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The Effect of Student Performance towards the Adoption of Blended Learning: A Case Study of Investment Students

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Abstract

This study delves into the crucial role of blended learning in optimizing academic performance and learning experiences among investment students enrolled in the INV537 course at Universiti Teknologi MARA (UiTM) Cawangan Johor Kampus Segamat for the academic year 2022/2023. The methodology involved a rigorous data collection process, utilizing four primary sources: entrance and exit surveys, Student Feedback Online (SuFO), student statistical grades from the Student Information Management System (SIMS) database, and the Closing the Loop (CDL) and Continuous Quality Improvement (CQI) report. The major findings indicate an exceptional overall performance indicator of excellence for the course. Students expressed elevated satisfaction levels due to effective teaching methods, well-structured content, suitable assessments, and a supportive learning environment. Despite this, the course grade was only rated as fair, pointing to areas for improvement, particularly concerning challenges faced by students in the final examination. For future research, this study recommends employing a longitudinal approach, undertaking comparative analyses with other teaching methodologies, qualitatively exploring students' perspectives, investigating the impact of faculty development programs, and assessing the efficacy of hybrid blended learning models.

Keywords: Adoption, Blended Learning, Digital Learning, Flexibility, Performance

Introduction

Malaysia's education sector has successfully integrated e-learning, blended learning, flipped classrooms, and open and distance learning (ODL) to improve education quality and student outcomes both nationally and globally (Mazlan et al., 2020). These approaches have also contributed to the advancement of global learning by fostering collaboration to address global challenges and promote lifelong learning opportunities worldwide.

Blended learning stands out as a pedagogical approach that fosters cross-cultural interactions and fosters inclusive learning environments. This innovative teaching method combines internet-based instruction with face-to-face tutoring in a collaborative learning framework, thus facilitating improved distance-student performance. By implementing "blended" online teaching, students receive guidance from educators during in-person classes, allowing them to seek clarification and deepen their understanding of the subject matter.

Blended learning is distinctly unique due to its integration of both face-to-face and online components, setting it apart from e-learning, flipped classrooms, and ODL, which lack in-person interactions. This combination allows for a more comprehensive and interactive learning experience, catering to diverse student needs and preferences.

The pandemic accelerated the adoption of blended learning, allowing students to continue their education with self-paced learning, access to multimedia resources, and interactive online activities. Before the pandemic, Haron et al (2012) found that the adoption rate of blended learning among Malaysian academics is low, with only 13 percent of participants embracing this learning approach. In contrast, it is worth noting that blended learning has become increasingly popular and accepted among students who have a positive attitude toward blended learning, valuing its flexibility and convenience in accessing course materials (Yu et al., 2023).

Blended learning presents both advantages and disadvantages for both educators and students in the context of teaching and learning. Chernysheva (2021) highlights that blended learning offers flexible self-paced learning, personalized experiences through online assessments, and increased engagement, resulting in improved learning outcomes. In contrast, the past review presents significant insights into the drawbacks of blended learning. Chernysheva's (2021) review highlights the disadvantages of blended learning, including the need for proper technological infrastructure, faculty development, and the potential increased workload and complexity for both students and instructors. Additionally, Yu et al (2023) explore the obstacles related to technical issues and limited internet accessibility, particularly impacting students in rural areas. Furthermore, Haron et al (2012) underscore the challenges posed by educator resistance to change and concerns surrounding online assessments, often rooted in technophobia.

Cao's (2023) meta-analysis highlights that the effectiveness of blended learning relies on instructional design, teacher competence, and technological support. This study reveals a positive impact of blended learning on performance, achievement, attitude, and engagement across different countries. Chen (2016) suggests that focusing on instructional design significantly attracts younger students to blended learning.

Furthermore, technology holds a critical role in the success of blended learning, and the quality of technology used significantly influences the effectiveness of this educational approach. Several key factors are associated with technology support in blended learning, encompassing design features like technology quality, interactions, face-to-face support, and learning management system tools (Kintu et al., 2017). Moreover, the 2017 New Media Consortium Horizon Report highlights blended learning designs as a driving force propelling technology adoption in higher education in the short term, underscoring the importance of integrating technology to enhance blended learning outcomes (Lazar et al., 2020).

The research conducted by Bizami et al (2023) supports the integration of technological learning tools in blended learning, as they enhance collaboration and interactivity among students. Their study highlights the benefits of incorporating technology in the blended learning environment, facilitating a more engaging and interactive educational experience.

By leveraging technological tools, blended learning can create immersive learning environments that promote collaboration and participation among students, ultimately enhancing the overall learning process. However, further exploration is needed to establish effective methods for integrating technology seamlessly and ensuring educational accessibility within the blended learning framework.

Building upon the findings of Haron et al (2012), which indicated a low adoption rate of blended learning among Malaysian academics, this paper further investigates the adoption of blended learning for investment students in the course Regulatory Framework in the Capital Market (INV537). Notably, INV537 is the sole course within the BA251 Bachelor Degree in Business and Administration (Investment) program conducted using blended learning. The study aims to gain insights into the adoption and effectiveness of blended learning specifically within this context, shedding light on its potential impact on investment students' educational experiences and outcomes.

Moreover, as the implementation of blended learning becomes more prevalent in higher education, there is a growing interest in understanding university students' attitudes, behaviors, and experiences concerning this educational approach. Consequently, investigating the perspectives and experiences of students engaging with blended learning has become an ongoing and crucial area of research (Nikolopoulou and Zacharis, 2023). In light of Chernysheva's (2021) future research recommendations, this paper aims to delve deeper into understanding how the adoption of blended learning impacts students' academic performance.

a. Learning Outcomes of the Course Design

The course aims to develop students' understanding of the regulatory framework in the capital market. The learning outcomes include the ability to analyze relevant concepts, report market misconduct with applicable provisions of securities laws, demonstrate values aligned with the regulatory framework, and integrate ethics and professionalism within this context. The course employs a combination of cognitive and affective assessments to evaluate students' progress. These assessments are incorporated into teaching and learning activities, such as portfolio cases, journaling critiques, quizzes, and case studies, providing a comprehensive and well-rounded evaluation of students' learning outcomes.

b. Organisation of the Course Contents

The best practice employed in this course involves maintaining a favourable student-to-lecturer ratio of 30:1 for each class. Figure 1 presents the course is divided into six (6) groups, denoted as JBA2513A, JBA2513B, JBA2513C, JBA2513D, JBA2513E, and JBA2513F, representing students from the Segamat campus in Johor, specializing in Business Administration with a major in investment management, and currently in their third semester. These six groups are taught by three (3) lecturers, ensuring effective and efficient instruction for the total of 187 participating students in this case study.

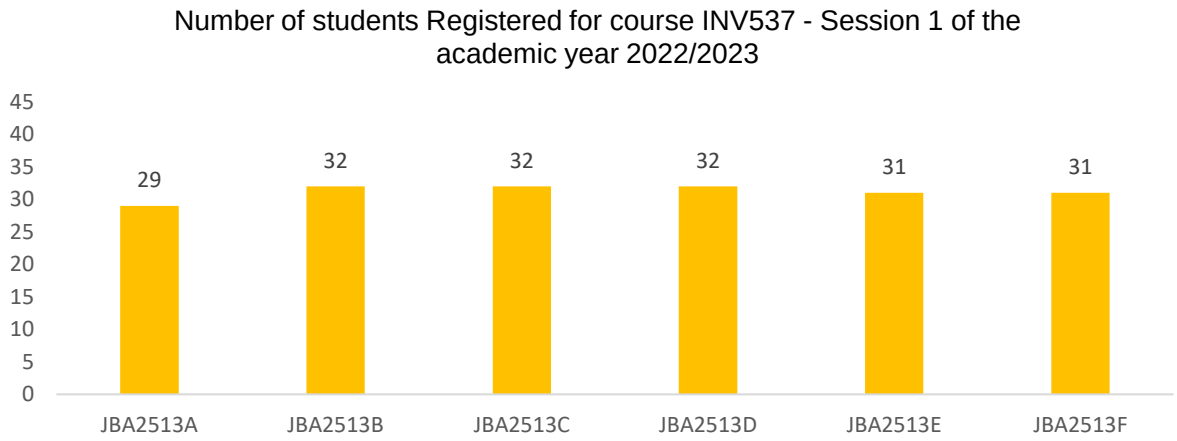


Figure 1 Number of students registered for course INV537
Source: Student Information Management System (SIMS) database

Table 1 illustrates the comprehensive syllabus contents for the course, comprising eight (8) chapters that are systematically covered over the 14-week duration, combining face-to-face and blended learning approaches. The course adopts a balanced 50% face-to-face and 50% blended learning approach. During the lecture or the first two hours of class each week, traditional in-person teaching methods are employed. Subsequently, the remaining two hours of the class are conducted through blended learning to optimize classroom usage, allowing other subjects to benefit from available classroom facilities. This strategic implementation of blended learning maximizes the utilization of resources while maintaining the efficacy of both face-to-face and online instructional methods, providing students with a diverse and enriching learning experience throughout the course duration.

Table 1
Course Syllabus, Timeline, and Assessments

	Chapter	Week	Assessments
1	Financial Market in Malaysia	1	Quiz (20%)
2	Ethics and Regulation	3-4	
3	Regulatory Bodies in Malaysia	5	
4	Securities Law in Malaysia	6-7	Portfolio Cases (30%)
5	Compliance and Ethics in the Securities Industry	8-10	Final Examination (40%)
6	Securities Regulation for Islamic Securities Products	11	
7	Securities Listing in Malaysia	12-13	Journal Critiques (10%)
8	The Trading System in the Secondary Market	14	

Source: UiTM Curriculum Management (AIMS) database

c. Blended Learning Teaching Strategies

The teaching methodologies approved for INV537 consist of lectures, discussions, and Blended Learning. The course adopts a balanced approach, with the first two hours of the class conducted in a traditional face-to-face format, featuring either lectures or interactive discussions. The remaining two hours follow a blended learning approach, incorporating live lectures, discussions, and various activities facilitated through e-learning tools like Padlet, Google Sites, Jamboard, Flip, Spotify, TikTok, Cap Cut, YouTube, Mentimeter, Google Meet,

and Canva. This innovative blend of teaching methods aims to enhance student engagement and create a dynamic learning environment where students actively interact with course content using diverse digital tools. Additionally, Telegram Messenger serves as an informal platform to disseminate course-related information and address any inquiries raised by students and lecturers.

Literature Review

Despite the low adoption of blended learning in subjects in Malaysia (Haron et al., 2012), a study conducted by Dziuban et al (2018) delves into the emergence of blended learning as the new normal in higher education and the crucial role of emerging technologies in its implementation. The research sheds light on the increasing significance of blended learning and its strong connection to emerging technologies in the context of higher education. Notably, the study emphasizes the highly positive impact of this blended learning approach on student learning and engagement.

Müller and Mildenberger (2021) conducted a systematic review focusing on replacing classroom time with online learning. They found that blended learning allows students to engage with course materials at their own pace, offering greater flexibility. However, successful implementation requires institutional support and faculty training. Nikolopoulou and Zacharis (2023) explored university students' learning behavior in the context of blended learning. Their study emphasized the importance of interactive and engaging online activities. Students responded positively to blended learning, especially when it provided opportunities for active participation and self-directed learning.

Blended learning has proven to be highly adaptable and successful in various academic disciplines, including labs, case studies, design studios, and other forms of assessment. For instance, a study by Peimani and Kamalipour (2022) underscores the transformative impact of blended learning on design studio education during the global pandemic. Despite initial challenges, students displayed resilience and embraced the flexibility and convenience of the online format.

The literature review reveals the growing significance of blended learning in higher education, with its associated benefits of increased flexibility, improved learning outcomes, and heightened student engagement. A recommendation by Sudibjo (2023) is to diversify blended learning activities to avoid monotony and enhance student engagement. This can be achieved by incorporating various e-learning tools, such as Padlet, into teaching and learning activities. The positive feedback received from students on the use of Padlet aligns with the findings of Albarqi (2023); Arouri et al (2023), who also emphasized the effectiveness of Padlet in fostering student engagement and enhancing learning outcomes.

Methodology

a. Sample

In this analysis, a total of 187 investment students who registered for the course of the Regulatory Framework in the Capital Market (INV537) have been taken as respondents. Those students are majoring in Bachelor of Business Administration (Investment Management) and are currently in their third (3) semester of study for six (6) semesters. The gender participation for this analysis consists of 45.5% male and 54.5% female. The subject of INV537, consisting of eight (8) chapters dominated by Compliance and Ethics in the Securities Industry, has been chosen for this case study. The respondents in this study were part of the first batch to undergo the blended learning method between October 2022 and January 2023. The course

was conducted by three educators over six (6) classes, with an equal distribution of 50% online instruction and 50% traditional classroom sessions. Both students and lecturers utilized various e-learning platforms and gamification techniques during the blended learning experience for teaching and learning purposes.

b. Instruments

In this study, data were collected from four (4) primary sources established by Universiti Teknologi MARA (UiTM) for Session 1 of the academic year 2022/2023. Firstly, entrance and exit surveys were conducted through the UFuture platform to assess students' feedback and experiences at the beginning and end of the course. Secondly, student feedback online (SuFO) was collected via the uFuture platform to obtain additional insights from the respondents. Third, student statistical grades were obtained from the Student Information Management System (SIMS) database to analyze the academic performance of the students during the course. Lastly, the Closing the Loop (CDL) and Continuous Quality Improvement (CQI) report was obtained via the uFuture platform, which served as a valuable source of information for further assessment and improvement of the course.

i) Exit-Entrance Survey

The evaluation of students' feedback on the lecturers and the subject during the blended learning session involved two stages of surveys: an entrance survey conducted at the beginning of the semester and an exit survey administered to respondents after completing the subject lesson plan in the last semester. Both surveys were carried out using the uFuture platform established by UiTM, and the collected data were analyzed using a Microsoft Excel spreadsheet. The survey assessed respondents' knowledge and understanding of various aspects related to the financial market and securities industry in Malaysia. Respondents were evaluated on their ability to explain topics such as the development of the securities market, ethics and regulations, regulatory bodies, trading system, main laws, regulatory structures, and securities listing requirements. Additionally, the survey aimed to gauge respondents' familiarity with identifying offenses under the Capital Market Services Act 2007, provisions of securities law related to discovering market misconduct, and analyzing contraventions of market misconduct in trading.

ii) Student's Feedback Online (SuFO)

The report comprises a total of 24 questions, organized into four distinct sections. In Section A, respondents were asked to provide their overall impression of the course. Section B focused on assessing lecturer professionalism, while Section C aimed to gather feedback on teaching and learning activities. Lastly, Section D focused on evaluating the infrastructure supporting the course. The survey was designed to comprehensively capture respondents' perspectives on different aspects of the course, providing valuable insights into their experiences and perceptions.

iii) Student Information Management System (SIMS) database

The Student Information Management System (SIMS) database contains the official grade scores of students after they have completed the assessment and teaching and learning activities. It serves as a comprehensive repository of academic performance data, providing valuable information about students' achievements and progress throughout their educational journey.

iv) Closing the Loop (CDL) & Continuous Quality Improvement (CQI) report

The CDL and CQI report identifies the need for lesson plan restructuring to improve teaching and learning in the next semester. It guides educators and administrators in making effective changes for better educational outcomes.

Results and Discussions

The results and discussions presented in this study are based on four primary sources established by Universiti Teknologi MARA (UiTM) Cawangan Johor Kampus Segamat for Session 1 of the academic year 2022/2023. These instruments include entrance and exit-entrance surveys, student feedback online (SuFO), student statistical grades obtained from the Student Information Management System (SIMS) database, and the Closing the Loop (CDL) and Continuous Quality Improvement (CQI) report. Each of these sources provided valuable data and insights that contributed to the comprehensive analysis and evaluation of the course's performance and student outcomes.

Figure 2 provides insight into students' self-perceived abilities to understand and explain various aspects of the financial market and securities industry in Malaysia. The majority of students tend to lean towards the "Agree" and "Strongly Agree" responses, indicating a positive level of confidence in their understanding of the course material. However, some students also expressed "Neutral" or "Disagree" responses, suggesting that further attention and support may be needed to improve their understanding and knowledge in certain areas of the course. Overall, the data suggest that students have generally grasped the concepts covered in the course but may require additional reinforcement in certain topics.

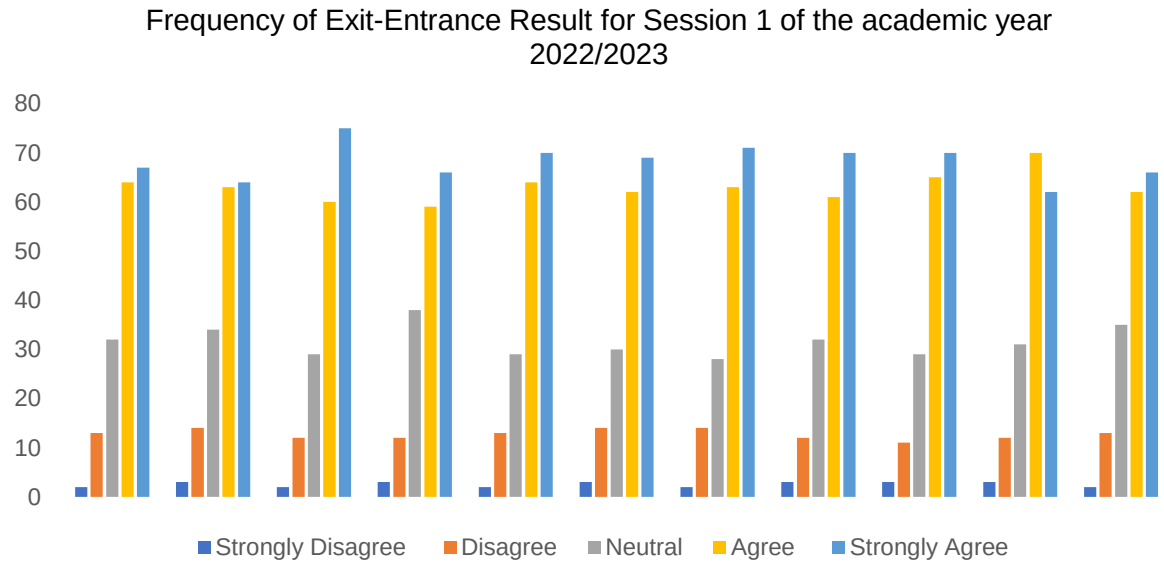


Figure 2 Frequency of Exit-Entrance Result for Session 1 of the academic year 2022/2023
Source: uFuture

Based on the student's feedback online for course INV537, the overall performance indicator for Session 1 of the academic year 2022/2023 is 93.89%, which is categorized as "Excellent" and falls above the 90% threshold. This high-performance indicator indicates a positive and satisfactory response from students regarding their experience in the course. The majority of students have expressed favorable feedback, highlighting the effectiveness and quality of the course in meeting their learning needs and expectations. The course has evidently achieved a high level of satisfaction and success among the students, reflecting the successful

implementation of teaching methodologies, course content, and overall learning experience in INV537.

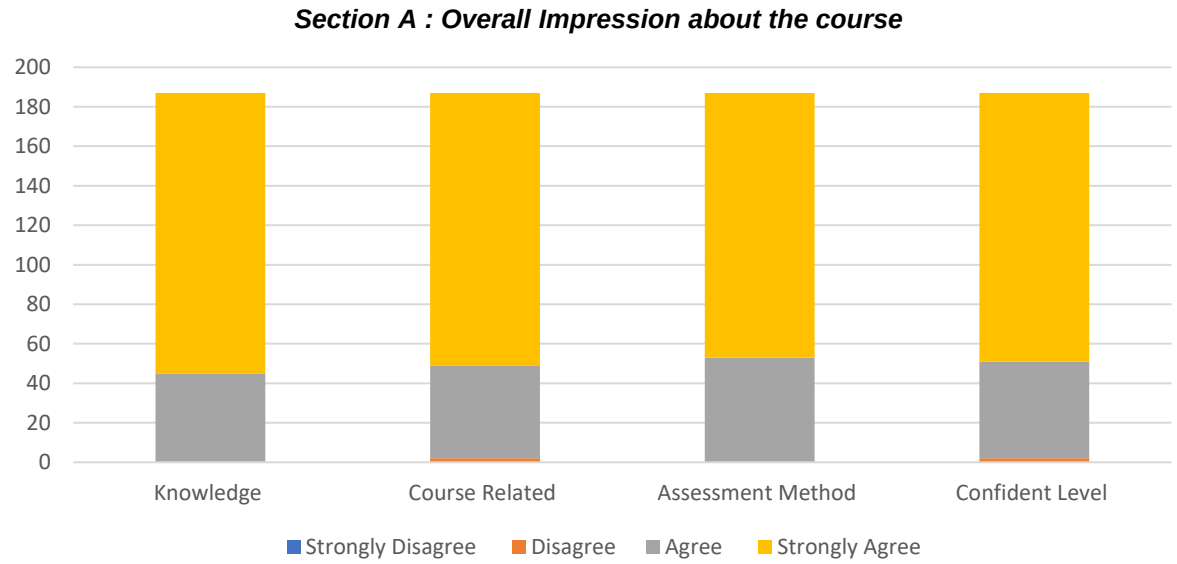


Figure 3 Section A of Student's Feedback Online Survey
Source: uFuture

Figure 3 indicates a positive and favorable response from the students regarding their experience with the course. The majority of students "Agree" or "Strongly Agree" with the effectiveness of the course in providing knowledge, relevant course materials, suitable assessment methods, and increasing their confidence in the subject matter. The high percentage of "Strongly Agree" responses suggests that the course has been well-received and has met students' expectations and learning needs, resulting in a positive overall impression of the course.

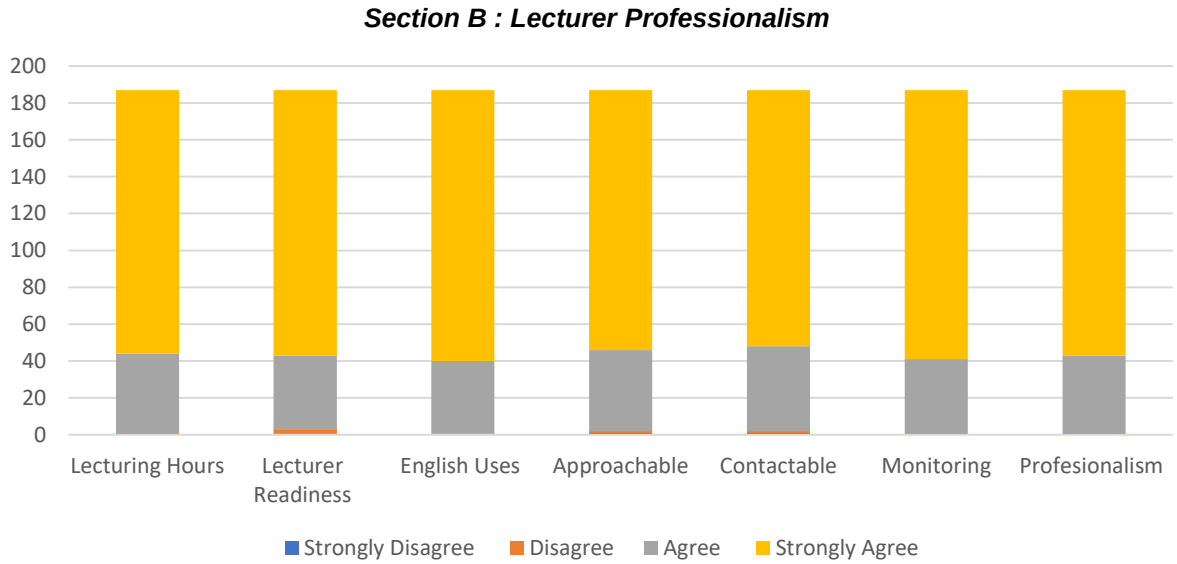
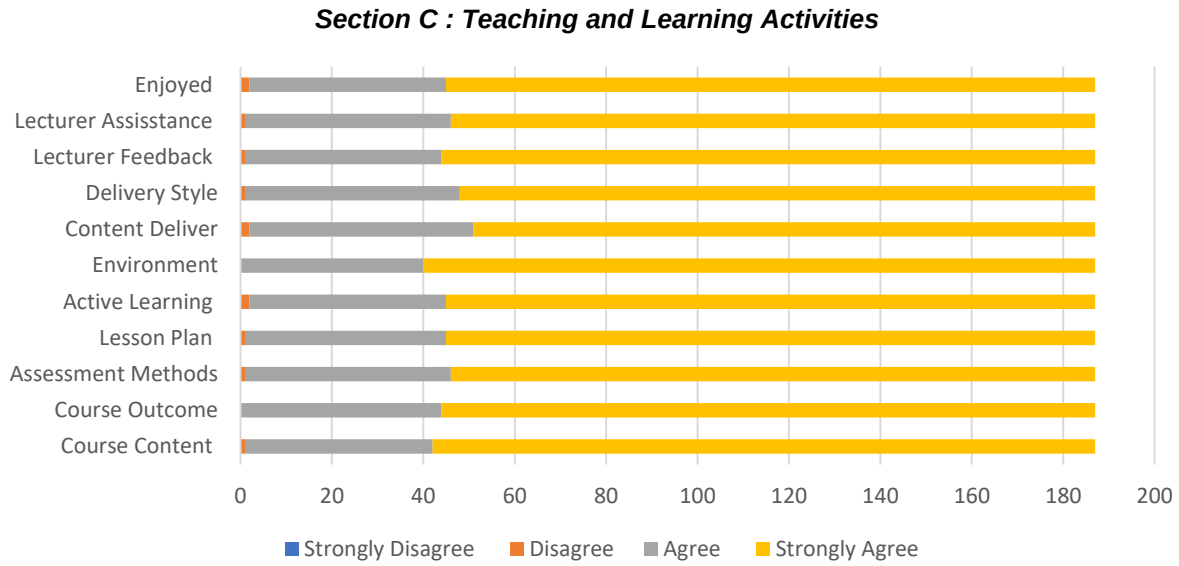


Figure 4 Section B of Student's Feedback Online Survey
Source: uFuture

Figure 4 indicates overwhelmingly positive feedback from students regarding the lecturer's performance and attributes. The majority of students "Agree" or "Strongly Agree" that the lecturing hours are appropriate, the lecturer is well-prepared and approachable, uses English effectively, and demonstrates professionalism. Additionally, students highly appreciate the lecturer's monitoring and responsiveness to student queries. The high number of "Strongly Agree" responses indicates that the lecturer is performing exceptionally well in all aspects evaluated by the students, resulting in a highly positive perception of the lecturer's performance and attributes.

Figure 5 reveals the majority of students expressed positive feedback. The "Agree" and "Strongly Agree" responses outweigh the "Disagree" and "Strongly Disagree" responses for most of the indicators. Notably, the aspects related to Course Content, Course Outcome, Assessment Methods, Lesson Plan, Active Learning, Environment, Content Delivery, Delivery Style, Lecturer Feedback, Lecturer Assistance, and Enjoyment received favorable responses from the students. This indicates that students generally found the teaching and learning activities in the course to be effective and engaging. The high percentage of positive responses suggests that the course's design and implementation were well-received by the students, contributing to a positive learning experience.

Figure 5 Section C of Student's Feedback Online Survey



Source: uFuture

In Section D, which focuses on Infrastructure, the students' feedback indicates positive sentiments towards the provided facilities (refer to Figure 6). The majority of the responses fall under the categories of "Agree" and "Strongly Agree" for both indicators, "Conducive" and "Equipment Adequate." This suggests that students generally found the learning environment to be suitable and conducive to their educational needs. Additionally, they felt that the equipment provided for their studies was adequate and supportive of their learning requirements.

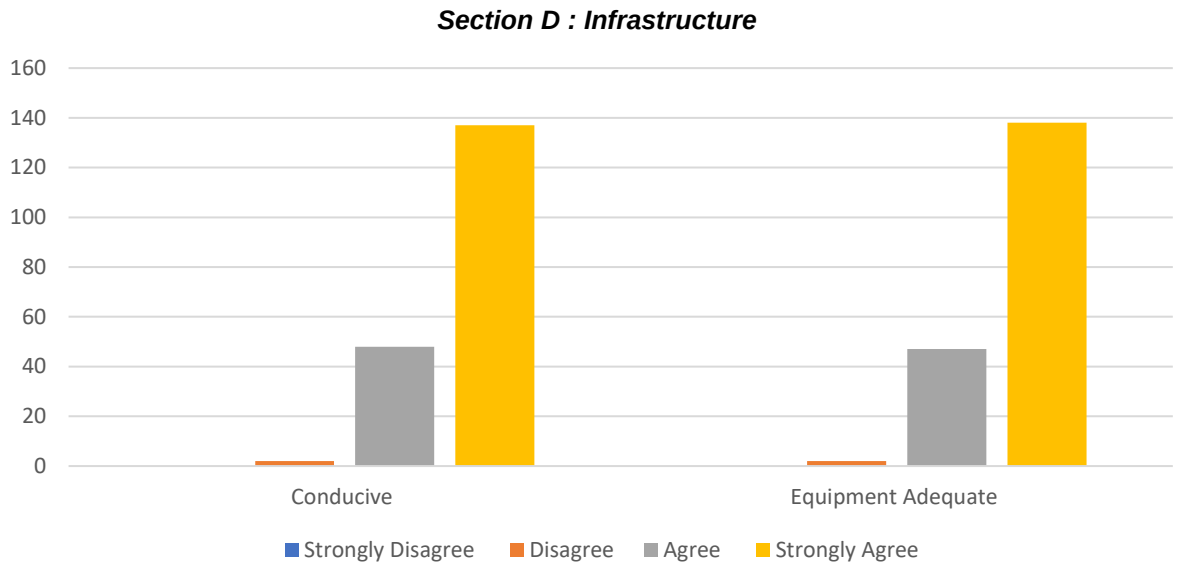


Figure 6 Section D of Student's Feedback Online Survey
Source: uFuture

In order to answer the objective of how the adoption of blended learning impacts students' academic performance can be achieved by evaluating the course grade. The distribution of student grades for the INV537 course in Session 1 of the academic year 2022/2023 indicates a range of performance levels among the students (refer to Figure 7). The majority of students received grades in the B category, with 39 students achieving a B-, 50 students achieving a B, and 37 students achieving a B+. This suggests that a significant proportion of students performed at a satisfactory level in the course.

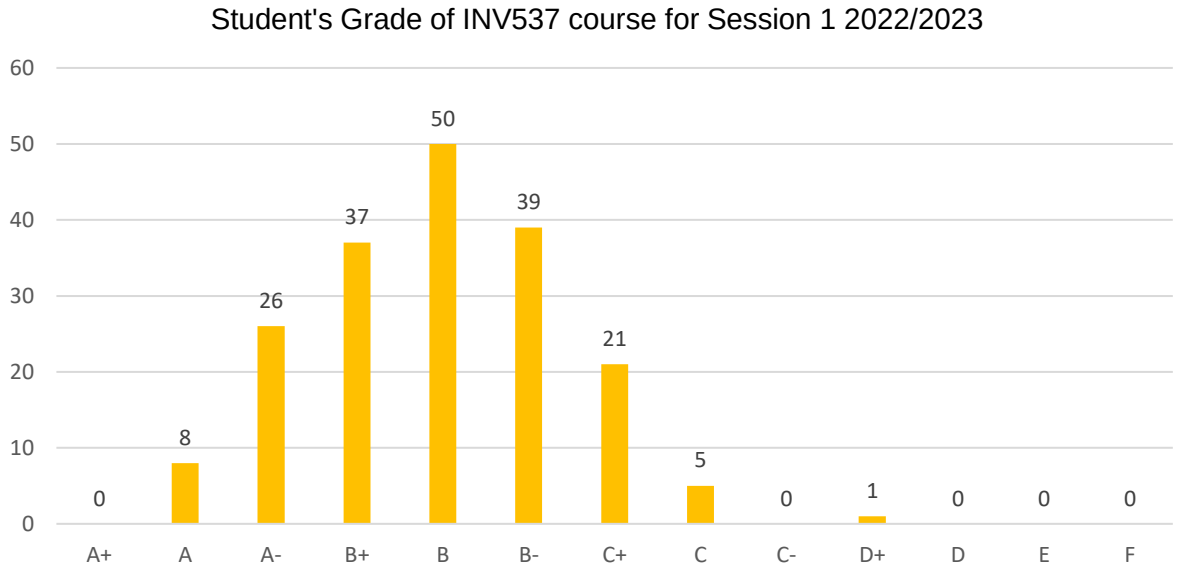


Figure 7 Student's Grade of INV537 course for Session 1 2022/2023
Source: Student Information Management System (SIMS) database

Furthermore, 26 students received an A-, indicating a good performance, while 8 students received an A, reflecting a higher level of achievement. It is noteworthy that no students

received grades in the C-, D, E, or F categories, suggesting that the overall performance of the students was relatively strong. Unfortunately, one student fails this subject with a grade of D+.

Overall, the grade distribution for the INV537 course shows a generally positive outcome and normal distribution, with a significant number of students achieving satisfactory to good grades. However, there is still room for improvement, as indicated by the absence of students in the top grade category (A+). This data provides valuable insights for course instructors and administrators to identify areas of strength and areas for further enhancement in the course delivery and assessment to better support student learning and performance.

Table 2
CDL report of INV537 for Session 1 2022/2023

Course Grade	Exit - Entrance Survey	SUFO	OBE-SCL Implementation	CO-PO-LO-KI Alignment
2 (FAIR)	3 (GOOD)	3 (GOOD)	4 (VERY GOOD)	5 (EXCELLENT)

Source: uFuture

Upon analyzing the data presented in Table 2, it is evident that the course has received favorable feedback from students in several key aspects. The Exit-Entrance Survey and SuFO evaluations both indicate a positive perception of the course, with ratings of "Good," signifying that students generally had satisfactory experiences during their learning journey. Additionally, the implementation of the Outcome-Based Education-Student-Centered Learning (OBE-SCL) approach received a high rating of "Very Good," highlighting the successful alignment of the course with its intended learning outcomes and the incorporation of student-centered teaching methodologies.

One of the most notable findings is the "Excellent" rating for the alignment of Course Outcomes (CO), Program Outcomes (PO), Learning Outcomes (LO), and Key Indicators (KI). This suggests that the course objectives are closely aligned with the overall program goals and learning outcomes, ensuring coherence in the curriculum and assessment strategies. This strong alignment is vital for ensuring that students' educational experiences are focused and cohesive, allowing them to develop the necessary skills and competencies expected from the course.

Despite the generally positive feedback, the overall course grade was rated as "Fair" indicating that there may be specific areas that could benefit from improvement. To enhance the course further, it may be valuable to analyze the specific aspects that led to this rating and identify potential areas of enhancement. Course instructors and administrators can use this feedback to implement targeted improvements that address any identified concerns or challenges.

Due to the course grade falling under the "Fair" category, the resource person is required to report the Continuous Quality Improvement (CQI) for Area 2, which pertains to the Assessment of Student Learning. This is because the assessment of the final examination case studies significantly contributes to the fair overall result of the course. A critical issue arose with students' performance in the final examination, stemming from insufficient preparation and misconceptions about certain concepts, sections, or acts. Some students demonstrated a lack of analytical skills and encountered difficulties in addressing problematic questions based on graphical representations. To address this challenge, a multifaceted approach will

be adopted. Additional exercises and activities will be incorporated to offer students more opportunities for analytical skill development. Innovative teaching techniques, including gamification activities, will be integrated to actively engage learners and enhance their experience.

Conclusion

The study conducted at Universiti Teknologi MARA (UiTM) Cawangan Johor Kampus Segamat highlights the positive impact of blended learning on students' academic performance and overall learning experience in the INV537 course. The course grade distribution showed that a significant number of students achieved satisfactory to good grades, indicating that blended learning can be an effective approach to enhance students' academic performance.

However, the study also identified that students faced difficulty in the final examination assessment due to real case studies. To overcome this problem, educators should take action for the next semester by incorporating extra exercises, innovative teaching techniques like gamification, and continuous monitoring and feedback. These measures can help students to better understand the subject matter and perform well in the final examination. The study's findings suggest that educational institutions can further elevate the quality of education and better prepare students for their future endeavors in a changing global landscape by adopting blended learning. Blended learning combines traditional classroom teaching with online learning, providing students with a flexible and personalized learning experience. This approach can help students develop critical thinking, problem-solving, and collaboration skills, which are essential for success in the 21st century.

For future research, recommendations include conducting longitudinal studies to assess long-term effects, comparative studies with other teaching methodologies, exploring students' perspectives through qualitative research methods, investigating faculty development's impact on instructors' readiness, and exploring hybrid models of blended learning. Addressing these areas will contribute to a deeper understanding of blended learning's potential and inform evidence-based strategies to enhance the quality of education and student learning outcomes in higher education.

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