

RELATIONSHIP BETWEEN COLLABORATIVE LEARNING AND STUDENT ENGAGEMENT

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Abstract

The current study focused specifically on students' perceptions of the collaborative learning and their engagement. The purpose of the study was to investigate the relationship between students' perceptions of collaborative learning and their engagement. Purposive sampling method was used in this study. The subject of this study involved 200 second year students of Sagaing University of Education. In this study, quantitative research method was used. For quantitative study, "Collaborative Learning Questionnaire" developed by Gleeson, McDonald and Williams (2004) to measure the perceptions of students on collaborative learning practiced by teachers and "Students Engagement Questionnaire" developed by Lam & Jimerson (2008) to measure the perceptions of students on their engagement were used. This study used a descriptive research method. According to the results of the study, students' perceptions on "social benefits" dimension was the highest in three dimensions of collaborative learning. For their engagement, they perceived that "behavioral engagement" was the highest in three dimensions. When examining the relationship between students' perceptions on collaborative learning and their engagement, it was found that there was a positive correlation between two variables. A significant relationship between students' perceptions on collaborative learning and their engagement ($r=.236, p<0.01$) was found based on research findings.

Keywords: collaborative learning, active learning, small group learning, student engagement

Introduction

In most of traditional classroom, the teachers transfer the knowledge into the heads of their students as empty vessels. Although the teachers believe that their students can store these information and withdraw later, their students cannot store them like a computer. The teachers neglected their students' diverse needs and feeling. For this reason, the new cognitive science reject the notion that real learning occurs when new information simply rests on top of the existing cognitive structure. Alfred North Whitehead (1929, cited in Barkley, Cross and Major, 2005) captured the wisdom of active learning in these words: "Beware of inert ideas- ideas that are merely received into the mind without being utilized, or tested, or thrown into fresh combination". Thus the teachers need to create a collaborative learning environment where students can engage actively. In collaborative learning (CL), learners can actively make the connections in their own brains and minds that produce learning for them (Cross, 1999, cited in Barkley et al, 2005).

CL gives students more deeper understanding because it helps students multiple perspectives and skills to address the common problem. In Vygotsky's zone of proximal developmental (ZPD) , he indicated "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, cited in Barkley et al, 2005).

CL can motivate students to become more active and more engaged in the learning process. Nowadays, colleges and universities want to provide greater opportunities for a wider

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variety of students to develop as lifelong learners. In traditional lectures, students generally are treated as a single, passive, aggregated entity. CL engages students of all backgrounds personally and actively, calling individuals to contribute knowledge and perspectives to the education developed from their unique lives as well as academic and vocational experiences (Barkley et al, 2005). One of the ideas behind this learning is to explore the relationship between students' perception of collaborative learning and their engagement.

Purpose of the Study

The purpose of this study is to investigate the relationship between the perceptions of second year students on collaborative learning and their engagement at Sagaing University of Education. The specific objectives of this study are as follows:

1. To examine the perceptions of students on collaborative learning at Sagaing University of Education.
2. To explore the perceptions of students on their engagement at Sagaing University of Education.
3. To investigate the relationship between the students' perceptions on collaborative learning and their engagement.

Research Questions

The research questions for the study are as follows:

1. What are the perceptions of students on collaborative learning at Sagaing University of Education?
2. What are the perceptions of students on their engagement at Sagaing University of Education?
3. Is there any relationship between the perceptions of students on collaborative learning and their engagement at Sagaing University of Education?

Definition of Key Terms

The terms used throughout the current study were defined for clarity and understanding in the below.

- **Collaborative Learning:** Collaborative learning is that it is a situation in which two or more people learn or attempt to learn something together (Dillenbourg, 1999, as cited in Mc Garrigle, 2009).
- **Active Learning:** To learn new information, ideas or skills, our students have to work actively with them in purposeful ways. They need to integrate this new material with what they already know-or use it to reorganize what they thought they knew (Smith & MacGregor, 1992).
- **Small Group Learning:** The shared learning gives learners an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten, 1991, as cited in Laal & Laal, 2012).
- **Student Engagement:** Hu and Kuh (2001, as cited in Trowler, 2010) define engagement as “the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes”.

Review of Related Literature

Collaborative Learning

Collaborative teaching and learning is a teaching approach that involves groups of students working to solve a problem, complete a task or create a product. (Mac Gregor, 1990, as cited in Laal, & Laal, 2012). Johnson et al. (1990, as cited in Laal, & Laal, 2012) pointed out 5 basic elements in CL. CL is not simply a synonym for students working in groups. A learning exercise only qualifies as CL to the extent that the following elements are present:

- Clearly perceived positive interdependence; Team members are obliged to rely on one another to achieve the goal. If any team members fail to do their part, everyone suffers consequences. Members need to believe that they are linked with others in a way that ensures that they all succeed together.
- Considerable interaction; Members help and encourage each other to learn. They do this by explaining what they understand and by gathering and sharing knowledge. Group members must be done interactively providing one another with feedback, challenging one another's conclusions and reasoning, and perhaps most importantly, teaching and encouraging one another.
- Individual accountability and personal responsibility; All students in a group are held accountable for doing their share of the work and for mastery of all of the material to be learned.
- Social skills; Students are encouraged and helped to develop and practice trust-building, leadership, decision-making, communication, and conflict management skills.
- Group self-evaluating; Team members set group goals, periodically assess what they are doing well as a team, and identify changes they will make to function more effectively in the future.

CL is the instruction including these elements that involves members working in groups to accomplish a common goal (Laal, & Laal, 2012).

Theoretical Foundation

Collaborative learning is a concept that defines a theoretical and research area of great interest and strong identity.

Socio-cognitive Conflict Theory

The socio-cognitive conflict theory is part of the Social Psychology School in Geneva, responsible for its systematization, called "interactionist paradigm of intelligence". This position must be understood in the context of Piagetian thought as a critical derivation of this. In this regard, it can be called as neo-Piagetian, despite the importance assigned to the socio-cognitive interaction by its representatives bring them to the Vygotskian perspective. In fact, it may be considered as a socio-constructivist approach (Dillenbourg et al., 1996, cited in Roselli, 2016). This theory argues that dissent with one or several partners over a task in which learning is concerned may stimulate task-related cognitive activity and result in progress. This idea support that the child at higher level can provide the child at the lower level in the learning process (Doise & Mugny, 1978).

Intersubjectivity Theory

For Vygotsky, like for G. Mead, inter-psychological processes precede genetically to the intra-psychological processes. This implies that individual consciousness emerges due to and through communicative interaction with others. The importance of this primary social interactivity is that through it the instruments and signs of culture are “internalized”. Semiotic or cultural mediation is fundamental to all human activity, whether directed towards the physical world and the social world. It is understood then why, for this current, interaction with others (and the interaction of the subject with himself) is basically dialogic because it is an interaction mediated by language and other symbolic systems. Consciousness (as intra-psychological phenomenon) emerges then from the intersubjectivity, understood as mediated communication (the inter-psychological process precedes the intra-psychological process, according to the well-known “general genetic law of cultural development”, by Vygotsky) (Dillenbourg et al., 1996, cited in Roselli, 2016).

Distributed Cognition Theory

The concept of distributed cognition emerges as a critical posture in cognitive psychology and, even more, in cognitive science. The essential idea is that information processing is performed on a human scale; it is not an exclusively individual, mental or internal phenomenon. Human cognition is integrated into the social and cultural context in which it happens (in this sense, it is about situated cognition) and, therefore, cognitive functioning should not be considered in terms of individual conscience, but “distributed” in the environment of tools and involved social agents. This implies that the group can be considered as a unit of cognitive functioning, that is, a cognitive system. But this system also includes, as elements of the system and not as mere external context, concurrent technologies and instruments (Dillenbourg et al., 1996, cited in Roselli, 2016).

Advantages and Disadvantages of Collaborative Learning

Considering the different approaches regarding collaborative learning, its implementation generates some advantages and disadvantages. As the main benefits of teamwork, Johnson and Johnson (1994, cited in Barros, 2011) highlight the following: student motivation to carry out a joint effort and to meet the planned objectives, the responsibility assumed by all the team members, a greater productivity, the generation of positive relations among the team members (commitment, solidarity, respect, teamwork spirit, etc.) as well as developing the awareness of being a translator and the integration with other members. Kelly (2005, cited in Barros, 2011) claims that teamwork promotes the acquisition of interpersonal skills as well as entailing a personal and social experience for students. Despite these benefits, collaborative learning can involve some disadvantages including the lack of participation of some team members and the dominant attitude of some members, especially self-confident students (Johnson & Johnson, cited in Barros, 2011). Kiralyet *al.* (2003, cited in Barros, 2011) also highlight a tendency in which weak students usually benefit from the most advanced ones, whilst the opposite rarely occurs. Sometimes, students find it difficult to trust the other team members, since some of them prefer to work individually and are not motivated to work as a team. Klimkowski (2006, cited in Barros, 2011) claims that inappropriate teamwork performance may cause difficulties in coordinating the project and attaining the planned goals.

Student Engagement

Students engagement is important in the educational setting (Mosley, Ardito, & Scollins, 2016, Roseth, Johnson, & Johnson, 2008, Fredricks, Filsecker, & Lawson, 2016, as cited in Cinches et al., 2017). “Engagement could be described as the holy grail of education,” (Sinatra, Heddy, & Lombardi, 2015, as cited in Cinches et al., 2017); therefore, meaningful benefits happen when a student is engaged in their learning.

New Models of Student Engagement

Many educators said that engagement includes three, four or more components. Although different terminology makes comparison difficult, four dimensions appear repeatedly. Three correspond to the behavior component of the participation identification model, and one corresponds to the affective component.

- *Academic engagement* refers to behaviors related directly to the learning process, for example, attentiveness and completing assignments in class and at home or augmenting learning through academic extracurricular activities. Certain minimal “threshold” levels of academic engagement are essential for learning to occur.
- *Social engagement* refers to the extent to which a student follows written and unwritten classroom rules of behavior, for example, coming to school and class on time, interacting appropriately with teachers and peers, and not exhibiting antisocial behaviors such as withdrawing from participation in learning activities or disrupting the work of other students. While a high degree of social engagement may facilitate greater learning, a low degree of social engagement usually interferes with learning, that is, it serves to moderate the connection between academic engagement and achievement.
- *Cognitive engagement* is the expenditure of thoughtful energy needed to comprehend complex ideas in order to go beyond the minimal requirements. Behaviors indicative of cognitive engagement include: asking questions for the clarification of concepts, persisting with difficult tasks, reading more than the material assigned, reviewing material learned previously, studying sources of information beyond those required, and using self-regulation and other cognitive strategies to guide learning. High levels of cognitive engagement facilitate students’ learning of complex material.
- *Affective engagement* is a level of emotional response characterized by feelings of involvement in school as a place and a set of activities worth pursuing. Affective engagement provides the incentive for students to participate behaviorally and to persist in school endeavors. Affectively engaged students feel included in the school community and that school is a significant part of their own lives (belonging), and recognize that school provides tools for out-of-school accomplishments (valuing) (Christenson, Reschly and Wylie, 2012).

Methodology

Research Method

Descriptive survey method was used in this study.

Population and Sample

The second year students were mainly considered as the sample of the research. Among the entire population is (408) second year students in Sagaing University of Education, a total of

(200) student was selected. Forty nine percent of second year students who involved in collaborative learning were selected as the participants of this study by using purposive sampling method.

Research Instrument

In this study, Students' Perceptions on Collaborative Learning Questionnaire was constructed by Gleeson, McDonald and Williams (2004) and Student Engagement in Schools Questionnaire developed by Lam & Jimerson (2008) were used. The questionnaire was divided into two parts. The first part of questionnaire was for collaborative learning which included five point Likert-type items for three categories: social benefits (2 items), developing small group communication skills (6 items), and learning benefits (11 items). The second part of the questionnaire was for student engagement and it also included five point items for three categories: affective engagement (9 items), behavioral engagement (11 items) and cognitive engagement (12 items).

Data Collection

Firstly, the researcher studied the relevant literature concerned with the research. Secondly, in order to get the required data, the researcher constructed an instrument under the guidance of Head of department. The questionnaire was translated into Myanmar by the researcher. To enhance the suitability of the questionnaire in Myanmar context, at least three educators in Sagaing University of Education agreed all the items to make modifications to translate a draft questionnaire. Next, the questionnaires were returned (100%) from the subjects in the sample University under study. Then, the collected data were statistically analyzed and interpreted. Finally, based on the findings, suggestions and recommendations were made.

Analysis of the Data

To analyze the quantitative data, the Statistical Package for the Social Science (SPSS) version (23) was used. In order to examine the means and standard deviations for students' perceptions towards collaborative learning and their engagement, descriptive statistics was used. In addition, Pearson-product movement correlation was utilized to explore the relationship between the perceptions of second year students on collaborative learning and their engagement. Then, responses from open-ended questions were categorized and analyzed to complement findings on differences in students' perceptions on collaborative learning and their engagement.

Research Findings

Table 1 shows the mean and standard deviation of the dimensions.

Table 1 Mean Values and Standard Deviations of Collaborative Learning Perceived by Students on each Dimension

Dimension	N	M	SD
Social Benefits	200	4.15	0.615
Learning Benefits	200	4.18	0.565
Developing Small Group Communication Skills	200	4.03	0.492
Collaborative Learning	200	4.12	0.476

Based on the results of mean values, Table 1 is illustrated. It demonstrates the comparison of the mean values of students' perceptions on each dimension of the effectiveness of collaborative learning. According to Table 1, the mean value for social benefits was 4.15, the mean value for developing small group communication skill was 4.03 and the mean value for learning benefits was 4.18. Among them, it can be found that the mean value for learning benefits was the highest and the mean value for small group communication skill was the lowest (See Figure 1).

In order to see obviously for the mean values for each dimension, Figure 1 was illustrated.

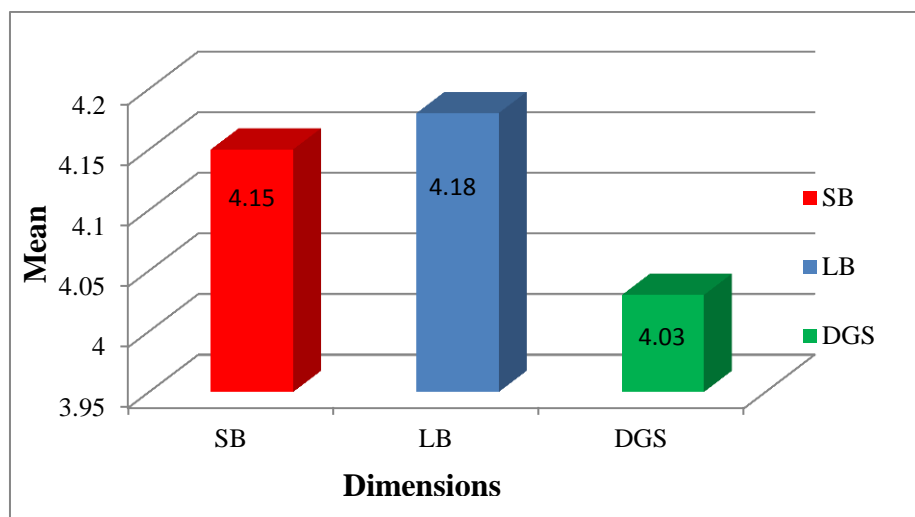


Figure 1 Mean Values of Collaborative Learning Perceived by Students on each Dimension

Note: SB= Social Benefits LB= Learning Benefits

Table 2 shows the mean and standard deviation of students' engagement on each dimension.

Table 2 Mean Values and Standard Deviations of Students' Perceptions of their Engagement on each Dimension

Dimension	N	M	SD
Affective Engagement	200	3.16	0.423
Behavioral Engagement	200	3.72	0.790
Cognitive Engagement	200	3.49	0.827
Engagement	200	3.45	0.521

Based on the results of mean values, Table 2 is illustrated. It demonstrates the comparison of the mean values of students' perceptions on each dimension of their engagement. According to Table 2, the mean value for affective engagement was 3.16, the mean value for behavioral engagement was 3.72 and the mean value for cognitive engagement was 3.49. Among them, it can be found that the mean value for behavioral engagement was the highest and the mean value for affective engagement was the lowest (See Figure 2).

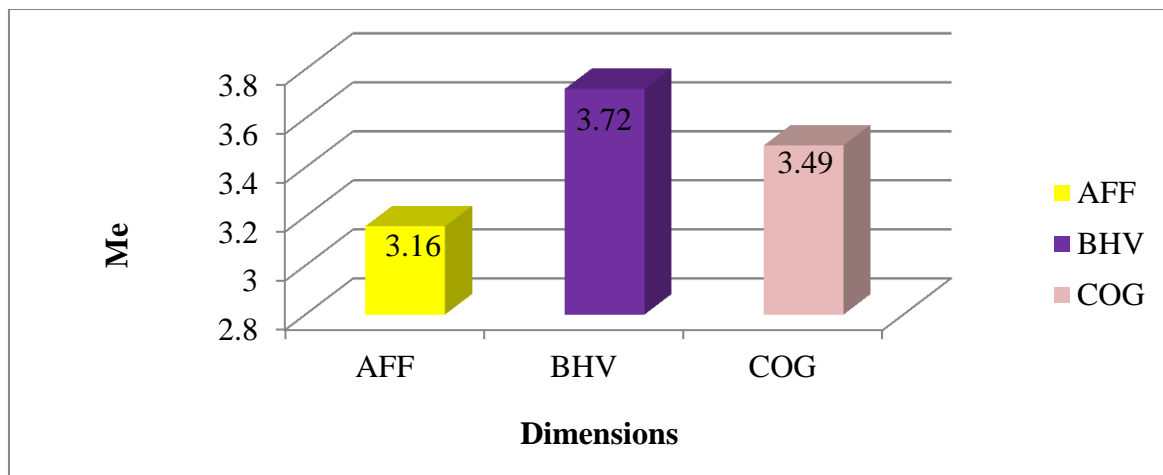


Figure 2 Mean Values of Students' Perceptions of their Engagement on each Dimension

Note: AFF=Affective Engagement BHV=Behavioral Engagement COG=Cognitive Engagement

The Pearson's product moment correlation was used to find out the relationship between students' perception of collaborative learning and their engagement. Table 3 shows the relationship between students' perception of collaborative learning and their engagement.

Table 3 Relationship between Students' Perceptions of Collaborative Learning and their Engagement

Variables	Collaborative Learning	Engagement
Collaborative Learning Pearson Correlation Sig (2- tailed)	1	
Engagement Pearson Correlation Sig (2- tailed)	.236** .001	1

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

Table 3 describes correlation between students' perceptions of collaborative learning and their engagement. Based on the responses of students, collaborative learning ($r = .236$, $p < 0.01$) was positively correlated with their engagement.

Open-ended Responses

Students were asked one open-ended question concerning with their attitudes toward collaborative learning and their engagement. Among students participants, 195 (97%) students responded this question while 5 (3%) did not response. Students' responses were as follows:

- Most students stated that they have more friends and good relationship with their teachers because of collaborative learning. They can expand their knowledge by sharing knowledge in group works and can understand their lessons more thoroughly and specifically than before. Some thank that collaborative learning can motivate them to get their success. Therefore, they are interested in their lessons and want to attend their class regularly. Some mentioned that they can construct their group's unity and coordinate their group members for their group's benefits. Some responded that they have more confidants to present their ideas in front of the class. Therefore, they like collaborative

learning because CL is more effective and they know CL's advantages. Some students answered that they are satisfied with themselves because they can reflect their weakness through collaborative learning. A few of students stated that they are worried about collaborative learning because they have a little difficult and cannot concentrate their learning. Moreover, they have difficulties to adjust different ideas within group. They are disappointed with disengaged members. In addition, they responded that their groups are not interested in their teacher and classmates more often. Although they think that they were tried the best, they could not succeed. They need to get feedback from their teachers. Moreover, they need more clear and more specific their teachers' instructions. Sometimes, they meet more complex questions in paper seminar. They suggested that one group include five members only. In addition, presenting different titles can be more attractive than presenting same titles in class. Besides, they stated that collaborative learning is time consuming. For this reason, the teachers should use teacher-centered approach. They proposed that they do not want group works when they are near exam. They felt that it becomes so difficult for their exam.

Conclusion, Discussion, Suggestions and Recommendation

The main purpose of the study was to examine the relationship between the perceptions of second year students on collaborative learning and their engagement at Sagaing University of Education.

In order to measure students' perceptions on collaborative learning, Students' Perceptions on Collaborative Learning Questionnaire was constructed by Gleeson, McDonald and Williams (2004). In order to measure their engagement, Student Engagement in Schools Questionnaire developed by Lam & Jimerson (2008) was used.

Analyses of quantitative data collected from the study attempted the three questions. **Research question one** investigated second year students' perceptions on collaborative learning at Sagaing University of Education measured by Students' Perceptions on Collaborative Learning Questionnaire was constructed by Gleeson, McDonald and Williams (2004). According to this questionnaire, students' perceptions on collaborative learning were measured by three dimensions: social benefits, learning benefits and small group communication skills. When studying the students' perceptions on each dimension of collaborative learning, it was found that the mean value for social benefits was 4.15, the mean value for developing small group communication skill was 4.03 and the mean value for learning benefits was 4.18. Among them, it can be found that the mean value for learning benefits was the highest and the mean value for small group communication skill was the lowest.

In other words, second year students can learn collaborative rapidly and they can understand effectiveness of collaborative learning. Moreover, they can participate group work activities and also can enhance their learning.

Research question two investigated second year students' perceptions on their engagement at Sagaing University of Education by using Student Engagement in Schools Questionnaire developed by Lam & Jimerson (2008). According to this questionnaire, students' engagement was measured by three dimensions: affective engagement, cognitive engagement and behavioral engagement. When studying the students' perceptions on each dimension of their engagement, it was found that the mean value for affective engagement was 3.16, the mean value

for behavioral engagement was 3.72 and the mean value for cognitive engagement was 3.49. Among them, it can be found that the mean value for behavioral engagement was the highest and the mean value for affective engagement was the lowest. In a way, the students attend their class regularly and participate their activities with enthusiasm.

Research question three valuated the relationship between second year students' perceptions on collaborative learning and their engagement at Sagaing University of Education. According to the research finding, the overall students' engagement was positively correlated with students' perceptions of collaborative learning of "Social Benefits" ($r = .174, p < 0.05$), "Learning Benefits" ($r = .226, p < 0.01$), "Developing Small Group Communication Skills" ($r = .207, p < 0.01$). Again, the overall collaborative learning was positively correlated with students' engagement dimensions such as "affective engagement" ($r = .263, p < 0.001$), "behavioral engagement" ($r = .174, p < 0.05$), "cognitive engagement" ($r = .145, p < 0.05$).

Based on the research findings, students' perceptions on collaborative learning ($r = .236, p < 0.01$) was positively correlated with their engagement. It can be found that correlation was low. When calculating the coefficient of determination r is 5. This means that 5 percent of the variance in students' engagement is predictable from the variance of students' perceptions on collaborative learning. Therefore, 5 percent of the variance of students' engagement is due to other factors than students' perceptions on collaborative learning such as motivation, collaborative learning skills, learning environment and exam oriented system.

According to the finding of the open-ended responses, most of the students have more friends and good relationship with their teachers because of collaborative learning. Some students said that they can expand their knowledge by sharing knowledge in group works. They can understand their lessons more thoroughly and specifically than before. Some students thank that collaborative learning can motivate them to get their success. Therefore, they are interested in their lessons and want to attend their class regularly. Some can construct their group's unity and coordinate their group members for their group's benefits. In addition, they have more confidants to present their ideas in front of the class. They are satisfied with themselves because they can reflect their weakness through collaborative learning. Therefore, they like collaborative learning because CL is more effective and they know CL's advantages.

On the other hand, some students have difficulties in collaborative learning they cannot concentrate and lack skills about this learning. Some cannot adjust within group because of different ideas. Some think this learning is boring and time consuming. Some said that they are worried about exam and this learning cannot support exam. Thus, the findings of open-ended responses support the quantitative findings.

In conclusion, second year students of Sagaing University of Education have positive perceptions on collaborative learning. Especially, their perceptions of learning benefits are strongest. Besides, their perceptions of their engagement are also positive and their perceptions of behavioral engagement are strongest. In this way, second year students can understand collaborative learning and change their learning rapidly because they know benefits and get opportunities to expend and share their knowledge. Similarly, they can participate their class works with enthusiasms. Although students' perceptions of collaborative learning was positively and low correlated with their engagement, there are other factors such as motivation, collaborative learning skills, learning environment.

In suggestions, the followings are suggested for the learners and teachers.

Students should be encouraged to develop social skills by encouraging leadership, decision-making, trust-building and conflict management skills. They need to believe that they are linked with others in a way in a group so that their group can get success. Therefore, all have accountability and responsibility within group to develop small group communication skills. They should actively participate for doing their share of the work and for mastery of all of the material to be learned. Besides, they need to understand that collaborative learning is more fun, more interest and deeper learning.

For the teachers, trained and experienced teachers are needed to support and create collaborative learning environment. Then, they should give feedback on their students' works. To be more effective, they always reflect their teaching and instruction. Finally, University and all departments should support the needs because the teachers invest more time and more effort for this learning process.

Recommendation for Further Research

This study was concerned with the relationship between students' perceptions on collaborative learning and their engagement. Due to the limitations of time and resources, this research study was conducted with second year students from Sagaing University of Education. It was a small scale study and did not cover all the students in University of Education. On the basis of this study, some suggestions are made.

- This study will provide a foundation for further research. A longitudinal study is needed to undertake to validate and confirm the findings of the study.
- This research studied second year students from Sagaing University of Education. Thus, it should be expanded to various years in Sagaing University of Education, Yangon University of Education, and University for Development of National Races and other Education Colleges.
- Further study should explore the relationship between students' perceptions of collaborative learning and their accountabilities.

The twenty-first century poses a paradox for higher education. When higher education introduces collaborative learning in their classrooms, a number of research and wisdom grew. There was empirical evidence that small groups of peers learning together have advantages for academic achievements, motivation, and satisfaction.

This study could supply university teachers to better understand how they teach by evaluating students' perceptions on their learning. This study will assist teachers to understand students' attitudes toward learning and, to encourage students' participation in learning, to solve students' difficulties, to espouse proper and efficient teaching strategies to achieve a better performance in teaching.

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