

Cooperative Learning In The Music Theory Classroom

Lawrence M. Zbikowski and Charles K. Long

Those who teach know that our understanding of a topic gains depth and clarity—becomes *truly* understanding rather than a pale collection of facts and half-remembered thoughts—only within a dynamic environment where we try to set out concepts for others and have them challenge and question us. For this, beyond the contractual obligations of a profession, is what teaching is all about: to teach is to learn, and to share that learning with others. It is odd, then, that the organization of our classrooms does not permit students to experience this same dynamic process. Typically, we talk, the students listen, a few ask questions, we talk some more, play a few examples, and then it's on to the next class. We assume that students will master and retain the material by taking notes, asking a question now and then, and studying on their own. But given our own experience this assumption seems dubious at best.

An alternative is to change the dynamic of the classroom by dividing a class up into small groups of typically four students and asking them to work on specific topics as a group. Students then have an opportunity to become teachers themselves as they explain problems and concepts to other students, discuss alternative solutions, and work together to develop an understanding of the topic. This, in essence, is cooperative learning at its best. The opportunity provided by placing students in small groups may also be lost: students may fail to participate actively in their groups, groups may employ ineffective strategies in their approach to tasks, tasks may be inappropriate for group work. For group exercises to be effec-

tive, cooperation between students *must* be built into each small-group lesson. The fostering of cooperation and interdependence through structured small-group exercises distinguishes cooperative learning from the simple practice of dividing up a large class into small groups. Understanding this point is central to the following discussion. Employing cooperative learning entails, for those of us who work at the post-secondary level, a reconsideration of what it means to teach: although dispensing information and providing inspiration remain important, guiding learning strategies becomes equally important.

Our discussion of cooperative learning in the music theory classroom, which draws on our experiences using these techniques to teach both education and music theory at the post-secondary level, is divided into three sections. In the first section we consider ways in which cooperation between students can be structured. In the second section we offer four sample lessons that use cooperative learning for the study of topics specific to music theory. In the third section we discuss the larger import of cooperative learning for the teaching of music theory and consider some of the challenges it presents.

Structuring Cooperative Learning at the Post-Secondary Level

Although cooperative learning has been used and studied extensively at the primary and secondary level,¹ it has not been implemented widely on the post-secondary level. A number of factors may contribute to this; perhaps the simplest is that methodologies of teaching have tended to be of less concern to teachers at the post-secondary level. In general, we teach as we were taught, changing our habits only in the face of unique or epochal circumstances. A recent study of ways to implement cooperative learning at the college level by David Johnson, Roger Johnson, and Karl Smith proposes to change this situation, building upon the extensive research

¹For representative studies see those in Shlomo Sharan et al, eds., *Cooperation in Education* (Provo, UT: Brigham Young University Press, 1980) and Robert Slavin et al, eds., *Learning to Cooperate, Cooperating to Learn* (New York: Plenum Press, 1985).

on and experience with cooperative learning by Johnson and Johnson over the past two decades.² In the model Johnson, Johnson, and Smith present, cooperative learning involves five basic elements: positive interdependence, face-to-face promotive interaction, individual accountability, social skills, and group processing. We will consider the structuring of cooperation at the post-secondary level in terms of these five elements.

Positive interdependence. One of the basic premises of cooperative learning is that individuals working together can achieve things that are beyond the same individuals working alone. However, it is not simply strength in numbers that makes these unique achievements possible but the combination of individual capabilities represented within the group. The subtle boundary between simply working in groups and a truly cooperative experience is made manifest for musicians when a small ensemble moves from playing notes together to making music together: although the process may be elusive, the transformation, when it occurs, is unmistakable.³ The

²David W. Johnson, Roger T. Johnson, and Karl A. Smith, *Cooperative Learning: Increasing College Faculty Instructional Productivity*, ASHE-ERIC Higher Education Report No. 4. (Washington, DC: The George Washington University, School of Education and Human Development, 1991). Johnson, Johnson, and Smith's study is one of the few that deal with cooperative learning at the post-secondary level. See also James Bellanca and Robin Fogarty, *Blueprints For Thinking in the Cooperative Classroom* (Palatine, IL: Skylight Publishing, Inc., 1991); the journal *Cooperative Learning: The Magazine for Cooperation in Education*; and the newsletter *Cooperative Learning and College Teaching* (Stillwater, OK: New Forums Press, Inc.). College and university teachers may wish to consider compensating for the relative lack of material at this level by collaborating with colleagues who teach education and who use cooperative learning techniques.

³For one account of the way individual efforts combine in an ensemble consider the comments of Michael Tree, violist with the Guarneri Quartet:

There's a widespread belief that string-quartet playing demands a constant unanimity of style and approach. Yet it should be remembered that a quartet is based on four individual voices. The fact that we have to coordinate and find a proper balance doesn't mean that any one of us should become faceless. On the contrary, the re-creation of a masterpiece needs the full, vital participation of each of us.

uniting of individual capabilities toward the achievement of some goal is called positive interdependence. This characteristic is at the heart of cooperative learning, and much of the success of a cooperative lesson is based on realizing some measure of positive interdependence within each group. This can be accomplished by structuring learning situations so that individuals have to work together to succeed, and all members of the group have to perform competently if mutual success is to be assured. Here are four ways to structure positive interdependence suggested by Johnson, Johnson and Smith:

1. The completion of two complementary tasks should be included in the goals of every cooperative lesson: first, students must learn and understand the assigned material, and second, students must make sure all members of the group learn and understand the material. Setting these tasks requires stating the object of an exercise and holding each group responsible for the performance of its constituent members. Performance can be checked by asking questions of individual group members chosen at random or can be built into the evaluation of the exercise. This sort of guidance (setting tasks, checking performance) is typical of the responsibilities of the teacher in a cooperative classroom; in general, the teacher should concentrate on planning the lesson so that an absolute minimum of intervention by the teacher takes place.

2. Joint rewards for achievement also encourage positive interdependence: short exercises completed within the group during class can be collected, graded, and the average grade assigned each member of the group as a bonus. Similar results can be achieved by assigning bonus points to all group members based on the grade given one paper chosen at random, or by asking each group to submit one solution which will then be used as the basis for mutual reward. Another alternative is to assign bonus points if each member of a group scores above 90% (or some similar benchmark) on a test. There is some disagreement, however, about using grades for promoting positive interdependence. Spencer Kagan argues that

David Blum and the Guarneri Quartet, *The Art of Quartet Playing: The Guarneri Quartet in Conversation with David Blum* (New York: Alfred A. Knopf, 1986), 3.

every grade should reflect individual achievement and that cooperative learning should be viewed only as an instructional strategy, not an assessment strategy.⁴ It has been our experience that college students often find that working together is its own reward and the use of group grades is unnecessary.

3. One of the simplest ways to emphasize cooperative relationships is by distributing only one copy of the materials for an exercise to each group: this requires that the students share the materials in order to solve the problem. Variations on this strategy include having each student work on a different part of a problem as a way of contributing to the solution of the problem as a whole,⁵ and having an in-class exercise build upon a homework assignment completed by each student in advance.

4. Participation in group activities can be insured if roles are designated. For part-writing exercises requiring a single solution from the entire group, one group member can be chosen as the recorder (to write out the answer), another chosen to check the work for missing accidentals or forbidden parallels, yet another to check for any other violations of voice-leading rules.⁶ The assignment of roles insures that each member of the group has an obvious responsibility in the completion of the task. Switching roles frequently, even within an assignment, encourages each member of the group to acquire all of the skills.

Face-to-face promotive interaction. As students work on a problem together they have an opportunity to help, assist, and encourage each other's efforts to learn. This is what Johnson, Johnson, and Smith call face-to-face promotive interaction.⁷ However, since students can *obstruct* as well as facilitate each other's learning, this interaction needs to be structured and monitored. Choosing and

⁴Spencer Kagan, *Cooperative Learning* (San Juan Capistrano, CA: Resources for Teachers, Inc., 1992).

⁵This approach has been formalized as the jigsaw strategy; see Elliot Aronson, N. Blaney, C. Stephan, J. Sikes, and M. Snapp, *The Jigsaw Classroom* (Beverly Hills, CA: Sage, 1978).

⁶Other options for roles to be assigned to group members are given in Johnson, Johnson, and Smith, *Cooperative Learning*, 63-64; for implementation see Sample Lesson 3 below.

⁷*Ibid.*, 7, 30.

implementing an appropriate cooperative learning structure assure that the interaction among group members is about lesson content and not next weekend's social event. Even groups that work well together, however, sometimes wander off the task at hand. The teacher must be prepared to intervene if a group is unproductive; usually a few suggestions that emphasize the importance of working together to achieve results can serve as reminders to group members that they will be individually accountable for the material covered in the exercise. These interventions should be as unobtrusive as possible so that the group learns to monitor its own functions.

Individual accountability. In order for groups to be as effective as possible students must be individually responsible for learning the material. Emphasizing this accountability is one means of guarding against two of the most frequent problems that occur when students are asked to work on exercises in groups: less able members may leave it to other members of the group to complete the assigned task (the "free-rider effect"), or more able group members may simply solve the problem at hand without making sure others understand the solution. In this second case only the more able group member benefits from the exercise (the "rich-get-richer effect").⁸ The most direct solution to these problems is to make the relationship between work done in groups and work done individually (on homework assignments and tests) very clear. Once students understand that they must each learn the material in order to receive rewards, they more readily participate in group exercises. Having said this, it should be emphasized that problems such as these arise with surprising infrequency in properly structured cooperative lessons. Students are almost always eager to become more actively involved in learning and to share what they know with others in the group. Here as elsewhere the teacher is important as a role model and guide.

Social skills. Because students are required to interact with each other in a cooperative lesson, social skills take on an importance not often observed in a college classroom: skills in leadership, making decisions, building trust, communicating effectively, and managing conflict are essential for completing exercises within a group.

⁸For further discussion of these and related problems see *Ibid.*, 15-16.

This emphasis on the development of social skills represents an important contribution to a student's education, since such skills will often be as important for success in a career as an understanding of the intricacies of music (for corroboration of this point see Richard Light's observations in the final section of this article). For students at the post-secondary level the opportunity to work together accompanied by encouragement from the teacher will go a long way toward developing these social skills. It is also important to consider specific social skills when designing a cooperative lesson so that these skills, once acquired or refined, can be used in further cooperative situations.

Group processing. One important means of improving the effectiveness of groups is to ask groups to evaluate how they function; Johnson, Johnson, and Smith call this sort of reflection group processing.⁹ A straightforward way of accomplishing group processing is to ask groups to list one strength of their group and one thing that could be improved. The responses generated, combined with an exercise that emphasizes cooperation between group members, can dramatically improve the way groups function.

It should be apparent from the preceding that cooperation between students doesn't simply happen: it must be structured into each lesson by the teacher. Implementing cooperative learning requires anticipating the changed circumstances associated with effective group learning and planning accordingly. The sorts of lesson plans that result are the subject of the next section.

Four Sample Cooperative Lessons

Just as there are several ways of teaching music theory within a lecture format, cooperative learning may be used in a variety of ways to teach music theory. In the following section we offer four sample lessons as illustrations of the ways cooperative learning can be applied to the specific task of learning music theory. In these lessons the emphasis is not so much on unruly problems of music theory as it is on incorporating the five elements discussed above

⁹Ibid., 22-24.

into learning experiences, the overall goal of which is an improved understanding of musical structure. Opportunities presented by lesson plans structured around more general instructional goals, such as classroom discussions of readings or critical evaluations of written analyses, will not be considered in depth, although the sample lessons (in particular, Sample Lesson 4) suggest ways to address these opportunities as well.

Before taking up the lessons two important practical questions must be considered: what process should be used to divide the class into groups, and what sort of constituency is the goal of this process. In general, the teacher should assign students to groups rather than let students form groups on their own; assigned groups can be formed with a view toward achieving maximum heterogeneity within each group, putting all groups at the same approximate advantage or disadvantage. A group size of four is optimal; assuming a class size of twenty-four, the teacher would sort students into six groups, striving to have each group represent the diversity of the class as a whole (the use of cooperative learning techniques in large lectures is mentioned briefly in footnote 14 below). The process can be relatively informal; experience indicates, however, that a number of factors may play a part in making a group balanced or unbalanced, and more formal procedures that take into account actual academic performance may be desirable.¹⁰ On occasion it may be necessary to depart from the goal of maximum heterogeneity. Two situations come to mind. First, if six members of a class of twenty-four are women it would be logical to assign each woman to one of the six groups; however, it may be desirable to *pair* women in at least some of the groups so that they are not always isolated within groups of men. Second, if the performance of student compositions is anticipated, groups may be formed with a view toward creating standard ensembles such as piano trios, string quartets, or brass quintets.

Sample lesson 1—using first-inversion harmonies. The music-theoretical goal of this lesson is to teach students how first-inversion

¹⁰One formal procedure for assigning students to groups based on academic performance is discussed in Robert E. Slavin, "Student Team Learning: A Manual for Teachers," in *Cooperation in Education*, ed. Shlomo Sharan et al. (Provo, UT: Brigham Young University Press, 1980), 97-100.

harmonies are used (with this as with all of the sample lessons the cooperative learning goals discussed above are assumed as well). The group exercise is the middle part of a three-part process that begins with an introduction to the topic, either through readings (to be done before class), a lecture, or some pairing of the two. The second part of the process is the group exercise discussed below. The third part of the process is a homework assignment, to be completed by each student individually; the assignment is similar to but somewhat more involved than the group exercise done in class. The group exercise thus serves as a reinforcement of the introduction and as preparation for the homework assignment.

The main points of the introductory part of the lesson are that first-inversion harmonies prolong a given harmony, provide a smoother bass line, or both.¹¹ The group exercise is a practical one that gives students an opportunity to put this understanding into action. Copies of the exercise (see Ex. 1a) are distributed to the class. Each student is instructed to analyze the passage and then rewrite the bass in order to achieve a more flowing bass line, changing the doublings in the lower two voices of the right-hand part to avoid forbidden parallels (the soprano voice is to remain unchanged). The students are then asked to form or join their groups, roles of recorder and checker are assigned, and the group is asked to combine

EXAMPLE 1a. Sample exercise for group work

¹¹This is essentially the same perspective used by Allen Forte in *Tonal Harmony in Concept and Practice*, 3rd ed. (New York: Holt, Rinehart and Winston, 1979) and Edward Aldwell and Carl Schachter in *Harmony and Voice Leading*, 2nd ed. (San Diego: Harcourt Brace Jovanovich, 1989).

the individual efforts into a single result. The individual efforts are stapled to the group effort, and the resulting packets are collected by the instructor and evaluated. The entire procedure strikes a balance between individual accountability and mutual reward, and, given the brevity of the exercise, can be done in relatively little class time.

Several successful solutions to the exercise are possible, and students are encouraged to discuss the merits of each solution within their group. Two student solutions are given in Examples 1b and 1c.

EXAMPLE 1b. Student solution #1

D: I V⁶ I ii V V⁶ I V⁷ I

EXAMPLE 1c. Student solution #2

D: I V I⁶ ii⁶ V V⁶ I V⁷ I

Group solutions can be shared in a couple of ways. After the completion of the lesson solutions can be solicited from each group, written on the board, and sung or played. This provides aural reinforcement and gives an opportunity for discussion *between* groups. A cooperative structure called three stay-one stray is an alternative, quick way to ensure discussion between groups and may be especially rewarding with more challenging or complicated exercises for which more solutions are possible.¹² In this sort of lesson the recorder in each group takes the group solution to another group and explains it to them. The group members can then comment on the differences between the two solutions and make suggestions. The recorder then returns to the home group and shares those suggestions. Further changes can be encouraged at this stage.

The homework assignment, which is the third part of the lesson, is itself in two parts. The first part simply duplicates the basic format of the group exercise, with changes in key, mode, and soprano line for variety, and includes three or four passages similar to the one given in Example 1a. The second part (given in Ex. 1d) is slightly more involved, offering students an opportunity to try their hand at writing bass lines for two consecutive phrases. This assignment provides both individual accountability and a reinforcement of the things learned in the cooperative lesson.

Example 1d. Exercise for the 2nd portion of the homework assignment

The musical notation for Example 1d consists of two staves. The top staff is in treble clef with a key signature of two flats (B-flat and E-flat) and a common time signature (C). It contains six measures of chords, each with a fermata over it. The bottom staff is in bass clef with the same key signature and time signature. It contains six measures of a melodic line. The first measure has a fermata. The second measure has a '7' below it. The third measure has a '7' below it. The fourth measure has a '7' below it. The fifth measure has an '8' above it and a '7' below it. The sixth measure has an '8' above it, a '7' below it, a '6' below it, a '5' below it, and a '4' below it.

¹²Kagan, *Cooperative Learning*, 12.

Sample lesson 2—drill on fundamentals. The goal of this lesson is the reinforcement of fundamentals, accomplished through an oral drill that requires students to draw on a variety of aspects of their knowledge of music. The oral drill is then followed by a short written quiz on the same material. The sample exercise used here (which focuses on inversions of seventh chords) is somewhat complex and requires a developed knowledge of key signatures, relationships between keys, chord inversions, and intervals. It also requires that the student combine all these things rapidly and accurately. The exercise is intended more to emphasize fundamental ideas that may have grown fuzzy through disuse than to reinforce newly acquired concepts. This intent is in keeping with the spirit of Michael Rogers's well-reasoned argument for the importance of fundamentals; the exercise itself is a modified version of examples given by Rogers.¹³

In this exercise students are put into pairs; formal groups are not required, although the ready organization of formal groups may eliminate some dithering.¹⁴ After an explanation of the sort of problem involved (and, if necessary, a description of the steps involved in solving the problem) two sets of question sheets are handed out to each pair of students (abbreviated versions are given in Fig. 1a and 1b). Each set has both questions and answers; students use the questions to quiz each other, and check each other's response against the answer provided on the question sheet.

FIGURE 1a. Sample question set #1

- | | |
|--------------------------------------------------------------|-------------|
| 1. What is the $V\frac{1}{2}$ of the supertonic of Eb major? | Bb, C, E, G |
| 2. What is the $V\frac{2}{3}$ of the mediant of f# minor? | G#, B, D, E |
| 3. What is the $V\frac{3}{4}$ of the mediant in Eb major? | A, C, D, F# |

¹³Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Carbondale, IL: Southern Illinois University Press, 1984), chapter 3.

¹⁴Johnson, Johnson, and Smith discuss other ways informal groups can be used. For example, in large classes the teacher may interrupt the lecture to ask students to join with a few of their classmates to summarize the points just made (it always helps if the lecturer has actually *made* clear points). Although this sounds chaotic, it is actually quite effective, and has the additional benefit of rousing weary students from their slumbers. See Johnson, Johnson, and Smith, *Cooperative Learning*, 90-102.

FIGURE 1b. Sample question set #2

1. What is the $V\frac{4}{3}$ of the dominant of a minor? F#, A, B, D#
2. What is the $V\frac{6}{5}$ of the supertonic in D major? D#, F#, A, B
3. What is the $V\frac{1}{2}$ of the subdominant in b minor? A, B, D#, F#

A sample drill might go something like this:

Stephanie: "1. What is the $V\frac{1}{2}$ of the supertonic of E \flat major?"

Joan: Umm... B \flat , C, E, G.

Stephanie: Right.

Joan: Okay; "1. What is the $V\frac{4}{3}$ of the dominant of a minor?"

Stephanie: Easy: F, A, B, D#.

Joan: Close, but not quite right; what's a perfect fifth above B?

Stephanie: Oh, yeah; it should be F#, A, B, D#.

Joan: Good job.

Stephanie: "2. What is the $V\frac{6}{5}$ of the mediant of f# minor?"
and so on. . .

After completing all of the questions (between seven and ten on each sheet) students trade sheets and continue the exercise. If pairs of students finish both runs through the questions before the allotted time is up they can trade back once more and choose questions at random, or change the key specified in each question. The latter will require a little thinking on the part of the questioner to make sure the correct answer is given.

After the completion of the oral exercise the question sheets are collected and a short written quiz is administered. Where appropriate it may be useful to have the quiz timed as a way of stressing the need for facility with these sorts of fundamental concepts. The quiz is collected and graded by the instructor, with grades awarded on an individual basis. The procedure of following the oral exercise with a quiz encourages students to apply themselves to the exercise and should discourage partners from simply giving the answers away. Again, since the answer to each question involves a number of steps the process of solving the problem must be made clear by the teacher. Partners can then assist each other in retracing the steps to solving the problem should difficulties occur, perhaps

working on just one part of the solution to each problem until facility is gained.

Another approach to material at this level (which presupposes a slightly different exercise from the one given above) is a cooperative structure called "teammates consult."¹⁵ Each student is given a worksheet. Pencils must remain down while the question is read and discussed by the group. When consensus is reached, the group members fill out the answer on their individual worksheets.

Sample lesson 3—harmonic dictation. The goal of this lesson is to make students aware of the different aspects of a harmonic texture, with the understanding that this awareness can contribute to fluency and accuracy in taking harmonic dictation. A group size of four is assumed, and each student is assigned a role: as a homophonic passage is played Student A listens for the soprano line, Student B listens for the bass line, and Student C tries to concentrate on the overall harmonic progression. Student D records the information from each of the three other students to construct an answer made up of a soprano line, bass line, and analytical symbols (typically, Roman numerals with inversions indicated). A sample exercise and response are given in Examples 2a and 2b.

EXAMPLE 2a. Sample harmonic dictation



¹⁵Kagan, *Cooperative Learning*, 11.

EXAMPLE 2b. Students' response



A^b: I I⁶ V V⁶ I V⁷ I

In total, four such dictation exercises are played, each repeated three or four times. With each successive exercise roles rotate; for the second exercise Student A is the recorder, Student B is responsible for the soprano line, Student C is responsible for the bass line, and Student D listens for the overall harmonic progression. A complete diagram of rotations is given in Figure 2. At the conclusion of each exercise the correct solution is given by the teacher, and any complications or problems discussed. After the discussion of the fourth dictation exercise a quiz is given, consisting of a passage similar to or slightly simpler than the preceding four. For the quiz the responses are individual, each student supplying the entire solution; these are then handed in to be graded by the teacher.

FIGURE 2. Rotation of roles

Exercise	1	2	3	4
Student A	soprano	recorder	harmonies	bass
Student B	bass	soprano	recorder	harmonies
Student C	harmonies	bass	soprano	recorder
Student D	recorder	harmonies	bass	soprano

In general, group exercises of this sort can be particularly useful in skills classes, since they offer an opportunity to break down complex and elusive tasks into component parts at the same time that the pressure of individual performance is momentarily eased. Designating rotating roles for group members insures a measure of accountability and participation within each group and facilitates the isolation of specific problems individual students may have. The group setting permits discussion of the solution to each exercise and encourages students to suggest strategies for listening. Finally, the sheer number of exercises played has its benefit: practice may not always make perfect, but it can surely contribute to facility.

This particular exercise also offers practice on the group skill of checking; part of the recorder's role should be to check for errors or lack of agreement in the information provided by the other students. The skill of checking must be taught and emphasized: it is critical to the learning process. It is not enough that the group confront the problem: the confrontation must result in correct answers. Students are sometimes reluctant to correct other students, fearful of hurting their feelings. It is incumbent upon the teacher to convince group members that permitting peers to accept incorrect answers is unethical and harmful.

Sample lesson 4—extended group project. This lesson is a more extensive foray into cooperative learning, one in which students are required to accomplish a number of tasks over a four-week period. The central task is to prepare, as a group, a presentation on one composition chosen from four or five works specified by the teacher. The basic requirements are that presentations last no longer than twelve minutes, involve every member of the group, and reflect what the group thinks is important about the composition. (The twelve-minute limit is simply an expedient that permits three presentations within a fifty-minute time period, with time after each presentation for questions and comments.) Provisions are made so that no more than two groups within the class are permitted to choose the same composition.

The first step in preparing the presentation is for group members to choose a composition. Sample compositions, all taken from

the fifth edition of Charles Burkhart's anthology of music,¹⁶ are given in Figure 3a. The list should be given out ahead of time so that group members may look over the pieces; then five minutes are set aside after another group exercise or at the end of class for groups to choose the piece they will work on.

FIGURE 3a. Sample compositions from Burkhart's anthology

Ludwig van Beethoven, String Quartet No. 13 in B \flat major,
Op. 130, Second movement

Franz Schubert, "Der Doppelgänger" from *Schwanengesang*

Felix Mendelssohn, *Song Without Words*, Op. 62, No. 1

Robert Schumann, "Vogel als Prophet" from *Waldszenen*, Op. 82

In a class session early in Week 1 group members decide what things about the composition must be researched and analyzed, and how to organize these things into an effective presentation. A checklist is given in Figure 3b. After the group has decided what must be covered responsibilities are delegated to individual group members, with the expectation that students will work on their individual assignments outside of class. Students should exchange telephone numbers (if they have not already done so), and one student should be chosen as a coordinator to insure that goals are met. All this activity is summarized in an initial report of group progress, given to the teacher either verbally or in written outline.

Toward the end of Week 2 groups meet with the teacher to report on the results of their research and analysis. At this point the strategy decided upon in earlier sessions can be fine-tuned and any other analytical or practical problems resolved.

¹⁶Charles Burkhart, *Anthology for Musical Analysis*, 5th ed. (Fort Worth, TX: Harcourt Brace College Publishers, 1994)

FIGURE 3b. Suggestions for things to be researched, analyzed, and done in preparation for group presentation

- a. harmonic analysis; plan to describe any chromatic harmonies in some detail
- b. formal analysis
- c. melodic analysis
- d. text analysis (with songs)
- e. programmatic analysis
- f. information about other pieces in collection or other movements
- g. historical information about the composer, origins of the work, circumstances for early performances of the work
- h. recordings/performance
- i. handouts
- j. materials on board
- k. other audio/visual aids

In Week 3 groups make their presentations to the class. At the conclusion of each presentation the class has the opportunity to ask questions of the presenting group or otherwise comment on the presentation, serving as a sort of informal evaluation of the presentation. The teacher provides a formal evaluation through a grade (where appropriate) and, more importantly, through written comments on the research and analysis imparted in the presentation. These comments are then at the disposal of each student for the final phase of the project, which consists of a two-to-three page paper on the composition presented by the group, due in Week 4. Each student summarizes the group presentation in this paper, following an outline of the sort given in Figure 3c. Because this information extends beyond any individual student's part of the presentation it requires a sharing of information among members of the group at the same time that it insures individual accountability for the material covered.

FIGURE 3c. Outline for paper summarizing group presentation

I. Identification of the work presented and historical information about the piece.

II. A brief description of the essential aspects of the form of the piece.

III. A brief discussion of one or two of the most important aspects of the compositional organization of the piece. Chances are these aspects coordinate with the form of the piece: important formal junctures often correspond with significant tonal developments. A few well-chosen examples from the work may be included, but these are not a substitute for a verbal account. Any examples should be included on a separate sheet of paper and keyed to the text, although there is no requirement for musical examples.

IV. A brief account of how any or all of this information might effect a performance of the work or an analytical interpretation of the work.

Cooperative Learning in the Music Theory Classroom

It is our belief that properly structured cooperative lessons can significantly enhance the way students learn, replicating in some measure the learning process we as teachers experience as we teach, listen to, and learn from others. The bulk of research indicates that cooperative learning can result in quantitative improvements in student achievement; at the very minimum, students in cooperative environments have at least the same level of achievement as students in more traditionally structured classrooms.¹⁷ Perhaps more important than quantitative measures of achievement has been the

¹⁷For example, see Slavin, "Student Team Learning: A Manual for Teachers," 88; Sharan et al., "Cooperative Learning Effects on Ethnic Relations and Achievement in Israeli Junior-High-School Classrooms," in *Learning to Cooperate, Cooperating to Learn*, 313-40; and Johnson, Johnson, and Smith, *Cooperative Learning*, 38-42.

qualitative improvement that studies have shown: an improvement in students' attitude toward learning is a consistent result of introducing cooperative learning into the classroom. The most persuasive account of this change comes from a study devoted to the question of what makes for excellence in post-secondary education.

Dividing students into small groups of between four and six, as they work on substantive topics, has a clear payoff. The payoff comes in a *modest* way for student achievement, as measured by test scores. It comes in a *far bigger* way on measures of students' involvement in courses, their enthusiasm, and their pursuit of topics to a more advanced level.¹⁸

This change in attitude is of signal importance for the study of music theory, for it helps students deal with competing demands made by other courses and by expectations of excellence in musical performance, demands that require students to learn as efficiently as possible. Efficient learning of the musical concepts dealt with at the post-secondary level has been undercut by the changing matrix of culture, reducing or eliminating much of the background knowledge that provides the necessary context for these concepts. A change of attitude alone cannot replace this context, but it can help students come to terms with the disparity between what they know and what they *need* to know to become effective students of music.

Although cooperative learning involves more interaction with students, almost all of this interaction takes place inside the classroom, which is the site of the cooperative learning experience. The increased teacher-student interaction associated with cooperative learning need not entail any huge increase in contact with students outside of class during office hours and appointments. Teachers *will* have to invest additional time in preparing lessons, an investment comparable to expanding into new portions of the repertoire, learning how a novel kind of computer software operates, or initiating the exploration of a new area of research. Of course, the issue

¹⁸Richard J. Light, *The Harvard Assessment Seminars, First Report* (Cambridge, MA: Harvard University Graduate School of Education and Kennedy School of Government, 1990), 70.

of whether faculty should invest time in improving teaching through the adoption of innovative techniques is the subject of some debate, on a practical if not philosophical level: in post-secondary education, as elsewhere, the inertia of the status quo is a force to be reckoned with.

Introducing cooperative learning into an environment dominated by a lecture format may cause complications, although resistance from students is probably the least significant problem. Given clear guidance and a coherent learning structure most students readily adapt to working in small groups. A more significant problem may be the teacher's own training: the barriers created by years of passive absorption, highly competitive learning and work situations, and proscriptions against sharing information (a practice that many, regardless of circumstance, associate with cheating) are not easily overcome. The teacher interested in changing the dynamic of his or her classroom through cooperative lessons must recognize these barriers and have confidence that the rewards associated with becoming actively involved in the learning process will motivate students to overcome whatever reluctance they may have about working in groups.

Among the rewards students describe is the development of social skills. As Light notes in his review of studies of small-group learning,

students overwhelmingly report one additional benefit of small group work. They point out that *the process of working in a group*, in a supervised setting, teaches them crucial skills. The skills they learn include how to move a group forward, how to disagree without being destructive or stifling new ideas, and how to include all members in a discussion. Few students, if any, have these skills when they arrive at college. Fewer still ever get formal training in them. Yet alumni from 35 liberal arts colleges report overwhelmingly that the best thing colleges could do for students in coming years would be to train them in how to engage in group efforts productively.¹⁹

The prospect of this reward carries its own challenge, for few if any teachers of music theory are trained in the development of social skills. Their training is, and should be, in music theory. To make

¹⁹Ibid., 70-71.

the most effective use of cooperative learning the importance of social skills must be recognized and time, thought, and effort (along with a bit of humility about our own level of social skills) must be directed toward their cultivation.

As a final point, cooperative learning can, in a quiet and yet wholly persuasive way, open the classroom to viewpoints conditioned by combinations of gender, ethnicity, and experience different from those of the teacher. The importance of these viewpoints has been argued for elsewhere, and the arguments need not be rehearsed here. The possibility of allowing these viewpoints to emerge will, for many, be more than an even trade for the loss of that most central support to our ego, our role as the sole source of information within the classroom.

We believe cooperative learning has much to offer teachers at the post-secondary level. Beyond potential improvements in students' achievement, it offers the real promise for changing students' attitudes through actively engaging them in the learning process and giving them an opportunity to learn and refine social skills. Cooperative learning can also teach the teacher to think in new ways: previously silent or muted voices come to the fore; groups of students arrive at striking interpretations of a problematic work; a stilted explanation is given new life through a fresh interpretation from an eager and engaged student. But most importantly, cooperative learning can introduce our students to the thrill we ourselves have felt when, having learned, we share this learning with others.

REFERENCES

- Aldwell, Edward, and Schachter, Carl. *Harmony and Voice Leading*. 2nd ed. San Diego: Harcourt Brace Jovanovich, 1989.
- Aronson, Elliot; Blaney, N.; Stephan, C.; Sikes, J.; and Snapp, M. *The Jigsaw Classroom*. Beverly Hills, CA: Sage, 1978.
- Bellanca, James, and Fogarty, Robin. 2nd ed. *Blueprints For Thinking in the Cooperative Classroom*. Palatine, IL: SkyLight Publishing, Inc., 1991.
- Blum, David and the Guarneri Quartet. *The Art of Quartet Playing: The Guarneri Quartet in Conversation with David Blum*. New York: Alfred A. Knopf, 1986.
- Burkhart, Charles. *Anthology for Musical Analysis*. 5th ed. Fort Worth, TX: Harcourt Brace College Publishers, 1994.
- Forte, Allen. *Tonal Harmony in Concept and Practice*. 3rd ed. New York: Holt, Rinehart and Winston, 1979.
- Johnson, David W.; Johnson, Roger T.; and Smith, Karl A. *Cooperative Learning: Increasing College Faculty Instructional Productivity*. ASHE-ERIC Higher Education Report No. 4. Washington, DC: The George Washington University, School of Education and Human Development, 1991.
- Kagan, Spencer. *Cooperative Learning*. San Juan Capistrano, CA: Resources for Teachers, Inc., 1992.
- Light, Richard J. *The Harvard Assessment Seminars, First Report*. Cambridge, MA: Harvard University Graduate School of Education and Kennedy School of Government, 1990.
- Rogers, Michael R. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*. Carbondale, IL: Southern Illinois University Press, 1984.
- Sharan, Shlomo; Hare, Paul; Webb, Clark D.; and Hertz-Lazarowitz, Rachel, ed. *Cooperation in Education*. Provo, UT: Brigham Young University Press, 1980.
- Sharan, Shlomo; Russel, Peter; Hertz-Lazarowitz, Rachel; Bejarano, Yael; Raviv, Shulamit; and Sharan, Yael. "Cooperative Learning Effects on Ethnic Relations and Achievement in Israeli Junior-High-School Classrooms." In *Learning to Cooperate, Cooperating to Learn*, ed. Robert Slavin et al. New York: Plenum Press, 1985.
- Slavin, Robert E. "Student Team Learning: A Manual for Teachers." In *Cooperation in Education*, ed. Shlomo Sharan et al. Provo, UT: Brigham Young University Press, 1980.
- Slavin, Robert; Sharan, Shlomo; Kagan, Spencer; Hertz-Lazarowitz, Rachel; Webb, Clark; and Schmuck, Richard, ed. *Learning to Cooperate, Cooperating to Learn*. New York: Plenum Press, 1985.