

Moving away from Rote Learning in the University Classroom: The Use of Cooperative Learning to Maximise Students' Critical Thinking in a Rural University of South Africa

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ABSTRACT The study investigated the practice of cooperative learning as a way moving away from rote learning in the university classroom. The aim of the study was explore different approaches of cooperative learning and recommending the best approach suitable for rural Universities with the aim of maximizing students' critical thinking in the rural university classroom. The researcher used qualitative research approach with case study research design. The research population consisted of lecturers from one rural university. This sample comprised 15 lecturers from two faculties, and data were collected using focus group interviews and questerviews. Themes were identified and analysed for content. The results of this study revealed that cooperative learning encourages students' critical thinking and increased participation. The study recommended that lecturers be trained on the use of cooperative learning. Furthermore, the study recommended co-operative learning as suitable teaching pedagogy for rural university. Cooperative learning encourages students to work together and achieve a common goal at the end of the lesson.

INTRODUCTION

According to Macarena and Emilio (2015), cooperative learning is learning which involves students working together and being responsible for their own and one another's learning. Cooperative learning is different from group work in the sense that the lecturer sets rules for students and teaches the skills of co-operative learning. This learning involves student-to- student interaction, while fostering successful learning by all. Students are given an opportunity to react on ideas, experience, insights and knowledge, thus generating alternative ways of thinking and feeling. Macarena and Emilio (2015) posit that learning occurs in the social context of classroom, and knowledge is constructed through interaction of students. However, the important rules to keep in co-operative learning are that: no members (student) should dominate by doing all or most of the talking and work; each student should contribute a fair share to the workload; they should stick to the given task; and the groups should keep the tasks moving.

According to Kawita and Panita (2015: 2186), "cooperative learning is a generic term for various small group interactive instructional procedures." This learning concept allows small

groups of students to work together to help themselves and their teammates to learn. Students may also be assigned to a group to work on long-term classroom goals. These groups are called base groups. "Base groups are cooperative groups that last the entire semester or school year; they provide a means through which students can clarify assignments for one another, help one another with class notes, and provide one another with a general sense of support and belonging in the classroom" (Bahman 2014). Students work together on common tasks or learning activities that are best handled through group work.

Characteristics of Cooperative Learning

Students work together in small groups of two to five members. In others, when using cooperative learning, students may not be less than two or more than five. The number of students who work together should strictly be between two to five, and students are positively interdependent. Positive Interdependence is an element of cooperative and collaborative learning where members of a group who share common goals perceive that working together is individually and collectively beneficial, and success depends

on the participation of all members, in contrast to Negative Interdependence (that is individuals can only achieve their goal via the failure of a competitor) and No Interdependence (that is a correlation does not exist between individuals' goals). Amir (2014: 3746) argues that positive interdependence happens when "individuals perceive that they can attain their goals if and only if the other individuals with whom they are cooperatively linked attain their goals." Consequently, positive interdependence results in members of a group "encouraging and facilitating each other's efforts...in order to reach the group's goals" (Masoud et al. 2013: 140). Lastly, in co-operative learning, students are individually accountable or responsible for their work or learning (Porntip 2013). This means study students should to manage themselves and their learning in a very effective way that would promote learning.

Cooperative learning groups can consist of two to five students, but groups of three to four are also effective. Classes can be divided up into several groups. The groups should contain high achievers and low achievers. Cooperative learning allows the teacher to actively involve students in discovering knowledge through a new learning process. The learning process takes place through dialogue among the students. Dialogue can be achieved through formulated questions, discussions, explanations, debates, writings, and brainstorming during class (Anowar and Rohani 2013). Projects that require a wide range of talents and skills can be assigned to each group member, thus contributing to the group's overall success (Kim and Kim 2013). Assigning different roles to different students and providing scripts for interaction is another application of cooperative learning.

How Cooperative Learning Benefit Students

Research has shown that using cooperative learning in the classroom has positive effects on academic achievement, inter-ethnic relationships, the development of English proficiency, acceptance of mainstreamed academically handicapped students, self-esteem, liking of self and others, and attitudes toward school and teachers. According to Amir (2014), when students work together toward a common goal, academic work becomes valued by peers. Students feel more relaxed and comfortable when they share

ideas among themselves as peers. In other words, lecturers should create an environment that would motivate students to participate.

Another benefit of cooperative learning is that students are motivated to help one another to learn. When students exchange ideas among themselves, they assist one another to understand the topic and achieve the objective of the lesson. Furthermore, cooperative learning motivates students to take responsibility for their learning. For instance, if students know the topic to be discussed in the next class, they take responsibility of going out and researching about the topic in preparation of the lesson. In cooperative learning, students have opportunity to translate the teacher's language into a peer conversation. In some instance, students understand better when one of their peers explain things than when the teacher is explaining. Moreover, cooperative learning assists students to learn to see situations from another's viewpoint, justify their own viewpoints, and analyse ideas. In other words, students discuss things to assist each other to think critically and see things differently. This allows students to have fun learning. When students have to organize their thoughts to explain ideas to teammates, they engage in cognitive elaboration, or an extension of their thinking, which enhances their own understanding, even when they are learning in a second language (Porntip 2013).

Five Basic Principles Fundamental to Cooperative Learning

The first principle of cooperative learning is face-to-face promotive interaction. By using face-to-face promotive interaction, learning becomes active rather than passive. Teams encourage discussion of ideas and oral summarization. Peer assistance clarifies concepts for both helper and the student being helped. Cooperative teams help students learn to value individual differences and promote more elaborate thinking.

The second principle is on positive interdependence. In this principle, students must feel that they need each other in order to complete the group's task, that is, they "sink or swim together." Positive interdependence can be built into the task by jigsaw information, by limiting materials, by having a single team product, through team roles (recorder, reporter), or by randomly selecting one student to answer for the

team. It can be built into a reward structure by assigning team points based on team averages, on members reaching a pre-determined criterion, or on team improvement rather than outright grades.

The third principle is on individual accountability/personal responsibility. In this principle, students must feel that they each are accountable for helping to complete a task and for mastering material. They must know that a “chauffeur/hitchhiker” situation will not be productive. Ways to build individual accountability include: students taking individual quizzes; each student being responsible for a specific portion of a task; each student being able to summarize another’s ideas; any student being called on at random to answer for the team.

The fourth principle is on interpersonal and collaborative skills. These include skills for working together effectively (staying on task, summarizing, recording ideas) as well as group maintenance skills (encouraging each other). Ways to foster skills development include: teacher modelling, brainstorming characteristics of “good” skills, direct practice, process observing, and reflection. Skills practice can be “tacked on” to academic lessons through games or by making social skills a separate objective to be practiced and observed.

The last principle is on reflection/group processing of interaction. Processing means giving students the time and procedures to analyse how well their groups are functioning and how well they are using the necessary collaborative skills. Processing can be individual, team-wide, or for the whole collaborative class level. Examples include: How well did I listen? Did we take turns and included everyone? How could we have coached each other better? How can the class function more smoothly? (Kawita and Panita 2015).

Theoretical Framework

Vygotsky’s Social Learning Theory (1962) underpinned the study. The theory is applicable to this study because it best explains how students can learn from one another. Social learning theories also help to understand how people learn in social contexts (learn from each other) and inform lecturers on how to construct active learning communities. Vygotsky (1962) examined how our social environments influence

the learning process. He suggested that learning takes place through the interactions students have with their peers, teachers, and other experts. Consequently, teachers can create a learning environment that maximizes the students’ ability to interact with one another through discussion, collaboration, and feedback. Moreover, Vygotsky (1962) argues that culture is the primary determining factor for knowledge construction. We learn through this cultural lens by interacting with others and following the rules, skills, and abilities shaped by our culture.

Vygotsky viewed learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge or experience. In other words, “learning involves constructing one’s own knowledge from one’s own experiences.” Learning, therefore, is a very personal endeavour, whereby concepts, rules, and general principles internalised may, consequently, be applied in a practical real-world context. This is also known as Constructivism. Social constructivists posit that knowledge is constructed when individuals engage socially in talk and activity about shared problems or tasks. Many other educational theorists adopted Vygotsky’s social process ideas and proposed strategies that foster deeper knowledge construction, facilitate Socratic student discussions, and build active learning communities through small group-based instruction.

In essence, Vygotsky recognizes that learning always occurs and cannot be separated from a social context. Consequently, instructional strategies that promote the distribution of expert knowledge where students collaboratively work together to conduct research, share their results, and perform or produce a final project, and help to create a collaborative community of learners. Knowledge construction occurs within Vygotsky’s social context that involves “student-student and expert-student collaboration on real world problems or tasks that build on each person’s language, skills, and experience shaped by each individual’s culture” (Vygotsky 1978: 102).

Statement of the Problem

The university classroom is supposed to be a place whereby students become critical thinkers and interact with one another to participate

on their learning. However, the teaching approach used in this rural university appears not to encourage students to think critically. As a result, students become recipients of information (rote learning) and memorize information without clear understanding.

Research Question

- What are the challenges facing lecturers when facilitating cooperative learning?
- How do lecturers prepare students to move away from rote learning to cooperative learning?

Objectives of the Study

- To explore challenges facing lecturers when facilitating cooperative learning.
- To recommend possible ways lecturers may use to prepare students to move away from rote learning to cooperative learning.

RESEARCH METHODOLOGY

The paradigm used in this study was the qualitative approach. The purpose of qualitative research is to develop an understanding of individuals and events in their natural state, taking into account the relevant context (Leedy 2001). Qualitative research is aimed at gaining a deep understanding of a specific organization or event, rather than surface description of a large sample of a population. It aims to provide an explicit rendering of the structure, order, and broad patterns found among a group of participants. In qualitative research, interpretation of data was done by means of a set exterior in order to determine the amount of quality with regards to the understanding of findings (Kolb 1999). Procedures are not strictly formalized, and scope is more likely to be undefined, and a more philosophical mode is adopted (Mouton and Marias 1998). The data was gathered and analysed through qualitative methods; small groups are normally investigated in qualitative research (Van Der Westhuizen 1999). In the context of this study, the participants consisted of lecturers in one rural university, and this was considered as a small group.

The research design used in this study is phenomenology. Cresswell (2007) regards a phenomenological study as a study that describes

the meaning of the lived experiences of a phenomenon or concept for several individuals. In the context of this study, experiences of lecturers when facilitating co-operative learning were discussed in order to get answers to the research questions. Phenomenological approach aims to describe what the life world consist of, or more specifically, what concepts and structures of experience give form and meaning to it (Schram 2006). A researcher using phenomenology design strives to describe the phenomenon as accurately as possible, refraining from any pre-given framework, but remaining true and to the facts (Thomas 2004). At the root of phenomenology is the intent to understand the phenomena under study on their own terms and, therefore, to provide a description of human experience as it is experienced by the subject (Bentz and Shapiro 1998) thereby allowing the essence to emerge (Cameron et al. 2001). The present study was aimed at understanding the practice of co-operative learning in the context of a particular rural university without comparing how it is practiced elsewhere. The product of the research is a careful description of the conscious everyday experiences and social actions of subjects. Everyday experience, in this study, refers to actual teaching and learning in the university classroom. In order to accomplish this, the researcher should be able to turn narratives into meaningful articulations by making sense of the data that was provided. Researchers should also be able distance themselves from their judgments and pre-conceptions about the nature and essence of experiences and events in everyday world actions (Schram 2006).

Population and Sampling

The population comprised lecturers from two faculties of the rural university of the Eastern Province. The total population of these faculties was forty four. Du Plooy (2010) refers to sampling as the rigorous procedure involved when selecting individuals from a large population. A sample is, therefore, a group of subjects chosen from the population using a particular sampling method. In the first phase of data collection, questerviews were used for eliciting responses from three lecturers. Thereafter, the researcher adjusted interview questions to make sure that they address the research questions. Purposeful sampling was used to sample twelve

participants to respond to the questions during focus group interviews. Six participants were those with more lecturing experience (10 years and more) and other six with less lecturing experience (five years and less).

Data Collection and Instruments

To carry out any type of research investigation, data must be gathered. These procedures employ distinctive ways of collecting the data. Each is particularly appropriate for certain sources of data, thereby yielding information of the kind and in the form that can be most effective (Kothari 1997). The use of various techniques allows the researcher to confirm the findings. For this study, two phases were undertaken: phase 1 used questerviews; phase 2 used focus group interviews.

Data Trustworthiness

Trustworthiness is a set of quality criteria for judging interpretive research, which is also known as authenticity criteria (Kolb 1999). In this regard, qualitative research theorists advise researchers to explain what precautions they have taken to enhance the trustworthiness of the findings of their studies. In this study, the researcher gave an overview of two trustworthiness criteria, namely, credibility and transferability.

In order to ensure credibility of results of this study, the researcher did some consultations and pre-checked the common teaching/lecturing approaches used in this university prior to the actual data collection sessions. Moreover, the researcher used both random sampling and purposive sampling to ensure credibility during the two phases of data collection. Triangulation was also applied by using questerviews and focus group interviews. Voluntary participation was used to ensure members that participated in the study have an interest and will provide honest and genuine information to the study.

All universities in South Africa are expected to produce quality students that are competitive both nationally and internationally. The transferability of credits across universities unifies the curriculum and practice of teaching in higher education institutions. Therefore, the results of this study can be transferred or applied in other universities, be it nationally or internationally.

Data Analysis

According to De Vos et al. (2013), qualitative data analysis is, first and foremost, a process of inductive reasoning, thinking, and theorising which is far removed from structured, mechanical and technical procedures aimed at making inferences from empirical data of social life. De Vos et al. (2013) state that data analysis is the process of making sense out of data, which involves consolidating, reducing and interpreting what has been said and what the researcher has seen and read. It is, thus, the process of understanding and making sense of the meaning of the data. This understanding was organised into a descriptive account, therefore, data collected from open-ended questionnaires was sorted, organised and speculated on in order to develop meaning from it. In this study, the tape-recorded focus group interviews were transcribed *verbatim*. After transcribing the interviews, a sense of the whole was obtained by reading transcriptions carefully with understanding and summarizing the salient aspects.

Ethical Issues

In the light of the established codes of ethics, a researcher has a responsibility towards the research informants. Overall, data collection was governed by the code of conduct with a view that the consequence of participating in a study does not harm the respondents in any way (De Vos et al. 2013). The researcher used consent forms wherein the participants signed as a way voluntarily agreeing to participate in the study. In addition, in this study, the researcher took the following steps to safeguard the research participants:

- The researcher communicated aims of the research to those participating in the study (De Vos et al. 2013);
- The researcher explained to the participants that their participation was valuable but dependent on their agreement to participate willingly;
- In an attempt to minimize place threats, the researcher conducted the interviews privately with each lecturer in a convenient silent room;
- The researcher asked for permission to record interviews from each participant and

stated that the information was for research purpose only; and

- The researcher kept the participants' names, faculty and university confidential.

The researcher also assured the respondents that the information they provided was only to be used for research purposes. Furthermore, they were promised that their names will not be disclosed, and the questionnaires were answered in a private place with only the respondent and researcher present. Lastly, the researcher showed respect for the well-being of the participants and the right to self-determination.

RESULTS

Cooperative learning changes students' and lecturers' roles in classrooms. The ownership of teaching and learning is shared by groups of students and is no longer the sole responsibility of the teacher. The authority of setting goals, assessing learning, and facilitating learning is shared by all. Students have more opportunities to actively participate in their learning, question and challenge each other, share and discuss their ideas, and internalize their learning. Along with improving academic learning, cooperative learning helps students engage in thoughtful discourse and examine different perspectives, and it has been proven to increase students' self-esteem, motivation, and empathy. A summary of the focus group interviews' responses is shown on Table 1.

Table 1: Focus group interviews' responses on the challenges facing lecturers when facilitating cooperative learning

<i>Main theme</i>	<i>Sub-themes</i>
<i>Infrastructure for Rural Universities</i>	Classroom setting; managing noise.
<i>Classroom Management</i>	Domination of certain students; loss of focus; and arguments and attacks instead of discussion.

Infrastructure for Rural Universities

Rural universities have challenges of poor infrastructure, and as a result, it is difficult to facilitate lessons using cooperative learning. Some of the issues raised by lecturers include the following:

Classroom Setting

Among challenges that rural universities are faced with, infrastructure and poor classroom setting came very strongly. Some of the participants said:

"It is difficult for us to use cooperative learning in our teaching because our classroom settings are not designed in a way that will accommodate this kind of learning".

Reflecting from above response, one can argue that due to classroom setting in this rural university, it was difficult for lecturers to facilitate cooperative learning.

Managing Noise

One of the basic principle of cooperative learning is that students work together to achieve a common goal. Therefore, it means students should be given a chance to discuss with their peers and find solutions by themselves. With regard to this challenge, some lecturers mentioned that:

"We are teaching overcrowded classrooms. Therefore, it is difficult to manage noise when facilitating cooperative learning in such classroom. Therefore, cooperative learning cannot work when it comes to large classrooms that we teach".

Reflecting from this response, lecturers find it difficult to manage the level of noise when facilitating cooperative learning. This compromises the quality of learning that takes place because lecturers are not even aware that what the students are discussing is relevant to the topic discussed.

The main findings from this theme have revealed that lecturers are unable to facilitate cooperative learning due to issues of infrastructure and classroom settings. Findings from the understudied rural university have shown that classrooms are not designed in a way that is suitable for facilitation of cooperative learning. Furthermore, lecturers find themselves with large numbers of students in their classroom; as result, it was difficult to facilitate cooperative learning in such conditions.

Classroom Management

Managing classrooms in cooperative learning may be a challenge for lecturers, especially those that were not trained to facilitate this type

of learning. Some of the issues raised by lecturers include the following:

Domination of Some Students

One of the principles of cooperative learning is that no student should dominate others by doing a lot of talk/work. Preparing students to fulfil this principle may be a challenge for lecturers especially in rural universities. Some of the lecturers responded as follows when it comes to this matter:

“Most of our students are unable to communicate or express themselves. Therefore, only students that are good in English are able to participate. This is a challenge because even if I point students to participate, they just don’t want to talk, and if I stop student who dominate, no learning will take place”.

What came out from the above response was that due to language barriers, students are unable to participate in the lesson. As a result, lecturers are forced to leave certain students to dominate during the discussion for learning to take place.

Loss of Focus

Cooperative learning emphasizes that students should stick to the given task. However, it becomes a challenge for lecturers to keep students focused to the given task. Some lecturers have mentioned the following when it comes to this matter:

“Our students cannot focus for one hour if they have to manage their own learning. This is a challenge because instead of discussing the given topic, they may lose focus and discuss something that is not relevant or out of the context.”

Reflecting on the above response, one may argue that it is difficult to facilitate cooperative learning because students may not cooperate on the given task, and this compromises the quality of their learning.

Arguments and Attacks Instead of Discussion

Students may use cooperative learning as an opportunity to get back at and attack one another. Lecturers also support this statement, and some lecturers were quoted as follows:

“Our students use cooperative learning to attack each other. They need to understand that cooperative learning is for effective learning not for them to criticise one another.”

Reflecting on this response, it came out clear that students do not understand the purpose of cooperative learning, as a result, and they use it to fight their personal battles.

There are many challenges when it comes to lecturers’ preparation to move away from rote learning to cooperative learning. In the university understudied, it came out that it was difficult to manage students when using cooperative learning. Furthermore, students were neither prepared nor ready to carry out cooperative learning since language was still a challenge for students to participate. Furthermore, students were using cooperative learning lessons to attack one another rather than learning.

DISCUSSION

Discussion of these findings was guided by the following themes: classroom setting; domination of certain students; managing noise control; loss of focus; and arguments and attacks instead of discussions.

Most of the university classrooms, rural universities in particular, are still designed in a way that does not allow any other teaching or learning approach other than the lecturer method. The same challenge is experienced by lecturers in the university where this study was conducted. Lecturers in this university find classroom setting to be a barrier for them to have smooth facilitation of co-operative learning. Co-operative learning requires an environment that will enable the facilitator (lecturers) to move between the rows and monitor students’ learning. It was also difficult to control the level of noise in the classroom because the university understudied had overcrowded classrooms. Therefore, it was difficult to have successful lessons using cooperative learning. Another challenge that was mentioned by lecturers is domination of certain students during cooperative learning. According to Curriculum 2005 in Nutshell (2001), during cooperative learning teachers/lecturers have a responsibility to make sure that each member of the groups contributes a fair share to the workload. As a lecturer, it is important to advise students to assign tasks for each member of their groups as this will assist in making sure that

each member has contributed to the final product. Participants further mentioned that loss of focus from students is one of the challenges they experience during facilitation of cooperative learning. Therefore, it is important for lecturers to move along the rows and make sure that each every group sticks to the given task.

One of the advantages of cooperative learning is that it promotes students' critical thinking, creative skills, communication skills and commitment to their work. However, one challenge experienced by this university was that students tend to attack one another instead of discussing the tasks at hand. Students sometimes require assistance and may need to be reassured that they can positively interact with others. However, if lecturers train students, the group learns that conflict should be avoided rather than resolved. Therefore, lecturers may want to encourage groups to:

Listen to Every Member: The extent to which you genuinely hear others will increase confidence, acceptance, and success. Problems are more easily solved when people keep an open mind and listen to others' perspectives. Listening carefully to others also helps us understand and appreciate how group members feel and think;

Define Responsibilities: Whenever one person dominates by doing all of the work, others feel less valued and tend to shrink back. On first glance, it may appear as though some group members are simply lazy. However, in reality, students accused of slacking off will often tell you that somebody else is bossing them around without allowing choices or welcoming their contributions. The idea here is to agree on who does what, and by when. Collaboration takes place around the "how" and "what" questions;

Value Each Person's Gifts: Trouble occurs if one student is after gaining marks only and fails to trust others in the group to attain high marks. So rather than welcoming each person's ideas and contributions, the domineering person relies on only one or two to demonstrate their talents. It is, however, known that people are motivated by demonstrating their own individual strengths, not by coasting on another member's abilities;

Model Excellence: Rather than preach to other group members how to achieve excellent work, group members can demonstrate their own willingness to create quality responses. If one

student falls short of the group's expectations, others can help by supporting and encouraging change. However, members should avoid sharp criticism and negative reactions to each other's ideas and insights; and

Promote Humour: Humour often prevents and diffuses conflicts before they blow up. The best humour is created around a situation in which everybody can laugh but never laughing at one person's expense. People who have a knack for humour often laugh at themselves. This creates a safe environment in which others become more willing to take similar risks.

When lecturers were asked how they prepare students to move away from rote learning to cooperative learning, they mentioned that they use small group teaching. It is important for lecturers to understand that cooperative learning is different from group work because in cooperative learning, lecturers teach the skills for cooperative learning while in group work, they set rules. Lecturers were also asked about the best examples of cooperative learning suitable for a rural university, and they responded that they are not aware of different examples of cooperative learning. Therefore, there is a need for lecturers to familiarise themselves with different examples of cooperative learning.

CONCLUSION

Reflecting on the findings of this study, one would realise that the use of cooperative learning was one of the important teaching approaches that encourage students' critical thinking. Lecturers should use cooperative learning in most of their lessons in order to prepare students for cooperative world. Furthermore, it is important for lecturers to familiarise themselves with different examples of cooperative learning. For successful cooperative learning, lecturers should encourage the spirit of 'Ubuntu' (respect one another) among students. There was a need for lecturers to expose students to different examples of cooperative learning as this would assist students to be responsible for their own learning. One of the benefits of cooperative learning is that students will prepare themselves before the class, knowing that they will be given a certain task to perform, and this is all that university learning is all about.

RECOMMENDATIONS

The results of this study revealed that lecturers are unable to carry out cooperative learning effectively because of lack of skills. Furthermore, lecturers are not aware of different examples of co-operative learning, and this limits student's learning. Therefore, the study recommends that lecturers be trained on the use and importance of cooperative learning in their teaching. Furthermore, the study recommends co-op as a relevant model of cooperative for rural university. According to this model, learners work together in groups which they choose to join in order to produce a group product on a topic which has been selected, and which they teach to the whole class, with each member of a group making a particular contribution. The model recommends the following procedure: firstly, students should identify the topic to be investigated and establish a group; secondly, they should plan the group investigation; thirdly, they should carry out the investigation and prepare the report and presentation/demonstration; fourthly, they should present the report; and lastly, they should evaluate the process, product and their learning.

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