

**“Creating a Deeper Learning Environment using
Group-Based Active Interactive Collaborative Learning ”**

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**Araya Debessay, Professor, CPA, CIA, CMA
Department of Accounting & MIS
Alfred Lerner College of Business & Economics
Advanced Fellow, Institute to Transform Undergraduate Education (ITUE)¹
University of Delaware
Newark, DE 19716
Debessay@udel.edu
302-831-6890**

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“Creating a Deeper Learning Environment using Group-Based Active Interactive and Collaborative Learning”

Araya Debessay, University of Delaware

Introduction

The purpose of this paper is to acquaint workshop participants with “Group-based Active Interactive Collaborative Learning (GBAICL).” The discussion in the workshop will assume that the participants have read this document. The workshop will be interactive. It is expected that workshop participants will have questions that will serve as basis for active workshop participation.

Objectives of the Workshop

Participants at this interactive workshop will be introduced to GBAICL. I will share with workshop participants my experiences in using GBAICL in several accounting courses over a period of more than ten years. The workshop will present a step-by-step description on the application of GBAICL. By the end of the workshop, it is hoped that workshop participants will have gained sufficient understanding of GBAICL to apply it in their respective courses.

Structure of the Workshop

The workshop is structured as follows: Discussion on: (a) the motivation to switch to GBAICL as a first step towards full application of Problem-Based Learning (PBL), (b) the pedagogical objectives of GBAICL, (c) the component elements of GBAICL, and (d) benefits of GBAICL to students and to instructors.

Several classroom management techniques that facilitate the use of GBAICL will be presented.

Motivation for Switching to GBAICL

When I started my teaching career at the University of Delaware in 1978, like most educators who are not schooled in pedagogical techniques, I used the method of teaching that I observed from my favorite professors, which was predominantly lecture based. In spite of the fact that my students’ evaluation of my teaching was invariably positive as evidenced by several teaching excellence awards I received, I was not fully satisfied with my method of teaching. My dissatisfaction was primarily due to my frustration in my inability to cover course content and the feeling of exasperation and exhaustion I experienced in my effort to rush through the course material.

The turning point that motivated me to change my teaching approach was my participation at a conference workshop on “Team Learning” in 1992 that was conducted

by Larry K. Michaelsen, a management professor at the University of Oklahoma.² This was a period when there was a persistent call for introducing new pedagogical innovations by the American Accounting Association, (the Bedford Committee, 1986) and the “Big 8” accounting firms (1989). These calls for introducing innovative pedagogical approaches had a strong impact on my desire to adopt Michaelsen’s teaching approach with some modifications, and called it Group-Based Active Interactive Collaborative Learning. GBAICL, which encourages active student-centered learning while delegating the role of the instructor to that of a facilitator of the learning process, has been instrumental in my interest to use PBL in my courses.

Pedagogical Objectives of GBAICL

Primary Objectives

The primary objective of GBAICL is to create a learning environment that will help students have a deeper understanding of the conceptual basis of the material covered in the course, as opposed to simply memorizing concepts to get a passing grade. The focus is in helping students develop analytical and conceptual thinking.

Secondary Objectives

In addition to helping students gain a deeper understanding of the course material, GBAICL is also helpful in accomplishing several of the educational objectives advocated by the Accounting Education Change Commission. These are:

- i. To help students set the foundation for life-long learning by creating a learning environment that encourages students to assume a major responsibility in the learning process.** This goal is accomplished by using active learning component of GBAICL.
- ii. To help students improve their intellectual, communication, interpersonal, and team work skills.** Intellectual skills include the ability to locate, obtain, and organize information and the ability to identify and solve problems. Communication skills include both receiving and transmitting information and concepts, including effective reading, listening, writing, and speaking. Interpersonal skills include the ability to work effectively in group tasks, and to provide leadership when appropriate. The group-learning aspect of GBAICL helps students develop their interpersonal communication and team work skills.

The interactive and collaborative nature of the teaching approach is expected to help students improve their oral communication and interpersonal communication skills

² I encourage the reader to refer to, Larry K. Michaelsen, “Team Learning: A Comprehensive Approach for Harnessing the Power of Small Groups in Higher Education” *To Improve the Academy*, 1992, pp. 107-122.

Component Elements of GBAICL

GBAICL has the following major features:

(1). Group-based. As the title suggests GBAICL is group-based. Students in the class are organized into permanent and purposefully heterogeneous groups. The need to have permanent groups throughout the semester is to enable group cohesiveness to develop so that the groups can work effectively as a team. (Michaelsen, p. 109) One important objective of this model is to help students develop the ability to perform assigned tasks as members of a team where the individual does not have the luxury of choosing one's team members, as will be the case when they join the workplace. For this reason, and the benefits they derive from being exposed to working with a diverse group, students are not allowed to form their own groups. Students are asked to fill out a student profile form during the first day of class. Heterogeneous groups are then formed using information collected from the student profile forms (see Appendix B) together with students' GPAs which I independently obtain. Using GPA, which is confidential information, is helpful in making sure that all groups are academically strong as reflected by the average GPA of each of the groups. To avoid any possibility of being biased by the knowledge of a student's GPA, I normally delegate the responsibility of forming groups to my teaching assistant. Generally, the group sizes in my classes vary between 4 to a maximum of 6. The maximum class size in the courses that I teach varies with the level of the courses (sophomores 40, juniors 35 and seniors and graduate classes 25). According to Michaelsen and others, group-based learning method can be applied even in much larger classes. (Michaelsen, p.109)

(2). Active Learning. GBAICL entails active learning on the part of the students in the sense that students carry a major responsibility in their learning. The role of the instructor ideally under this model is that of a facilitator of the educational process and not that of a dispenser of knowledge as is the case with the traditional lecture method of teaching. The "Active Learning" component of GBAICL is meant to ensure that students are not passive recipients of information. By helping students to be actively involved in the learning process they are taught how to learn on their own thus helping them set the foundation for life-long learning.

(3). Interactive. GBAICL is interactive in the sense that students are expected to actively interact among themselves and with the instructor during class time as well outside class. A major aspect of the learning process is supposed to take place during such interactions, where students are expected to work closely with one another clarifying issues that they find confusing or difficult to understand by themselves individually. If students do not feel confident with the responses or clarifications given to them by their peers, they are encouraged to seek explanation and further clarification from the instructor. Groups are encouraged to request a meeting with the instructor to discuss any course related issues.

(4). Collaborative. GBAICL has a collaborative component. Students are expected to work as a group during class discussion, during in-class group quizzes, and on group projects that require collaboration. Students are expected to work on class assignments, which require checking of their solutions with their group members. Groups are also expected to collaborate in working on in-class quizzes in which a common grade is given

to all members of the group, after working on the same in-class quiz on an individual basis for which an individual grade is obtained. The greater the degree of collaboration among the group members the better the chance of scoring a good grade in the course by each member of the group.

(5). Devoting the vast majority of the class time to small group activities. Most of class time is used for group discussion, which necessitates a shift in the role of the instructor from dispenser of information to manager of a learning process. Here is where students gain -- students teaching students. During the in-class group discussions the instructor circulates among the groups providing assistance when called for.

(7). A nine-step instructional activity sequence. Successful application of this model requires a structured sequence of classroom activities. I use the following nine-step instructional method in my classes.

Nine-Step Instructional Method

(1). Individual Study.

Prior to coming to class, students are instructed to read an assigned chapter carefully; to take notes of important points, and to jot down questions on material they found confusing or difficult to understand. Students are expected to answer assigned conceptual questions on the material assigned and to solving assigned exercises/problems/cases.

(2). Questions from Students.

In class, students are expected to come promptly to their assigned group seats and after a brief introductory remarks by the instructor, students are expected to discuss the questions they jotted down when they read the assigned text material with their group members. It is important to make sure that students have cleared some of the troublesome questions and have a good understanding of the conceptual issues before going to the next stage which is the discussion of the assigned exercises/problems/cases. Questions that have not been dealt with satisfactorily within the group are recorded by the group spokesperson (a role that is supposed to rotate among the group members - so is the role of the group leader). Each group is then asked to present their questions for clarification. Before the instructor gives clarification, students are encouraged to volunteer to respond to students' questions as part of their credit for class participation. Class participation points are used as an incentive to encourage students to actively participate in class discussions. The role of the instructor at this stage is to ensure that students are given adequate explanation for the questions they raised. This is the extent of lecturing given by the instructor, which marks a significant departure from the traditional primarily lecture approach. Essentially, the role of the instructor is to intervene when students' responses are not satisfactory or when there is a need for further clarification.

(3). Group Discussion on Assigned Exercises/Problems/Cases.

As the next sequence of class group activity, students are expected to compare their homework and to explain their solutions to their group members. This process provides students the opportunity to check their level of understanding of the material. They are expected to sharpen their listening skills, their communication skills, and their

interpersonal skills. If a student is not satisfied with the explanation given by his group, or if the group as a whole feels that they are having a problem with understanding a given concept, then their group spokesperson is expected to record that item for class discussion.

For the benefit of students who might be too shy to ask questions on material that they do not understand, students with questions are encouraged to relay their questions to the group-leader/group spokesperson. One of the responsibilities of the group spokesperson is to ask questions on behalf of the group members. This way the instructor can make sure that students are given ample opportunities to get clarifications on concepts that they have not clearly understood. This is particularly helpful for students who are not satisfied by the explanation they get from their group members.

During these discussion sessions the role of the instructor is to resolve crucial points that may prevent a group from proceeding with the work. If in the opinion of the instructor the nature of the question is of common interest to the class, then such a question will be addressed to the class as a whole either at the end or while the group discussion is going on.

When groups finish discussing the assigned problems, the instructor invites questions on any related issues, problem or case that the groups had difficulties with. In discussing questions raised by students, the instructor makes every effort to encourage active participation by all students. From the students' responses the instructor assesses the overall understanding level of the material covered. Based on this assessment the instructor provides any necessary explanation to be sure that the students have a good grasp of the major points that students should have learned on the given chapter.

(4). Individual In-class Quiz

A short 10-minute quiz composed of multiple choice questions or short answer questions over the assigned readings or homework-type problems is then administered, and collected for grading. Administering a quiz on an assigned chapter helps in two ways: (a) motivates students to come better prepared, and (b) provides feedback on the students' level of understanding of the material covered.

Administering a quiz at the end of a chapter helps students to be sure that they have studied the chapter before going to the next. This is particularly beneficial when successive chapters build on chapters already covered.

(5). Group Quiz

As soon as students complete the individual quiz, the same quiz is immediately administered as a group quiz. The group leader plays an important role in involving every member of the group in answering the group quiz. Students can refer to their individual quiz answers during the group quiz, although they cannot change their individual answers. The discussion during the group tests is very lively. In those situations where there is a consensus on the answer for a given question, no discussion is needed. Heated discussion often ensues when students have different answers for a question. Here is when real learning takes place. Students are challenged to defend their suggested answers and the rationale upon which they based their answer. Their ability to defend their answers depends on their understanding of the material and their ability to

express themselves well. This gives students a feedback on the level of their understanding of the material. The process of articulating the rationale for a particular answer in itself promotes learning. The group quiz is graded in class as soon as the group completes the quiz. If the group has incorrect answers, the group quiz is returned to the group to reconsider the wrong answers. At this stage, students are allowed to have access to their textbook and notes. This is the next sequence of in-class activity.

(6). Group Quiz with open notes.

The groups which has made errors in answering the group quiz are now allowed to refer to their notes and text-book and are given the opportunity to change their answers. A revised correct answer receives 50% credit.

With access to their books and notes, students are likely to correct their mistake while earning a partial credit at the same time.

Allowing students to have access to their books and notes to correct a wrong answer has several advantages: (a) Because of the partial points they earn by finding the right answer students tend to focus their energy and attention in finding the correct answer. This way, the instructor can avoid the tendency by some students who waste class time blinding defending their wrong answers and creating unnecessary tension and ill feelings. (b) The other advantage of the open book test is that it provides a timely reminder to a student that reading the text carefully and taking good notes pays off. This invariably leads to better study habits on the part of students.

(7). Discussion on Quiz Questions.

In those situations where groups continue to have a problem getting the correct answer even with their open books and notes, the reason may be: (a) either the question is not properly worded in which case the instructor may choose to drop the question, or (b) it may indicate to the instructor the need to further clarify the concept that students have missed.

There are several important benefits of administering quizzes at the end of every chapter.

First, quizzes are effective in motivating students to be actively engaged in their learning on a continuous basis. Quizzes give students an incentive to accept responsibility for their own learning instead of creating dependency on the instructor. Students who complete their assigned homework are rewarded by higher scores on the individual quizzes and by their contributions to the success of their group. The quizzes also give students timely feedback on their understanding of the material covered. In most instances, the students are initially exposed to concepts through assigned readings. The additional exposure during the individual quizzes helps reinforce their understanding of what they learned during their study. During the group tests, students receive oral input from their peers that often broaden their understanding and they also benefit from acting in a teaching role. During the open book session, students engage in a focused restudy of particularly troublesome concepts

Second, by using tests, administered on an individual basis and as a group effort, instructors can virtually eliminate time that is often wasted in covering material that students could learn on their own, and still be certain that students have mastered the core concepts in a given chapter. By focusing on the more complex topics and concepts and

relegating the easy material for the students to study on their own, the instructor is in a position to use his/her energy and class time more effectively. This can alleviate the frustration that is often felt when the focus is on covering every topic on a given chapter and not having enough time to do so.

(8). Instructor's Summary of Major Learning Objectives

At this stage, the instructor summarizes the significant issues and gives a brief concluding remark on the chapter highlighting the important learning objectives of the chapter.

(9). Overview of the next chapter.

During the last 5 or so minutes of the class session, the instructor provides a brief overview of the next chapter, drawing the attention of students to the significance of the chapter and where emphasis should be made. The intent here is to raise the curiosity level and wet their appetite for the topic to be covered next.

Course Management Techniques

Peer Evaluation. Using peer evaluation (see Appendix A) in group-based learning is a good course management tool to dispel the concern many good students have about being taken advantage of by less responsible and less conscientious individuals who might end up hurting their grades. Peer evaluation is a control mechanism that empowers students to demand fair contribution in group work from every member of the group. In short, largely alleviates the students' fear that other will fails to do their fair share of the work.

Grading based on a combination of several components. A student's grade is based on homework grades, individual and group quizzes, two individual mid-semester exams, a final individual comprehensive exam, and class participation, which is determined by the instructor using input from group members through peer evaluation. In this sense, individual **performance, group performance, and peer evaluation** make up the grade of an individual. To minimize homework grading on the part of the instructor or the TA, students are given clear guidelines in self-grading. Students are informed that homework grades are randomly checked for appropriateness and those who are caught cheating are warned that this is viewed as a serious violation of the Code of Academic Honesty and will be dealt with accordingly. Moreover, the homework grading policy is structured in such away that students are given due credit for making an honest effort even if the answer is not right, hence the temptation to cheat on self-grading is highly minimized.

In designing a grading scheme it is important to make sure that the grades are primarily a reflection of the students performance and should not be heavily influenced by the group effort.

The Benefit Of GBAICL

1. **Promoting Deeper Understanding of Course Material.** Because students are actively involved in the learning process, and because GBAICL creates a learning environment that encourages and motivates students to put more effort in the learning process, students end up learning more and getting better grades. One significant observable phenomenon in using GBAICL is that the drop-out rate is significantly

lower than in other similar courses that do not use GBAICL. This is understandable in light of the fact that with GBAICL students tend to put more effort and attention to their learning.

2. **Providing social support for “at risk” students.** Working with peers provides a support system for weaker students who tend to get additional help from their groups, which contributes to reducing the dropout rate. As Michaelsen points out, one of the advantages of group-based learning is that “students can successfully tackle problems that are too difficult for even the most talented individually working alone.” (Michaelsen, p. 119) Another advantage of group-based learning is the peer influence seems to have a positive role in motivating members to do better in terms of completing assignments and coming prepared to class. (Michaelsen, p. 119) The peer assistance and the positive peer influence do play a significant role in motivating students to do a better job than they would have done under other circumstances
3. **Promoting the development of interpersonal and group skills.** Some of the academically talented but socially unskilled students soon realize that they need to improve their communication and interpersonal skills to succeed in the workplace. The feedback they get from their peers benefits many highly motivated students to learn about their weaknesses. Such self-realization helps students to make an effort to develop the understandings and skills they need to work productively as team members. It is important that the instructor reinforces the importance of interpersonal communication and team working skill and to encourage students to make an effort to acquire and develop these skills.
4. **Building and maintaining faculty member’s enthusiasm in teaching.** Using comprehensive group based teaching approach has a tremendous positive impact on the instructor. A point that Michaelsen makes is indeed true. Michaelsen observes:

...being responsible for creating enthusiasm and excitement about basic, but essential material is a burden that few are able to carry for long without burning out. As a result, even the most dedicated and talented instructors are likely to try to find ways of reducing their teaching load. Fortunately, with Group learning, the groups handle many of the aspects of teaching that for most is simply drudgery. For example, the instructor almost never has to go over basic concepts or answer simple questions. The quizzes handle the tasks with ease and most of the remaining questions even in basic courses are challenging enough to be interesting” (Michaelsen, p. 120).

My personal experience in adopting the Group-based Active Learning method has been very refreshing. I am now in a position to use my class time more effectively. Since I am only **explaining (lecturing) on demand**, I get a captive audience eager to listen to every word I say, which I find quite gratifying. Moreover, I have observed that I tend to be more enthusiastic and more energetic when I am asked to explain topics that students find difficult to understand on their own. This is primarily due to two reasons: (a) there is a feeling of gratification when one realizes that one is making a difference in the students’

learning, and (b) by not squandering one's energy going over the easy material, there is a tendency to be more enthusiastic and animated when dealing with challenging questions.

5. **Students' Reaction.** Based on students' mid-semester course evaluation and informal discussions with students, it appears that the students are pleased with the GBAICL. My course evaluations have continued to be positive, and I am continuing to be recognized for my teaching. I was particularly pleased to have been the recipient of the 2003 Student Choice Excellence in Undergraduate Teaching Award. This is in spite of the fact that some students feel that the amount of work they have to do in my class is much more than the amount of work they put in other courses.

Summary and Conclusion

Educators who are eager to introduce new and innovative pedagogical approaches to enhance their teaching effectiveness will find GBAICL a step in the right direction towards the application of PBL in their courses. My positive experience in using GBAICL has reinforced my interest in using PBL in my courses. Unfortunately, there is a shortage of unfolding real-life type cases that are suitable for PBL. Until such time that such cases become available those who aspire to introduce changes in their teaching will be best served adopting GBAICL.

References

American Accounting Association, Committee on the Future Structure, Content, and Scope of Accounting Education, (often cited as the Bedford Committee Report), entitled, "Future Accounting Education: Preparing for the Expanding Profession," *Issues in Accounting Education*, Spring 1986, pp.166-195.

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Appendix A

PEER EVALUATION FORM - CLASS DISCUSSION & GROUP TESTS:

Please complete and submit this form on the due date. See Assignment Sheet for due date. This information will be treated confidential. You are expected to be honest and objective in your evaluation of your peers.

Your Name: _____

Group No: _____

Peer Rating

You have a maximum of 20 points to give to each of your groups members INCLUDING YOURSELF based on your evaluation of each group member's performance on each of the following 5 items. Please assign some number of points (0-4) in each cell and add the points. The total points earned by each members should not exceed a maximum of 20 points. Please list your group members in alphabetical order.						
Participation in class discussions.						
Preparation to class - completion of homework.						
Ability to listen to different view points.						
Contribution of effort to group tests.						
Participation in group discussions and contribution of useful ideas and information.						
TOTAL POINTS - 20 Points maximum.						

Comments: _____

**Appendix B
STUDENT PROFILE FORM**

1. **NAME:** _____ **Gender:** _____

2. **Home address:** _____

2. **Phone #: Day** _____ **Evening:** _____

Email Address: _____

3. **Work Experience: (company name, # of yrs of work, nature of responsibility, etc)** _____

6. **Degree(s) held, field, and name of university:** _____

7. **Courses you are taking this Semester:**

Course No.	Course Name	Instructor

8 **List any accounting courses you had in the past, if any:**

9. You will be assigned to a group, which will be of a heterogeneous nature. Is there anything else that you would want me to know about you that will help me in assigning you to a group?

Please attach your most recent resume if available.