ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

Effect of Collaborative Learning Strategies on Achievement and Engagement Among HUMSS Students

Jerome Dansalan[1]

[1]La Paz National High School, San Narciso Zambales, Philippines

Publication Date: 2025/10/15

Abstract: Collaborative learning, in which students worked together to achieve shared academic goals, had been widely acknowledged for fostering deeper understanding, active engagement, and essential life skills. This study explored the effect of collaborative learning strategies on academic achievement and overall benefits among HUMSS students in Zone 3, Zambales Division, Philippines. The study involved 259 students from different schools in Zone 3 using the descriptive research method. Stratified random sampling was employed to ensure fair representation of the population. Findings showed that students perceived collaborative learning as beneficial to their academic performance, critical thinking, communication, and teamwork. They also acknowledged its academic, social, and lifelong advantages. However, statistical analysis revealed no significant differences in these perceptions based on sex, age, or grade level. A strong positive correlation between perceived benefits and academic achievement suggested that collaborative learning effectively enhanced educational outcomes across all student groups. The study proposed a Collaborative Learning Intervention Program, which included guided peer discussions, workshop activities, and group-based exercises. These activities were designed to strengthen collaboration and engagement while promoting deeper learning and interpersonal growth. Institutional implementation of collaborative learning practices and future research on other factors affecting their efficacy are recommended by the study.

Keywords: *Collaborative Learning, Academic Achievement, Critical Thinking, Communication, HUMSS Students*.

How to Cite: Jerome Dansalan (2025) Effect of Collaborative Learning Strategies on Achievement and Engagement Among HUMSS Students. *International Journal of Innovative Science and Research Technology*, 10(10), 737-743. https://doi.org/10.38124/ijisrt/25oct542

I. INTRODUCTION

Collaborative learning as an instructional strategy where students work together towards a common academic goal has been widely implemented across various educational system globally (Tichenor & Tichenor, 2020). Many teachers have goals of having their students achieve high engagement while in their classrooms. Teachers strive to find instructional strategies, activities and lessons while creating an environment where students can achieve that high engagement (Youngren, 2021). Each person brings different skills and abilities to the table, and by interacting and exchanging experiences, they help each other reach common goals or learning objectives. This shared effort and role-switching within the group play a key role in everyone's success and progress (Siller and Ahmad, 2024). Teaching and learning in a modern classroom are no longer an act of transferring knowledge. Instead of teacher-centered approaches, the focus has shifted to learner-centered and learning-centered strategies. In the current educational landscape, learners are no more the empty vessels to be filled in, rather they need to be the co-creators of knowledge; they should be willing to take ownership of their learning and contribute to the development of knowledge (Kumar, 2020).

In the Philippines, the Department of Education (DepEd) has several policies that supports collaborative learning. The Learning action cell (LAC) is one of the prominent examples that was introduced by DepEd Order No. 35, s.2016. These established collaborative groups where teachers engage in continuous professional development, sharing strategies that could benefit the students. This is not only to foster teacher's professional growth but also enhance students learning experiences. According to Nerona (2021), it is found that academic performance in such subjects is influenced by both student-related factors, such as the teaching methods used by the teachers. It indicates that teachers often rely on traditional and lecture-based approaches. The arrangement of group learning activities is to make learning based on the knowledge sharing of the social structure among the learners in the group, where each learner is responsible for his own learning and has the motivation to

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

promote the learning of others. (Kong, 2021). Students' behavior significantly influences their learning process. Actively participating in group activities fosters greater involvement within the group. However, a challenge arises when students fail to engage with tasks or respond to the teacher, which may indicate a lack of interest in their group, the teacher, or the subject matter (Pajarillo-Aquino, 2020).

Strategies in teaching create an environment where students feel comfortable and exploring knowledge with their own. One of the innovative teaching strategies is the collaborative technique which is based on the well-tested cooperative learning concept. The idea of collaborative learning is where students work together in groups or pairs to reach their academic goals, it has been widely studied and supported in the field. (Viado and Espiritu, 2023). Assessing the effect of the collaborative learning strategies on Social Studies Achievement and its benefits in Zone 3, Division of Zambales can help identify potential barriers, examine students' level of learning and evaluate the effect of these strategies which influence student's understanding in Social Studies. This study will be beneficial to students as they provide insights from more effective learning strategies that promote benefits and improved their academic achievement in Social studies. The findings of this study benefited educators who work with HUMSS students by providing strategies that could create retention of knowledge and how these strategies can influence the learning environment as well as parents and future researchers.

Thus, this study aimed to comprehensively investigate the collaborative learning strategies among HUMSS (Humanities and Social Sciences) Students in Zone 3, Division of Zambales, with a particular emphasis on their achievement in Social Studies. This research sought to provide valuable insights into the factors that shape student's collaboration skills and the benefits from collaborative learning such as academic, social, and lifelong skills.

II. METHODOLOGY

➢ *Research Design*

This study employed a descriptive research method where it systematically describes a phenomenon, group, situation without manipulating the given variables. A descriptive design study is one that describes the distribution of one or more variables, without regard to any causal or other hypothesis (Aggarwal and Ranganathan, 2019). According to Creswell 2014, the descriptive research design is a study that describes the characteristics of a population or phenomenon being studied.

This method involved collecting quantitative data, this is often through the use of survey questionnaires, interviews and observation to describe the current situation, attitudes or outcomes related to collaborative learning.

➢ *Respondents and Location*

The study respondents were Senior High School – HUMSS students from five public secondary schools across four districts (Cabangan, San Felipe, San Narciso, and San Antonio) in Zone 3, Division of Zambales. Using Slovin's formula with a 5% margin of error, the sample size was determined to be 259 out of a total population of 735 students. Stratified random sampling ensured proportional representation from each school: 53 from Cabangan NHS, 36 from San Rafael TVHS, 77 from La Paz NHS, 20 from Angeles NHS, and 73 from San Antonio NHS. This distribution reflected each school's actual population share, ensuring representativeness.

➢ *Instrument and Data Collection*

The main research instrument used in this study was a survey questionnaire adapted and modified from related studies on collaborative learning to meet the study's objectives. It was divided into three parts: the first part gathered the respondents' profile; the second part assessed the achievement of HUMSS students in collaborative learning; and the third part measured the benefits of collaborative learning with 24 items on academic, social, and lifelong benefits, also using the same scale. These modifications ensured the tool's validity, reliability, and relevance in capturing the necessary data. To collect the data, the researcher prepared the survey instrument, validated it through pilot testing, and sought approval from authorities. Formal permission was obtained from the Schools Division Superintendent of Zambales before distribution. The researcher personally administered the questionnaires, explained the study's purpose, guaranteed confidentiality, and collected the responses immediately to ensure completeness and accuracy.

➢ *Data Analysis*

Data were analyzed using SPSS and MS Excel. Statistical tools included frequency distribution for demographic data, mean and Likert scale for measuring collaborative learning levels, ANOVA for testing differences across profile variables, and Pearson correlation for examining relationships between variables. The reliability of the instrument was assessed using the Kuder-Richardson Formula 20 (KR-20), with interpretations ranging from excellent to poor consistency based on established standards.

III. RESULTS AND DISCUSSIONS

A. Demographic Profile of the Respondents

Table 1 shows the frequency and percentage distribution of the HUMSS student-respondents' demographic profile in terms of their sex, age, and grade level.

Table 1 Frequency and Percentage Distribution of the HUMSS Student-Respondents' Demographic Profile

Sex	Frequency	Percentage
Male	103	39.77
Female	156	60.23
Total	259	100.00

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

Age	Frequency	Percentage
20 and Above	7	2.70
16-19	231	89.19
13-15	21	8.11
Total	259	100.00
Mean Age:17.32 or 17 years old		
Grade Level	**Frequency**	**Percentage**
Grade 11	80	30.89
Grade 12	179	69.11
Total	259	100.00

The study involved 259 HUMSS student-respondents. In terms of sex, 103 were male (39.77%) and 156 were female (60.23%), showing a predominance of female participants. For age, the majority (231 or 89.19%) were 16–19 years old, while 21 (8.11%) were 13–15 years old, and only 7 (2.70%) were 20 years old and above. Regarding grade level, most respondents were from Grade 12 (179 or 69.11%), while 80 (30.89%) were from Grade 11. These demographic distributions align with related studies, which highlight the importance of contextualizing participant characteristics and emphasize that senior high school students, particularly those in Grade 12, often gain significant benefits from collaborative learning.

Similarly, Balangon and Dantic's (2021) study observed a higher number of Grade 11 respondents, which may be attributed to the fact that Grade 12 students were engaged in school activities during the distribution of the instrument. This discrepancy may be explained by the timing of the instrument distribution, which coincided with periods when Grade 12 students were preoccupied with various school-related commitments. Meanwhile, it is supported in the study of Calvez & Bual (2024), research showed that Grade 12 students demonstrated significantly higher levels of participation and awareness in academic activities than Grade 11 students.

B. Students' Perceived Benefits in Collaborative Learning Strategies in Social Studies

Table 2 Summary of Weighted Mean and Descriptive Equivalent of Students' Perceived Benefits in Collaborative Learning Strategies in Social Studies

Perceived Benefits in Collaborative Learning Strategies	Weighted Mean	Descriptive Equivalent	Rank
Academic Benefits	3.29	Strongly Agree	1
Social Benefits	3.19	Agree	3
Lifelong Skills	3.21	Agree	2
Overall Weighted Mean	**3.23**	**Agree**	

The overall weighted mean for perceived benefits is 3.23 (Agree), signifying that, in general, students believe collaborative learning in Social Studies is effective in enhancing their academic, social, and lifelong skill development. Similarly, the study of Capili (2020), it is found out that students engaged in collaborative learning strategies showed higher test scores and improved comprehension in Social Studies compared to those who learned individually.

C. Test of Significant Difference on the Students' Perceived Achievement in Collaborative Learning Strategies When Grouped According to Profile Variables

- *Academic Performance*

Table 3 Analysis of Variance to Test the Significant Difference on the Students' Perceived Achievement in Collaborative Learning Strategies in Terms of Academic Performance When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.190	1	.190	.937	.334	Accept H_o Not Significant
	Within Groups	52.276	257	.203			
	Total	52.467	258				
Age	Between Groups	.261	2	.131	.641	.528	Accept H_o Not Significant
	Within Groups	52.205	256	.204			
	Total	52.467	258				
Grade Level	Between Groups	.000	1	.000	.001	.970	Accept H_o Not Significant
	Within Groups	52.466	257	.204			
	Total	52.467	258				

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

The results show that sex (F = 0.937, p = 0.334), age (F = 0.641, p = 0.528), and grade level (F = 0.001, p = 0.970) all have significance values greater than 0.05. This means none of these factors significantly affect students' perceived academic performance in collaborative learning. Therefore, the null hypothesis is accepted for all three variables, indicating no significant differences based on sex, age, or grade level.

In the same way, Gillies (2016) conducted a comprehensive meta-analysis on collaborative learning where ANOVA results indicated that sex, age, and grade level do not significantly affect perceived academic achievement in collaborative learning yet the results demonstrated that collaborative learning fosters higher cognitive development and deeper learning experiences. The interactive nature of collaborative learning also enhances students' ability to retain information and apply their knowledge in real-world contexts.

- *Critical Thinking Skills*

Table 4 Analysis of Variance to Test the Significant Difference on the Students' Perceived Achievement in Collaborative Learning Strategies in Terms of Critical Thinking Skills When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.115	1	.115	.650	.421	Accept H_o Not Significant
	Within Groups	45.407	257	.177			
	Total	45.522	258				
Age	Between Groups	.072	2	.036	.202	.817	Accept H_o Not Significant
	Within Groups	45.450	256	.178			
	Total	45.522	258				
Grade Level	Between Groups	.020	1	.020	.112	.739	Accept H_o Not Significant
	Within Groups	45.502	257	.177			
	Total	45.522	258				

The findings reveal that sex (F = 0.650, p = 0.421), age (F = 0.202, p = 0.817), and grade level (F = 0.112, p = 0.739) all have significance values greater than 0.05. This means none of these variables significantly affect students' perceived improvement in critical thinking skills through collaborative learning. Thus, the null hypothesis is accepted for all factors.

In the study of Garcia et al., (2024), it systematically mapped the application of collaborative learning paradigms in educations signifying that regardless of sex, gender, and academic level, the results in the enhancement of critical thinking skills of the students were thru fostering and navigating collaborative problem-solving abilities. This suggests that collaborative learning creates an inclusive and dynamic environment where students actively engage in discussions, analyze complex issues, and work collectively to find solutions.

- *Communication and Teamwork*

Table 5 Analysis of Variance to Test the Significant Difference on the Students' Perceived Achievement in Collaborative Learning Strategies in Terms of Communication and Teamwork When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.122	1	.122	.568	.452	Accept H_o Not Significant
	Within Groups	55.426	257	.216			
	Total	55.548	258				
Age	Between Groups	.085	2	.042	.196	.822	Accept H_o Not Significant
	Within Groups	55.464	256	.217			
	Total	55.548	258				
Grade Level	Between Groups	.159	1	.159	.739	.391	Accept H_o Not Significant
	Within Groups	55.389	257	.216			
	Total	55.548	258				

The results show that sex (F = 0.568, p = 0.452), age (F = 0.196, p = 0.822), and grade level (F = 0.739, p = 0.391) all have significance values above 0.05. This indicates that none of these factors significantly influence students' perceived communication and teamwork skills in collaborative learning. Hence, the null hypothesis is accepted for all variables.

In the study of Hebles et al. (2019), the results demonstrated that cooperative and collaborative learning positively influence five dimensions of teamwork such as collective efficacy, planning, goal setting, problem-solving, and conflict management. This makes the importance of collaborative learning in developing essential teamwork in higher education.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

D. Test of Significant Difference on the Students' Perceived Benefits in Collaborative Learning Strategies When Grouped According to Profile Variables

➢ *Academic Benefits*

Table 6 Analysis of Variance to Test the Significant Difference on the Students' Perceived Benefits in Collaborative Learning Strategies in Terms of Academic Aspect When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.141	1	.141	.770	.381	Accept H_o Not Significant
	Within Groups	46.977	257	.183			
	Total	47.118	258				
Age	Between Groups	.117	2	.058	.318	.728	Accept H_o Not Significant
	Within Groups	47.001	256	.184			
	Total	47.118	258				
Grade Level	Between Groups	.183	1	.183	1.002	.318	Accept H_o Not Significant
	Within Groups	46.935	257	.183			
	Total	47.118	258				

The analysis shows that sex (F = 0.770, p = 0.381), age (F = 0.318, p = 0.728), and grade level (F = 1.002, p = 0.318) all have significance values above 0.05. This indicates that none of these factors significantly influence students perceived academic benefits of collaborative learning. Therefore, the null hypothesis is accepted for all variables.

Additionally, Stella & Nwanneka (2024) emphasized that there were no significant gender differences in achievement scores, suggesting that collaborative learning benefits students irrespective of gender. Together, these studies support the idea that collaborative learning is a universally beneficial pedagogical approach that promotes higher engagement, quality discussions, and academic success for all students.

➢ *Social Benefits*

Table 7 Analysis of Variance to Test the Significant Difference on the Students' Perceived Benefits in Collaborative Learning Strategies in Terms of Social Aspect When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.001	1	.001	.006	.939	Accept H_o Not Significant
	Within Groups	57.779	257	.225			
	Total	57.780	258				
Age	Between Groups	.092	2	.046	.204	.815	Accept H_o Not Significant
	Within Groups	57.688	256	.225			
	Total	57.780	258				
Grade Level	Between Groups	.162	1	.162	.721	.397	Accept H_o Not Significant
	Within Groups	57.619	257	.224			
	Total	57.780	258				

The findings reveal that sex (F = 0.006, p = 0.939), age (F = 0.204, p = 0.815), and grade level (F = 0.721, p = 0.397) all have significance values greater than 0.05. This means none of these factors significantly affect students perceived social benefits of collaborative learning. Thus, the null hypothesis is accepted for all variables.

Pulgar et al. (2022) found that collaboration among students with strong friendship ties positively benefitted academic performance. The results can be seen that the quality of social interactions, influence by existing friendship plays a significant role in the effectivity of collaborative learning especially in non-traditional classroom environment.

➢ *Lifelong Skills*

Table 8 Analysis of Variance to Test the Significant Difference on the Students' Perceived Benefits in Collaborative Learning Strategies in Terms of Lifelong Skills When Grouped According to Profile Variables

Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Decision/ Interpretation
Sex	Between Groups	.145	1	.145	.644	.423	Accept H_o Not Significant
	Within Groups	57.718	257	.225			
	Total	57.863	258				
Age	Between Groups	.006	2	.003	.013	.987	Accept H_o

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

	Within Groups	57.857	256	.226			Not Significant
	Total	57.863	258				
Grade Level	Between Groups	.127	1	.127	.565	.453	Accept H_o Not Significant
	Within Groups	57.736	257	.225			
	Total	57.863	258				

The results show that sex (F = 0.644, p = 0.423), age (F = 0.013, p = 0.987), and grade level (F = 0.565, p = 0.453) all have significance values above 0.05. This means none of these factors significantly influence students perceived lifelong skills benefits in collaborative learning. Therefore, the null hypothesis is accepted for all variables.

On the other hand, the research finding highlighted that collaborative learning fosters essential lifelong skills which includes critical thinking, communication, and teamwork. It also emphasizes that regardless of gender, sex and academic level, collaborative learning is valuable beyond the classroom. (Le et al., 2017).

E. Test of Significant Relationship Between the Students' Perceived Achievements and Benefits of Collaborative Learning Strategies in Social Studies

Table 9 Pearson r to Test the Significant Relationship Between the Students' Perceived Achievements and Benefits of Collaborative Learning Strategies in Social Studies

		Perceived Benefits	**Interpretation**
Perceived Achievements	Pearson Correlation	.790**	**Highly Positive Significant Relationship**
	Sig. (2-tailed)	.000	
	N	259	
**. Correlation is significant at the 0.01 level (2-tailed).			

The Pearson correlation coefficient is 0.790, which indicates a highly positive relationship between students' perceived achievements and benefits from collaborative learning strategies. This suggests that as students' perceived achievements increase, their perceived benefits of collaborative learning also tend to increase. The significance value (p-value) is 0.000, which is less than the alpha level of 0.01. This indicates that the correlation between perceived achievements and perceived benefits is statistically significant at the 0.01 level (2-tailed). Therefore, the relationship observed is not due to chance and is highly reliable.

In the study of Kibirige (2019), results indicated that cooperative learning and collaborative learning as same strategies enhances learner's performance more than traditional one. It is also supported in the study of Love & Tantiado (2024), a moderate positively correlation between collaborative learning and student's well-being, particularly emphasizing peer support.

IV. CONCLUSIONS AND RECOMMENDATIONS

The research finds that a majority of the respondents were Grade 12 female students in the 16–19 age bracket, pointing to their preparedness for work or university. Students concurred that collaborative learning impacts positively on academic performance, critical thinking, communication, and teamwork but that participation can still be enhanced. There were no differences found by sex, age, or grade level, suggesting that collaborative learning is effective with a wide range of people. Overall, it improves academic, cognitive, and social abilities, and a program of intervention was formulated in order to further reinforce its effects.

Collaborative learning strategies ought to be inclusive and responsive to the varied needs of students, especially underrepresented populations. Activities must be planned that promote critical thinking, including debates, role-playing, and case studies, with cooperation encouraged through assigned roles and clear expectations. Equal access to collaborative experiences must be ensured, and institutionalization of collaborative learning may be considered by schools through teacher training and structured programs. Lastly, the proposed intervention program must be checked, endorsed, and regularly enhanced depending on its effect on students.

REFERENCES

[1]. Capili, J. (2020). "The Effects of Collaborative Learning on Students' Academic Performance in Social Studies." *Philippine Journal of Education and Learning*, 25(3), 45-59.
[2]. David, A. R., & Capuno, R. (2020). "The Impact of Collaborative Learning on Academic Performance and Critical Thinking Skills of Senior High School Students."
[3]. Department of Education. (2016). *Learning action cell as a K to 12 basic education program school-based continuing professional development strategy for the improvement of teaching and learning* (DepEd Order No. 35, s. 2016). Department of Education, Republic of the Philippines. https://www.deped.gov.ph
[4]. Department of Education. (n.d.). *K to 12 Basic Education Curriculum | Department of Education*. Deped.gov.ph. https://www.deped.gov.ph/k-to-12/about/k-to-12-basic-education-curriculum/
[5]. Dizon, A. J. (2021). "Effects of Collaborative Learning in Enhancing Student Engagement and Participation in Senior High School."

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25oct542

[6]. Gaad, A. V. (2021). Enhancing students' achievement in physical science through online collaborative learning (OCL) strategy. *Journal of Research and Innovation*.
[7]. Garcia, R., Christoph Treude, & Valentine, A. (2024). Application of Collaborative Learning Paradigms within Software Engineering Education: A Systematic Mapping Study. *ArXiv (Cornell University)*, 366–372. https://doi.org/10.1145/3626252.3630780
[8]. Kong, L. (2021). Collaborative learning and academic performance in Lyceum of the Philippines University - Batangas City senior high school. *International Journal of Frontiers in Sociology*, *3*(2), 58–62. https://doi.org/10.25236/ijfs.2021.030212
[9]. Pulgar, J., Ramírez, D., Umanzor, A., Candia, C., & Sánchez, I. (2022). Long-term collaboration with strong friendship ties improves academic performance in remote and hybrid teaching modalities in high school physics. Physical Review Physics Education Research, 18(1). https://doi.org/10.1103/physrevphyseducres.18.010146
[10]. Siller, H.-S., & Ahmad, S. (2024). Analyzing the impact of collaborative learning approach on grade six students' mathematics achievement. [Publisher location information missing].
[11]. Viado, A., & Department, J. (2023). The collaborative-individual learning in improving the critical thinking skills of secondary students in the Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research*, *4*(7), 2592–2600. https://doi.org/10.11594/ijmaber.04.07.35
[12]. Youngren, J. (2021). Impacts of collaborative learning on student engagement [Master's thesis, Minnesota State University Moorhead]. *Dissertations, Theses, and Projects*, 483. https://red.mnstate.edu/thesis/483