

Chapter 1

APPLYING GROUP AND TEAM LEARNING CONCEPTS IN TAX CLASSES

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In the last decade tax pedagogy has experienced substantial revisions not only in technical focus, but also in the teaching methods used in tax classrooms. These changes have been motivated, in part, by recommendations from professional firms that accounting educators revise the overall teaching approach to strengthen students' critical thinking, communication, and interpersonal skills (Accounting Education Change Commission [AECC] 1990; *Perspectives* 1989). Some of the pedagogical changes implemented in response to these recommendations include, but are not limited to, the use of case studies, web-based teaching, cooperative learning, and team learning. This chapter focuses on the application of group and team learning methodologies to tax education.

Group activities within accounting firms and other professional organizations continue to be a common and integral element of the day-to-day activities of these firms. In many professional environments, two distinct types of groups often exist—hierarchical groups and lateral equivalent groups. The first, and perhaps most common group type (at least in public accounting), is the hierarchical group. A hierarchical group is one where the group is composed of members with varying degrees of technical ability and seniority. A common example of this group type is a typical engagement team that includes staff members, seniors, managers, and partners.

The second common group type is a lateral-equivalent group (e.g., teams of similarly qualified professionals working on large projects concurrently or multidisciplinary teams of professionals working together). It is interesting to note that engagement teams for larger clients in a public accounting firm may actually consist of both types of groups working concurrently. For example,

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a group of staff members may be working on a single engagement (i.e., a lateral equivalent group), while the engagement team as a whole consists of the staff, seniors, manager, and partners (i.e., a hierarchical group).

Regardless of the type of team dynamic in place (i.e., hierarchical or lateral equivalent), the ability of each team member to make salient contributions while creating synergy with the other group members is of paramount importance to the effectiveness of the group. Thus, it is increasingly apparent why interpersonal skills are often listed alongside writing and communication skills as the most important characteristics for success as a professional accountant.¹

A growing body of educational literature suggests that students' knowledge acquisition may be substantially enhanced when cooperative or team learning strategies are incorporated into the curriculum, suggesting that group learning approaches may accomplish more than simply augmenting a student's interpersonal skills. However, prior to incorporating cooperative learning techniques in a particular course or curriculum, the overall learning objectives must be considered. Examples of this literature include, but are not limited to, Bonner (1999), Rebele et al. (1998), Roebuck (1998), Johnson and Smith (1997), Peterson and Thompson (1997), Nichols (1996), Sullivan (1996), Borkowski and Welsh (1996), Peek et al. (1995), Ravenscroft et. al. (1995), Cottell and Millis (1993, 1992). These manuscripts each address various aspects of cooperative or team learning as they relate to overall pedagogical enhancements and/or learning objectives.

The challenge that faces tax academicians is the effective implementation of innovative teaching techniques that enable tax professors to meet the needs of two primary client bases: (1) students and (2) prospective employers of such students. Quite simply, these challenges represent one of the reasons this tax pedagogical monograph was developed. With these goals in mind, this chapter focuses on how to implement cooperative/team learning in a tax classroom.

In order to facilitate this discussion, the remainder of the chapter is organized as follows. First team learning and cooperative learning are defined, compared, and contrasted, after which an introduction of a group learning continuum is presented. A discussion of the operational requirements and mechanics of effectively incorporating group projects and the team learning concept into a curriculum follows. The last two sections of the chapter address the advantages and disadvantages of team/cooperative learning along with examples of group projects emphasizing tax concepts.

TEAM LEARNING vs. COOPERATIVE LEARNING

"Team learning" is a pedagogical process that goes beyond using temporary groups or assigning occasional group activities. Roebuck (1998) and Michaelsen (1992) propose that team learning involves students spending approximately 80 percent of their in-class time working in permanent and heterogeneous teams. In this instructional design the professor becomes a facilitator and manager of learning rather than the primary provider of information. The students assume an active and responsible role in the learning process rather than as passive recipients. One of the primary benefits associated with this type of learning environment is that students acquire experience dealing with the team dynamics they will encounter in the professional environment.

Roebuck (1998) provides an explanation of the elements needed to facilitate effective team learning. First, teams should be heterogeneous in nature (i.e., comprised of culturally diverse individuals). Second, student performance evaluations should be based on a combination of individual performance, team performance, and peer evaluation. Finally, the majority of the class

¹ Note that at least one firm, Arthur Andersen & Co. (AA), has made a significant financial investment to emphasize the importance of teamwork in accounting success. This is evidenced by the firm's sponsorship of the national Arthur Andersen Tax Challenge. The Tax Challenge is designed not only to stimulate interest in the field of taxation, but also to provide an environment in which the case-study methodology can be used in conjunction with team and cooperative learning techniques to achieve success in the competition.

should be dedicated to the team learning environment where team activities emphasize applying concepts rather than simply discussing them. Roebuck (1998) further suggests that the ideal team project should be sufficiently difficult such that very few, if any, students could complete the assignment working alone in a reasonable time period.

“Cooperative learning,” on the other hand, has been defined and operationalized by educators in several different ways. Slavin (1987, 8) defines cooperative learning as “instructional methods in which students of all performance levels work together in small groups toward a group goal.” Johnson et al. (1990) define cooperative learning as the establishment of small student groups to maximize each student’s learning. While individual definitions vary on the degree of specificity, researchers generally agree on two features essential to cooperative learning: positive interdependence and individual accountability (Ravenscroft et al. 1995). In addition, effective cooperative learning mandates that students strive for the group’s goal congruence while accepting responsibility not only for their individual knowledge acquisition, but also for the knowledge acquisition of the other members of their group.

While many of the objectives of team learning and cooperative learning are identical, the primary difference based on the above definitions appears to be the extent to which group activities are incorporated into the overall learning process. Recall that Roebuck (1998) and Michaelsen (1992) suggest that, in team learning, group activities should constitute 80 percent or more of the instructional process. On the other hand, the definitions of cooperative learning described above do not place such a heavy usage requirement on the group approach, even though the intended outcomes are the same. Therefore, one might conclude that the term “cooperative learning” refers to the use of groups as an instructional tool, rather than an overall teaching style, as required in the team learning approach.

Though the motivational stimulus for the increased emphasis on the use of cooperative learning in accounting may be primarily attributable to feedback from professional firms and/or the ABCC, the effectiveness of cooperative learning approaches can be applied in a theoretical context to Bloom’s (1956) taxonomy of educational objectives (hereafter Bloom’s taxonomy).² Bloom (1956) suggests that most teaching involves some combination of six different levels of teaching objectives: (1) recall and recognize information—committing to memory facts, theories, and principles; (2) comprehension—the ability to understand and explain concepts in their own words; (3) application—the ability to apply what has been learned to examples; (4) analysis—the ability to bifurcate knowledge into component parts when applicable; (5) synthesis—the ability to reconstruct component parts of information into a cohesive whole; and (6) evaluation—the ability to examine knowledge critically and consider logical extensions of this knowledge (Lowman 1984).

Brightman (1995) reclassifies Bloom’s taxonomy into three meta-levels of learning: (1) Rote or Knowledge Level, (2) Meaningful Integrated Level, and (3) Critical Thinking Level. The rote or knowledge level of learning requires that students memorize ideas or procedures. This rote form of learning represents Bloom’s first category (i.e., recall and recognition). Since memorization is inherently an individual task, cooperative learning techniques are relatively ineffective at helping students achieve this level of learning.

The objective of meaningful integrated learning is to have the student translate concepts into everyday language as well as apply and interrelate these concepts. Meaningful integrated learning combines Bloom’s second, third, and fourth objectives (i.e., comprehension, application, and analysis). Because of the higher level of learning at this meta-level of cognition, cooperative learning

² Note that Bloom’s (1956) taxonomies of learning objectives have been compared and contrasted to Gagne’s and Andersen’s taxonomies, as quoted in Bonner (1999). While all three taxonomies have their distinct characteristics, the underlying premises are basically the same. Therefore, in this monograph, the authors have, for simplicity, elected to overlay the cooperative learning issues and benefits to Bloom’s taxonomy with the understanding that a similar analysis is easily facilitated for Gagne’s and Anderson’s taxonomies as well.

combined with interactive lecture and cases is often very effective at achieving these learning objectives. The highest level of meta-learning is critical thinking. Critical thinking is designed to combine Bloom's fifth and sixth objectives (i.e., synthesis and evaluation). Since this is the highest, and in most cases the ultimate, level of learning desired by professors, it may also be the most difficult to attain. Cooperative learning in conjunction with unstructured cases and/or lengthy projects that involve teams interacting with real-world companies is posited to be very effective at conveying this type of learning.

Having addressed the different levels of meta-cognition and the environments where cooperative learning or team learning is effective, the next section of this chapter introduces the concept of a group learning continuum. This continuum is designed by the authors to present the various levels at which group activity can be used in a tax classroom to achieve an instructor's learning objectives.

GROUP-LEARNING CONTINUUM

In the previous sections different levels of learning objectives were introduced (i.e., Rote, Meaningful-Integrated, and Critical Thinking). In doing so, the potential effectiveness of incorporating cooperative learning techniques into the curriculum to achieve the respective objectives was discussed. Since each individual professor establishes his or her own learning and teaching objectives, the extent to which groups are incorporated into a given course will vary based on the objectives of the course. The following group learning "continuum" is presented to summarize the differing degrees to which cooperative learning is used in college classrooms. This continuum has been developed using primarily anecdotal evidence obtained from discussing with colleagues the level of group activities used in several different courses.

Group Learning Continuum

Use of Groups

0%	Minimal Group Activities	20%	Substantial Group Usage	70%	Team Learning	100%
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Note from the above continuum that there are three ranges of group usage with extreme values on each side of the continuum. The two extreme points represent 0 and 100 percent group-learning activities used in class, respectively. The extensive use of the more traditional lecture-style teaching methodologies suggests there is a greater likelihood that many college classrooms will incorporate no group activities rather than the opposite extreme of total group activities. However, current pedagogical trends suggest a movement away from no group activities toward more extensive use of cooperative learning techniques. Nonetheless, few college courses appear to use team-based learning on an exclusive basis.

The above continuum also presents three ranges or categories of group usage. The first range is labeled "Minimal Group Activities." Professors in this category tend to use lecture as the predominant teaching methodology with group projects introduced occasionally. Because of the low emphasis on cooperative learning, only a very small percentage of a student's grade, if any, is based on group activities.

The next range on the continuum, "Substantial Group Usage," is representative of a movement into cooperative learning. Courses in this category use cooperative learning for approximately 20 to 70 percent of the course activities. As such, a significant portion (e.g., 10 to 60 percent) of the students' grades is based on group activities. The final range, "Team Learning," represents

courses where the instructor has adopted team learning or a similar approach. Courses in this category use minimal professor lecture activities while using at least 70 percent group learning activities. Because of the substantial emphasis on cooperative learning in this range of the continuum, at least 50 percent of a student's grade is based on group activities.

Where a course lies on this continuum is typically a function of two primary factors. The first is the professor's desire to use cooperative learning in the classroom. More specifically, if a professor does not wish to commit to incorporating cooperative learning techniques in his or her classroom, the course will consistently lie in the "Minimal Group Activities" category on the continuum.

The second factor that affects the placement of courses on the continuum is the course material and learning objectives (Bonner 1999). While current trends in pedagogy suggest that striving for higher levels of meta-cognition (i.e., meaningful integrated learning or critical thinking) should be an objective of every course, certain courses are simply not well suited for extensive group activities. One reason that a course might not be conducive to cooperative learning is that course content may be compromised when group learning activities are used. Adjustment of content is a function of the time commitment necessary to implement group activities and is often one of the trade-offs encountered when using group learning techniques. Therefore, if covering a base amount of material at a particular level of detail is absolutely crucial to the student's success in future classes, group learning activities may not contribute to achieving the course goals. With that caveat in mind, however, most classes can incorporate at least some group learning activities if sufficient planning is done, and more importantly, if a commitment by the professor to cooperative learning exists.

Tax courses, in particular, seem to provide a reasonable environment for cooperative learning activities. More specifically, since many tax concepts are interrelated, the use of group cases to help the students connect various tax concepts is quite effective. Case projects provide professors with the flexibility to let students practice many of the mundane mechanical concepts that may be relatively meaningless by themselves (e.g., computation of office-in-home deduction) in a case that connects all relevant points (e.g., prepare a Schedule C with all trade or business expenses including office-in-home). Recall Roebuck's (1998) suggestion that for team learning to be effective, the cases used must be sufficiently complex that students working alone would be unable to satisfactorily analyze the issues in the time frame provided.³

At this juncture, many of the motivations and theoretical underpinnings associated with the recent emphasis on cooperative/team learning have been addressed. The following sections discuss the operationalization of team learning in the tax curriculum, along with some of the advantages and disadvantages of using these learning techniques.

OPERATIONALIZING GROUP LEARNING IN THE CURRICULUM

The first step necessary to incorporate group learning in the classroom is to assign students to groups. A number of issues should be considered in determining group assignments. These considerations include but are not limited to: (1) who should determine the group members (i.e., professor or students), (2) what is the desired group size, (3) should the group assignments be permanent or transitory, (4) should all group members have equal authority or is a hierarchical structure implemented, and (5) what is the professor's role in conflict resolution. These and other issues are addressed in this section.

³ For a more detailed example of applying team learning in a tax classroom, see McConnell and Sasse (1998). These authors discuss how they applied Michaelsen's Team Learning Model to a Federal Income Tax course and the results they encountered through this modification of teaching methodology.

Characteristics of Good Groups

Heterogeneity

When using groups as a primary knowledge acquisition vehicle within a course, the cooperative learning literature suggests that students learn most when they are members of heterogeneous groups. In this context, heterogeneity includes not only diversity of intellectual abilities, but also cultural and environmental diversity as well. Roebuck (1998), for example, notes that students' assets and liabilities should be spread across groups. This advice appears to be based on concerns relating to the equity and effectiveness of the learning process. In a group learning environment, equity issues are concerned with the allocation of both student strengths and weaknesses across groups in an attempt to mitigate the risk that the group selection mechanism is a significant factor in determining students' final grades.

Group heterogeneity also impacts the effectiveness of the learning process in at least two ways. First, diversification of learning abilities and skill sets is likely to enhance the overall learning of the group members since interdependence among group members is likely to surface as each group member attempts to mitigate his or her weaknesses by interaction with fellow group members. Concurrently therewith, the same group members are substantially more likely to share their strengths, thus increasing the overall learning of all members. On the other hand, homogeneous groups of similarly qualified individuals are less likely to provide an effective learning platform. Assume, for example, a graduate tax course in which many, but not all, of the students have spent several weeks working on internships with public accounting firms. If the students with internships are grouped together, two problems arise. First, groups with no experienced members may feel that they are operating at an unfair advantage. Second, and perhaps more important, members of these groups will have no opportunity to learn from the internship experiences of their classmates. In contrast, if the experienced students are spread across all groups, some of the learning experiences associated with internships may be spread across the entire classroom.

A second benefit of group heterogeneity relates more to the benefits of incorporating general diversity rather than academic or intellectual diversity, *per se*. To the extent groups are being used to teach students interpersonal skills, this lesson is far more effective if students are required to work with others who possess different characteristics from their own. Although the term "difference" usually brings to mind "cultural" differences, cultural heterogeneity may not always be possible. After all, cultural heterogeneity within groups is a function of the level of cultural heterogeneity within the population (e.g., the university) from which the groups are drawn. Nonetheless, even in a classroom lacking a large amount of cultural diversity, students can be grouped with others whose approaches to solving problems differ from their own.

Some instructors use personality or problem-solving tests such as the well-known Myers-Briggs Type Indicator (MBTI) to profile their students prior to making group assignments. While the use of tests such as the MBTI to facilitate group assignments is not a fail-safe, it provides the instructor with an independent measure of the different problem-solving approaches favored by individual students. The professor can use the literature associated with the respective test (e.g., the MBTI) to create groups that, in theory, should be more effective because of the synergy of problem-solving skills within the group. Another vehicle that can be used *ex ante* by professors to assess the possible success or failure of a particular group is an anticipatory case exercise. McConnell and Sasse (1999) describe a four-part case that can be used to identify potential group dynamic problems, while also alerting students to the expectations associated with the team learning process.

Cohesion

Another important issue to consider in the group selection process is cohesion. Group cohesion is vital to team learning—without such cohesion the potential for effective group learning

is substantially compromised. Group projects decompose into individual projects that are hastily cobbled together just prior to deadline.

Note, however, that truly heterogeneous groups are generally not initially cohesive, and thus begin at a disadvantage relative to self-selected groups of friends.⁴ In order to develop cohesion within heterogeneous groups, instructors must recognize certain natural barriers to cohesiveness. Factors to consider are students' work/family schedules and geographic locations, among others. For example, students who live far from one another or have conflicting work schedules should generally not be assigned to the same team unless there is sufficient overlap in their school schedules to allow them to meet on campus. Scheduling and distance problems such as these are less significant, however, if students meet and interact in virtual classrooms and/or chatrooms.⁵

Friends vs. Strangers

A related concern is whether, or to what extent, friends should be placed on the same teams. As noted above, groups of friends are naturally more cohesive than are groups of strangers. However, where some members of a group are friends, but not others, cohesiveness may suffer, as some members of the group feel excluded.⁶ Moreover, some research suggests that groups of strangers may perform better on certain tasks than do groups of friends, particularly when accountable to a third-party supervisor (e.g., the professor) for their actions (Peterson and Thompson 1997). Groups of friends also tend to be less heterogeneous than groups of strangers and thus these groups may not be as effective in teaching interpersonal skills.

On a positive note, groups of strangers will often become friends over time. If they remain in the same groups, it is unlikely their friendship would pose barriers to effective group learning in later assignments (or courses). It is also worth noting that problems of convenience (e.g., arranging meeting times and locations) are frequently easier to resolve among groups of friends.

Assigning Students to Groups

The issues addressed above generally work against allowing students to self-select into groups of their own choosing. Such groups are almost always comprised of friends, at least partly, and are seldom heterogeneous. As a result, when team or group learning is to be the focus of a substantial portion of course activities, the literature strongly suggests that the instructor should choose the groups.⁷ A number of methods can be used to make group assignments.

Achievement-Based Selection

Often an instructor will know his or her students, and their academic aptitude, prior to the beginning of class. Perhaps he or she has taught the same students in other classes. This prior experience provides the professor with the information necessary to make reasonably effective

⁴ Peterson and Thompson (1997) report that in competitive situations, group cohesion was positively associated with performance. Moreover, groups of strangers became more cohesive when held accountable to a third-party supervisor, whereas groups of friends became less cohesive. —

⁵ For example, WebCT and similar Internet educational packages allow instructors to create electronic meeting rooms for students, thereby eliminating concerns that students living long distances from one another should not be assigned to the same teams. Readers interested in more information about this topic should refer to Chapter 7 in this monograph by Amy Dunbar and/or see the summary of the presentations made by Amy Dunbar and Bob Jenson at the 1999 Midyear Meeting of the ATA. Summaries of these presentations are available on the ATA web site at <http://www.uni.edu/ata/>.

⁶ See Fiechtner and Davis (1992) for a discussion of other issues that arise when students are allowed to self-select into groups of friends.

⁷ Where team learning is not the foundation of a course, group projects are still quite effective at helping students to integrate multiple concepts. Here, however, the primary learning vehicle is the case itself, and less emphasis perhaps needs to be placed on the ideal composition of groups.

group assignments. Absent such experiential knowledge by the professor, other achievement-based indicators such as grade point averages and/or similar information can be obtained from the students or from the appropriate department in the university at the beginning of the semester to help facilitate group assignments. If the instructor, rather than the students, is going to select groups, information regarding student aptitude or prior academic achievement is probably the most objective basis on which selection can be based. Using this information, the instructor can ensure that all groups have a balanced composition of stronger and weaker performing students.⁸

Personality Profiling

An alternative to grouping students based on past academic performance is to group them in accordance with personality profiles. As discussed above, a popular instrument for classifying students' personalities is the MBTI test.

"Value-Line" Question Method

A different method for selecting groups, suggested by Kagan (1989/1990), is the "value line" question method. Under this procedure, students use a Likert scale (where the lowest value represents strong agreement and the highest value represents strong disagreement) to respond to a normative statement provided by the professor. Cottell and Millis (1993) suggest the following three statements as examples for accounting students:

- The plus/minus grading system should (should not) be implemented at this university;
- Accounting majors should be required to take more liberal arts courses;
- The 150-hour requirement for professional certification should be implemented by this state.⁹

Students are "ranked" in accordance with the strength of their agreement or disagreement with the normative statement. The instructor then groups students by matching students from opposite ends of the "value line" with those from the middle. To illustrate, assume a class of 16 students from which the instructor wants to select four equal groups. Group 1 would consist of students 1 and 16 (the students furthest apart on the value line), and students 8 and 9 (the students closest to the middle). Group 2 would consist of students 2 and 15 (the furthest apart of the remaining students), and students 7 and 10 (the closest to the middle of the remaining students). Groups 3 and 4 would be selected in the same manner. Of course, proactive steps must be taken when assigning group members using this method to prevent the last group assigned from being comprised of members that maintain neutral positions on the statements (i.e., the center of the Likert scale) and thus represent a homogeneous group.

A simplified derivative of this method has proved to be effective when used by the authors of this monograph. In the simplified format, students are asked to rank-order a series of four or five statements assessing whether the statements are "most like me" or "least like me." Statements should reflect the objectives of assignments. For example, if teams will be working on research projects, the statements might be: (1) I am a great leader/organizer; (2) I am a great writer; (3) I am a great detective; and (4) Computers are my life. The professor can then assign students to teams so that each team has a member who ranked each item "most like me." Of course, smaller class sizes might compromise the effectiveness of this simplified approach.

⁸ In some cases, the instructor may wish to group strong students together. This type of group selection may be used, for example, to address a perceived "free-rider" problem. Homogeneous grouping may also be useful in teaching some students to listen to others; in some cases, a particularly high-performing student may need to be shown that others are just as capable, and can add value to the group decision-making process.

⁹ In light of the current obsolescence of this statement in most states, this statement might be revised to read "The 150-hour requirement for professional certification is a positive change for the accounting profession."

“Corners”

Another, very different, method of dividing students into groups involves first asking students to group themselves into *homogeneous* groups. For example, in an undergraduate class, students might be asked to group themselves by major—marketing majors in one corner, accounting majors in another, and so on. Alternatively, students might be self-selected into groups based on whether and with whom they have worked internships. At any rate, after self-selecting into a pre-specified number of homogeneous groups, the instructor then creates heterogeneous groups by choosing one student from each group to make new groups (Kagan 1989/1990).

Random Selection

Perhaps the most common method of assigning students to teams is random selection. Students can be assigned to teams using playing cards (all 4s together, etc.), counting out (where students call out numbers from, say, 1 to 4, and all students with the same “counts” are then grouped together), or other methods. Random selection is fast, easy, and generally effective at establishing heterogeneous groups. Since friends usually sit together in class, randomization using playing cards or by counting heads almost always breaks up groups of friends, thereby preventing potentially divisive cliques from being built into groups from the very beginning. Moreover, random selection is not as intrusive as methods based on prior grades, experience, or other indicators of academic potential. For that reason, of course, it is not as effective as polling students or checking grades at distributing academic “assets” across groups. However, with a large class, the very process of randomization generally distributes these students evenly across groups.

How Large Should Groups Be?

Determination of proper group size is largely dependent on the nature of the assignment(s) to be completed by the groups. Roebuck (1998) suggests groups should generally consist of five to seven members. In tax classes, given the nature of most projects, somewhat smaller groups are often more appropriate. For certain assignments, such as research projects, groups of two or three seem to be effective. For larger projects, groups of three or four generally work well.¹⁰ In determining the proper group size, the key element is the nature of the task(s) to be performed by the group. If the group is too large for the task, some members may not have clear roles to play. These situations often result in free-riding and a breakdown in group cohesion.

Team Duration, Delegation of Authority, and Conflict Resolution

The issues of how long teams should stay together, whether teams should be hierarchical or lateral equivalent, and how instructors should handle team conflict are fairly closely related. For example, one way to handle conflict within teams is to change the composition of those teams. Thus, if the instructor plans to rotate teams, conflicts on one assignment are not likely to affect student performance on the next assignment. On the other hand, the choice to create hierarchies of authority within teams will generally be more effective if team composition is stable over the course of the semester.

Thus, the critical question in this regard is whether teams should be stable or whether students should instead be rotated over time. We have experimented with both approaches in our classrooms, and have noted certain advantages and disadvantages associated with each approach. Allowing groups to stay together throughout the semester generally results in substantially greater group cohesion, especially where the students are not initially well acquainted, as is often the

¹⁰ Note that the Arthur Andersen Tax Challenge is based on four-person groups.

case in large classes. Stability allows team members to become comfortable with one another and to develop relationships over the course of the semester. These benefits are particularly important where, as the team learning approach emphasizes, team members are expected to learn from one another. On the other hand, it is not unusual in these situations for students to "specialize" so that over the course of the semester each member focuses on only one aspect of the assigned cases. For example, one member may specialize in doing research, another in making necessary computations, and another in writing the group's analyses or memoranda, etc. This approach clearly provides benefits for the team in terms of efficiency, but may reduce the efficiency or effectiveness of the learning process.

One way to mitigate the problem of member specialization is to rotate team membership. Where students are on different teams for each assignment, it is more difficult for them to specialize in particular aspects of group assignments. In addition, particularly for smaller classes, rotating group membership can help to fairly distribute intellectual assets and liabilities across groups.¹¹

An alternative approach to this problem is to rotate tasks or authority within teams. A particular team member may be placed in charge of the team for one assignment, with others are assigned to do particular types of work (e.g., research). By delegating responsibility or responsibilities to particular members of the team, and rotating these assignments, the problem of specialization can be alleviated. In addition, this approach brings potential advantages in developing interpersonal skills. Students who are shy and unassuming will be forced to take a more assertive role in group activities, while those who are more outspoken or dominating may be forced to play a more passive role.

Finally, the issue of conflict resolution must be considered. Invariably, instructors who use group assignments will be faced with the problem of conflict between group members. Dealing with these conflicts can be difficult and there is no standard rule of thumb that can be applied to every situation. Rotating team members sometimes works to solve conflicts. In other cases, counseling the student or students involved may be required. Other times, groups can be left to resolve their difficulties on their own. The latter approach is particularly effective where team members' evaluations of one another affect their individual grades, which produces a significant incentive to get along.

DESIGNING APPROPRIATE GROUP ASSIGNMENTS

The group-learning experience is no better than the assignment(s) forming the basis of the group's activities. Effective assignments must be sufficiently complex to engage every member of the team. Otherwise, a climate is established in which the weaker members of the team may allow the stronger members to take over.¹² This "free-rider" (i.e., a student who does not contribute fully to the group's analysis of the assigned case) problem, if it occurs, can result in breakdowns in cohesion and overall compromises to the effectiveness of the learning process.

Nonetheless, the tax curriculum provides an incredibly effective environment in which to use team and cooperative learning techniques. A wide variety of sufficiently challenging tax assignments can be developed for group analysis and presentation. These assignments range from research cases that can be completed by two-member groups to large planning cases like those used in the Arthur Andersen Tax Challenge that are appropriate for groups comprised of three or four

¹¹ For example, in one class of 16 students, one student was significantly less prepared academically than the others. Because group membership was rotated each week, this student worked on at least one assignment with each of the other members of the class (in groups of four). Thus, although his group consistently underperformed the others, none of the other students' grades were significantly affected overall by working with him.

¹² Weakness in this context may refer to academic potential, personality, or some combination of both.

members.¹³ Nonetheless, the content of the cases enables tax academicians to use group learning to accomplish different academic objectives such as understanding tax compliance issues or completing research tasks.

Research Cases

Complex research cases can be very effective learning projects for small groups. Generally, to be effective in a cooperative learning context, a research case should consist of more than one issue. Moreover, the most effective cases are those in which the issues, though separate, are interrelated. Students generally address separate issues individually, and then come together to integrate their findings as a group. For example, a case on transfer pricing might involve simultaneous analyses of both income tax and customs tax issues. Typically, the student(s) researching the customs tax issues associated with transfer pricing will focus on minimizing transfer prices between related business units in separate countries to reduce customs duties, while students researching the income tax issues will focus on maximizing the allowable transfer prices to minimize income taxes. When they come together as a group, they will realize how the two issues are related (and in this case contradictory), and integrate their findings to develop a plan that minimizes total taxes.

Another example of effective group projects include business cases in which tax and nontax concerns must be considered and contradictory issues resolved using cost-benefit analyses (e.g., a stock redemption that save taxes but dilutes a shareholder's economic interest in a corporation). In cases like these, the group is required to combine their tax expertise and knowledge of other business disciplines to arrive at an answer that coincides with management's goals to minimize the cost of the transaction. Nonetheless, the key to success is to design cases in which the different research issues are sufficiently related such that two or more students cannot work individually and merely "paste" their individual analyses together with a minimal amount of group interaction.¹⁴

Use of Cases to Cover Technical Issues Not Addressed in Class

Case studies are also effective at covering technical material that may be difficult to effectively communicate in the traditional lecture style. For example, when teaching alternative minimum tax (AMT), the instructor might choose to focus class time on the explanation and rationale for the alternative minimum tax, while using comprehensive case studies to facilitate students' understanding of technical measurement of tax preferences, AMT adjustments, and the overall calculation of AMT. In this context, the group's task is to learn by doing, but only after being introduced to the theoretical underpinnings of the concept.

Integration of Multiple Concepts

As noted above, the greatest benefits of group projects in the tax curriculum are typically derived from cases that integrate multiple tax and nontax concepts. The Arthur Andersen Tax Challenge cases provide excellent examples of this type of project. These cases are sufficiently complex such that students working alone are unlikely to provide a satisfactory solution to the case given reasonable time constraints.

¹³ The experience of the authors is such that groups of five or more tend to be difficult to manage and provides an increased risk of "free-riding."

¹⁴ Of course, similar projects can be assigned to individual students, rather than groups. Use of groups, however, allows students to tackle more complex problems without exceeding available resources (time and energy). Moreover, use of groups allows students to learn technical tax concepts and research skills while simultaneously learning to work with other people.

EXAMPLES

At Texas Tech University, a series of cases patterned after the Arthur Andersen Tax Challenge materials are used as the foundation for a graduate course in tax planning. The cases used, while similar to the Andersen cases, are generally more complex and cover a broader range of topics. These modifications are possible because the student teams have more time and resources available to devote to analyzing the cases.

A typical case requires students to review work already completed (e.g., a prior year's return), identify and analyze any issues that appear to have been incorrectly handled, and make recommendations for addressing/correcting the problem(s) identified. They then review a series of hypothetical transactions for the current year and use these as the foundation for estimating their client's hypothetical current-year tax liability. In this context, they are required to address one or more speculative transactions (e.g., a transaction that is being considered but has not yet been concluded), and make recommendations regarding how the transaction should be structured, or whether it should be completed.

Cases analyzed early in the semester require the students to evaluate several identified alternatives and recommend the choice with the most favorable after-tax consequences. For example, students may be provided with a corporation's balance sheet that summarizes the tax bases and fair market values of the firm's assets and liabilities. In addition, they are informed that the shareholders are considering selling the business. Based on this information, the students must discuss the tax and nontax consequences associated with sale of the stock vs. sale of the assets, or with a transaction that would combine a redemption of some of the stock in the corporation with sale of the remainder to the potential buyer. Given these identified alternatives, their task is essentially to compare the advantages and disadvantages of each from the seller's perspective.

In subsequent cases, students are provided with more unstructured tax problems that require them to identify and evaluate the potential alternatives and consequences of each. For example, an estate-planning case may require students to advise a client of the potential estate taxes that will be triggered by his or her death and make recommendations on how to reduce those taxes. Students are also required to identify alternatives that may be available, such as using annual *intervivos* gifts to reduce the taxpayer's gross estate. Note however, that simply recommending a gift program is not sufficient to achieve a superior grade. In order for the students to earn an "A" for the project, they must also identify which assets should be gifted, how the gift should be transferred (i.e., either by trust or otherwise), and which property should be retained by the client and transferred through the estate.

Many of the cases used in this course explore technical tax provisions that may not have been thoroughly covered in other classes (e.g., alternative minimum taxes, retirement plans, self-employment taxes, etc.). These topics are integrated into a comprehensive tax-planning engagement requiring 20 to 30 hours per case of research and computation on the part of each team. Moreover, borrowing heavily from the format of the Arthur Andersen Tax Challenge cases, "real-life" documents are incorporated (1099s, closing statements from the sale of property, etc.) to more closely reflect the way in which information is actually made available in many practice situations. The cases are also used to emphasize that nontax considerations often comprise the bulk of business decisions. Thus, in one case, student teams are required to analyze the tax benefits associated with the purchase of medical equipment by a doctor's office. They compute the after-tax cost, in present-value terms, of the acquisition. In addition, they are asked to conduct a standard break-even analysis to determine how many "applications" of the machine will be necessary over a five-year period in order for the machine to pay for itself given the fee the doctor believes he or she could reasonably charge for the service.

An infinite number of scenarios and technical issues can be used to make challenging, educational cases. The above examples are intended to merely illustrate how the tax faculty at Texas

Tech University has integrated multiple related topics into comprehensive cases that are then assigned to groups of students. The cases are designed to require not only the participation of every member of the team, but also to make team members spend time interacting with one another to bring the various components together. In other words, the multiple tasks cannot stand alone, but rather must be integrated into a single plan or strategy.

ESTABLISHING A GRADING SYSTEM

Establishing a fair and competent grading system is crucial when incorporating team learning or group assignments into the curriculum. The grading system must combine individual assessment with incentives for group work if the professor places importance on team learning. Providing students with a voice in the process of weighting assignments motivates them to sincerely welcome the concept of team learning. For example, the professor can set minimum and maximum percentage levels for all assignments and allow the groups to negotiate the final proportions to be used.

At least two grading problems arise with groups. First is the problem of free-riders. Although this problem can be alleviated largely through proper case design as discussed above, it cannot be eliminated through design alone. When one or more students refuse to participate, one of two outcomes results: either the group's overall performance on the assignment suffers, or one or more of the other group members must carry the load for the free-rider. Both of these outcomes are generally viewed unfavorably by the other group members. However, the free-rider problem can often be mitigated by incorporating peer evaluations into the grading system.

Peer Evaluations

Peer evaluations can take several forms. A common grading structure that includes peer evaluations assigns individual team member grades as a function of both the team's grade on the assignment and the individual team member's peer evaluation grade determined by the other group members. For example, the instructor might direct team members to assign everyone on the team (including themselves) a participation grade, with an additional restriction that the grades must average 90. Each member's individual grade is then equal to the team's grade multiplied by the ratio of the individual's peer evaluation divided by 90. If every team member contributed equally to the team's success (or lack thereof), each member will be assigned a peer score of 90, and will receive an individual grade equal to the overall team score (90/90 times the overall team score). In contrast, if one team member did not participate fully in the group's activities, (s)he might receive a peer score of 50 and the other three team members scores of 103.33 (again, the average score must equal 90). The underperformer then receives an individual grade for the project equal to 56 percent (50/90) of the team's overall score, while the other three team members receive individual scores approximately 15 percent (103/90) higher than the overall team score. This type of grading system is generally quite effective at eliminating the free-rider problem.

Individual Tests

The second problem arising from the use of group assignments is grade inflation. Often, a case can be made that grades should be higher when groups are incorporated into the curriculum because students acquire more knowledge or simply learn more effectively. In other cases, however, higher overall grades may merely reflect that the better students are carrying those members of their teams who are not as academically gifted. Though it sounds similar, this problem is different from free-riding. For example, assume a group in which every member works equally hard, but one member of the team is a particularly good student who reviews the team's final product and makes a number of adjustments before the assignment is turned into the instructor. As a result of these adjustments, the group's grade is significantly improved. It is not always clear

in these circumstances that all members of the team are learning the material at the same level. Yet, each is getting the same grade and is therefore sending the same signal to potential employers or others reviewing the students' academic records regarding their mastery of the material covered in the course.

If this is a concern to the instructor, as it generally should be, the problem can be addressed relatively easily. Peer evaluations may alleviate the problem to some extent, but only if team members evaluate their teammates on both effort and effectiveness.¹⁵ To augment the effectiveness of peer evaluations in these situations, the instructor can structure the grading system so each student's final grade is based on both team projects and on individual assignments such as individual examinations.

In addition to addressing the potential problem with grade inflation, this structure also provides the instructor with important feedback on the effectiveness of the group assignments as a learning tool. If students are performing well on both the group assignments and the individual exams, then the group learning process more than likely is working effectively. If students' individual performances are not acceptable, then perhaps the group assignments are not providing an effective learning environment for all participants.

Grade inflation does not always occur. If the grading system assigns approximately 50 percent weight to the individual assignments and 50 percent weight to team assignments, and the team assignments are structured as described above, then there is less chance for superior students to "carry" their teammates. In this situation, only those students who excel individually will receive As and the overall class average will tend to be lower than if just team assignments were the basis of the grade (since those who are not learning as effectively will receive lower grades on the individual exams).

SUMMARY: ADVANTAGES AND DISADVANTAGES OF GROUP/TEAM LEARNING

Advantages

In summary, the use of groups in the curriculum brings a number of benefits to the educational process. First and foremost, group projects are more effective at teaching interpersonal skills than the standard lecture and examination approach to teaching. In many cases, students actually participate to a greater extent in the learning process. Usually, they are more comfortable asking questions—and challenging the answers—with their teammates. Moreover, because the learning process is by definition more "hands on," they will be required to partake more fully in exploring the material.

Group projects and team learning also bring certain emotional advantages to the learning process in many situations. Group activities are more interactive and therefore more enjoyable for students, at least once they become comfortable making decisions in conditions of uncertainty. Time often passes more quickly than when sitting behind a desk passively listening to a lecture. (This also means that group assignments can require more time than individual assignments.) In addition, the consequences of awkward behavior, or other social or professional missteps that could potentially have long-range negative career effects if they occur during one's employment are generally less painful (and may result in less economic punishment) when working with small groups in an academic environment. Students often develop new friendships and feel a greater degree of camaraderie when working in groups, especially if the groups are selected by the instructor.

Perhaps the greatest advantages of using group assignments and/or team-learning approaches in the classroom are associated with the quality of learning. In the group learning dynamic, if the

¹⁵ For example, a team member may be perceived by his teammates as having worked extremely hard on the team project, but having come up with the wrong answer, thus contributing disproportionately to the team's lack of success. If so, they may assign poor peer evaluations to this student, resulting in a lower grade.

groups and tasks are properly designed, students learn from one another. If the group is indeed interactive, the process of discussing alternatives with teammates and debating the relative merits of each alternative develops the critical thinking skills necessary for students to succeed in business. Moreover, because stronger students help teach weaker students, and vice versa, both types of students may learn more. As most instructors will attest, one cannot teach without learning, and thus those group members who are helping their teammates to understand the material are enriching the quality of learning for both themselves and their teammates.

Disadvantages

Of course, extensive use of group projects in the curriculum has disadvantages as well as advantages. As noted previously, group projects and team learning often are plagued by grade inflation and free-rider problems. Although these problems can be alleviated, it is difficult to completely eliminate them, in particular the problem of grade inflation. Further, although group projects allow instructors to teach both technical and human skills simultaneously, extensive use of team learning may require some forfeiture of technical content. Because teams require more discussion and interaction, it often takes more time to cover technical content than with more traditional approaches.

When individual teams experience substantial difficulties, both kinds of learning (technical and interaction skills) may be impeded. A lack of team cohesion may result from personality conflicts, inconvenience (team members with differing schedules, priorities, etc.), perceptions of free-riding, or discontent with the intellectual or academic performance of one or more team members. A lack of cohesion among members of a team may in turn affect student performance and/or grades (which will invariably be reflected in student evaluations of faculty performance). This problem, of course, is a fact of life in professional settings, but that is small consolation to students and instructors experiencing such turmoil.

Perhaps the biggest drawback associated with team learning or extensive use of group projects is their impact on perceptions of faculty performance. Although adapting a curriculum to incorporate extensive group learning projects often requires a substantial time commitment from the instructor, many faculty find the perception of students and fellow faculty members is that the instructor using group learning has made a reduced commitment to teaching. Swanson (1994), for example, reports that his teaching evaluations were significantly lower overall when he changed to a team-learning approach from a traditional lecture-recitation method.

Although the issue of lower teaching evaluations is a legitimate concern, it is far from a universal problem. We have had generally positive experiences with our team-intensive courses. Our student evaluations do not appear to have been harmed by the heavy reliance on groups in those courses where we felt group learning was feasible and effective. Indeed, for one of us, implementing the team learning approach resulted in the unexpected benefit of higher student evaluations. We suspect that the improved student evaluations of the instructor occurred, in part, because the students in these classes felt more a part of the learning process and so became more involved in the class. This enjoyment seemed to transfer into appreciation of the professor. Be advised, however, that it is very common for student evaluations of the instructor to decline in the initial semesters when the transition from traditional lecture methods to team learning methods occurs. Nonetheless, as the instructor becomes more confident and experienced with cooperative learning teaching techniques, evaluations should return to pre-cooperative learning levels or, hopefully, surpass prior teaching ratings. Thus, long-term teaching ratings should not be jeopardized.

CONCLUSION

Professional success in the practice of accounting requires a substantial amount of “people” skills. Most work done by accountants in both public accounting and private industry is done in

teams. Effective communication with both team members and “customers” is essential. Significantly, employers of new accounting graduates frequently suggest that the interpersonal and communications skills of accounting graduates need improvement.

Developing these skills among accounting students is largely a matter of incorporating appropriate group projects in the accounting curriculum. Only by working in groups with other students will accounting students develop the crucial team working skills necessary for professional success. Moreover, a growing body of literature suggests that the team learning approach is also an effective technique for teaching technical content.

We do not suggest that team learning or extensive group projects should be incorporated into every class. While failure to begin migration to this type of learning, at least in part, might result in students being at a disadvantage in the workplace, we do not advocate that all courses need to be revised. While we have not incorporated extensive group projects into all of our classes, we do use a substantial number of group activities in our overall curriculum, and in some courses use groups exclusively. Our experiences have been positive for the most part, and we have developed confidence that group projects, if properly designed, are a powerful educational tool—not the only effective tool, certainly, but a productive one we believe has enhanced our tax programs. We encourage others to experiment with these approaches to teaching, and learning, and to share those experiences with our colleagues in the ATA.

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