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ABSTRACT

This paper presents findings from a study that explored students' perceptions of cooperative learning strategies used in educational administration classes. Specifically, the study sought to determine whether students perceived the strategies to be more effective than traditional methods in increasing their knowledge and retention and in improving their decision-making, communication, human relations, and group-process skills. During phase 1 in Spring 1993, questionnaires were sent to 74 students who had completed a graduate class in school business management or the principalship at California State University at San Bernardino. Questionnaires were sent to 60 students who had taken a leadership development course at Pepperdine University, Malibu, California during the second phase in January, 1994. Sixty-three and 41 responses, respectively, were received. Students at both universities perceived cooperative learning strategies to be effective in terms of improving their knowledge of subject matter and decision-making, human relations, communications, and academic skills. The positive ratings support findings of other research in which students rated cooperative learning experiences more positively than competitive ones. The appendix describes various cooperative learning techniques. (LMI)

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**Cooperative Learning in Graduate Education:
A Study of Its Effectiveness in Administrator Training
in Two California Universities**

by

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**presented at the annual conference of the
National Council of Professors of Educational Administration
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COOPERATIVE LEARNING IN GRADUATE EDUCATION: A STUDY OF ITS EFFECTIVENESS IN ADMINISTRATOR TRAINING IN TWO CALIFORNIA UNIVERSITIES

INTRODUCTION

The American educational enterprise from kindergarten to graduate school rests firmly upon the time-honored foundation of rugged individualism and competition. Cooperation, group effort and mutual support among students are behaviors frowned upon in the halls of academe. In fact, to share information in most school contexts is tantamount to cheating (Covey, 1989). And to give a colleague the help he or she needs may pose a threat to one's relative position on the "grading curve." Yet, ironically, most of us today work in an environment that calls for cooperation rather than competition and independent effort.

The decade of the 80s saw business and industry moving toward greater cooperation and involvement of workers with management in planning and decision making. Following the lead of the business community public schools are now being called upon to incorporate shared decision making and collaborative problem solving into their *modus operandi*. Administrators, teachers, parents and other stakeholders from the community are being asked to participate in a management strategy which relies heavily upon group interaction and cooperation.

With the advent of site-based management, school leaders are expected to work with highly diverse individuals and groups of people and lead them in making educational decisions. Yet, often as not, principals and teachers alike lack the skills in group process and collaboration to be successful in sharing governance and decision making at the school site.

A study by the American Society for Training and Development (1988) concluded that, in addition to skills in learning to learn, listening and oral communication, competence in reading, writing and computation, adaptability, and problem solving, the ability to work with others is key to leadership success. That being the case, where may the neophyte school administrator who will assume leadership of a school in the era of restructuring acquire the requisite skills for collaboration, group decision making, and shared governance? Where will teachers who will work in the restructured school learn to collaborate and work together toward a common goal? Certainly not in the traditional graduate school classroom where individual effort and competition are prized and cooperation is punished.

An old adage says: "If you tell me, you won't convince me. If you show me, you may convince me. If you involve me, I will understand." Those of us who are engaged in the preparation of teachers and administrators can provide an arena for teachers and aspiring school leaders to learn to work effectively with others, to learn collaboration and group process skills. We can change the way we teach our classes to implement cooperative learning strategies which may result in our students becoming better equipped to work collaboratively in schools of tomorrow.

BACKGROUND

Cooperative learning is not new. Early American education emphasized cooperative learning and indeed it was a necessity in the typical one room school. In the early part of this century, John Dewey (1916) promoted the use of cooperative learning. However, by the late 1930s, cooperative learning as a teaching strategy had lost ground as competition gained emphasis in schools and colleges (Pepitone, 1980).

By the 1960s elementary and secondary students were again learning together in small groups and the pedagogy was called variously "small group learning," "small group teaching," and "group work." The term "cooperative learning" used to describe certain types of group learning gained popularity in public school education during the 1980s. In California, for example, the State Department of Education's curriculum frameworks published during the 1980s recommended cooperative learning as an instructional strategy in K-12 public schools.

Cooperative learning is defined as the instructional use of small groups in which students work together to maximize their own and each other's learning. The stated goals of cooperative learning are to increase students' achievement, to create positive relationships among students and to promote students' healthy psychological adjustment to school. Students interact with members of their cooperative work group, share ideas and materials, support and encourage each other, orally explain and elaborate the concepts and strategies being learned, and hold themselves and each other accountable for completing the assignment.

There is no single, universally recognized method of cooperative learning. Among the several approaches to cooperative learning are the student team learning methods of Slavin (1990), the group investigation approach of Sharan (1980, 1990), the structural approach of Kagan (1990), the complex instruction approach of Cohen (1986), and the collaborative approach described by Brubacher, Payne, and Rickett (1990).

Cooperative learning has been generally accepted as an effective teaching-learning strategy in K-12 schools. Research on the effects of cooperative learning has been quite extensive. Over 600 studies have been conducted during the past 90 years comparing the effectiveness of cooperative, competitive, and individualistic learning (Johnson, 1991).

According to Blintz and Harste, there is "a substantial body of research on cooperative learning which provides compelling evidence that working with a partner promotes more positive attitudes and higher achievement." (Blintz and Harste, 1991) Research has shown the positive effects of cooperative learning in the development of self-esteem, intergroup relations and the development of social skills (Cohen, 1992).

The use of cooperative learning is indicated whenever the goals of learning are highly important, mastery and retention are important, the task is complex or conceptual, problem solving is desired, divergent thinking or creativity is desired, quality of performance is expected and higher level reasoning and critical thinking are needed (Johnson, 1988). Among important skills developed through cooperative learning are: oral communication, teamwork, decision making and human relations skills, knowledge of subject matter, study skills, and networking.

There are two major components to all human interactions - content and process. The first deals with the subject matter or the task upon which the group is working. This is the focus of attention in most interactions. The second, process, is concerned with what is happening among and to members of the group. In cooperative learning both content and process are emphasized.

It is in the second area, process, that the greatest benefit for students in the administrator preparation programs may accrue. Cooperative learning activities engender positive interdependence among students as they work together for solutions to problems. They learn to share the work, share resources, and share the decision-making responsibility. Social skills of cooperation, compromise, and mutual caring are fostered as well. These are skills that will stand them in good stead as tomorrow's leaders of restructured schools.

Instructors in the administrator preparation programs at California State University San Bernardino and Pepperdine University began using cooperative learning strategies in school administration courses several years ago in an attempt to find teaching strategies that were more appropriate for the adult, mid-career, professional students enrolling in those programs. The traditional lecture, note-taking, examination method of graduate school instruction did not work well with students who were full-time teachers and administrators. (See Appendix for description of examples of Cooperative Learning techniques used.)

PURPOSE OF THE STUDY

School leaders must be well versed in learning theory, be able to think critically, and possess effective management skills. But such knowledge and skills will be of little use in the restructured schools of tomorrow if the principal cannot work well with diverse groups and lead them in making educational decisions. There are serious concerns about the traditional education and training of school administrators being able to provide that type of leadership skill.

While cooperative learning has been used in university level courses, few reports of its use and effectiveness appear in the literature. Manera and Glockhamer (1989) reported on cooperative learning in three colleges of Arizona State University. They found that these learning strategies resulted in greater mastery of content and higher order reasoning by students. Glass and Putnam (1989) also reported on positive feedback from students when cooperative learning was used at the University of Maine. And, one of the authors of this paper reported on the effective use of cooperative learning strategies in graduate courses at Pepperdine University (Hughes, 1993).

The purpose of this study was to determine whether cooperative learning strategies as used in school administration classes was perceived by students to be more effective than traditional methods in increasing their knowledge and retention of subject matter, improving their decision making, communication, human relations and group process skills, and improving their skills or success in further learning.

The study was conducted at California State University San Bernardino and Pepperdine University. Subjects of the study were students who had completed courses in school management and administration, school business management and finance and leadership development. The authors had used cooperative learning strategies in each of their classes.

METHODOLOGY

The study was conducted in two phases. The first phase included those students who had attended California State University San Bernardino and the second phase included those who had attended Pepperdine University.

In the Spring of 1993, a questionnaire was mailed to 74 students who had completed a graduate class in School Business Management and Finance or The Principalship taught by one of the authors at San Bernardino during the previous fall and winter quarters. Sixty-three (85%) of the questionnaires were returned.

Students were asked to evaluate the effectiveness of cooperative learning as experienced in the class they had completed. They were encouraged to be very candid in their response and complete anonymity was assured. Students were asked to evaluate cooperative learning as an instructional strategy as compared to more traditional instructional strategies used in other administrator preparation courses.

Recipients were asked to rate the value of cooperative learning in nine areas:

1. Knowledge of subject matter
2. Increased awareness of benefits of working together as a team
3. Improvement of decision making skills
4. Improvement of human relations skills
5. Improvement of writing skills
6. Improvement of speaking skills
7. Improvement of research skills
8. Improvement of networking
9. Improvement of study skills

The recipients were asked to indicate the effectiveness of cooperative learning in comparison with traditional instructional strategies by utilizing a five point scale with (1) indicating no improvement, (2) indicating modest improvement, (3) indicating average improvement, (4) indicating good improvement, and (5) indicating excellent improvement. Comments were solicited, as well.

In January of 1994, questionnaires were sent to 60 students who had completed the Leadership Development course taught by one of the authors at Pepperdine University over the previous two years. Forty-one (68%) of the questionnaires were returned. The questionnaires and instructions were duplicates of those sent to the San Bernardino students except that they had been modified appropriately for Pepperdine students.

FINDINGS, ANALYSIS AND INTERPRETATION

Student perception of the effectiveness of utilizing cooperative learning in school administration courses at two California universities is presented in Table 1.

Table 1. Cooperative Learning Ratings

<u>Area</u>	<u>San Bernardino Rating</u>	<u>Pepperdine Rating</u>
Subject matter	4.21	4.50
Teamwork	4.56	4.70
Decision making	3.94	4.35
Human relation skills	4.41	4.58
Writing	3.46	3.40
Speaking	3.86	3.93
Research	3.89	3.55
Networking	4.65	4.35
Study skills	3.90	3.60

Student rankings of this instructional strategy along with comments are summarized by each of the competency areas.

Knowledge of Subject Matter

On a five point scale, the acquisition of subject matter received an average ranking of 4.21 from the San Bernardino students and 4.50 from the Pepperdine students (see Table 1). Student comments included:

I enjoy working in teams. I retain more of the subject matter.

For me, learning and working in a cooperative setting increases my knowledge at least tenfold.

Portions of the class which involved group work are the portions which I remember most. Any lectures which we may have had have since become vague in my mind.

Hands-on experience in a cooperative manner has been effective in that it has increased not only my knowledge of the subject, but has enabled me to retain important information that will assist me in my profession.

Taking the tests as a team was extremely beneficial. It wasn't that test taking became easier, because it didn't. You study harder for tests because you want to help your group.

Cooperative learning was a digestible, comprehensive coverage of an area that I had only learned previously through the school of hard knocks.

The format was an excellent motivator for me. I feel I worked harder and, in turn, gained more knowledge.

Teamwork

Increased awareness of working together as a team was rated number one by Pepperdine students with a response of 4.70 and second highest by students at San Bernardino with a rating of 4.56. Some of the comments included:

The discussion/teamwork games were great.
The time we spent together was for me a first hand experience of the effectiveness of group interactions. The cooperative learning that went on was incredible.

In a lecture oriented class or working on a project by myself, I feel that only one side of a geometric figure is in place. With group work all sides are represented and in place.

I think working in teams is essential; I wish that administrators would view team work as essential.

I definitely got to know how each person on my team thinks, works, and values.

I thoroughly enjoyed the concept of teamwork.

Value of working together is far superior to classes organized around lectures and exams.

Cooperative learning enabled us to get more done that we can alone.

Cooperative learning "makes the medicine go down" a bit easier. The group work is more interesting and since everyone takes part it provides more information on the subject. I enjoy this type of work!

Decision Making Skills

Students rated an improvement in decision making skills at 3.94 from the San Bernardino students and 4.35 from Pepperdine. Comments included:

Bouncing ideas off each other helped us make better decisions.

Working together helps you see another's point of view and make better decisions.

Increased my ability to focus as a team member and value the viewpoint of others.

I had to modify my values and goals to help my team come to consensus and compromise.

Brainstorming is definitely the most productive way to put together any project, proposal, or policy.

This rating of 3.94 for the advantages of utilizing cooperative learning was also similar to Gabbert, Johnson, and Johnson (1986). They found that cooperative learning promoted a greater use of higher-level reasoning strategies and critical thinking than competitive or individualistic learning strategies.

One of the most effective methods for generating creative thinking is to have several people focus simultaneously on the same problem. A series of questions can help clarify the problem and focus discussion. Questions such as, why did you choose that strategy to deal with the problem, what other alternatives were available, did you review all possible resources will provides students an opportunity to listen to each other and observe how fellow students approach the decision making process. As students become comfortable reflecting upon and talking about their thinking, they see the value of talking through a problem with a discussion of alternatives.

In a school leadership role, the sharing of ideas and different solutions to problems are needed to reflect upon conflicting information, unstated assumptions, unclear goals and opposing strategies. Such issues can be of considerable value for team decision making and effectiveness. Working together in a group also provides the opportunity for students to learn how to handle conflict. Conflict is sure to arise when group members have different information, perceptions, opinions and values. Conflict can promote an active search for more information, a rethinking of one's information and conclusions and the opportunity to see a problem from a different perspective. Individuals working alone do not have the opportunity for such a process.

Human Relations Skills

Students gave their third highest ranking to an improvement in human relation skills, a 4.41 for San Bernardino and 4.58 for Pepperdine. Comments included:

Working closely with others can lead to a better working relationship.

The class promoted tolerance through an understanding of human interaction.

It was very beneficial to my skills in communication and cooperation.

The class improved human relation skills.

I often use these strategies when facilitating workshops, in-services for teachers; it's great!

More than I ever had before I learned to work with many different people both on a spontaneous and long term basis, which was very valuable.

I gained more patience and understanding of other individuals' learning, studying, working styles.

Successful cooperative learning rests on the development of students' interpersonal skills. Being flexible, judging appropriate behaviors, and developing empathy are important skills for the administrator. There are very few work situations that do not involve people learning and working in conjunction with others. Therefore, becoming proficient in the prerequisite social skills is as important as expertise in practical and theoretical knowledge skills (Raizen, 1989).

One of the most effective means to understand the behavior of others is to first understand one's own behavior. In order to create a truly productive workplace, group skills and self-knowledge are important (Weisbord, 1987).

When students become more aware of and gain a better understanding of the different learning styles in the classroom, a complementary dimension is added to the teaching of thinking. An awareness and appreciation of others' learning styles will help strengthen their ability to interact with others. This skill will be very valuable when they encounter different styles and values in a leadership role

Writing Skills

Improvement of writing skills received the lowest rating on the objectives, a 3.46 for San Bernardino and 3.40 for Pepperdine. No positive or negative comments were made on this particular objective. The intent of the instructor in the San Bernardino classes was that by students working cooperatively to develop a research paper, they would benefit from the expertise of each other. For example, each member of the team was strongly encouraged to assist in final editing of the paper.

Speaking Skills

Improvement of speaking skills received a rating of 3.86 and 3.93 for San Bernardino and Pepperdine students respectively. Comments included:

The most important aspect of cooperative learning for me in this class were the small group discussions and presentations. This was where we had a chance to go over our own ideas and share those of others.

I'm able to share my ideas and thoughts as well as listen and hopefully understand the thoughts of others.

During the class sessions, several students commented to one of the instructors about the stress of making an oral presentation and said they felt less stress by making a team presentation. Students were evaluated on the effectiveness of the team presentation and their interaction with each other. Explaining a subject to classmates is an effective way to demonstrate how well an individual grasps the subject.

Studies have shown that only job knowledge ranks above communications skills as a factor for workplace success (Carnevale et al., 1988). However, research indicates that fear of public speaking is quite common among the general population (Motley, 1988). Bowers (1986) found that college students are frequently apprehensive about speaking in the classroom. This anxiety can be reduced when students are given the opportunity to express themselves in a small group of peers (Neer, 1987).

Cooperative learning demonstrates that classroom activities that encourage verbal interaction and provide opportunities for oral presentations can help students improve their oral communication skills. Cooperative group learning draws students into the learning process and the interaction with other students provides practice in communication skills.

Research Skills

Students rated an improvement in research skills as 3.89 for San Bernardino students and 3.55 for Pepperdine. Comments included:

While working full-time, some research projects require an inordinate amount of time; by having a team, the work can be divided and then shared.

Realizing other's grades would depend on the quality of my work made me work harder!

I thought that the group research paper improved my research skills.

Networking

Networking with team members and class members was rated number one with San Bernardino students with a rating of 4.65, but only fourth at Pepperdine. Comments included:

I learned more. I accomplished more. I now have connections with others that would never have happened without the experience of team learning.

It brought the class closer together.

Since there were only two people in my team, I did not have the opportunity to really network.

Perhaps a minimum of three in a group might be helpful to future students.

Here is another advantage, friendship!

Johnson and Johnson (1988) found that students who study cooperatively develop a greater commitment and caring for each other. They found that as relationships within the class become more positive, absenteeism decreases and students' commitment to learning, feeling of personal responsibility for assigned work and a willingness to take on difficult tasks increases. In a later study, (1991), they also found that motivation and persistence, satisfaction and morale and productivity and achievement also increased.

Study Skills

An improvement in study skills was given a 3.90 rating by San Bernardino students and 3.60 by Pepperdine students. Comments included:

I am a self-starter and disciplined student; the cooperative group was a good experience to encounter others with different study skills.

It is nice to see real teaching strategies used at the university level, rather than just directed teaching.

Working as a team was very helpful due to lowered stress.

I believe it was easier to relax, enjoy, and learn more knowing I wasn't working alone and having to feel unsure about what was expected.

Positive interdependence results in students' promoting each other's learning and achievement. Within most tasks, productivity is enhanced when individuals give each other relevant task-related help and assistance (Johnson and Johnson, 1989). When engaged in cooperative activities, individuals seek outcomes that are beneficial to themselves and to all other members of the group.

An important aspect of cooperative learning is the opportunity for group members to provide each other with feedback about how they are fulfilling their responsibilities and completing their work. The small group setting gave students the opportunity to maximize their own and each other's learning. Cooperation resulted in students' striving for mutual benefit so that all members of the team could benefit from each other's efforts and a realization that one's performance depends on the individual and one's colleagues.

SUMMARY AND CONCLUSIONS

At Pepperdine University and California State University San Bernardino, we found collaborative learning techniques to be successful and well accepted by our students in the administrator preparation programs. The results of this study support the use of cooperative learning as an effective instructional strategy in attaining the objectives of courses in school administrator preparation programs.

The positive ratings and comments from respondents regarding the effectiveness of cooperative learning in educational administration are similar to results obtained in studies by Johnson and Johnson (1989). They found students rated cooperative learning experiences more positively than competitive and individualistic ones. More positive attitudes toward the subject area, the instructional experience, and continuing motivation to learn more about the topic were noted when cooperative learning was used. Bligh (1972) also found that students who had opportunities to interact with classmates and the instructor were more satisfied with their learning experience than students who are taught exclusively by lecture.

Respondents to the survey expressed very positive opinions of the effectiveness of the cooperative learning experienced in the courses taught by the authors. General evaluative comments included:

This was my first class at _____ and it set the tone for the rest of the classes I took. Every other method of teaching/learning was not as enjoyable or effective. I thought it was great!

Cooperative learning has broadened my perspective as an educator. This new system has opened my eyes in sharing and experiencing a broader intellectual input by others. Rigid thinking can and does paralyze creativity. Cooperative learning leads to greater awareness and stimulates us to reach a higher level in our intellectual pursuit. I'm thankful for and now use this method in my own classroom.

I've taken graduate courses at _____ University, _____ State University and at _____ University. (This) represents the most beneficial graduate course I have ever taken.

I enjoyed _____ immensely and have retained more information from that class than any other.

This kind of instruction allowed for a much more practical application of information.

(W)orking together as a team reinforced my faith in our higher education system.

Cooperative learning methods allow the student to acquire the maximum amount of information from other students as well as the professor.

One respondent commented, "There was a great deal more work put into the course, yet my grade is lower than I typically earn. My support of my partners became my main goal, rather than the benefits I would receive." While this statement reflects negative feelings about the course grading procedure, the comment about ensuring the success of others is perhaps the primary goal of leadership.

Cooperative learning enhances pro-social skills and engenders positive interdependence among students and enhances collegiality. Group decision-making and shared leadership skills are learned, skills that can be particularly useful for the school administrator attempting to restructure the governance of the school to achieve greater collaboration among stakeholders in the school and community.

While the students who responded to this study clearly evaluate cooperative learning as an effective instructional strategy in educational administration courses the conclusions drawn from the study must be tempered by the limitations of the methodology used. The results were limited to the perception of students surveyed. The effectiveness of cooperative learning has been well documented at the elementary and secondary level. However, additional study utilizing more quantitative methods is needed to validate its effectiveness at university level.

References

- American Society for Training and Development. (1988). Workplace basics: The skills employers want. Washington, D.C.: U. S. Department of Labor.
- Bligh, D. A. (1972). What's the use of lectures? Harmondsworth, Eng.: Penguin.
- Blintz, W. and Harste, J. (1991). Whole Language Assessment and Evaluation: The Future." in B. Harp (Ed.) Assessment and evaluation in whole language programs. Norwood, MA: Christopher Gordon
- Bowers, J. W. (1986). Classroom communication apprehension: A survey. Communication Education, 35 (4), 21-31.
- Carnevale, A. P., Ganer, L. J., & Meltzer, A. S. (1988). Workplace basics: The skills employers want. Alexandria, VA: American Society of Training and Development.
- Cohen, E. (1986). Designing groupwork. New York: Columbia University, Teachers College Press.
- Cohen, E. (1992). "Restructuring the classroom: Conditions for productive small groups." Issues in Restructuring Schools, Center on Organization and Restructuring Schools, University of Wisconsin - Madison, Report No. 2.
- Cohen, E.G., Lotan R., and Catanzaritel, L. (1990). Cooperative learning: Theory and research. New York: Praeger.

- Covey, Stephen R., (1989). The 7 habits of highly effective people. New York: Simon and Schuster.
- Dewey, J. (1916). Democracy and education. New York: MacMillan
- Gabbert, B, Johnson, D. W., & Johnson, R. (1986). Cooperative learning, group-to-individual transfer, process gain, and the acquisition of cognitive reasoning strategies. Journal of Psychology, 120 (3), 265-78.
- Glass, R. M., & Putman, J. (1988-1989). Cooperative learning in teacher education: A case study. Action in Teacher Education, 10 (4), 47-52.
- Hughes, H. W. (1993). Using cooperative/collaborative learning in graduate education. The Journal of CAPEA, Vol. 5, No. 1.
- Johnson, D. W., & Johnson, R. T. (1989). Cooperation and competition: Theory and research. Edina, MN: Interaction Book Co.
- Johnson, D. W., Johnson, R. T., and Johnson-Holubec, E. (1990). Circles of learning: Cooperation in the classroom, 3rd ed. Edina, MN: Interaction Book Co.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1991). Cooperative learning: Increasing college faculty instructional productivity. Washington, D.C.: The George Washington University.
- Kagan, S. (1986). Cooperative Learning and Sociocultural Factors in Schooling. In Beyond Language: Social and Cultural Factors in Schooling Language Minority Students. Los Angeles: Evaluation, Dissemination and Assessment Center, California State University Los Angeles.
- Manera, E. S., & Glockhamer, H. (1988-89). Cooperative learning: Do students "own" the content? Action in Teacher Education, 10 (4), 53-56.
- Motley, M. T. (January, 1988). Taking the terror out of talk. Psychology Today, 22 (1), 46-49.
- Neer, M. R. (1987). The development of an instrument to measure classroom apprehension. Communication Education. 36, 154-66.
- Pepitone, E. (1980). Children in cooperation and competition. Lexington, MA: Lexington Books.
- Raizen, S. A. (1989). Reforming education for work: A cognitive science perspective. Berkeley, CA: University of California, Berkeley, National Center for Research in Vocational Education.
- Slavin, R. E. (1990.) Cooperative learning: Theory, research and practice. Englewood Cliffs, NJ: Prentice-Hall.
- Weisbord, M. (1987). Productive workplaces. San Francisco: Jossey-Bass.

APPENDIX

In our courses we have used a variety of cooperative learning techniques. Those described below have been found to be particularly appropriate for courses in school administration and leadership:

JIGSAW

One of the most widely used cooperative learning strategies is Jigsaw, a technique that is easily adaptable to any class. We have adapted Jigsaw for our graduate classes by eliminating some of its more stringent structural aspects that are necessary when it is used with young children.

Originally, Jigsaw was designed as a teaching technique that enabled students to take responsibility for their learning by participating actively in the lesson. Each student in a learning group is provided with only part of the material, one piece of a jigsaw puzzle. Each student becomes an "expert" on one part of an instructional unit which he or she in turn teaches to the other members of his or her learning group or home team.

The learning task for each student is to obtain the information from every piece of the puzzle in order to be able to "see the whole picture." To do well, each student has to learn the unique information possessed by each other member of the learning group. Each student then becomes both learner and teacher. Group process skills such as sharing, mutual dependency, and active listening are enhanced. (See the work of Cohen, Johnson, et. al., Slavin, and Kagan.)

Jigsaw can be used with any piece of literature that lends itself to division such as a magazine article, chapter of a textbook, and so forth. I sometimes use it to introduce students to a journal article or book chapter which they have not been assigned to read outside of class. I am able to cover a significant amount of new material in a short span of time and discuss the key points of the article or chapter within the same class period.

ABC (also called Pairs and Squares)

This is a technique that provides opportunity for every student in the class to participate actively in discussions. No one is left out. If there is an odd number in the class, the instructor joins in as a participant. The instructor selects a question for discussion from reading material previously assigned or introduced in class by lecture, video, or other material. A question for which there is no clear-cut answer or on which there can be variance of opinion works best.

The first step, A in the ABC process, requires each student to spend five minutes thinking about the question and formulating an answer or position on the question presented by the instructor. It is usually best to have the students write out their response as well. Discussion is not allowed during this step.

In step B students are asked to pair up with someone they do not know or have not worked with recently. The pair spends five or six minutes discussing the question. The instructor calls time and directs each pair to choose another pair and continue the discussion. An additional requirement is added at this point. The foursome (or square) is tasked to come to consensus and present their answer to the class as a whole, the C step.

The ABC process can be used not only for discussion of key points in material previously assigned, but also to generate new ideas. It is a good way to generate topics for role play episodes, for example. During the A step the student outlines a scenario, real or fantasy, to illustrate a particular topic such as conflict resolution.

Step B allows two students to compare ideas one-on-one. The pair then discusses their ideas with another pair, step C. From among the four one idea is chosen for presentation to the class. Depending on the time available, the selected idea may be presented via role play or contributed to a pool of scenario ideas from which one may be chosen by the instructor for role play.

2 X 4 DEBATE

The 2x4 debate is a technique that is especially useful in dealing with controversial issues. Students arrange themselves in pairs. The instructor gives one pair a question from previously assigned or presented material and instructs them to take the affirmative position. The instructor then chooses another pair to take the negative position.

After a time of preparation the question is debated before the class with stringent time constraints for presentation and rebuttal by each side of the question. I usually allow the affirmative position one minute to present followed by the negative position for one minute. The affirmative is then allowed 30 seconds for rebuttal and the negative has 30 seconds for response. A final 15 second response is allowed for each side before the question is opened to the whole class for discussion.

ROLE PLAY

Role play is particularly useful for practicing skills or strategies that otherwise may only be described or discussed in the typical classroom setting. Role playing conflict resolution strategies, for example, can be very powerful. The technique provides students with a quasi-realistic experience within the safety of a controlled environment.

The class is divided into equal groups by any convenient means. The number of groups is equated with the number of characters in the role play. A problem is presented to both groups at the same time. The problem may be one chosen by the professor or one developed by the class through the ABC process. The best type of problem is one which has potential for emotional overtones.

After the problem has been described by the instructor, each group is assigned a character. Each group works together to write a scenario for the role play. This assignment requires consideration of both sides of the issue or problem and preparation of contingency based options for each side of the dialogue. The groups then choose one member to act as their assigned character in the role play. This preparation usually takes 30-45 minutes.

When the groups are ready, the actors take their places and the role play begins. There is no time limit for this phase and may take a few minutes for a simple problem or much longer for complex or highly emotional scenarios. A critique and discussion by the class follows.

THE DOUBLE-ENTRY JOURNAL

Students may fill their heads with facts, data, or some expert's ideas, but learning will not have taken place until students create meaning for themselves from those facts, data, ideas. To learn, to make knowledge their own, students must reflect and react.

One method to encourage critical thinking and reflection is journal writing. Among the several forms journal writing may take, the double-entry journal is perhaps the most versatile and effective. It can be used for notetaking in lectures, reacting to various class activities, or reflecting on assigned readings, for example.

The double-entry journal is simple to construct and use. Students provide themselves with either a three-ring binder with ordinary lined paper or a spiral-bound notebook. Each page is

divided into two columns by drawing a vertical line down the middle of the page. The left-hand column is used to take notes: reading notes, direct quotations, observational notes, lists, images, descriptions of events, summaries, etc. The right-hand column is used to record: notes about those notes, comments, reactions, objections, feelings, new ideas generated.

When using the double-entry journal in class to record notes on lectures, discussions, or other class activities, a time for reflection and writing should be set aside after the event is over and before the students are dismissed or go on to another activity. Eight to ten minutes of uninterrupted quiet should be sufficient for reflection and writing.

Double-entry journal writing can be used effectively with assigned readings. The student should first briefly summarize the reading in the left column. This summary should serve as an objective skeleton of the reading text. Following the summary, 6-10 major points from the reading should be recorded. The notations should be expressed in a form that would allow someone who had not read the text to have a sense of the meaning of the main ideas in the reading.

In the right-hand column the student records personal reflections on the major points of the text recorded in the left-hand column. The student should approach the text with such questions as: "How does this tie in with my experience, previous readings, expectations?" "What do I not understand?" "Do I agree/disagree with the author?" "What impressed me/annoyed me about the reading?" "How does this new information fit with my beliefs, my philosophy, prior knowledge?" "Where have my ideas been challenged, changed, confirmed?"

Reflections should be more than "I like this idea," or "I've never met a person who could live up to this." Comments should reflect thoughtful views on the implications of what the author is saying. The WHY should be explored rather than the WHAT.

The purpose of the double-entry journal is twofold: first, students carry on an interactive dialogue with the text of the assigned reading, constructing and recording their impressions and summaries, making the knowledge their own; second, they use these texts to broaden the dialog to include classmates and the texts they have created.

Discussion of assigned readings take on a very different form when the double-entry journal is used. Instead of the instructor leading the discussion of the assigned reading or lecturing on the text, discussions take place in small groups and are led by students.

Students are grouped according to any reasonable criteria: themes, subject area, alphabetical, numbering, article assigned, etc. Give students five minutes to re-read their journal entry, both their summary of the reading and their reflections, to prepare for discussion in the small group (2-4 students). Students read the entries of all others in their group taking notes or making comments in the margins on any issues or questions that arise.

After the students have read the entries of all group members, the group may be involved in a number of different learning tasks. Examples include:

- Discuss each member's entry and comments made by group members;
- Draft a group summary of the reading to use for whole-class reporting;
- Draft a "burning question" for the group that was inadequately addressed in the reading;
- Summarize the discussion that ensued about an issue raised by the reading;

- Prepare to report a summary of the group discussion to the whole group;
- Each group member write a response to what others have said about the reflections;
- Create a list of new perceptions and understandings about an important component of the course;
- Write a question or statement on the board and guide the discussion by the whole class on the reading.

The process begins with the individual, moves to the small group and then to the whole group. The task of recording and reporting is rotated among groups members. Writing and talking enhances learning; hence, all need to participate. Arranging and re-arranging groups allows for all students to work together over the course of a semester.

When a number of articles must be read to gain understanding of an issue or concept, assign one or two articles to each individual by numbering the articles. Assign each person an article(s) by whatever means suits the make-up of the class. Those who read the same article(s) meet to share their perceptions and understandings reflected in their journals. After discussing the article(s) and deciding how the main ideas should be presented to the other class members, groups are formed to include the range of articles covered. Each group now has a representative for each article. As each representative presents the main ideas of the article(s) the rest of the group can make notes, ask questions, require elaboration, etc.

After each small group time, it is important to reconvene the whole group and ask each group to report using one of the strategies suggested above. Members of other groups may address questions to the reporting group.

If students come to class unprepared, they should not be allowed to join a group for the discussion as they will not have a journal to share. They should be asked to work alone on the reading and their journal. They should not be allowed to take up group time if they have not come to class prepared with a journal.

Before asking students to do this for homework, it is useful to demonstrate the process using a short 1-3 page article during class. These texts can be used in numerous ways. Select those strategies that serve the intentions and goals of the content and lesson.

Advantages of using the double-entry journal include:

- Responsibility for learning belongs to the learner vs. "We do it all for you!"
- Active/reflective students vs. passive
- Increase personal relevance of new knowledge vs. assumed relevance of content to students
- Student centered, allowing students to question and construct meanings vs. Teacher centered (lecture) assuming teacher knows what student's questions/needs are
- Student talk (pairs, triads, small groups, large groups) vs. Teacher led "discussions" and question/answer exchanges
- Builds community of learners vs. learners isolated individuals

- Improves ability to think vs. reproducing what the instructor wants to hear
- Issues related to course topic remain integrated, knowledge is cumulative throughout the course vs. knowledge constrained by chapter titles.

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