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RESEARCH ARTICLE

Self-Regulated Learning, Online Learning Self-Efficacy, and Satisfaction Among Accounting Matriculation Students in Flipped Learning Environment

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ABSTRACT

This study aims to identify the levels of Self-Regulated Learning (SRL), Online Learning Self-Efficacy (OLSE), and student satisfaction in the Flipped learning environment among Accounting matriculation program students. A total of 415 students participated as respondents in this study. The data were analysed using descriptive statistics and t-tests with the SPSS software. The overall analysis indicated that the average minimum scores for SRL among Accounting matriculation students were at a high level. The level of OLSE among Accounting matriculation students was also at a high level. Additionally, the level of student satisfaction among Accounting matriculation students in the Flipped learning environment was high. The t-test results revealed significant differences in the levels of SRL skills and OLSE among Accounting matriculation students in the Flipped learning environment based on students' gender, but no significant differences were found in the level of student satisfaction. Furthermore, the study revealed higher levels of SRL and self-efficacy among male students. Overall, this study emphasizes the need to enhance technology usage and flexibility while recognizing the importance of fostering effective SRL skills and online learning self-efficacy. The findings of this study are expected to provide valuable information, particularly in improving the implementation of Accounting learning in matriculation programs.

Contribution/Originality: This study contributes to the existing literature by assessing Self-Regulated Learning (SRL), Online Learning Self-Efficacy (OLSE), and student satisfaction in a Flipped learning environment among Accounting matriculation students under KPM. It highlights significant gender differences in SRL and OLSE, emphasizing the importance of fostering these skills and technology usage

for improved learning outcomes in Accounting education.

1. Introduction

Self-regulated learning (SRL), online learning self-efficacy, and student satisfaction are crucial factors for accounting foundation students in the Flipped learning environment. Studies have found that SRL skills and attitudes toward education predict university success (Cyndi et al., 2022). SRL helps students control their own learning by setting goals, monitoring progress, and adjusting strategies according to their needs (Ejubović & Puška, 2019). Online learning self-efficacy is considered a major contributor to academic success in virtual education (Ahmadipour, 2022). Research indicates a positive correlation between self-efficacy beliefs and academic success in introductory accounting courses (Cyndi et al., 2022). Self-efficacy is also found to be a significant predictor of accounting student satisfaction in an online learning environment (Yandra et al., 2021). Overall, the results suggest that engaging in SRL, enhancing self-efficacy in online learning, and increasing student satisfaction can lead to improved academic performance and success in online accounting learning.

Self-regulated learning (SRL) is a crucial factor for accounting foundation students. SRL refers to the process where students control their own learning by setting goals, monitoring progress, and adjusting strategies as needed (Wang et al., 2023). Students actively engaging in SRL experience improved academic performance. Studies suggest that SRL skills and attitudes predict success at the university level (Cassady et al., 2022). Other research recommends conceptual frameworks and professional development models to support the SRL process for teachers and enhance students' academic outcomes (Kramarski & Heaysman, 2021). Overall, it indicates that SRL is a critical factor contributing to improved academic performance and success for accounting foundation students.

1.1. Research Objectives

This study aims to:

i. Identify the levels of SRL skills, self-efficacy in online learning, and satisfaction among accounting foundation students in the Flipped learning environment.
ii. Determine significant differences in SRL skills, self-efficacy in online learning, and satisfaction among accounting foundation students in the Flipped learning environment based on gender.

2. Literature Review

Self-regulated learning (SRL) is a process in which students direct their learning to achieve set goals and objectives in a timely and controlled manner (Chitra et al., 2022). Studies have shown that self-regulated learning is associated with improved educational performance (Apridayani et al., 2023). Students defined as "self-regulated" actively participate in the learning process—emotionally, motivationally, and cognitively (Sahranavard et al., 2018). Pedagogical support and expectations set by teachers can significantly impact students' capacity for self-regulated learning (Jin et al., 2023). Self-regulated learners use external feedback, such as from peers or instructors, as guidance to achieve their internal goals. Therefore, it can be concluded that self-regulated

learning is higher among students actively engaging in the learning process and taking control of their learning.

Online learning self-efficacy considered a crucial contributor to academic success. Self-efficacy is believed to be a key component in the success of online learning (Shen et al., 2013). In the context of traditional face-to-face and online learning, self-efficacy has been identified as a major contributor to student success (Taipjutorus et al., 2012). Online learning self-efficacy play a vital role in students' performance and persistence in the online learning environment. Thus, evidence suggests that Online learning self-efficacy is higher among students who have confidence and belief in their ability to succeed in the online learning environment.

Student satisfaction in Flipped learning has become an intriguing topic, with studies finding that the Flipped classroom model can enhance student satisfaction when used at appropriate age and curriculum levels (Swensen, 2022). Other studies report that both students and professors find the Flipped classroom to be a positive, satisfying, and enjoyable experience (Martínez-Jiménez & Ruiz-Jiménez, 2020). Systematic studies and meta-analyses have found that the Flipped classroom can facilitate more interaction between teachers and students, leading to closer relationships and potentially enhancing satisfaction (Låg & Sæle, 2019). A study involving higher education students in Finland found that students were satisfied with the Flipped classroom when they had systematic guidance on the teaching approach used, a comprehensive understanding of the taught content, and a safe learning environment conducive to discussion (University of Eastern Finland, 2022). A study on nursing students found that learning satisfaction was higher for face-to-face learning compared to Flipped learning without face-to-face interaction, with face-to-face Flipped learning significantly affecting overall learning satisfaction (Cho & Kim, 2021). In conclusion, student satisfaction in Flipped learning may vary depending on factors such as age, curriculum, and specific implementation of the Flipped classroom model. While some studies have found higher satisfaction in Flipped learning, others have reported no significant differences or lower satisfaction. Further research is needed to better understand the factors influencing student satisfaction in the Flipped learning environment.

3. Research Methods

In this study, a total of 415 Accounting students from the matriculation colleges of the Malaysian Ministry of Education (KPM) participated as respondents. The majority of respondents consisted of female students 76.9% (n = 319) compared to 23.1% (n = 96) male students. Descriptive statistical analysis was conducted to profile the basic data of the study using IBM SPSS version 22.0 software. Descriptive analysis utilized frequency distribution, percentages, minimum, and standard deviation to examine the levels of SRL (Self-Regulated Learning), Online Accounting Learning Self-Efficacy (OLSE), and Flipped Learning Satisfaction. The data were then transformed into minimum scores categorized into three levels: low, moderate, and high, as shown in Table 1. Subsequently, inferential analysis, independent t-test was employed to examine whether there were differences in the levels of SRL, OLSE, and student satisfaction based on gender.

Table 1: Levels of SRL, Self-Efficacy in Online Accounting Learning, and Flipped Learning Satisfaction Based on Scores

Level	Score
Low	1.00 – 4.00
Moderate	4.01 – 7.00
High	7.01 – 10.00
N = (n-1)/b = (10-1)/3 = 3	

4. Results

The analysis reveals that the overall average score for Self-Regulated Learning (SRL) is 8.78 with a standard deviation of 0.73. This indicates that the level of SRL among accounting foundation students is high. The highest minimum score is 9.31 (standard deviation = 0.73) for the Help Seeking aspect, while the lowest is 8.35 (standard deviation = 1.10) for the Planning aspect. Table 2 shows the average minimum scores for each assessed SRL construct and the overall SRL minimum score.

Table 2: Minimum Scores, Standard Deviation, and Levels of Self-Regulated Learning (SRL) Constructs

Construct	No. of Items	Scale	Minimum Score	Standard Deviation (SD)	Level
Planning	6	1 to 10	8.3510	1.09601	High
Monitoring & Control	3	-	8.8145	0.99224	High
Assessment & Self-Reflection	7	-	8.5102	1.00814	High
Environmental Management	3	-	9.0112	0.97493	High
Time Management	3	-	8.6112	1.03424	High
Help Seeking	6	-	9.3068	0.72517	High
Continuous Effort	4	-	8.9120	0.88214	High
Task Value	3	-	8.9896	0.99927	High
Self-Regulated Learning (SRL)	35	-	8.7842	0.72995	High

Table 3 presents the average minimum scores for each assessed Online Learning Self-Efficacy (OLSE) construct and the overall OLSE minimum score. Overall, the OLSE average minimum score is 8.81 with a standard deviation of 0.89, indicating a high level of OLSE among accounting foundation students. The highest minimum score is 9.03 (standard deviation = 0.90) for the Computer and Internet aspect, while the lowest is 8.43 (standard deviation = 1.13) for the Technology Usage aspect.

Table 4 displays the average minimum scores for each assessed Flipped Learning Satisfaction (F-LIP) construct and the overall F-LIP minimum score. Overall, the average minimum score for Flipped Learning Satisfaction is 9.18 with a standard deviation of 0.78, indicating a high level of satisfaction among accounting foundation students. The highest minimum score is 9.29 (standard deviation = 0.79) for the Learning

Environment aspect, including Learning Content and Professional Educator, while the lowest is 8.99 (standard deviation = 0.90) for the Flexibility aspect.

Table 3: Minimum Scores, Standard Deviation, and Levels of Online Learning Self-Efficacy (OLSE) Constructs

Construct	No. of Items	Scale	Minimum Score	Standard Deviation (SD)	Level
Technology Usage	3	1 to 10	8.4265	1.12974	High
Computer and Internet	5	-	9.0390	0.90052	High
Online Learning Self-Efficacy	8	-	8.8093	0.89224	High

Table 4: Minimum Scores, Standard Deviation, and Levels of Flipped Learning Satisfaction (F-LIP) Constructs

Construct	No. of Items	Scale	Minimum Score	Standard Deviation (SD)	Level
Flexibility	3	1 to 10	8.9896	0.90157	High
Learning Environment (Learning Content, Intentional Content, Professional Educator)	5	-	9.2949	0.78510	High
Flipped Learning Satisfaction (F-LIP)	8	-	9.1804	0.78001	High

Next, the t-test is used to test Hypothesis 1 (H1) to determine if there is a significant difference in the level of SRL skills among accounting foundation students in the Flipped learning environment based on gender. According to Table 5, male students have an average SRL score of 8.93 (SD = 0.70), higher than the average score of female students, which is 8.74 (SD = 0.73). The t-test indicates a significant difference in SRL skills based on gender, with a t-value of 2.221 and a p-value of 0.027 ($p < 0.05$). Therefore, Hypothesis 1 (H1) is accepted.

Table 5: T-Test Results for Self-Regulated Learning (SRL) Based on Gender

Construct	Gender	N	Minimum Score	Standard Deviation (SD)	t	Sig. (2-tailed) p-value
Self-Regulated Learning (SRL)	Male	96	8.93	0.703	2.221	0.027
	Female	319	8.74	0.733	-	-

Similarly, the t-test is employed to test Hypothesis 2 (H2) to examine whether there is a significant difference in the level of Online Learning Self-Efficacy (OLSE) among accounting foundation students in the Flipped learning environment based on gender. Table 6 shows that male students have a higher average OLSE score (9.03, SD = 0.853) compared to female students (8.74, SD = 0.895). The t-test results indicate a significant difference in OLSE based on gender, with a t-value of 2.735 and a p-value of 0.006 ($p < 0.05$). Therefore, Hypothesis 2 (H2) is accepted.

Table 6: T-Test Results for Online Learning Self-Efficacy (OLSE) Based on Gender

Construct	Gender	N	Minimum Score	Standard Deviation (SD)	t	Sig. (2-tailed) p-value
Online Learning Self-Efficacy (OLSE)	Male	96	9.03	0.853	2.735	0.006
	Female	319	8.74	0.895	-	-

Furthermore, Hypothesis 3 (H3) tests whether there is a significant difference in the level of satisfaction among accounting foundation students in the Flipped learning environment based on gender. As per Table 7, male students have a slightly higher average satisfaction score (9.26, SD = 0.735) than female students (9.15, SD = 0.793). However, the t-test results show that the difference is not significant, with a t-value of 1.165 and a p-value of 0.245 ($p > 0.05$). Therefore, Hypothesis 3 (H3) is rejected, indicating no significant difference in satisfaction levels based on gender.

Table 7: T-Test Results for Flipped Learning Satisfaction Based on Gender

Construct	Gender	N	Minimum Score	Standard Deviation (SD)	t	Sig. (2-tailed) p-value
Flipped Learning Satisfaction (F-LIP)	Male	96	9.26	0.735	1.165	0.10576
	Female	319	9.15	0.793	-	-

Overall, the gender-based analysis indicates that male accounting foundation students tend to have higher levels of self-regulated learning skills and online learning self-efficacy compared to their female counterparts. However, there is no significant difference in satisfaction levels based on gender, with both male and female students expressing high satisfaction with Flipped learning in accounting education.

5. Conclusion

The objective of this study was to assess the levels of self-efficacy in online learning, self-regulated learning (SRL), and student satisfaction within the Flipped learning environment among Accounting matriculation students. Descriptive analysis revealed that Accounting matriculation students exhibited high levels of self-regulated learning strategies, as evidenced by an average minimum score of 8.78 for each SRL construct. Notably, the highest minimum score pertained to the Seeking Help construct, while the Planning aspect received the lowest score. Moreover, the study found a high level of self-efficacy in online accounting learning, with an average minimum score of 8.81. The Technology Usage aspect garnered the lowest score, emphasizing the need for further attention in this area. Additionally, Accounting matriculation students expressed overall high satisfaction with the Flipped learning experience, as indicated by an overall minimum average score of 9.18. While the learning environment, including content and educators, received the highest satisfaction score, flexibility emerged as an area requiring improvement.

Drawing insights from the literature, the study examined the significance of SRL skills, particularly in time and environmental management, which correlates with effective allocation of time and suitable learning spaces (North, 2019). Students exhibiting high

time management skills tend to outperform those with lower proficiency (Harati, 2021), showcasing the positive impact of SRL on task completion and assignment submission (Goda et al., 2015; North, 2019). In the context of online learning, students facing uncertainties need to develop or adapt SRL strategies. The observed high SRL levels among Accounting matriculation students affirm their adeptness in planning, organizing, directing, self-monitoring, and self-assessing during the learning process. This proficiency reflects a mature approach to learning, demonstrating a readiness to assume responsibility for their academic development.

Furthermore, the study established a significantly high level of Online learning self-efficacy among Accounting matriculation students. This finding implies that students confidence in their ability to comprehend and master accounting concepts through the Flipped learning method. The confidence extends to the utilization of online learning platforms, crucial for pre-class preparation. The study aligns with prior research indicating that high academic self-efficacy correlates with better academic performance (Basila, 2017; Landrum, 2020). Students with high self-efficacy perceive online learning as more beneficial, demonstrating a willingness to engage in the digital learning environment. Consequently, fostering students' self-efficacy becomes imperative for online educational institutions to ensure sustained motivation and success.

Moreover, the high level of satisfaction observed among Accounting matriculation students indicates their positive reception of the Flipped learning approach. This aligns with broader studies suggesting higher satisfaction levels in the Flipped learning environment compared to traditional methods (Strelan et al., 2020). However, it is crucial to note that satisfaction with online learning can vary, with some students expressing moderate or low satisfaction due to issues such as unclear learning materials, inadequate guidance, and limited feedback (Surahman & Sulthoni, 2020). As non-academic outcomes are deemed equally important, addressing satisfaction levels is imperative (Anthonysamy et al., 2020; Ejubović & Puška, 2019; Kuo et al., 2013; Zalli et al., 2019).

The study further investigated gender-based differences in SRL skills, self-efficacy in online learning, and student satisfaction within the Flipped learning environment. Significant disparities were identified in SRL and self-efficacy, with male students exhibiting higher levels in both aspects. These differences may stem from variations in priorities, learning styles, or the influence of gender stereotypes. However, despite these variations, there were no significant gender-based differences in student satisfaction. The nuanced findings align with existing literature highlighting gender differences in SRL strategies (Shing & Rameli, 2020; Lilian, 2021) and self-efficacy perceptions (Ali, 2021; Aristovnik et al., 2020).

In conclusion, this study contributes valuable insights into the self-regulated learning, self-efficacy, and satisfaction levels of Accounting matriculation students within the Flipped learning paradigm. The findings underscore the need for targeted interventions to enhance technology usage and flexibility while emphasizing the importance of fostering self-efficacy for effective online learning experiences. Additionally, the study emphasizes that while gender differences may influence SRL and self-efficacy, they do not significantly impact student satisfaction within the Flipped learning framework. The implications of these findings extend to instructional design and educational practices, advocating for tailored strategies that accommodate diverse learning styles and preferences, fostering a positive and inclusive learning environment

Based on the descriptive analysis of the levels of self-efficacy in online learning, self-regulated learning (SRL), and student satisfaction in the Flipped learning environment among pre-accounting matriculation students, this study reveals several significant findings. Pre-accounting matriculation students demonstrate overall high levels of self-regulated learning strategies, indicating their ability to control, plan, and monitor their own learning, with a particular emphasis on seeking help. They also exhibit high levels of self-efficacy in online learning, showcasing a strong belief in their ability to learn in a digital environment. However, the aspect of technology usage may require more attention to enhance effectiveness.

Moreover, students express high satisfaction levels with the overall Flipped learning experience. While this highlights the positive emphasis pre-accounting matriculation students place on the learning environment, improvements are needed in the flexibility aspect. The study suggests that differences in SRL and Online learning self-efficacy may influence how male and female students engage in learning, but these differences do not necessarily reflect variations in student satisfaction with the Flipped learning experience. Adjustments in teaching strategies and personalized approaches may be necessary to accommodate gender differences in student involvement in the learning process. However, the primary focus should remain on maintaining student satisfaction without neglecting these differences.

Additionally, this study provides a positive overview of the effectiveness of implementing Flipped learning in the context of pre-accounting matriculation. Students show active engagement, confidence in online learning, and high satisfaction levels, supporting the positive impact of the Flipped approach. The study offers valuable insights into how gender differences can affect specific aspects of learning in the Flipped context, providing relevant perspectives for further improvement and development. Enhancements in technology usage in online learning and a greater emphasis on flexibility in the Flipped environment can contribute to further enhancing the quality of teaching and learning. With these conclusions, it is hoped that this study provides a positive outlook and useful recommendations for further development and improvement in the implementation of Flipped learning in pre-accounting matriculation programs.

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Research Ethics Committee of Sultan Idris Education University. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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