

A Journey into Cooperative Learning with Teacher Education Students

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Abstract:

The focus of this article is the journey two professors took during their implementation of cooperative learning with their teacher education students. It is the opinion of the authors that cooperative learning is a viable, yet underused, teaching and learning tool. Prospective teachers best internalize this methodology when they themselves are active participants in the techniques. The authors offer personal experience to assist in the readers' understanding.

The Ubiquitous Lecture

Walking the hallowed halls of higher education one is more likely to observe professors delivering a lecture and students listening and writing copious notes. The lecture format is a widespread methodology used in both undergraduate and graduate courses (Brinkley, Dessants, Flamm, Fleming, Forcey, & Rothchild, 1999), which supports the philosophy that the learner is an "empty vessel" waiting to be filled. In the history of education, lectures have been popular vehicles for transmitting knowledge. These are easiest to prepare and deliver, expected by the masses of students, and often are the best "fit" for traditional desk and chair arrangements found in many university classrooms. Certainly, large lecture halls filled with several hundred students are more conducive to large group lecture delivery.

While lectures are a teacher-centered approach, they allow the instructor to gather material from a variety of sources that might not be readily available to students, present material in a condensed format, and attempt to quickly move students from one point of understanding to another. Students who learn the most from lectures seem to be auditory learners. Gardner's work is well established indicating that learners process information in a variety of ways, auditory being one of those ways. Instructors must be cognizant of this as they choose information delivery styles for their college classrooms (Anderson & Adams, 1992).

As institutions have acquired technology found in today's "smart classrooms," lectures seem to augment PowerPoint presentations. Distance education delivery systems have sprung up on many college campuses. In order to deliver the courses, instructors make adjustments in their teaching styles to accommodate the necessary technology to send the course to their virtual students. The tendency might be to limit the use of alternative teaching strategies with instruction hindered by our own knowledge of how to utilize online instructional tools (Ko & Rossen, 2001).

The Unused Alternative

Cooperative learning, a student participatory teaching style that focuses on groups of students working together to accomplish a common goal (Johnson, Johnson, & Holubec, 1994), may be seen by some as an alternative teaching style. Cooperative learning increases student learning at all levels (Johnson, Johnson, & Holubec, 1990). It has several components that set it apart from more traditional group work and make it useful with children and adults. This paper focuses on its use with adults.

Can we change the post-secondary instructional paradigm from predominately lectures to a student participatory teaching and learning style such as cooperative learning? Alternatively, how do teacher education students internalize cooperative techniques into their cognitive domain so that they can use the techniques with their future students? Is our merit-based American society marked too indelibly with the ideals of individualism and competition to favor cooperation and collaboration? This paper will demonstrate affirmative answers to the first two questions. We leave the last question to the reader.

Are Lectures Best?

Gardner (1999) tells us that we are intelligent in various ways. This suggests that students can learn from a variety of teaching styles or by various modalities, to use other verbiage. Controversy Theory (Johnson, Johnson, & Smith, 1998) proposes that when students face opposing views, then they gather evidence to support one side and present the evidence to another adult to refute the position. Students can then look at the situation from multiple points of view. Behavior Learning Theory posits that students will work diligently for what they perceive as a reward and stop working if they perceive no reward or sanctions (Johnson, et. al, 1994). Cognitive Evaluation Theory suggests that students will continue working if they perceive feelings of competence and value (Cameron & Pierce, 1994). Cooperative learning offers enticements for those who participate in the group endeavors.

Cooperative Learning

Group activities, particularly in teacher education classes, offer opportunities for teacher candidates to develop a sense of community ethos. That sense of belonging, working together, taking risks, and encouraging each other become additional instructional strategies that teachers strive to facilitate in school classrooms (Moberly, 1996). Cooperative learning experiences offer particular means for teacher candidates to work together to attain the best that they collectively can be. Each teacher education course offers new experiences and different demands. Teacher candidates must be able to demonstrate skills, competencies, and dispositions in performance assessments. Cooperative learning groups offer such opportunities. A sense of “we are all in this together” translates to “together we can do it.” The college classroom becomes a place where teacher candidates can take risks, find support, receive suggestions and gain encouragement.

Members of cooperative learning groups take on specific, interdependent roles. These roles are vital to the success of the particular group and if one member falters, the whole group suffers because other members must take up the slack. Watson (1995) suggests that students' motivation to complete their work improved when participating in cooperative learning groups. Perhaps they perceived a reward. While students did not want to disappoint their teammates, they acknowledged that peer communications and acceptance improved during cooperative meetings.

There is an element of social skill development and intercommunication. These skills focus on the group members' ability to communicate effectively and respectfully with each other; in other words, the members' abilities to work together and to disagree with each other's ideas without attacking the person involved. This concept, in itself, seems a viable reason to incorporate cooperative learning into the classroom.

Another component is an element of individual accountability. Students must be held individually responsible for material learned during the cooperative learning event. Allowing the students to decide independently whether to take the exams as a cooperative group *or* individually eliminates the "free rides" (Joyce, 1999) associated with the assessment part of traditional group projects. Therefore, all must learn the material so as not to lose the chance of a desirable grade.

A debriefing, or group processing (Johnson, et. al, 1994), at the end of the cooperative learning event completes the cooperative activity. At this final point, students have the opportunity to confidentially indicate to the instructor how well the group worked together and how well each particular group member performed his or her task or role. One method of group processing involves the students completing a chart that indicates his or her group mates' level of participation. Alternatively, another version asks the students to write a short paragraph detailing each of the group members' performances.

How Do I Start Using Cooperative Learning with my University Courses?

University instructors can facilitate internalization of cooperative learning strategies among pre-service teachers by using cooperative learning in their undergraduate and graduate level courses. First, a distinction between formal and informal cooperative learning strategies will help the novice instructor incorporate the strategies into his or her classroom. Informal strategies are ad hoc groups formed for a short time but do not exceed the length of one class period. These strategies may or may not include the components of positive group interdependence, accountability, emphasis on social skills, and group debriefing. Formal cooperative learning strategies last from two class periods to several weeks and do include the components listed above.

One of the authors (Ransdell) spent time teaching her undergraduate students about cooperative learning. She discussed the theory, practice, and highlighted the differences between traditional group work and cooperative learning. By incorporating cooperative strategies into her own teaching, she hoped that her students would internalize the strategies. Various cooperative

learning strategies were taught and implemented during the semester including Jigsaw, Co Op-Co Op, and Think-Pair-Share.

Jigsaw

During the second week of class, Ransdell used Jigsaw (Slavin, 1983) with her undergraduate teacher education students. This formal cooperative learning strategy consists of base groups and expert groups. The teacher forms base groups (i.e., group members labeled ABCD, ABCD, and ABCD). Base groups initially separate to form expert groups (in this case, four groups: AAA, BBB, CCC, and DDD) where all team members study their assigned aspect of the topic and decide how they will teach their respective base group members. Base groups reassemble and each person teaches his or her teammates the information learned in their respective expert groups (Ransdell, 2001).

The students had a list of a dozen professional journal articles about issues teachers in urban schools face that are not directly related to academic achievement. Students were grouped and each group was instructed to read only particular articles for discussion during the following class. The instructor told the students at the beginning of the next class there would be a question on the midterm that dealt with the information in the assigned texts. The students would be individually responsible for information gathered from their base group members' articles as well as their own (individual assessment). Expert groups met and discussed the articles and then returned to the base groups to teach each other about the content of the articles. Students discussed (social and interpersonal communication foci) and took notes. The students learned the key points from all of the articles, but had to read only a portion of the list (positive interdependence). Students reflected on the experience (group processing). Grades indicated content competence on the midterm question about information in the texts.

Co Op-Co Op

Another formal cooperative learning strategy is Co Op-Co Op. This strategy was created for the college classroom (Kagan, 1985). Groups of students become experts in a particular aspect of a topic. The students take either their own time, or class time to research, discuss, and learn the material. They create a presentation for their classmates to teach the assigned aspect of the topic to their classmates. The professor has a right to include additional information or clarify at the end of the presentation. All students in the class will be held accountable for key information given in the presentations.

An example of the Co Op-Co-Op strategy might be from the other author's (Moberly) curriculum class. Groups formed to investigate and become experts in a particular curriculum model. The group decided research strategies, met to analyze and synthesize information, and presented the model to the class. These group members were now the experts in the curriculum model and were periodically asked in class sessions to compare and contrast the model with another model. Group members assumed the role of teachers using the model and were asked to respond to current educational issues.

Think-Pair-Share

Examples of informal strategies include Think-Pair-Share (Kagan, 1989) where students think of an answer to a question, share their answer with a partner, and then that pair shares with another pair. Finally the foursome creates an answer that represents the consensus of the their group to the whole class. This activity may take fewer than 15 minutes. Ransdell used this strategy with her graduate class. After discussing the terms “reflective” and “practitioner,” students individually, created a definition for a “reflective practitioner.” Each student shared his or her definition with a partner. The partners shared their definitions with another pair. Then the foursome created a definition to share with the whole class.

Getting Started

Content frameworks appropriate for formal cooperative learning strategies, such as Jigsaw, include topics within the humanities and social sciences that do not teach sequential skills. For instance, asking students to create a notebook of appropriate lessons for children ages 3-5 years old. Students could incorporate a range of multidisciplinary topics related to the growth and development of children of this age. Aspects of science that are not sequentially related would also fit well. Secondary teacher education candidates might develop lesson plans to teach aspects of biology to 9th and 10th graders. Alternatively, university classroom instructors might allow students to work together to master a math or physics concept before assessing the students’ learning.

An Adaptation of Group Investigation

Another of Ransdell’s cooperative projects with her undergraduate students involved using candy bars to form groups. There were five different kinds of candy and four to five bars of each variety. Students chose a candy bar, which determined the groups. For instance, all those who chose a Milky Way, were in one group. This is a random grouping strategy, but other more purposeful grouping strategies could have been chosen.

The assignment for the students asked them to create a family involvement plan for an elementary school. The plan would cover nine months with one parent meeting per month. Students had to choose a meeting plan format (such as a panel discussion, brainstorming, roundtable), list strategies to entice parents to attend (for instance, a door prize), determine a theme or subject for the meeting (such as preparing for testing), create activities for the meeting and then for teachers to use in their classrooms later that month. Additionally, the students were to list three to five books and resource materials useful for parents and three to five books appropriate for children to read after the meeting had taken place.

As the candy bars dictated, four to five students composed each group. Students discussed the division of the work among their groups, however they were required to have one person responsible for coordinating the project, following an established format, and uploading everything into one file on a floppy disc for email dissemination to classmates.

Evaluating Performance

How does one recognize when college students act as a team and share the workload equitably, rather than allow one person to complete all of the work? Evaluation instruments and techniques used with cooperative learning strategies might include a debriefing process called “Group Processing” (Johnson, et. al, 1990) which asks students to confidentially report the other students’ actions. One way to do this is to ask each member of a cooperative group to suggest individual grades for the group members and to justify their comments with examples. In the project mentioned above, Ransdell asked her students to write a short paragraph explaining how his or her group worked together. To encourage this part of the assignment, Ransdell asked her students to suggest an individual grade and to justify their opinions.

Group Dissatisfaction

Representative excerpts, with all names changed, from group processing paragraphs follow. The first two quotes suggest individuals’ displeasure with the limited participation by a teammate. Those who completed their work did not suffer because of the failure of one member. Students received an individual grade based on the part of the project for which each was responsible.

Mildred:

Shelly requested that we all have our information to her by October 18 so she would have plenty of time to put everything together. I e-mailed everyone letting them know the topics I had chosen and reminded everyone of Shelly’s requested due date. Shelly also e-mailed everyone with a reminder notice, however, Roxanne did not meet the deadline. Roxanne does not have the computer knowledge to do what was necessary so she called Shelly and e-mailed her three months to Shelly. Roxanne apparently didn’t do the assignment to completion; she did not include the proper minimum number of references. Since we are to be graded as a group, and Roxanne, as of this writing, did not complete the assignment as directed we should get a “B”. However, at this I have to protest. Wendy, Shelly and I did our work to the fullest and then some. I feel it is unfair for the rest of us to be penalized because someone else didn’t do her part.

Sharon:

Our cooperative learning project went smoothly at first. Almost everyone put forth great ideas and communicated on an even platform. Since there were four members in our group, we each took two months and we did the ninth month together [planning a family involvement program for a school year]. The day that we were working on our group month, Walter did not stay, so we just did it without him. The group processor decided that she needed our plans by Tuesday October 22. When she did not receive Walter’s plans, we talked to him in class that day and told him she needed them definitely by Wednesday morning. He said that was fine. As of today, Thursday October 24, the day they are due, Walter has not e-mailed his plans. Overall, I believe that our group project

went well except for what is stated above. The other group members and I worked well together and I believe we ... deserve the highest grade possible for our hard work.

The other members expressed similar views while Walter remained silent about this assignment and handed in nothing relative to this group's project.

Successful Relationships

In the following two quotes, Laurie and LaShonda, members of different groups, expressed successful cooperative working relationships.

Laurie:

After working in a group I found that each member had unique ideas. Every person in the group carried out what they were supposed to do. I feel that the group came together as one in the end and everything came together perfectly. I truly feel that our group has earned an A because we were a dependable hardworking team.

LaShonda

We did get together a few times immediately after a class session to compare notes and see if we were all on the same page. Overall, everyone was very cooperative and willing to do his or her part. I can honestly say that we didn't have any 'slackers' [sic]. I also feel that our coordinator has done an excellent job of bringing everything together.

The Importance of Interdependence

The last two quotes are from members of the same group. Their sentiments reflect the interdependence component of cooperative learning.

Sonja:

While doing this project I came to form a better understanding of what true group work was all about.

Cathy:

Our group worked extremely well with one another and felt that we complimented each other. Our entire group gave up a Sunday afternoon to meet with one another at the library to get our project done. We each were responsible for two month and our last month we all gave great ideals [sic] to get this month done. Sonja did an excellent job making sure that all of our information got put on one disk [sic] that that we needed to turn in. Latisha did a wonderful job coming up with the topic for our last month's lesson plan. Anna did a terrific job with organizing things to get accomplished on Sunday when we met, and I, Cathy came up with the great ideal [sic] of the incentives for the parents. As you can see, our entire group did a great job and feel that we deserve an 'A'.

Students reported that this type of group work setting provided more structure than group work in some of their other classes. Students liked the individual accountability and having the opportunity to explain why particular pieces were missing or not up to the required standards. Students reported feeling less pressure to take up the slack for non-participatory members and the structure made it clear that the instructor expected each person to take responsibility.

Support for Cooperative Learning

Johnson, Johnson, and Smith (1998) report some of these same aspects in their meta-analysis of college students, which indicated that students actually experience academic success with cooperative learning techniques. The students reported that they created favorable relationships with peers, displayed greater mental and psychological health related to their adaptation to college life, and felt more positive toward their college experience after having participated in cooperative learning exercises (Johnson et al., 1998). Watson's (1995) subjects acknowledged that peer communications and acceptance improved during cooperative meetings.

Caveats

Lake (2001) reports that students see this alternative teaching style as unscholarly; rather akin to unstructured group work where one student works diligently, to carry the group, and the others do little or nothing. In the end, all students in the group receive the same grade, regardless of their contribution (Kagan, 1995). Students' course evaluations of their professors suggested that students placed a lower value on cooperative learning strategies than they did on the more traditional lectures (Lake, 2001). Lake's research was with physical therapy students and one might question if the students had pedagogical knowledge associated with education and learning.

Discussion

Ultimately, K-12 teachers learn to teach by relying on their experience as students and knowledge acquired via post-secondary education (Goodlad, 1994). Many K-12 teachers learned most recently through lectures so it follows that, subconsciously, these neophyte teachers are most familiar with, and believe that, giving lectures must be the way to teach. This mentality must change if teacher education students are going to incorporate cooperative strategies in their teaching, they must learn via cooperative strategies. Professors who teach about and incorporate cooperative strategies into the everyday life of their teacher education students rather than teach cooperative learning only as an instructional theory in a course provide their students with an internalized learning structure. In turn, as teachers, they can use these techniques with their future children. Cooperative learning has proven itself useful in defusing tensions in a classroom through the focus on interpersonal communication and the development of social skills (Johnson, et. al, 1990). It seems a natural that teacher education students should have this technique in their personal array of teaching tools.

Teacher education students need to learn the theory and techniques associated with cooperative learning. Undergraduate program and alternative certification programs might focus

on hands-on techniques and small group work, but true cooperative learning appears seldom used. As the Chinese proverb suggests: “When I hear I forget, When I see I remember, When I do I learn.” Adults and children learn by “doing” and it makes sense that college instructors need to offer opportunities for teacher candidates to participate in cooperative learning tasks.

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