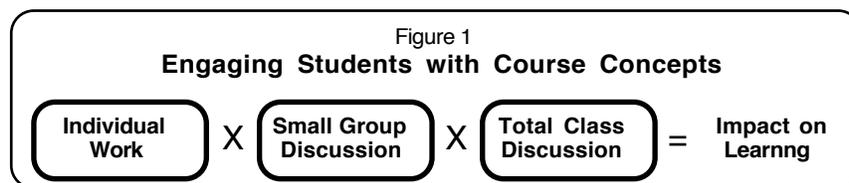


By Larry K. Michaelsen -- Adapted from the Professional and Organizational Development Network Essay Series Teaching Excellence: Toward the Best in the Academy, Vol. 9, 1997-1998. POD Network, Ames, IA, 1998. -- For additional information, contact the Larry K. Michaelsen, Professor of Management and Business Communication, Dockery 400G, University of Central Missouri, (660) 543-4124, or e-mail: lmichaelsen@ucmo.edu or visit <www.teambasedlearning.org>.

Three Keys to Using Learning Groups Effectively

Small group-based instructional methods can produce a wide variety of positive educational outcomes. These outcomes, however, only occur when instructors create conditions that motivate students to prepare for and engage in give-and-take discussions. Fortunately, by applying three fundamental principles, instructors can create these conditions in the vast majority of learning groups. These principles, referred to as “KEYS” in this essay, are: 1) promoting individual and group accountability, 2) using assignments that link and mutually reinforce individual work, group work and total class discussions, and 3) adopting practices that stimulate give-and-take interaction within and between groups. Further, to obtain the best results from using small groups, instructors must observe these keys in managing each of three opportunities (shown as “3 Boxes” in Figure 1) to engage students with course concepts: individual work, small group work, and total class discussion.



KEY #1 -- Promoting Ongoing Accountability

If students fail to prepare for group work, group assignments are likely to force better students to “carry” their less willing and/or less able peers. Further, improperly managed small-group discussions are likely to degenerate into social events in which little if any learning occurs. Both problems can be avoided almost entirely. The key is using assignments and practices that hold individuals and groups accountable for their behavior.

Individual accountability. Instructors can use three quite different mechanisms to promote responsible individual behavior. The most basic mechanism is requiring students to complete preparatory individual assignments (especially graded ones) prior to group discussion (e.g. requiring students to turn in written concept summaries at the beginning of class on group assignment days). A second mechanism is using procedures or assignments that cause members to express their point of view during group discussions. For example, some instructors assign one member to make sure that everyone is asked to provide input. The third mechanism is to include peer evaluation in the grading system.

One very effective way to promote individual accountability is the Readiness Assurance Process in Team Learning (Michaelsen, Knight & Fink, 2004). This process requires individuals to complete a test (typically true-false/multiple-choice) over a set of pre-assigned readings and turn in their answers. Next, groups re-take the same test and turn in their consensus answers for immediate scoring. This process incorporates all three mechanisms for promoting individual accountability. First, students are directly accountable because the individual scores count as part of the course grade. Second, during the group test, each member is invariably asked to voice and defend his or her choice on every question. The resulting discussions produce immediate feedback that provides clear evidence of both the degree to which individual members have prepared, in advance, for the group work and the

importance of obtaining input from everyone on all-important decisions. Third, members who fail to complete the assigned readings almost invariably receive a low peer evaluation.

Group Accountability. Without group accountability, neither instructor nor students know: 1) if their learning goals have been achieved, or 2) if students are taking the group work seriously. Groups can be held accountable by carefully managing small group and total class discussions. The key is the nature of the group assignments. First, assignments for groups (or each phase of a long-term project) must require groups to produce a tangible output. Second, the “product” that students are asked to create should enable both immediate feedback on the quality of group work and the opportunity for direct comparisons with output from other groups.

KEY #2 -- Using Linked and Mutually Reinforcing Assignments -- “4 S’s”

The second key to using groups effectively is making sure that the assignments at each stage of the learning process (i.e., the “3 Boxes” in Figure 1) are linked and mutually reinforcing. When this is done, assignments in the first two stages have a powerful positive effect on the learning that occurs in the next stage. To obtain the maximum overall payoff, assignments at each stage should be characterized by “4 S’s”:

- 1) **Significant problem:** *Students* should view the problem as authentic and relevant to their lives.
- 2) **Same problem:** Individuals/groups should work on the same problem, case, or question.
- 3) **Specific choice:** Individuals/groups should be required to *use* concepts to make a specific choice.
- 4) **Simultaneously report:** Whenever possible, groups should report their choices simultaneously.

The importance of assignments that are linked and mutually reinforcing is illustrated by the experience of a colleague who uses a series of case files to develop medical students’ critical thinking (i.e., diagnostic) skills. For many years, she assigned groups to write a series of one-page memos identifying a preliminary diagnosis for each patient but was disappointed in the learning outcomes for two reasons. First, students only worked with a fraction of the cases because groups delegated the work to individual members. Second, correcting the assignment took so long that the value of the feedback was minimal. She now uses the Readiness Assurance Process (described above) to ensure that students have mastered basic concepts and that groups have developed a norm of seeking input from each member before reaching a decision. Then, on the day of the activity, she adds a vital piece of new information to a set of pre-assigned patient cases (which are inherently authentic and relevant to medical students) and gives groups a specified length of time to either: 1) select a most likely diagnosis from a limited set of alternatives, or 2) commit themselves to a position that they do not have enough information to make a definite diagnosis. When the time has elapsed, she gives a signal for the groups simultaneously to hold up a legal-sized sheet of paper on which they their choices to the rest of the class. The outcome is always a lively discussion *within* the groups followed by a vigorous interchange *between* groups.

KEY #3 -- Adopting Practices that Stimulate Idea Exchange

The degree to which group discussions expose students to new perspectives from their peers depends on two factors. The first factor is the extent to which the instructor uses assignments and creates conditions that foster give-and-take group interaction. The other factor is the diversity of opinions, ideas, and perspectives that exist within each group.

Using assignments that require group interaction. The most common reason for a low level of group interaction is the use of assignments that can be completed by independent individual work. For example, if assignments are too easy, one member will simply act on behalf of the group. Assignments that require a great deal of writing are also likely to limit both interaction and learning. If asked to produce a lengthy document, group discussions seldom produce very much learning for two reasons. First, discussions tend to be limited in duration (i.e., students feel pressured to get going on

the real work). Second, they tend to focus on working out who will write which piece of the total product rather than on the substance of the issues that will be contained in the paper. By contrast, assignments that require students to use course concepts to make difficult choices (e.g., the medical school example above) always produce high levels of both interaction and learning (Michaelsen, Fink & Knight, 1997).

Removing barriers to participation. Often, members of new groups are reluctant to speak out. One response to this problem is assigning roles within the group, e.g., recorder, summarizer, devil's advocate, etc. However, a more powerful approach is using permanent groups and assignments, practices, and a grading system that foster the development of group cohesion (Michaelsen, Black & Fink, 1996). As groups become more cohesive, trust and support typically build to the point that even naturally quiet members are willing to engage in intense give-and-take interactions with little worry about being offensive or misunderstood (Watson, Michaelsen & Sharp, 1991). As group members come to see their own success as tied to the success of their group, they are motivated to invest considerable personal energy into doing group work.

In-class group work. Interaction is also likely to be limited unless groups are allowed to do their work in class. In many cases, the cost of meeting outside of class is so great that students will meet just long enough to divide up the work. They will then complete the assignment individually and learn little from each other. Their output is a group product in name only and, any cohesiveness developed during the initial meeting, is likely to be offset by a concern that other members might fail to do their part.

Creating diverse groups. Another way to expose students to new ideas is making sure that groups are relatively large (5-7 members) and as diverse as possible. Creating diverse groups involves two steps. The first is identifying the dimensions that make a difference in student performance in each specific course, e.g., majors, previous course work, relevant job experience, etc. The other is sorting members into groups so that member assets and liabilities are spread as evenly as possible across groups (Michaelsen, et al, 2004).

Summary and Conclusions

By using assignments in each of the "3-Boxes" (see Figure 1) that are completed during class time, and are characterized by the "4-S's" (**S**ignificant problem, **S**ame problem, **S**pecific choice, and **S**imultaneously reporting), instructors create the conditions needed for effective learning groups. These conditions include: individual and group accountability, the need and opportunity for group interaction, and the motivation to engage in give-and-take discussion. In the vast majority of groups, the net result will be increased learning and high satisfaction for both students and instructors.

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Course Scorecard

Primary Content Objective		
Cover Content	Focus	Use Content
Team Formation		
Student Selected	Selection Method	Criteria Selected
Homogenous Teams	Composition	Diverse Teams
NOT Transparent	Process	Transparent
Orientating Your Students		
No Explanation	Rationales	Explain Rationales
Instructor-set	Grade Weights	Student-set
Readiness Assurance Process		
Inappropriate Frequency	Frequency	Appropriate Frequency
Test Trivial Knowledge at Index Level	Focus of Questions	Test Important Knowledge Table of Content Level
Delayed or Inappropriate Process	Feedback	Instant Using IF-AT's
Not Using	Appeals	Using Appeals
No link to following activities	Link to Activities	Clearly linked to following activities
Application Activities & Assignments		
Trivial Problem	Problem Significance/Relevance	Significant Problem Authentic & Challenging
Different Problem (for different groups)	Problem Selection	Same Problem
Requires Creating a Complex Product	Deliverables	Specific Choice Requiring Complex Thinking
Sequential Report	Reporting	Simultaneous Report
Individual Accountability		
No IRAT	Accountability to Instructor	IRAT
No Peer Evaluation or Inappropriate Procedures or Wt.	Accountability to Peers	Peer Evaluation Appropriate Procedures & Wt.
Team Accountability		
Don't "count"	Impact of Team Assignments	Affect course grade
Delayed Feedback	Feedback on Team Assignments	Immediate Feedback