
Self-Regulated Learning in Blended Learning Environment

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Abstract

Background:

As technology advances and online learning becomes increasingly prevalent, consideration of students' metacognitive skills grows in importance. This study aims to provide insight into the influence of Self-Regulated Learning (SRL) on the academic outcomes of English students while examining the dominant component within SRL and assessing whether there is a relationship between the use of SRL and gender.

Methodology:

The research involved 123 students from the English Department in one university located in North Sulawesi, Indonesia. An adjusted questionnaire was utilized in a web-based survey to explore the use of SRL amid blended learning settings.

Findings:

The statistical analysis revealed a positive relationship between SRL and the learning outcomes of the students in the blended learning environment. In particular, students predominantly used achievement orientation as their SRL component in the blended learning environment, while gender differences in the use of SRL strategies were found to be statistically insignificant.

Conclusion:

As a result, this study highlights the importance of self-regulated learning in the improvement of student outcomes in a blended learning environment. The prominence of performance orientation is a noteworthy aspect of SRL application. Additionally, the lack of notable gender-based disparities in the utilization of SRL implies a level of equality in the educational setting.

Originality:

This study aims to fill an important gap in current understanding by exploring the complex relationship between SRLs, gender and blended environments among English language learners. By investigating the dynamics of effective learning strategies in the current digital age, this study aims to contribute to a comprehensive understanding of the factors that influence academic success and pave the way for targeted educational interventions.

Keywords : SRL; Self-Regulated Learning, Gender, Blended Learning

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1. INTRODUCTION

The acquisition of English as a Second Language (ESL) has become an important aspect of the globalization process. One of the most commonly studied methods of integrating technology into the classroom is blended learning. This method combines traditional face-to-face instruction with online instruction ([Garrison & Kanuka, 2004](#); [Osguthorpe, & Graham, 2003](#); [Williams, 2002](#)). In addition to the learning environment, blended learning involves the cooperative use of different teaching methods to improve learning outcomes ([Clark & Mayer, 2011](#)).

The appropriate use of digital learning tools in online learning can have an impact on students' academic achievement ([Salvo et al., 2019](#)). As an alternative tactic to promote students' digital learning environment and academic success, self-regulated learning (hereafter, SRL) has been proposed. SRL refers to students' ability to understand and manage their learning and to modify the learning process based on feedback about their learning status ([Yamada et al., 2011](#); [Zimmerman & Schunk, 1989](#)).

Students with advanced SRL skills are able to optimize the digital learning environment and perform better academically ([Barnard-Brak et al., 2010](#); [Wang et al., 2013](#)); SRL plays an important role in education. Specifically, it improves student learning outcomes. SRL significantly influences student achievements in secondary and higher education ([Fredricks et al., 2004](#)).

Prior research has demonstrated a link between the digital learning environment and academic success ([Ceylan & Kesici, 2017](#); [Jena, 2013](#); [Peters, 2000](#)). The association between SRL and academic accomplishment has been examined by various scholars ([Dent & Koenka, 2016](#); [Wolters & Hussain, 2015](#)), also prior to the pandemic era. Similarly, there are many analyses of the relation between SRL and the online learning milieu ([Johnson & Davies, 2014](#); [Yamada et al., 2015](#); [Yot-Domínguez & Marcelo, 2017](#)).

Despite the numerous studies that demonstrate SRL's impact on academic achievement, there is a lack of research investigating its relationship with blended learning. Identifying the primary determinants of students' SRL could provide valuable insights into the relationship between SRL parameters and their academic success. Given the significant amount of research suggesting that gender is a dependable indicator of engagement in online learning, it is relevant to probe the potential influence of gender on students' self-regulated learning in the setting of blended learning. As a result, the present study endeavors to develop numerous research topics.

1. What is the Correlation of Self-Regulated Learning of English students Learning outcomes in a blended learning environment?

2. What is the most frequent or dominant factor of Self-Regulated Learning that students use?
3. Are there any differences in English students' Self-Regulated Learning depending on gender?

2. METHODOLOGY

2.1 Participants

The sample for this study consisted of 123 undergraduate students enrolled in a university located in the North Sulawesi Province of Indonesia. Among the 123 students, 47 individuals (38.2% of the total) were male, while the remaining 76 students (61.8% of the sample) were female. All participants were from the Department of English Education. The participants were selected using a census or complete enumeration method, which means that the entire population of English students at the university was included in the study ([Kumar, 2019](#)). The decision to use a census sampling technique was based on the feasibility and practicality of including all available participants in the study. By including the entire cohort of English students, this sampling method ensured that the findings would be representative of the entire population and increased the generalizability of the results.

2.2 Instruments

The present study employed a survey-based research methodology to examine the relationship between students' Self-Regulated Learning and their learning results inside a Blended Learning Environment. The self-regulated learning measures employed in the current study conducted by [Zhu et al., \(2016\)](#) were utilized to assess the relevant constructs. [Zhu et al., \(2016\)](#) employed a total of 23 items in their investigation, however the present study utilized a modified version consisting of 20 items. The survey instrument utilized for self-regulated learning (SRL) was partitioned into four distinct sections. The initial section pertains to metacognitive awareness, which encompasses self-management. The subsequent section focuses on intrinsic orientation, while the final section addresses performance orientation.

The data were analyzed using Pearson's correlation in order to assess the validity of the instrument. A total of 20 items were included in the analysis, and SPSS version 23.0 was utilized for the calculations. The validity of the questions was established based on the statistical analysis, which indicated that the calculated r-value (0.177) exceeded the critical r-value for a sample size of 123. Additionally, the p-value associated with the analysis was found to be less than 0.05, further supporting the validity of the items. Additionally, the Cronbach alpha coefficient was computed in order to assess the internal consistency dependability of the

measurement tool. The Cronbach alpha coefficient yielded a value of 0.717. In summary, the instrument exhibits a high degree of internal consistency.

Table 1. Validity of Instrument

No	Items	Pearson Correlation
<i>Metacognitive Awareness</i>		
1	"When I study a Subject in an online class, I set goals for myself in order to direct my activities in each study Period."	.518**
2	"I treat Subject material as a starting point and try to develop my own ideas about it."	.632**
3	"I make simple charts, diagrams, or tables to help me organize the Subject material."	.499**
4	"When studying a Subject, I read my class notes and course reading online repeatedly."	.536**
5	"I am persistent in getting help from my lecturer in an online class."	.522**
<i>Self-Management</i>		
6	"When the subject's work in an online class is difficult, I either give up or only study the easy parts." (Reversed)	.238**
7	"I find it hard to stick to a study schedule in an online class." (Reversed)	.276**
8	"Even when the Subject Materials are dull and uninteresting, I manage to keep working until I finish."	.374**
9	"During Online Class time, I miss important points because I'm thinking of other things." (Reversed)	.202*
10	"I make sure that I keep up with the weekly reading and assignments for a Subject."	.467**
11	"I find that I have been reading for a Subject materials in online class but don't know what it is all about."	.178*
<i>Intrinsic Orientation</i>		
12	"I feel it is important to learn the Subject Material in this online class."	.437**
13	"Understanding the Subject matter is very important to me."	.323**
14	"I think I'm able to use what I have learn in this subject in other subject"	.238**
15	"I prefer the Subject materials that really challenge me, so I can learn new things."	.395**
16	"I want to do well in online class because it is important to show my ability to my family, friends or others."	.501**
<i>Performance Orientation</i>		
17	"I set a high standard for my assignments."	.646**
18	"I keep a high standard for my learning."	.543**
19	"I want to get better grades in online class than most of other students"	.549**
20	"Getting a good Grade in online class is the most satisfying thing for me."	.453**

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

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

Table. 2 Reliability Statistics

Cronbach's Alpha	N of Items
.717	21

2.3 Data Collection and Analysis

After the completion of the online questionnaire survey form, it was administered by a lecturer during their scheduled online class session. The researcher provided a comprehensive explanation of the survey processes to the instructor. Additionally, the goal of the study was elucidated in the Google form with explicit instructions. The URL of the online survey was distributed to each student's mobile device via WhatsApp (WA), and the students were afterwards requested to participate in the survey.

Following the completion of data collection using an online survey form, a comprehensive Excel spreadsheet was prepared. This spreadsheet encompassed all 123 cases and had the respective answers for each variable. The data were imported into an SPSS sheet for analysis, following the necessary adjustments for reversed question data. The quantitative data obtained from a sample of 123 individuals was analyzed using the Statistical Package for the Social Sciences (SPSS) version 23.0.

The primary research inquiry is to the impact of Students' Self-Regulated Learning on students' learning outcomes. To assess the significance of the association, Pearson correlation analysis was employed. The second research inquiry pertains to identifying the prevailing frequency component in Self-Regulated Learning, and a descriptive statistical analysis was performed. To examine the data categorized by gender, a third research question was formulated. In order to identify any statistically significant disparities between gender and students' Self-Regulated Learning, an independent t-test was performed.

3. FINDINGS

3.1 *Self-Regulated Learning and Learning Outcomes*

Based on the observed correlations, it can be concluded that there is a significant relationship between self-regulated learning and learning outcomes in a blended learning environment, with a significance level of 0.001 or $p < 0.05$. This finding implies that self-regulated learning is positively correlated with students' learning outcomes in a blended learning environment. However, it is worth noting that this relationship is only moderately strong, as evidenced by a Pearson Correlation value ranging from 0.21 to 0.40, indicating a low level of positive correlation. The research showed that there is indeed a positive correlation between the degree of Self-Regulated Learning and Learning Outcomes within a blended learning environment.

Table 3. Correlations between Self-Regulated Learning and Learning Outcomes

		Self-Regulated Learning	Learning Outcomes
Self-Regulated Learning	Pearson Correlation	1	.285**
	Sig. (2-tailed)		.001
	N	123	123
Learning_Outcomes	Pearson Correlation	.285**	1
	Sig. (2-tailed)	.001	
	N	123	123

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

3.2 *Factors in Self-Regulated Learning*

Table 4 presents the frequency of each factor in Self-Regulated Learning. It shown that the dominant factor was Performance Orientation with the value of Mean=20.80, the second

factor was Self-Management with Mean=20.07, the third factor was Metacognitive Awareness with Mean=18.60 dan the last factor was Intrinsic Orientation with the smallest Mean=17.33.

Table 4. Statistics Descriptive of Components

		Metacognitive		Intrinsic	Performance
		Awareness	Self-Management	Orientation	Orientation
N	Valid	123	123	123	123
	Missing	0	0	0	0
Mean		18.60	20.07	17.33	20.80
Median		19.00	20.00	17.00	21.00
Mode		17 ^a	19	17	22
Std. Deviation		3.291	2.700	1.657	3.178
Minimum		11	13	13	13
Maximum		25	27	20	25

a. Multiple modes exist. The smallest value is shown

3.3 Gender and Students' Self-Regulated Learning

The differences between females and males in Self-Regulated Learning showed in table 5 and 6. Table 5 stated the mean scores of Females=78.58 and Male=78.66. Table 6 revealed statistically significant differences of equal variances assumed with sig. (2-tailed) = 0.723 or sig > 0.05 means there were no significant differences between Female and Male students in Self-Regulated Learning in the Blended learning environment.

Table 5. Statistic descriptive between Female and Male in Self-Regulated Learning

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Self-Regulated Learning	Female	76	78.58	6.830	.783
	Male	47	78.66	7.878	1.149

Table 6. The significant differentiate between Female and Male students in Self-Regulated Learning

		Independent Samples Test									
		Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Learning Outcomes	Equal variances assumed	.041	.841	-.356	121	.723	-.496	1.394	-3.255	2.264	
	Equal variances not assumed			-.358	100.034	.721	-.496	1.383	-3.240	2.249	

4. DISCUSSION

Blended learning has gone from optional to mandatory as a result of the proliferation of online learning platforms and the global impact of the coronavirus epidemic. Students have the opportunity to engage in home-based study and enhance their language skills through online connections. Therefore, possessing a comprehensive understanding of students' self-regulated

learning within a blended learning context is of utmost importance. The online course in blended learning requires students to be highly aware to attain academic goals.

The current results validate the scales proposed by [Zhu et al., \(2016\)](#), which were based on [Barnard et al., \(2008\)](#) research. [Zhu et al., \(2016\)](#) study indicated that participants' Self-Regulated Learning scores strongly predicted their learning outcomes. According to [Nejabati, \(2015\)](#) study, the implementation of Self-Regulated Teaching Strategies significantly enhanced students' reading comprehension skills. The question of whether Self-Regulated Learning is essential for students gives rise to the following argument. In the current study, a significance level of 0.001 or less than 0.05 suggests a favorable correlation between self-regulated learning and students' learning outcomes in a blended learning environment. The findings confirm a significant association between students' level of self-regulated learning and their academic achievement.

The results of the study show that the most important factor in Self-Regulated Learning is performance orientation, with an average score of 20.80. This implies that in a blended learning setting, students understand that their performance orientation is critical not only for themselves but also for their instructors' evaluations. Additionally, the study findings suggest that there is no statistically significant gap in Self-Regulated Learning between male and female students in the blended learning environment. This is based on the two-tailed significance test with a p-value of 0.723, which exceeds the predetermined significance level of 0.05.

In spite of the research findings, there are certain drawbacks to this study. Students' access to the Internet as a potential factor that could affect their learning outcomes in a blended learning environment was not considered in the study. Another limitation is the exclusion of the learner's self-reflection phase in the components of the self-regulated learning framework. The framework currently only includes the forethought and performance phases. The SRL questionnaire used in this study has limited capacity for qualitative analysis, capturing only measures of correlation, frequency, and statistical descriptive information.

5. CONCLUSION

The study's findings indicate that Self-Regulated Learning (SRL) is significantly associated with students' academic achievements. SRL is the ability of students to manage their cognitive, behavioral, and emotional processes effectively to reach their desired learning outcomes. Self-regulated learning (SRL) helps students to take an active approach in addressing their academic challenges. Moreover, research on self-regulated learning suggests

that learners who have insights into their own learning processes are able to identify the most effective strategies for acquiring knowledge. Based on the study's results, it is suggested that educators, particularly teachers and lecturers, have a vital part in promoting the growth of students' Self-Regulated Learning practices. To overcome limitations addressed in the discussion section, it is recommended that future research efforts cover all stages of Self-Regulated Learning. Additionally, it is crucial to investigate and analyze various issues in addition to gender, such as students' internet connectivity in a blended learning environment.

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