

EXPLORING THE RELATIONSHIP BETWEEN SELF-REGULATED LEARNING AND COLLABORATION SKILLS: A GENDER-BASED ANALYSIS

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ABSTRACT:

This study examines the relationship between self-regulated learning (SRL) and collaboration skills, with a focus on potential gender differences among students. A sample of 40 students was analysed to explore whether higher levels of SRL correlate with improved collaboration skills and to determine if gender plays a significant role in these skills. The results indicate a moderate positive correlation coefficient value ($r = 0.488$) between SRL and collaboration skills, but no significant gender differences were found. These findings suggest that enhancing self-regulation can positively impact collaboration skills, irrespective of gender.

Keywords: Self-Regulated Learning, Collaboration Skills, Gender Differences, Educational Research

INTRODUCTION:

Self-regulated learning (SRL) and collaboration skills are critical components of successful educational outcomes. SRL involves students' ability to manage their own learning processes through goal setting, self-monitoring, and self-reflection (Zimmerman, 2008). Self-regulated learning (SRL) involves a set of cognitive and metacognitive strategies that includes goal setting, self-monitoring, self-evaluation, and adaptive learning strategies (Zimmerman, 2002). SRL empowers students to take ownership of their educational journey, leading to enhanced academic performance and greater persistence in the face of challenges. Self-regulated learning focuses on developing key skills, such as establishing clear objectives for learning, utilizing techniques to meet those objectives, tracking progress, and adjusting the learning environment to support these goals (Zimmerman & Schunk, 2021). Collaboration skills, on the other hand, refer to the ability to work effectively with others towards shared goals (Johnson & Johnson, 2009). These skills are essential for navigating complex social and academic environments. They include effective communication, teamwork, and problem-solving abilities (Johnson & Johnson, 1999). Collaborative learning environments encourage students to engage in joint activities, negotiate, and share diverse perspectives, thereby enriching their educational experience and fostering a deeper understanding of the subject matter (Gillies & Boyle, 2010). As educational environments increasingly emphasise collaborative learning and self-directed study, understanding the interplay between these skills becomes crucial. The interplay between SRL and collaboration skills is a significant area of interest in educational research. Effective self-regulation can enhance an individual's ability to contribute positively to group work, as students who are skilled in self-regulation are often better at managing their tasks, setting goals, and reflecting on their performance (Boekaerts & Corno, 2005). Conversely, collaborative experiences can provide valuable opportunities for practicing and refining self-regulation strategies, as students engage in mutual feedback and shared problem-solving (Vermunt & Verloop, 1999). Moreover, gender differences in SRL and collaboration skills add another layer of complexity to this dynamic. Research on gender differences in education has revealed varying patterns of behaviour and achievement. For instance, some studies suggest that females may exhibit higher levels of cooperation and interpersonal skills, which could influence their collaboration outcomes (Gorrell & Hwang, 1995). However, findings on gender differences in SRL are less consistent, with some research indicating that gender may have a limited impact on self-regulation abilities (McClelland et al., 2006). Recent research has highlighted the importance of SRL in improving academic performance and overall learning outcomes (Pintrich & De Groot, 1990). Collaboration skills are similarly valued for their role in fostering teamwork and problem-solving abilities. However, the

relationship between SRL and collaboration skills, and the potential impact of gender on these skills, remains underexplored.

This study addresses these gaps by investigating the correlation between SRL and collaboration skills and examining whether gender differences influence these skills. Understanding how SRL and collaboration skills interrelate and how these factors are influenced by gender is crucial for designing effective educational interventions. By examining these relationships, this study aims to provide insights into how self-regulation and collaboration skills contribute to student success and how gender may influence these dynamics. The findings from this research could inform strategies to enhance learning experiences and outcomes for all students, ensuring that educational practices are responsive to diverse needs and abilities.

In summary, this study seeks to investigate the relationship between self-regulated learning and collaboration skills, with a particular focus on examining gender differences. By exploring these aspects, the research aims to contribute to a deeper understanding of how SRL and collaboration skills can be fostered and leveraged to support academic achievement and personal growth. By analysing a sample of students, this research provides insights into how self-regulation might affect collaboration and whether educational strategies should be tailored based on gender.

The objectives and hypotheses of the study are as follows:

OBJECTIVES:

1. To examine the correlation between self-regulated learning (SRL) and collaboration skills among students.
2. To analyse potential gender differences in self-regulated learning and collaboration skills.

Hypotheses

Hypothesis 1: There is a positive correlation between self-regulated learning (SRL) and collaboration skills among students.

Hypothesis 2: There are no significant gender differences in self-regulated learning (SRL) and collaboration skills among students.

REVIEW OF RELATED LITERATURE:

Self-regulated Learning: Self-regulated learning is a process by which learners take control of their own learning activities, including goal setting, self-monitoring, and self-reflection (Zimmerman, 2002). It involves several key components, such as cognitive strategies, metacognitive awareness, and motivational factors. Self-regulation has been linked to academic success, as students who effectively manage their learning processes tend to perform better academically (Schunk, 2003).

Collaboration Skills: Collaboration skills involve the ability to work effectively with others, including communication, cooperation, and problem-solving abilities (Johnson & Johnson, 2009). Collaborative learning environments have been shown to enhance students' critical thinking and interpersonal skills, making collaboration an essential component of modern education.

Correlation Between SRL and Collaboration Skills: Research has demonstrated that self-regulation and collaboration are interconnected. Effective self-regulation can lead to better collaboration because students who manage their learning processes well are likely to contribute more effectively to group work (Pintrich & De Groot, 1990). Conversely, engaging in collaborative activities may enhance self-regulation by providing opportunities for self-monitoring and reflection.

Gender Differences: The influence of gender on SRL and collaboration skills has been a topic of interest in educational research. Some studies suggest that gender differences exist in learning styles and collaborative behaviours, while others indicate that these differences are minimal (Hyde, 2005). This study aims to clarify whether gender significantly impacts SRL and collaboration skills.

This research addresses significant gaps in the existing literature by examining the direct relationship between SRL and collaboration skills, assessing gender differences in these skills, and applying validated measurement tools. The findings contribute to a better understanding of how SRL influences collaboration and provide insights for designing effective educational interventions.

However, further research is needed to explore these relationships in different contexts and with larger, more diverse samples to enhance the generalisability and applicability of the findings.

METHODOLOGY:

Participants: The study sample consisted of 40 students, balanced between boy and girl participants. The students were selected from a high secondary school setting to ensure a representative sample of typical educational experiences.

Measures: Self-regulated learning was assessed using the Self-regulated Learning Questionnaire developed by Gupta and Mehtani (2019). This tool evaluates various aspects of self-regulation, including goal setting, self-monitoring, and self-reflection. Collaboration skills were measured using the Collaboration Skills Assessment Tool by Boyraz (2018), which assesses communication, cooperation, and problem-solving abilities.

Procedure: Data were collected through surveys administered to the students. The SRL and collaboration skills questionnaires were distributed, and participants completed them during a scheduled class period. The data were then analysed to determine the correlation between SRL and collaboration skills and to assess any gender-based differences.

DATA INTERPRETATION AND ANALYSIS:

The researcher analysed the objectives of the study using statistical methods such as Correlation Analysis and Independent Samples t-Test. The descriptive statistics of self-regulated learning for gender are given in Table 1.

Table 1: The descriptive statistics of Self-regulated learning and Collaboration Skills with respect to gender

	Mean	Std. Deviation	N
SRL	185.73	28.397	40
COLLABORATION	110.53	13.856	40

The data was also tested for homogeneity and normality. The results are in Table 2 and Table 3 respectively.

Table 2: Levene's Test for Equality of Variances

	F	Sig.
SRL	.562	.458
COLLABORATION	.696	.409

For Self-regulated Learning (SRL), $F = 0.562$, $\text{Sig.} = 0.458$ and the p-value (Sig.) of 0.458 is greater than 0.05, indicating that the variances between the groups (male and female students) are equal or homogeneous for SRL.

For Collaboration Skills, $F = 0.696$, $\text{Sig.} = 0.409$ and the p-value (Sig.) of 0.409 is also greater than 0.05, indicating that the variances between the groups are equal or homogeneous for collaboration skills.

Table 3: Kolmogorov Smirnov's Test of Normality

	Kolmogorov-Smirnov Statistic	df	Sig.
SRL	.115	40	.199
COLLABORATION	.110	40	.200*

Self-regulated Learning Statistic = 0.115, $\text{Sig.} = 0.199$ and the p-value (Sig.) 0.199, which is greater than 0.05, suggests that the SRL data does not significantly deviate from a normal distribution, indicating normality.

Collaboration Skills Statistic = 0.110, $\text{Sig.} = 0.200$ and the p-value (Sig.) 0.200, which is also greater than 0.05 suggests that the collaboration data does not significantly deviate from a normal distribution, indicating normality.

THE OBJECTIVES-WISE AND HYPOTHESIS-WISE DATA ANALYSIS AND INTERPRETATION ARE GIVEN BELOW:

Objective 1: To examine the correlation between self-regulated learning (SRL) and collaboration skills among students - This objective aimed to determine whether higher levels of SRL are associated with better collaboration skills, thereby exploring the direct relationship between these two variables.

Hypothesis 1: There is a positive correlation between self-regulated learning (SRL) and collaboration skills among students. This hypothesis predicts that students who exhibit higher levels of self-regulated learning will also demonstrate stronger collaboration skills.

Correlation Analysis: The result in Table 4 shows a correlation between students' self-regulated learning and collaboration skills.

Table 4. The correlation between students' self-regulated learning and collaboration skills

	SRL	COLLABORATION
SRL	1	.488**
COLLABORATION	.488**	1

Pearson's correlation coefficient revealed a moderate positive correlation between SRL and collaboration skills ($r = 0.488$, $p = 0.001$). The p-value of 0.001 indicates that the correlation is statistically significant at the 0.01 level. This suggests that students who are more proficient in self-regulated learning also tend to have better collaboration skills. The correlation is statistically significant, indicating that the relationship is unlikely due to chance. Thus, hypothesis 1 is accepted.

Objective 2: To analyse potential gender differences in self-regulated learning and collaboration skills. This objective seeks to identify whether there are significant differences in SRL and collaboration skills between boy and girl students, contributing to the understanding of gender-related influences on these skills.

Hypothesis 2: There are no significant gender differences in self-regulated learning (SRL) and collaboration skills among students. This hypothesis posits that boy and girl students will show similar levels of SRL and collaboration skills, indicating that gender does not significantly affect these abilities.

Independent Samples t-Test: The independent samples t-tests were conducted to analyse differences in SRL and collaboration skills between male and female students.

Table 5: Independent Samples t-Test

	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference
SRL	.212	38	.833	1.927	9.103
COLLABORATION	1.219	38	.230	5.316	4.360

SRL shows $t = 0.212$, $df = 38$, $p = 0.833$ and Collaboration Skills shows $t = 1.219$, $df = 38$, $p = 0.230$. These results in Table 5 show no significant differences and they indicate that gender does not significantly impact SRL or collaboration skills in this sample. Thus, hypothesis 2 is accepted.

FINDINGS AND EDUCATIONAL IMPLICATIONS :

The findings of this study reveal a significant positive correlation between self-regulated learning and collaboration skills, suggesting that enhancing SRL can improve students' ability to collaborate effectively. This supports previous research indicating that self-regulation is crucial for successful collaboration (Pintrich & De Groot, 1990).

The lack of significant gender differences in SRL and collaboration skills suggests that educational strategies can be applied universally without specific adjustments for gender. This aligns with the gender similarities hypothesis, which posits that males and females are more alike than different in many psychological traits (Hyde, 2005).

Thus, given the positive correlation between SRL and collaboration skills, teachers should consider incorporating strategies that enhance self-regulation as part of collaborative learning activities. For

example, teaching students' effective goal-setting and self-monitoring techniques can improve both their individual and group performance. Moreover, since gender differences were not significant in this study, educational interventions can focus on individual student needs rather than gender-specific approaches. This suggests that universal strategies for improving SRL and collaboration skills may be effective across different genders.

CONCLUSION :

This study provides valuable insights into the relationship between self-regulated learning and collaboration skills and highlights the lack of significant gender differences in these areas. The positive correlation between SRL and collaboration skills suggests that enhancing self-regulation can benefit collaborative performance. The findings support the use of universal educational strategies that focus on improving SRL to enhance collaborative abilities among students. Further research is needed to explore additional factors and contexts to build on these findings and improve educational practices.

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