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Résumé de l'article

Group investigation is a teaching strategy that requires students to work in small groups and solve problems by reaching a consensus or solution. Involvement in the investigative process enables a teacher to provide an environment which alleviates conflict and facilitates cooperation. Further, the quality of the solution is higher when reached through consensus. The students are positively motivated to learn and behavioral skills are expanded.

In this paper, the writer examines the history and effectiveness of group investigation since its inception as a teaching strategy by Herbert Thelen. Based upon this analysis and upon formative trials in varied classroom settings, he postulates how the strategy can be utilized by music educators in school and university settings.

GROUP INVESTIGATION IN MUSIC INSTRUCTION: A PEDAGOGICAL SCENARIO

Bernard W. Andrews

Introduction

Our lives represent the interplay of themes that come out into the open in certain situations and then, like a spent melody, retreat into the background as other figures achieve prominence. In each reappearance, a theme has a new configuration, a new flavour, a new way of functioning. It may find direct expression in conscious seeking; it may be projected as if it belonged to someone else; it may provide an undercurrent of almost-felt meaning; it may suddenly unleash a new insight or discovery.¹

Teachers at all levels are being encouraged to broaden their approaches to instruction and thereby respond more effectively to individual learning styles and to students with diverse cultural backgrounds. Most recently, the Commission of Inquiry on Canadian Universities recommended that university teachers develop a more student-centred approach by adopting modern teaching methods.² Similarly, elementary and secondary educators have been encouraged to utilize a variety of individualized and small group approaches to respond more effectively to students' needs.³

In school and university music programs, large group instruction predominates in both the lecture hall and rehearsal room.⁴ In these settings, eighty-eight percent of the music teacher behaviours are teacher-directed rather than student-

1 Herbert Thelen, *Education and the Human Quest* (New York: Harper and Row, 1960), 22.

2 Stephen Smith, *Commission of Inquiry on Canadian University Education* (Ottawa: Association of Universities and Colleges of Canada, 1991), 135.

3 See Robert Slavin, "Synthesis of Research on Cooperative Learning," *Educational Leadership* 38 (1980), 655-60; Robert Shavelson, "Review of the Research on Teachers' Pedagogical Judgments, Plans and Decisions," *Elementary School Journal* 83 (1983): 392-413; and A. Brown and A. Palincsar, "Guided, Cooperative Learning and Individual Knowledge Acquisition," *Technical Report* no. 372 (Cambridge, Massachusetts: Bolt, Beranek and Newman, 1986).

4 See C. H. Benner, *From Research to the Music Classroom*, no. 2 (Music Educators National Conference: Reston, Virginia, 1972); and Bernard W. Andrews, "The Case of the Missing Time," *Canadian Music Educator* 30 (1989): 21-2.

centred,⁵ and students rarely influence instructional decisions,⁶ express personal creativity,⁷ or receive individual attention.⁸ Large group instruction emphasizes shared goals, values and rules. In contrast, small group strategies, such as group investigation, are characterized by intimacy, informality, emotional exchange and interpersonal relationships, and they set the stage for more complex and higher levels of learning.⁹ At the same time, such approaches provide students with the opportunity to work out solutions or investigate problems in their own way, and at their own pace, without direct teacher control.¹⁰ Consequently, small group strategies offer a viable alternative to the whole class method, as the basis for a student-centred approach to instruction.¹¹

Background

Society is composed of a variety of groups, each containing a network of individual expectations. Because groups are formed to meet these expectations, the psychic structure of a group is oriented to the personal psychic needs of individuals. They deal with their anxieties, doubts and private desires through interaction within the group. The way one acts to realize these needs may conflict with the efforts of others. As a consequence, interdependence requires some form of agreement on a code of social conduct. When conflicts arise, a shared opinion then emerges in the group about what sorts of behaviour will be sanctioned, and what sorts will be punished. Rules are elaborated, rationalized, explained, communicated, and interpreted within a large corpus of ideas,

- 5 Robert Erbes, "I Used to Direct my Rehearsals Like a Drill Sergeant!" *Music Educators Journal* 65 (1978): 50–53; and Harold Price, "The Effect of Conductor Academic Task Presentation, Conductor Reinforcement and Ensemble Practice on Performers' Musical Achievement, Attentiveness and Attitude," *Journal of Research in Music Education* 41 (1983): 245–58.
- 6 Wayne Bowman, "Reflections on the Methodology Controversy," *Canadian Music Educator* 25 (1983): 9–14; and John Shepherd, "Conflict in Patterns of Socialization: The Role of the Classroom Music Teacher," *Canadian Review of Sociology and Anthropology* 20 (1983): 22–43.
- 7 Brian Roberts, *Musician: A Question of Labelling* (St. John's: Memorial University, 1991); John Shepherd and Graham Vulliamy, "A Comparative Sociology of School Knowledge," *Journal of Sociology of Education* 4 (1983): 3–18.
- 8 Bernard W. Andrews, "An Alternate Approach to Music Instruction," *Teacher Education* 26 (1985): 61–70; Andrea Rose, "Music in Education: A Critical Analysis of Reproduction, Production and Hegemony," Ph.D. dissertation (University of Wisconsin, Madison, 1990).
- 9 David Gough, "Thinking About Thinking," *Research Roundup* 7 (1991): 1–6.
- 10 Virginia Chappell, "Freshmen in the Library: Making Meaning Out of Diverse Discourse Communities," a paper presented at the Annual Meeting of the Conference on College Composition and Communication, Chicago, Illinois, 1990.
- 11 Shlomo Sharan and Yael Sharan, "Group Investigation Expands Cooperative Learning," *Educational Leadership* 48 (1990): 17–21.

purposes, aesthetic sensitivities, ideals, material resources, organizational assumptions, and plans.

Working within these 'rules' and stimulated by the need for rules, the culture develops. The individual studies his reactions to the rules and re-interprets them to discover their meaning for the way of life he seeks. Through this quest, he changes his own way of life, and this in turn influences the way of life of others. But as the way of life changes, the rules must be revised, and new controls and agreements have to be hammered out and incorporated in the social order.¹²

The classroom has a social order and culture analogous to the larger society. Within each class there exists an interplay of interpretations, which often emerges as a conflict between personal needs and the social purpose of the group. These conflicts must be resolved if the students are to learn effectively. The process of group inquiry offers the potential for alleviating conflict and facilitating cooperation. The small investigative group can be an arena for expressing personal concerns and solving problems in a unique kind of way. By representing learning as a "puzzlement," the individual becomes involved because of the conflict between psychic needs and the group's social or task requirements.

He is driven by a very profound and very pervasive psychic need for the kind of classroom in which he can survive as a person and find a place for himself in the organization ... Algebra may mean less than nothing to him, but self-esteem, freedom of sorts, feelings of growing, adequacy and stimulation that provoke him into rewarding activity are important.¹³

The "group investigation" strategy developed by Herbert Thelen¹⁴ and expanded by others,¹⁵ organizes students to undertake planned experiences, to reflect on these experiences, and to extend their meaning and usefulness through knowledge obtained from the experiences of other people. The culture of a group is emergent, and it develops as students undertake varied activities. The source

12 Herbert Thelen, *Education and the Human Quest* (New York: Harper and Row, 1960).

13 Thelen, *Education and the Human Quest*, 147.

14 Herbert Thelen, *Dynamics of Groups at Work* (Chicago, Illinois: University of Chicago Press, 1954/11th impression, 1977).

15 For example, Shlomo Sharan and Yael Sharan, *Small Group Teaching* (Englewood Cliffs, New Jersey: Educational Technology Publications, 1976), and by the same authors, "Group Investigation Expands Cooperative Learning."

of motivation is intrinsic: an activity is the very real stake that the students have in the standards and expectations that become established within the group culture. Through the process of moving closer to such a culture over a period of time, they come to learn what the discipline of the subject means.

Review of the Literature

The notion of small group instruction as an effective teaching method is based on the theory of cooperation,¹⁶ which was developed as an alternate to structuring the classroom on a competitive basis. This theory defines a cooperative social situation as one in which the goals of the separate individuals are so linked together that there is a positive correlation between their goal attainments. Further, the individual's rewards are directly proportional to the quality of the group work.¹⁷ The psychological consequences of small group learning include: i) substitutability (*i.e.*, actions become interchangeable by group members); ii) positive cathexis (*i.e.*, if one's actions assist the group achieve its goals, the individual will be favourably evaluated); and iii) inducibility (*i.e.*, if one's attempts to move a group towards its goal, others will be receptive to engage in behaviours that will facilitate this action).¹⁸

Cooperation, however, is not a panacea for competition, as it has its own problems.¹⁹ How can a teacher prevent one or two of the students from doing all the work? How can one ensure that students are motivated to help each other and do not put down their lower-performing peers? How can individual differences be negotiated among group members? Research suggests that these problems can be overcome to some extent by: i) providing reinforcers to group members based on their individual performance;²⁰ ii) sharing resources;²¹ and iii) select-

16 Marian Deutsch, "A Theory of Cooperation and Competition," *Human Relations* 2 (1949): 129-152.

17 Harold H. Kelley and John A. Thibault, "Group Problem-Solving," in G. Lindzey and E. Aronson, eds., *The Handbook of Social Psychology* (Reading, Massachusetts: Addison-Wesley, 1969), 1-101.

18 Marian Deutsch, "Cooperation and Trust: Some Theoretical Notes," in M. R. Jones, ed., *Nebraska Symposium on Motivation* (Lincoln, Nebraska: University of Nebraska Press), 1962.

19 David W. Johnson, Roger T. Johnson, "Instructional Goal Structure: Cooperative, Competitive, or Individualistic," *Review of Educational Research* 44 (1974): 213-40.

20 Edwin J. Thomas, "Effects of Facilitative Role Interdependence on Group Functioning," *Human Relations* 10 (1957): 347-366, and Robert E. Slavin, "Classroom Reward Structure: An Analytical and Practical Review," *Review of Educational Research* 47 (1977): 633-650.

21 Larry K. Miller and Robert L. Hamblin, "Interdependence, Differential Rewarding and Productivity," *American Sociological Review* 28 (1963): 768-778, and Slavin, "Classroom Reward Structure."

ing small group strategies, such as group investigation, which intrinsically foster greater interracial cooperation and acceptance.²²

Group investigation is not merely concerned with stating facts and principles, but has been shown to be effective for developing higher-order thinking processes.²³ This is achieved by evaluating competing principles and theories, and developing a group consensus on explanations. Thelen does not believe that this will occur in a polite and comfortable classroom environment. He views the classroom as a dynamic rather static environment, and one that capitalizes on the differences in the ways that students act and interpret the role of investigator. Indeed, research indicates that a consensus reached by working through a conflict situation improves the quality of the solution.²⁴ This kind of teaching starts with a problem which the students can react to, and discover basic conflicts among their attitudes, ideas and modes of perception. The problem is analyzed, the work is divided among group members, data is gathered and organized, results are evaluated, and findings reported. Working in small investigative groups fosters a higher level of achievement than individualistic methods, increases cross-ethnic friendships, improves students' self-esteem, and creates positive attitudes toward other students and the schools.²⁵ Moreover, the kind of experiential learning the students receive affects them in three ways: i) cognitive structures are altered; ii) attitudes are modified; and iii) behavioural skills are expanded.²⁶

22 Herbert Thelen, "A Proposal for the Attainment of Racial Integration through Public Education," *School Review* 5 (1970): 391–396; and Sharan and Sharan, "Group Investigation."

23 Shlomo Sharan, Zachary Akerman, and Rachel Hertz-Larowitz, "Academic Achievement of Elementary School Children in Small Groups vs. Whole Class Instruction," *Journal of Experimental Education*, 48 (1980): 25–129.

24 See Patrick Laughlin, "Selection Strategies in Concept Attainment as a Function of Number of Persons and Stimulus Display," *Journal of Experimental Psychology* 5 (1965): 115–119; Merrill Meeham and R. Schuler, "Small Groups in Sixth Grade," *Elementary School Journal*, 67 (1966): 241–245; Patrick Laughlin and Michael Doherty, "Discussion versus Memory in Cooperative Group Concept Attainment," *Journal of Experimental Psychology* 58 (1967): 123–128; and Shlomo Sharan, Yael Sharan, Sheila Kogan, Rachel Hertz-Lazarowitz, Charles Webb, and Ronald Smuck, eds., *Learning to Cooperate: Cooperating to Learn* (New York, N.Y.: Plenum Press, 1985).

25 Shlomo Sharan, "Cooperative Learning in Small Groups: Recent Methods and Effects on Achievement, Attitudes and Ethnic Relations," *Review of Educational Research* 48 (1980): 240–258; Colin Asher, *Cooperative Learning in the Urban Classroom*, ERIC Clearinghouse on Urban Education 30 (Teachers College, Columbia University, N.Y., 1986).

26 Lawrence W. Sherman, "Cooperative Learning in Post Secondary Education: Implications from Social Psychology for Active Learning Experiences," a paper presented at the American Educational Research Association Conference, Chicago, Illinois, 1991.

Several small group teaching strategies have been developed and extensively researched. These include such strategies as group investigation,²⁷ role-playing,²⁸ reciprocal learning,²⁹ learning together,³⁰ and student team learning.³¹

The group investigation strategy selected for consideration by this writer has been shown to be effective in several areas: science,³² economics,³³ gifted instruction,³⁴ media studies,³⁵ secondary mathematics,³⁶ teacher education,³⁷ undergraduate teaching,³⁸ and English instruction.³⁹ In the literature there is no indication of a direct application of group investigation in music instruction. Writers on music education have suggested that music teachers should consider using small group approaches,⁴⁰ and that such approaches could prove beneficial

- 27 Thelen, *Dynamics of Groups at Work*; Sharan and Sharan, *Small Group Teaching*.
- 28 Fannie Shaftel and George Shaftel, *Role-Playing for Social Values* (Englewood Cliffs, New Jersey: Prentice-Hall, 1967).
- 29 Muska Mosston, *Teaching from Command to Discovery* (Belmont, California: Wadsworth, 1972).
- 30 David W. Johnson and Roger T. Johnson, *Learning Together and Alone* (Englewood Cliffs, New Jersey: Prentice-Hall, 1975).
- 31 David L. DeVries, Keith J. Edwards, and Robert E. Slavin, "Biracial Learning Teams and Race Relations in the Classroom: Four Field Experiments on Teams-Games-Tournament," *Journal of Educational Psychology* 70 (1980): 356-62.
- 32 Gary R. Witters, "A Group Investigation of Water Pollution," *Australian Science Teachers Journal* 17 (1971): 81-87.
- 33 John W. Renner, "An Evaluation of the Science Curriculum Improvement Study," *School Science and Mathematics* 73 (1973): 291-318; George Dawson, ed., *Economic Education: Experiences of Enterprising Teachers*, vol. 13 (New York, N.Y.: Joint Council on Economic Education, 1976).
- 34 See Jonatha W. Vare, "Moral Education for the Gifted: A Confluent Model," *Gifted Child Quarterly* 23 (1979): 487-499; and Vernon E. Wilson, "The Enrichment Triad," *Gifted Child Quarterly* 6 (1979): 8-9 and 58-60.
- 35 Vernon Burton and William Hogan, *Television Production: A Career Development Unit*, Roseville Area School District 623, Minn. (Office of Education, Washington, D.C., 1982).
- 36 Lawrence W. Sherman, "Cooperative Strategies in Secondary Mathematics and Science Classes: Three Comparative Studies," a paper presented at the annual meeting of the School Science and Mathematics Association, Lexington, Kentucky, 1986.
- 37 Bruce Joyce, *Models of Teaching as a Paradigm for Teacher Education* (New York, N.Y.: Teachers College Press, Columbia University, 1987).
- 38 Lawrence W. Sherman, "Cooperative Strategies for Undergraduate Teaching: A Comparative Study," a paper presented at the Triennial Convention of the International Association for the Study of Cooperation in Education, Tel Aviv, Israel, 1988.
- 39 Jack Huhtala and Elaine B. Coughlin, "Group Investigation, Democracy and the Middle East," *English Journal* 80 (1991): 47-52.
- 40 Joseph W. Landon, "Strategies for Opening the Traditional Classroom," *Music Educators' Journal* 60:8 (1974): 64-69.

for improving confidence⁴¹ and increasing achievement levels.⁴² Jay Zorn, a researcher in music education, has demonstrated that chamber music instruction does appear to be an effective medium for fostering favourable attitudes toward music and for increasing the level of music participation.⁴³

Group Investigation in Music Instruction

When I was a major department head with a large urban school board, I became increasingly frustrated with the heavy burden of teaching, administrative duties, and directing a variety of performing ensembles. At the suggestion of my principal, who was a former physical education department head, I decided to implement small group instruction with the program and try functioning in the role of a coach. After reviewing a wide variety of strategies, group investigation was selected as the approach appeared to be applicable for both academic content and skill acquisition. The earlier approach developed by Herbert Thelen⁴⁴ was utilized as the expanded model by Sharan and Sharan⁴⁵ was deemed to be the most complex of the small group strategies.⁴⁶ Over a period of one school year, group investigation lessons were implemented in a secondary school with two grade nine band classes and one grade twelve music class on a pilot basis. Subsequently, the strategy was implemented at a university with a first-year wind performance class (B.A.) and an instrumental music course in teacher education (B.Ed.).⁴⁷

41 Darrel Stubbs, "Chamber Music's Lesson in Performing Confidence," *Music Educators Journal* 60 (1983): 64–69.

42 Thomas G. Hollis, "Small Ensembles, Big Benefits," *Music Educators Journal* 75 (1988): 27–29.

43 Jay D. Zorn, "Effectiveness of Chamber Music Ensemble Experience," *Journal of Research in Music Education* 21 (1973): 40–47.

44 Herbert Thelen, *Dynamics of Groups at Work*, and by the same author, "A Proposal for the Attainment of Racial Integration through Public Education."

45 Sharan and Sharan, *Small Group Teaching*.

46 Robert E. Slavin, "Synthesis of Research on Cooperative Learning," *Educational Leadership* 38 (1981): 655–660.

47 I was familiar with field-based research and previously had undertaken similar studies with teaching strategies appropriate for large group instruction. See my articles, "Discovery Learning in Music Instruction: A Re-conceptualization of the Inductive Process," *The Canadian Journal of Research in Music Education* 32 (1991): 5–11; and "The Advance Organizer in Music Instruction: An Antidote for Mechanistic Rote Learning?" *The Canadian Journal of Research in Music Education* 31 (1989): 5–11.

Table 1. Investigative process.

Analysis	What is the nature of the investigation? What are the factors involved?
Organization	What information is needed? What are possible assignments for the investigation?
Consensus	What facts do we agree on? How do we substantiate our findings?

In both school and university settings, field notes were maintained detailing the students' behaviours, interviews conducted with the group leaders, and a questionnaire completed by all participants. Based on these formative trials, I found that, in general, the students enjoyed small group work and they were more favourably disposed to continue in the program (which was reflected in the higher level of enrolments in subsequent years). However, I also found that music students were unfamiliar with operating in small group settings, and they needed some form of direction. For this reason, the "investigative process" was developed and refined during the trial period to provide a guided framework for the students to follow (see table 1). With this process, group investigation can be utilized for a variety of performing, creating and listening activities. For example, music students can work in small groups to investigate: i) the appropriate performance practices of a Baroque selection (performing); ii) the suitable sound-effects on a synthesizer for a thirty-second commercial (creating); or iii) the varied interpretations of a symphonic work in different recordings (listening).

A Pedagogical Scenario for the Music Classroom

In planning for group investigation, the teacher selects a musical topic that offers the possibility for inquiry and the exchange of ideas. For example, a question designed to develop an understanding of musical style, such as "What are the characteristics of impressionism?," should first be considered for its investigative potential. The question must elicit an inquiry or pose a problem that can be described and analyzed; information must be available that can be gathered and organized; and a consensus on findings must likely occur.

Although the investigative process (table I) was initially developed to provide a guided framework for students to follow during the investigation, I also found it to be quite useful for determining the suitability of the investigative question. Table 2 outlines how the investigative process may be used in this way.

Table 2. Application of the investigative process.

Question:**“What are the characteristics of impressionism?”**

The **nature** of the investigation is one of texture. The **factors** involved are the elements of texture; that is, melody, rhythm, harmony and orchestration.

Organization:

How the elements are organized, for example changing meters or ninth chords, represents the **information** needed. Possible **assignments** could involve group members listening to and analyzing scores of different movements of a work, such as Claude Debussy’s *Trois Nocturnes*; or alternately, different selections, such as Maurice Ravel’s *Bolero*, Debussy’s *L’Après-midi d’un faune*, or Eric Satie’s *Gymnopédie*.

Consensus:

Agreement could be reached on how certain textural characteristics are achieved and **substantiated**; for example, the consistency with which “shimmering harmony” is achieved by tremolo strings, or “exotic” melodies created through the use of pentatonic and chromatic scales

During delivery of the investigative lesson, the teacher divides the class into small groups, and he or she provides each group with the question and the investigative process to follow (table 1). The music teacher operates as a coach, monitoring each group’s activity and providing guidance where appropriate. The groups are responsible for i) their own operating procedures (*i.e.*, timing and pacing); ii) for identifying how the elements of texture characterize an impressionistic style; and iii) for reaching a consensus and sharing the results with the class. The instructor should not attempt to control a group. When a group becomes directionless or argumentative, he or she should provide prompts and hint at some of the possibilities that the group might consider.

Activities cease to be inquiry when the teacher is the sole source of the problem identification and the formulation of plans, or when the end product of inquiry takes precedence over the inquiry process.⁴⁸

48 Bruce Joyce and Marsha Weil, *Models of Teaching* (Englewood Cliffs, New Jersey: Prentice-Hall, 1972).

When the allotted time has passed, each group presents its findings. This involves sharing ideas with the class through a group presentation, defending conclusions before critical peers, and refining conclusions until they receive peer support. The instructor plays a crucial role in the presentation by encouraging the class to i) evaluate each group's findings, and ii) examine the process that they followed.

Initially, the instructor may need to assist the class since music students have not been involved in the assessment of their work to any great extent.⁴⁹ Preparing the class to participate fully may require the development of a framework to assess each group's presentation. For example, a series of questions could be provided, such as "How did you reach those conclusions?"; "What inconsistencies did you uncover?"; and "What are the implications of your findings?". In addition, formal evaluation procedures that emphasize interaction can also be developed with the class. Such procedures as the rating scale and participation chart would be appropriate for assessing both student progress and inter-group cooperation.

Concluding Comments

The proposed group investigation strategy outlined in this paper provides music educators with a model with which to implement small group instruction in their classrooms. The music teacher shares the responsibility for learning by delegating problem-solving, group management and evaluative decisions to the students. It is anticipated that the students will benefit both socially and aesthetically from an investigation that culminates in a group consensus. In this respect, the strategy has shown to be successful in both elementary and secondary settings,⁵⁰ and recommended for post-secondary instruction.⁵¹ Further research will need to be undertaken to determine the effect of group investigation on musical achievement and musical appreciation.

49 Roberts, *Musician: A Question of Labelling*.

50 Shlomo Sharan, "Training Teachers for Cooperative Learning," *Educational Leadership* 46 (1988): 20–25.

51 Sherman, "Cooperative Learning in Post Secondary Education."

Abstract

Group investigation is a teaching strategy that requires students to work in small groups and solve problems by reaching a consensus or solution. Involvement in the investigative process enables a teacher to provide an environment which alleviates conflict and facilitates cooperation. Further, the quality of the solution is higher when reached through consensus. The students are positively motivated to learn and behavioral skills are expanded.

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