

Cooperative Learning and the Development of Constructivism amongst Undergraduate Students of the University of Bamenda

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ABSTRACT

Cooperative learning has been hypothesized to promote constructivism in the classroom. This study aimed at investigating the influence of cooperative learning on the development of constructivism in learners. The researcher sought to provide answers to two vital research questions, stated, taking into cognizance the indicators of cooperative learning. These research questions are: 1) How does Positive interdependence influence the development of constructivism in learners?; 2) How does effective group processing influence the development of constructivism in learners? Tchombe's Mediated Mutual Reciprocity Theory and Vygotsky's theory of Social Constructivism provided the theoretical starting point for this research. A descriptive survey design was considered necessary whereby close ended questionnaires in a Likert scale format were given to 75 students randomly selected from some schools and faculties of The University of Bamenda. Data were analyzed by using simple frequencies and percentages. Findings of the study revealed that positive interdependence promotes constructivism in learners. It was also revealed that effective group procession promotes constructivism amongst undergraduate students.

KEYWORDS: *Cooperative Learning, Constructivism, group processing, positive interdependence.*

Introduction

Cooperative learning has been hypothesized to promote constructivism in the classroom. Artut (2016), for example, maintains that cooperative learning helps students, especially student teachers maneuver their way through non routine problems. Terwel (2003) is of the opinion that cooperative learning benefits low achieving students given that they are more sensitive to the quality of their learning environment than high achieving students. According to him, this is because high achieving students have the potential to rely on personal agency and other personal resources like previous experience, prior knowledge, cultural background and habits. By citing individual mastery of material as one of the goals of cooperative learning, Slavin (1996) focuses on the constructivist dimension of the concept. Johnson et al. (1991) posit that cooperative learning is an instrument or tool in the hands of both teachers and students to ensure that students in small and dedicated nature work together so that group goals are realized. These authors posit that a colossal of benefits abound when students work together. For example, students quickly comprehend that mutuality is imperative if successful goal attainment is to be realized. Secondly students are cognizant of the fact that each other's success depends on the effort each member puts in as far as the group task is concerned. By implication, students are expected to work as a team with guided supervision from the teacher who uses his craftsmanship and creativity not only in setting the tone and pace of group work but ensures that there is diversity in the groups with strong and weak students in the same group. The teacher monitors and ensures that the groups are focused on the task at hand and that disruptive behaviours are sanctioned.

Review of Related Literature

Cooperative learning has been defined by different authors in different ways. However, their

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definitions often converge on the view that cooperative learning involves group work, requires team effort and the focus is on achieving group goals. Slavin (2015) for example, sees cooperative learning as conditions under which people learn as a team and outlines strategies like jigsaw, Think Pair Share and Numbered Heads as strategies promoting cooperative learning. As far as Slavin is concerned, cooperative learning gives learners the latitude to work together as a team, thereby helping each other master academic content. He believes that group reward and individual accountability are two important aspects of cooperative learning. Johnson and Johnson on their part add the concept of togetherness while Kagan (2013) looks at it from a structural approach perspective. Khodabandelou & Karimi (2011) focus on the student-centered nature of cooperative learning. According to them students learn better when they are associated with each other in a classroom or other educational environment. On his part, and not too distant from the above views Baloch (1998) points out that for one to consider cooperative learning a top pedagogical tool, a number of elements are essential. These elements are: first and foremost, interaction which gives learners the opportunity to know about themselves and one another; the second element is the necessary conditions for equity in the interactions between members. Focusing on the issue of accountability, Onwuegbuzie, Collins and Jiao (2009) posit that individual accountability is a necessary precondition for the success of the group which in effect, prevents the phenomenon of social loafing that is so pronounced in most groups. Gillies & Ashman (2003) articulate the constructivist dimension of cooperative learning by invoking the importance of prior knowledge, information transfer and plurality competence as necessary conditions for cooperative learning. Jacob, Power & Inn (2002) focus on the interethnic benefits of cooperative learning while Álvarez, Salavati, Nussbaum, & Milrad (2013) posit that the interactive nature of tablets, personal computers, videos, digital pencils etc have made them powerful tools when it comes to implementing cooperative learning.

Johnson et al. (1991) maintain that there are four core components of cooperative learning. These components are: (a) positive interdependence, (b) face-to-face promotive interaction, (c) individual accountability, and (d) group processing (Johnson et al., 1991). This study, however, focuses on just two of these components which will be discussed in this section of the work. The components of interest here are: positive interdependence and group processing. As far as positive interdependence is concerned Johnson & Johnson (1991) see it as the degree to which members of a group have a drive or urge to help each other achieve success and that by emphasizing rewards, motivation and comprehension of role activities, positive interdependence fosters achievements in groups (Nam & Zellner, 2011). In this regard, it is possible to see positive interdependence promoting conflict management in groups and further leads to cohesion within the group. Research by Holtham, Melville, and Sodhi (2006) found that students who work in interdependent groups were more effective than students in groups that were not interdependent.

In terms of group processing, Johnson et al. (1994) hold the view that it gives students the flexibility to describe actions of members that were beneficial or unbeneficial to them. Moreover, it gives students the possibility for decision making concerning actions that need change or need to be maintained. Yamarik (2007) believes that with group processing members are urged or motivated to be effective when it comes to contributing their efforts towards achieving group goals. Johnson and colleagues maintain that cordial relationships, social skills, ability to give and receive feedback, augmentation in students' knowledge, as well as overall positive behaviours of group members are essential elements that are vital for effective group processing.

Constructivism is an approach that believes that learners are actively engaged in the construction of knowledge. This approach holds that learners, are active not passive, that learners are coconstructors of knowledge with the teacher being a facilitator. Constructivist theories of learning believe that the learners must take control and ownership of the learning process and further emphasizes students'

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engagement in the learning process. Teachers' ability to utilize a variety of teaching methods like discussion, cooperative learning, discovery method, as well as employing strategies like questioning have the possibility of promoting a constructivist classroom. Mvududu and Thiel-Burgess (2012) maintain that constructivism calls attention to the necessity to provoke higher order thinking in the learners and ensures that students are making sense from the content being taught. Tchombe's (2019) Mediated Mutual Reciprocity Theory draws attention to the fact that learning should be need-interest-driven whereby there is a give and take relationship between the teacher and the learner. She further emphasizes the transformative role of the learner being central to how learners contribute meaningful knowledge by using indigenous resources and tools to actively engage in the teaching and learning process.

The theoretical underpinnings of this study hinges on Vygotsky's (1986) Theory of Social Constructivism and Tchombe's (2019) Mediated Mutual Reciprocity Theory. Vygotsky believes that the social and cultural environment of the learner are indispensable tools to help the learner create meaning from his environment. Vygotsky believes that teachers, more capable peers and significant others help in mediating learning as they scaffold knowledge and help the learners go beyond their zone of proximal development. In cooperative learning context, it is thus imperative that teachers group students taking into cognizance Vygotsky's views by ensuring that more able students are grouped alongside the less capable ones so that when the less capable ones face difficulties in understanding a concept, the more capable ones can provide necessary guidance as the teacher himself moves round to monitor group activities and ensure that he can equally act as a mediator to help learners go beyond their zone of proximal development.

Tchombe's Mediated Mutual Reciprocity Theory emphasizes the role of the learner's context, role of indigenous resources and tools, the interactive nature of the teacher and learners, the learner's transformative and active role in the construction of meaning and contributing richly to the learning process. Tchombe emphasizes the bidirectional flow of information whereby the learners are encouraged to take more and more responsibility for their own learning and the teacher is there to give and receive feedback. Tchombe draws attention to the fact that in the African context, cultural beliefs, cultural knowledge, artifacts, and indigenous resources are imperative in a context whereby participation is encouraged in the teaching and learning process. By engaging in shared activities in a mutual reciprocal nature, learners and teachers can make use of cultural amplifiers in a give and take relationship that fosters active learning. In this regard, it is evident that there is some sort of giving, receiving and influencing as there is bidirectional flow of information between the teachers and learners.

As far as research on cooperative learning is concerned; most of the research focus rather on short term impact on student learning. One of such studies was undertaken by Quitadamo, Brahler, and Crouch's (2009) who conducted a study on the effect of peer-led teams in critical thinking and concluded that cooperative learning did improve higher and critical thinking of undergraduate students. Similarly, Jalilifar (2010) looked at differences in reading comprehension in conventional classroom situations and student-led teams and found that student teams outperformed their counterparts in the conventional classrooms. Archer-Kath et al. (1994) on their part were able to establish that group processing with individual feedback proved to be more effective than one with whole group feedback and further enhanced motivation of learners, quality relationships, self-esteem and positive attitudes of learners.

Statement of the Problem

Social constructivism as a model gives learners the latitude to be actively engaged in the teaching and learning process, as they engage in active discussion in groups as well as with the teacher in question and answer sessions. Social constructivism appeals to adolescent learners as it engages their interest whereby, they see themselves interacting with their mates in a give and take relationship. In

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this process, knowledge is actively constructed via group work, as group members engage in active debate, discussions about a topic of interest. With such engagement in group work, it provides an avenue for students of strong ability to scaffold knowledge so that learners of low ability can benefit from such guidance and discussion as more significant others mediate their learning to help them get to their zone of proximal development. Jerome Bruner emphasizes the fact that learners must go beyond the information given, which places the ball on the side of the teacher to structure learning such that learners can be given the opportunity to be coconstructors of knowledge by engaging them in group work, debates and other relevant discussions in and out of class.

It is however, unfortunate that in most of our classrooms today, where emphasis is on the learner centered classroom, whereby the learners should be given the opportunity to take ownership of their own learning, in an activity-oriented environment, teachers are not sure of how to foster a constructivist learning environment. Most teachers fail to draw inspiration from Vygotsky as to the relationship between cooperative learning and constructivism. In this regard, many who make use of group work do so not as a strategy to promote constructivism but as a way to reduce and manage the large classroom size that often characterize our classrooms. This explains why when they do establish groups in class, the principles of establishing groups are not respected. Hence some groups are created lacking diversity and having all or most members with similar abilities, as well as friends belonging to the same groups. It becomes difficult in such a scenario for scaffolding and mediation to take place whereby the more capable peers assist the less capable ones to reach their zone of proximal development. Tchombe in her Mediated Mutual Reciprocity Theory draws attention to the fact that learning ought to be need-interest-driven in a give and take relationship. In this context, learners' (especially adolescent learners) interest is to learn in groups with their peers whereby they engage in tasks that are relevant to their daily lives. It is difficult for teachers who are not grounded in learning theories especially constructivist theories to fully engage learners in group work that gives them the latitude to be coconstructors of knowledge. It was against this backdrop that a study on cooperative learning and the development of constructivism was conceived and carried out. Based on this, the study seeks to provide answers to the following research questions: 1) How does Positive interdependence influence the development of constructivism in learners?; 2) How does effective group processing influence the development of constructivism in learners?

Methodology

A descriptive survey design was considered necessary whereby closed ended questionnaires in a Likert scale format were given to 75 students randomly selected from the Faculties of Arts, Education, Health Science, Science and the Higher Teacher Training College of The University of Bamenda. The questionnaire items were all structured on a four point Likert scale and they were related to the indicators of positive interdependence and effective group processing. The 75 students in the aforementioned faculties had to respond to a total of 10 items all related to positive interdependence and effective group processing.

Results

Data were analyzed separately for both the students and lecturers using simple frequencies and percentages. They were presented on tables. It is important to recall that this study sought to provide answers to two research questions namely: 1) How does Positive interdependence influence the development of constructivism in learners?; 2) How does effective group processing influence the development of constructivism in learners? These research questions were analyzed and presented on tables, followed by brief explanations as seen below. On the table Strongly Agree = SA, Agree = A, Disagree = D and Strongly Disagree = SD.

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Analysis of Students Questionnaire

Table 1: Positive interdependence

S/N	ITEMS	SA and A	D and SD	N
1	Helping my mates to succeed gives me pleasure	70 (93.33%)	5 (6.67%)	75
2	The bond in my group is very strong	75 (100%)	0 (0%)	75
3	Assisting my mates on academic matters creates an atmosphere of mutual respect	75 (100%)	0	75
4	We are always able to manage conflict in the group by ourselves	61 (81.33%)	14 (18.67%)	75
5	We always work together to achieve better results.	74 (98.67%)	1 (1.33%)	75
	Average score	71 (94.67%)	4 (5.33%)	75 (100%)

From the Table above, it can be seen that 70 respondents strongly agreed and agreed that helping their mates to succeed gives them pleasure giving an overwhelming percentage of 93.33% whereas only 5 of the respondents disagreed and strongly disagreed with this item giving a percentage of 6.67%. Following a similar trend, all the 75 respondents agreed and strongly agreed with the fact that the bond in their group is very strong giving a percentage of 100. The trend was not so dissimilar with item three where all 75 respondents also agreed and strongly agreed with the fact that assisting their mates on academic matters creates an atmosphere of mutual respect. As far as item four was concerned, 61 respondents (giving a percentage of 81.33) agreed and strongly agreed that they are always able to manage conflict in the group by themselves while 14 respondents disagreed and strongly disagreed with this view. Looking at the last item, an overwhelming 98.67% of the respondents agreed and strongly agreed with the statement that they always work together to achieve better results as against 1.33% who disagreed and strongly disagreed.

Table 2: Effective group processing

S/N	ITEMS	SA and A	D and SD	N
1	The teacher always allocate time for us to work in groups	75 (100%)	0 (0%)	75
2	We all contribute towards achieving group goals	72 (96%)	3 (4%)	75
3	I contribute to the joint efforts of the group	69 (92%)	6 (8%)	75
4	Teacher gives us feedback on our participation	70 (93.33%)	5 (6.67%)	75
5	We celebrate our own success as group members	75 (100%)	0 (%)	75
	Average score	71.4 (96.27%)	3.6 (3.73%)	75 (100%)

Table 2 above shows that all the 75 respondents (100%) agreed and strongly agreed that the teacher always allocate time for them to work in groups. As far as the second item is concerned, a greater majority of the respondents (96%) agreed and strongly agreed with the item that they all contribute towards achieving group goals. Similarly, 69 respondents agreed and strongly agreed that they contribute to the joint efforts of the group giving a percentage of 92 whereas only 6 respondents

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disagreed and strongly disagreed with this statement giving a percentage of 8. A closer look at item four tells us that 70 of the respondents agreed and strongly agreed on the statement that the teacher gives them feedback on their participation giving a percentage of 93.33% while 5 respondents disagreed and strongly disagreed with this statement giving a percentage of 6.67%. Finally, as far as the last item is concerned, all the respondents (75) agreed and strongly agreed that they celebrate their own success as group members.

Discussion of Findings

The aforementioned results are in synergy with Yamarik, (2007) who found that Group processing helps improve the effectiveness of the members in contributing to the shared efforts to achieve the group's goals via reflection on the learning process. The results also concur with Johnson & Johnson (2002) who found out that positive relationships among individuals are more strongly promoted by cooperation than by competitive or individualistic efforts. The results are further vindicated by the Mutual reciprocity Theory of Tchombe which posits that learners are in a give and take relationship and that teaching and learning has to be need-interest-driven with the learners playing an active role in their own learning as they take responsibility in the teaching and learning context while making use of cultural amplifiers. The findings of this study further tie with Vygotsky's Theory of social constructivism which posits that when learners work together in groups, the more capable peers are able to mediate learning so that the less capable ones can be scaffolded to get beyond their zone of proximal development.

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