0.10$ ) in terms of the students’ performance for the two groups. In fact, the average students’ performance during ODL is much better than the F2F with a mean difference of 0.93.

A more detailed comparison between batches is made. Batch 1 and Batch 3 are compared. This represents the ODL for the main intake.

Table 3

*T-test result comparing Batch 1 and Batch 3*

	N	Mean	S.D	Mean Difference	t-value	Sig
Batch 1	211	74.52	17.22	0.80	0.554	0.290
Batch 3	254	73.72	13.06			

As indicated in Table 3, the means for Batch 1 and Batch 3 are 74.52 percent and 73.72 percent respectively. Again, Table 3 depicts no significant difference between the performance between the two ODL batches.

Table 4

*T-test result comparing Batch 1 and Batch 2*

	N	Mean	S.D	Mean Difference	t-value	Sig
Batch 1	211	74.52	17.22	7.71	2.70	0.004***
Batch 2	47	66.81	19.80			

\*\*\* significant at 0.01 confidence level

Table 4 presents the students' performance for Batch 1 and Batch 2. Both are from the ODL batches. The t-test indicates that there is highly significant difference between the two batches with a p-value of 0.004 (p-value < 0.01).

Table 5

*T-test result comparing Batch 2 and Batch 4*

	N	Mean	S.D	Mean Difference	t-value	Sig
Batch 2	47	66.81	19.80	-7.73	-2.176	0.016**
Batch 4	29	74.53	11.13			

\*\*\* significant at 0.01 confidence level

Table 5 presents the students' performance for Batch 2 and Batch 4. Both are from the ODL batches with the second intake. The t-test indicates that there is significant difference between the two batches with a p-value of 0.016 (p-value < 0.05).

Next, comparisons are made for the students' performance during F2F.

Table 6

*T-test result comparing Batch 5 and Batch 7*

	N	Mean	S.D	Mean Difference	t-value	Sig
Batch 5	253	70.62	14.78	-5.47	-4.715	0.001***
Batch 7	309	76.08	12.69			

\*\*\* significant at 0.01 confidence level



Table 6 presents the students' performance for Batch 5 and Batch 7. Both are from the F2F batches with the main intake. The t-test indicates that there is highly significant difference between the two batches with a p-value of 0.001 (p-value < 0.01).

Table 7

*T-test result comparing Batch 6 and Batch 8*

	N	Mean	S.D	Mean Difference	t-value	Sig
Batch 6	40	73.75	16.27	9.26	3.059	0.001***
Batch 8	80	64.49	15.00			

\*\*\* significant at 0.01 confidence level

The same pattern can be observed when comparing the students' performance for Batch 6 and Batch 8 as depicted in Table 7. The t-test indicates that there is highly significant difference between the two batches with a p-value of 0.001 (p-value < 0.01).

### Discussion and Conclusion

Despite the fact that some studies conclude that the pandemic has negatively affected students (Hasan and Bao, 2020), the findings of this study indicate the opposite. In fact, the performance of the students has improved. In general, students' performance showed an improvement during the COVID-19 pandemic, compared to the prior periods. The findings provide strong support for the benefits of the new teaching approach in contributing to the students' performance. Total flexibility and self-paced learning are the primary advantages of online learning.

With online learning, students are able to undertake a variety of learning activities. They are also able to access various online review exercises and course materials, discussion with peers and self-reflection. This would in turn provide a platform for more effective learning and thus reflected in the students' performance and grades.

Additionally, AGT sheds light on individuals' goal orientations and their impact on motivation and performance. This paper employs the AGT on the education field and academic performance are evaluated during Covid-19 and post Covid periods. AGT argues that students with mastery goal orientation have intrinsic motivation and were self-motivated to develop competence and study skills to attain mastery. They are prone to excel in both remote learning and traditional classroom setting. Conversely, students with performance goal orientation tends to function better in a traditional class setting or in hybrid learning environment, to demonstrate their competence, to make social comparison and to outperform their counterparts. Thus, a collaborative and competitive social environment motivate them better as they desire to gain recognition, status or rewards based on their accomplishments. Accordingly, this paper could be expanded to explore how different factors influence students to attain the learning objectives. By understanding the factors, such as students' goal orientation, educators' role, assessments method, learning medium, classroom climate and interactions, researchers can design educational strategies and framework to foster adaptive methods and enhance students in achieving their full potential. Understanding the impact of different interventions, based on AGT principles, can help



educators and policymakers design effective strategies for remote or hybrid learning environments.

Contextually, the paper compares students' performances in management accounting subject during online distance learning (ODL), with students taking the same course in post-pandemic period. This analysis highlights any significant differences on the effectiveness of both learning settings on assessing academic performance, knowledge retention and students' engagement. The contribution of this paper allows future investigation in enhancing the quality of learning, both traditionally and remotely. Surveys and interviews could be undertaken to gather data on student's and educators' perception related to experiences, challenges and preferences of learning method that provides the highest motivation and effectiveness. The potential of ODL learning tools and platforms in enhancing students' learning outcomes, such as video conferencing, Google Classroom, Microsoft Teams and other digital and innovative learning tools, could be further examined and integrated into a hybrid learning models in management accounting classes. This paper also explores the potential for improvement in curriculum design and pedagogy to prepare students for future challenges and lifelong learning in the accounting field. It also raises the area for future research on how the skills and competencies developed through remote learning, such as during ODL, align with the evolving demands of the accounting profession.

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