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# Collaborative Learning and Academic Performance in Lyceum of the Philippines University - Batangas City Senior High School

**Li Kong**

*Lyceum of the Philippines University - Batangas City, Philippines*
*Email: 979185156@qq.com*

***Abstract*****:** *To develop and enhance student's academic performance in Lyceum of the Philippines University-Batangas City Senior High School, firstly, collaborative learning can do a really big help to other students who are not able to catch up with their lessons, provides the students information with the importance of collaborative activities and its effect to their academic performance. Second, to generate teaching methods those were effective for the students. Furthermore, to help the community to generate individuals which were accustomed to worked with different individuals because of collaborative learning.*

***Keywords:*** *Collaborative Learning, Technology and Academic Performance, Relationship between Collaborative Learning and Academic Performance*

## 1. Introduction

Teaching and learning in a modern classroom is no longer an act of transferring knowledge. The act of teaching has become a multi-disciplinary enterprise to develop critical thinking, interaction, and collaboration among learners (Nelson, 2014). In view of these multidisciplinary changes in the curriculum and related learning objectives, there has been an increasing need for collaboration to create a learning environment in the past decade or so. No longer focusing on teacher-centered, but shifting to learner-centered and learning-centered strategies.

Collaborative learning is a scientific and effective learning approach. In this learning approach, a small number of students are organized to work together in order to improve the learning of themselves and other students. It is also defined as a way to encourage students to set up groups and solve a given problem together. 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 promote the learning of others. Students in an ideal collaborative learning setting are expected to do cooperation among them as they encourage each other to do home assignments, work together regardless of their gender, academic ability, cast and whether they are normal or disabled. Students in a collaborative learning setting should celebrate each other's learning (Johnson, 2015).

Zakaria and Iksan (2011) believed that collaborative learning is the bases in the belief that learning is most effective when students are actively involved in sharing ideas and working collaboratively to complete academic assignments.

Lyceum of the Philippines University - Batangas City Senior High School was composed of three academic tracks such as Science, Technology, Engineering, Mathematics (STEM), Accountancy and Business Management (ABM), and Humanities and Social Sciences (HUMSS). Moreover, it is comprised with one Technical-Vocational Livelihood Track which is Gas Metal Arc Welding (GMAW) for Grade 11 and GTAW for Grade 12.

## 2. Methodology

The study engaged a quantitative approach which deals with the topic "Effects of Collaborative Learning to students' Academic Performance". The study focused on how collaborative learning affects the academic performance of senior high students in Lyceum of the Philippines University-Batangas

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High School. Answers were gathered from the questionnaire that was ranked according to its frequency. Ranking was used to determine and interpret the results of the questionnaire. Using the Likert-scale rating, the researchers got the weighted mean of each statement answered by the respondents. The mean scores were used to analyze and relate collaborative learning to academic performance of students. According to Statistics How (2017) "A weighted mean is a kind of average. Instead of each data point contributing equally to the final mean, some data points contribute more "weight" than others, all the weights are equal, weighted mean equal the arithmetic mean. Weighted means are very common in statistics, especially when studying populations."

$$\bar{x} = \frac{\sum_{i-1}^{N} w_i x_i}{N}$$

Where: Σ = the sum of (in other words…add them up)

w = the weights

x = the value

n = Total number of respondents

### 3. 3. Results and Discussion

#### *3.1 Demographic profile*

**Table 1**

**Demographic Profile**

| **Age** | **f** | **Percentage** |
|---|---|---|
| 17 | 20 | 50% |
| 18 | 20 | 50% |
| **Total** | **40** | **100%** |
| **Gender** | **F** | **Percentage** |
| Female | 20 | 50% |
| Male | 20 | 50% |
| **Total** | **40** | **100%** |

Table 1 show that there are respondents 20 respondents ages 17 years old. Moreover, it also shows that there are also twenty (20) respondent's ages 18 years old. Furthermore, it also shows that the respondents were composed of 20 males and 20 females.

The study reveals that their age has a major effect on the collaborative learning process because it affects their decision making and critical thinking. Even though students have the same age or not, it is very common that not all older than you have a more complex thinking than the younger ones.

According to (Basel, 2015) Aging is associated with significant decline in cognitive functions. But does translate into poorer decision making? Psychologists from the University of Basel and the Max Planck Institute for Human Development report that in simple decision situations, older adults perform just as well as younger adults. However, according to their study published in the academic journal Cognition, aging may affect decision performance in more complex decision situations.

From table 2 it reveals that the educational achievement of the students who are trained through brainstorming is higher than the achievement of those who are trained via explanatory method. The students who were taught through role play got better result than the students who were taught through information gap. It is caused by the strategy that is used. Role play gives the opportunity to the students to explore their ability to be more active in teaching and learning process.

According to (Shantel, 2015) Think-Pair-Share type of learning strategy / learning approach can develop the student's critical thinking and creates a much better result based from what they have gathered from one another.

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*Table 2 Different learning styles perceived by grade 12 students*

| Collaborative Learning Styles | Yes | No |
|---|---|---|
| Brainstorming | 40 | 0 |
| Group Review | 27 | 13 |
| Debate | 29 | 11 |
| Problem Solving | 36 | 4 |
| By Pairs | 32 | 8 |
| Group Reporting | 40 | 0 |
| Role Play Presentation | 40 | 0 |
| Laboratory Experiment | 26 | 14 |
| Group Quiz Bee | 19 | 21 |

*Table 3 Respondent's profile based on their academic performance*

| Academic Performance | Male | | | | Female | | | |
|---|---|---|---|---|---|---|---|---|
| | 21st Century | | PE | | 21st Century | | PE | |
| | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd |
| **86-90** | 80% | 20% | 20% | 5% | 55% | 15% | 10% | 0% |
| **91-95** | 20% | 80% | 50% | 45% | 45% | 80% | 60% | 35% |
| **96-99** | 0% | 0% | 30% | 50% | 0% | 5% | 30% | 65% |

According to (roger, 2009) female students are more efficient in using Collaborative Learning than male students. In addition, (Unity, 2015) stated that the female students are claimed to have better learning skills as compared to the boys. However, the male students are found to have intelligence and better understandings of technology than female students. Motivation is considered as an important element in the better learning and for motivation, good grades matter a lot. In this regards, several differences have been found in between both the genders. The intellectual level, the learning skills and the analytical skills, along with multiple other skills play unimportant part in making the differences more widened. The males are reported with much better analytical skills but fewer performers in learning skills. Achievement is defined in terms of good grades. The students having good grades in all of their subjects regardless of stage of education (either they are in their school, high school, university or some any other place). Everyone's cognitive ability measures one's attention and displays it in their test scores.

### *3.2 Survey results*

*Table 4 Effects of collaborative learning to student's academic performance male respondents*

| | Weighted Mean | Verbal Interpretation | Rank |
|---|---|---|---|
| 1. Collaborative Learning enhances the learning of low-ability students. | 3.35 | Strongly Agree | 2 |
| 2. Collaborative Learning interferes with the student's academic progress. | 2.9 | Agree | 8.5 |
| 3. Collaborative Learning helps me to understand the lesson better. | 3.15 | Agree | 6.5 |
| 4. Collaborative activities create a better output. | 3.45 | Strongly Agree | 1 |
| 5. Engaging in Collaborative Learning helps me to perform and show my skills better. | 3.2 | Agree | 4.5 |
| 6. I prefer using Collaborative activities than individual activities. | 3.15 | Strongly Agree | 6.5 |

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| | | | |
|---|---|---|---|
| 7. I am more comfortable when the activity will be done in groupings. | 3.3 | Strongly Agree | 3 |
| 8. My grades are more secure if there are 2-5 heads helping me to accomplish a task. | 2.9 | Agree | 8.5 |
| 9. Collaborative Learning gives too much responsibility to the students. | 2.35 | Disagree | 10 |
| 10. Collaborative Learning helps meet my school goals. | 3.2 | Agree | 4.5 |
| Composite Mean | 3.095 | Agree | |

Legend: 3.26 – 4.0 = Strongly Agree; 3.25 – 2.51 = Agree; 2.50 – 1.76 = Disagree; 1.75 – 1.0 = Strongly Disagree

Table 4 shows the gathered results from the G12 Male STEM students from different sections with a total number of 20 male students. It was shown on the table that "Collaborative activities create a better output" According to (Jake, 2014) collaborative activities are much better than doing individual activities because it produces much better output in student's activities in school. It also supports the ranked 1 in Table 4. which is "Collaborative Activities creates a better output".

*Table 5. Effects of collaborative learning to student's academic performance female respondents*

| | **Weighted Mean** | **Verbal Interpretation** | **Rank** |
|---|---|---|---|
| 1. Collaborative Learning enhances the learning of low-ability students. | 3.5 | Strongly Agree | 1.5 |
| 2. Collaborative Learning interferes with the student's academic progress. | 2.8 | Agree | 9 |
| 3. Collaborative Learning helps me to understand the lesson better. | 3.35 | Strongly Agree | 4 |
| 4. Collaborative activities create a better output. | 3.5 | Strongly Agree | 1.5 |
| 5. Engaging in Collaborative Learning helps me to perform and show my skills better. | 3.45 | Strongly Agree | 3 |
| 6. I prefer using Collaborative activities than individual activities. | 3.25 | Agree | 5.5 |
| 7. I am more comfortable when the activity will be done in groupings. | 3.25 | Agree | 5.5 |
| 8. My grades are more secure if there are 2-5 heads helping me to accomplish a task. | 3.25 | Agree | 5.5 |
| 9. Collaborative Learning gives too much responsibility to the students. | 2.25 | Disagree | 10 |
| 10. Collaborative Learning helps meet my school goals. | 3.25 | Agree | 5.5 |
| Composite Mean | 3.185 | Agree | |

Legend: 3.26 – 4.0 = Strongly Agree; 3.25 – 2.51 = Agree; 2.50 – 1.76 = Disagree; 1.75 – 1.0 = Strongly Disagree

*Table 6. Propose plan of action for effects of collaborative learning to students academic performance*

| **KRA** | **Program / Objectives** | **Activities / Project** | **Persons Involved** | **Time Frame** |
|---|---|---|---|---|
| **Collaborative Learning** | To raise awareness and help the students in improving their collaborative skills. | a. Creating a trainings and seminars<br>b. Symposium about different collaborative learning styles | Teachers<br>Students | April to June<br>2019 |
| **Academic** | To raise awareness and help the students in | Develops more effective collaborative | Teachers<br>Students | August to October 2019 |

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| | | | | |
|---|---|---|---|---|
| **Performance** | improving their academic performance | learning style. | | |

## 4. Conclusion

Based on the collected data from the survey-questionnaire, it concludes that brain storming, group reporting and role play presentations are the most used collaborative learning styles of the students. Collaborative learning has great influence on students` academic performance; collaborative learning activities do contribute well in students' ability to work together in groups that further enhance their creativity and thinking skills.

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