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# Cooperative Learning Applied to Interpreting Education

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## Abstract

This action research project explored whether employing cooperative learning activities would improve participants' perceptions of working in small groups. The action research model used in this study is based on a sequence of planning, implementation, observation, and reflection (Dana & Yendol-Silva, 2003; Hopkins, 2002; McLean, 1995). Action research is conducted by educators in their own classrooms and can lead to changes in curriculum, activities, or teaching methods. This style of research allows educators to reflect upon their teaching in a structured way, supported by valid research methods. Cooperative learning techniques (Johnson and Johnson, 1998) were applied in two interpreter education courses in order to facilitate student learning. A pre- and post-course survey of student attitudes toward working in small groups was used to measure student perceptions of working in small groups. Participants in both courses showed a shift to more positive perceptions of working in small groups with a stronger positive response in the non-graded summer intensive course with working interpreters.

Keywords: cooperative learning, action research, interpreter education, interpreting

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## Cooperative learning

# Cooperative Learning Applied to Interpreting Education

## 1. Introduction

This paper highlights the results of an action research project undertaken as part of the requirements for the Master of Education in Interpreting Pedagogy [American Sign Language (ASL)/English] program at Northeastern University in Boston, Massachusetts (USA). The research project explored whether employing cooperative learning activities would improve participants' perceptions of working in small groups. The research was conducted with a group of interpreters who were participating in an intensive one-week summer course in interpreting and with a group of interpreting students in their third year of undergraduate study who were taking their first interpreting skills course at an institution in the Midwest. I will first describe my place as the researcher, followed by the literature review and methodology of the research, and the results of the data analysis. A discussion of the research findings and of implications for me and other educators will complete the paper.

Cooperative learning is "the instructional use of small groups so that students work together to maximize their own and each other's learning" (Johnson & Johnson, 1998, p.2). It is different from merely placing students into small groups to do activities, as it involves specific techniques developed by, among others, David and Roger Johnson of the Cooperative Learning Center at the University of Minnesota in order to foster positive interdependence and group goals. The specific techniques employed in this research project will be described in more detail in the methodology section of this paper.

The action research model used in this study is based on a sequence of planning, implementation, observation, and reflection (Dana & Yendol-Silva, 2003; Hopkins, 2002; McLean, 1995). Action research is conducted by educators in their own classrooms and can lead to changes in curriculum, activities or teaching methods. This style of research allows educators to reflect upon their teaching in a structured way, supported by valid research methods.

### *1.1 Situating the researcher in the research*

Like many others in our field, I started teaching interpreting without a background or education in teaching or adult learning theories. I taught in ways that I had been taught or had seen others teaching. As a person who has a background in community organizing and social change, I liked working in groups and having people work in groups to solve problems. I did not know whether small groups were effective for interpreter education, but I thought students would learn more this way. Yet, it was frustrating when students did not like small group work. I understood their perspective that often one person ends up doing all the work while others "go along for a free ride," yet I still thought they could learn more by working together on projects than by listening to lectures or working independently. I had experienced small group work as a barrier, not an asset, to my own learning during my first semester of graduate school, and I witnessed my children's frustrating experiences in high school with small group projects. However, the desire to have students work in small groups overpowered the personal and student objections.

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In my graduate school studies, I studied adult learning theories; social constructivism, with its emphasis on co-creation of learning and being a “guide on the side,” facilitating education rather than being a “sage on the stage” (Brookfield, 1986; Kiraly, 2000; Wiggins & McTighe, 2005; Reigeluth, 1999). I learned about the cognitive processes that lead to complex learning and critical thinking as described in Bloom’s taxonomy (Bloom et al., 1956). I wanted students to function at a level where they were not merely gaining knowledge that they could recite but applying it to their lives through synthesis and ultimately evaluation. I wanted to have students graduate with the ability to function at Bloom’s highest level by “being able to judge the effectiveness of their own interpretations” (Winston, 2005, p. 211). Reigeluth’s focus on instructional designs that were more student centered than teacher centered strengthened my commitment to teach in a way that engages students. This commitment was reinforced by Wiggins and McTighe’s pairing of educative assessment with student self-assessment and self-adjustment. So, I persisted in using small group projects in the classroom and continued to have students complain, “I’m doing all the work in the group and it isn’t fair,” or to have students who just want me to tell them the right answer.

During one course, ASL and English Text Analysis, I tried what I thought was more of a social constructivist approach, in which a knowledge-building community learns through authentic practice, following the study of Kiraly’s (2000) book, *A Social Constructivist Approach to Translator Education*. Students worked in small groups in their first experience with preparing translations of texts. I did not provide a set of tools that they needed to use prior to the activity but, rather, hoped the situation would create a zone of proximal development (ZPD) (Vygotsky, 1978) for the students, and that I could assist in their learning process. Vygotsky defines the zone of proximal development as the distance between the “actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). Vygotsky believed that when a student is at the ZPD for a particular task, providing the appropriate assistance (i.e., scaffolding) will give the student enough of a “boost” to achieve the task. As Kiraly explained, this zone is “more of a fleeting ‘virtual space’ of potential growth, a window of opportunity that is created within a specific learning situation and that can lead to learning and thus socio-cognitive development” (p. 40). Unfortunately, it did not work as I hoped. Instead of providing an opportunity for learning and growth, the experience primarily frustrated the students. I was left wondering what was missing.

During this same time period, I attended a workshop on cooperative learning by David and Roger Johnson from the University of Minnesota, two of the leading researchers and educators in cooperative learning, and I realized a few of the fundamental errors I had made in my attempts to have students learn from each other in small groups or to be in their zone of proximal development. I had simply placed students in groups and assumed they knew how to work in groups and that they already had the necessary interpersonal skills. I had not thought about the essential elements that would create a shared goal and positive interdependence. This then began my journey to learn more about cooperative learning and to conduct an action research project. Fortunately, in my review of literature related to cooperative learning, I came across a paper by Kreke, Fields, and Towns (1998) entitled “An action research project on student perspectives of cooperative learning in chemistry: Understanding the efficacy of small-group activities.” It addressed student attitudes toward small group work and provided me with a model on how others had conducted action research with a similar question in mind.

## 2. Literature review

In order to understand cooperative learning and its appeal, we need to place it within a context of the field of adult education. “The field of adult education has made major shifts in recent years, from the behavioral approach of teaching students who passively sit through lectures, toward a learning-oriented, student-as-active-learner philosophy, where students are held responsible for their own construction of knowledge” (Winston, 2005, p. 210). Many different approaches, such as problem-based learning, social constructivism, collaborative learning, and cooperative learning, are being used to develop the critical thinking that is necessary for the construction of one’s own knowledge. Johnson and Johnson’s (1991) meta-study of over 500 research projects showed

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cooperative learning surpassed both competitive and individualized learning in three main categories: “1) greater motivation to achieve and higher actual achievement and productivity by high-, medium-, and low-achieving students, 2) more positive relationships among students, and 3) greater psychological health, including greater self-esteem and the ability to handle adversity and stress” (Kiraly, 2000, p. 37). While Kiraly found the highly structured nature of cooperative learning stifling to constructivism, I thought that cooperative learning could provide the framework for students to have a positive experience working in small groups, thus allowing them to embrace critical thinking and learn interpersonal skills.

### 2.1 What is cooperative learning?

Cooperative learning groups are much more intentional than simply assigning students to work in groups. Research on cooperative learning began in the 1960s with Morton Deutsch, which led to the establishment of the Cooperative Learning Center at the University of Minnesota by Johnson and Johnson. Cooperative learning differs from competitive learning, in which students work against each other to earn a grade (such as an A that only a few can receive) because the students are graded with a norm-referenced base. It also is different from individualistic learning, where students work by themselves to accomplish learning goals unrelated to what other students are doing and are evaluated with a criteria-referenced base (Johnson & Johnson, 1998). The meta-study of over 500 research projects by Johnson and Johnson (1991) showed that cooperative learning is more effective at promoting learner achievement than individual or competitive approaches (Kiraly, 2000).

To understand how cooperative learning differs from collaborative learning, it is important to look at some philosophical differences listed by Panitz (1997).

- Collaborative learning is established in theories of the social nature of human knowledge; cooperative learning is grounded in social interdependence theory, cognitive-development theory, and behavioral learning theory.
- Collaborative learning focuses on the *process* of working together; cooperative learning focuses on the *product* of the working together.
- Collaborative learning advocates more of a distrust atmosphere in allowing students more say in choosing groups; cooperative learning tends toward a teacher-centered classroom, reinforcing cooperation skills and positive interdependence.
- Collaborative learning is more focused on interacting and being responsible for actions; cooperative learning concentrates on accomplishing a goal.
- Collaborative learning asks the question, “How do we teach students various roles within a group setting?” whereas cooperative learning asks the question, “How can we empower students to become autonomous learners?”

There are three basic types of cooperative learning groups: formal, informal and base groups. All three types include five essential elements that increase the learning and community spirit within the classroom as the students work as a cooperative team rather than as individuals within a group (Tanner, 2009; Johnson & Johnson, 1998). These five elements, listed below, are described by Johnson and Johnson (1990) and listed in *Instructional Strategies* (Tanner, 2009, p. 9):

- *Positive interdependence*

Design the cooperative task so that the group has to rely on the contribution of each member. All team members must participate for the team to succeed. The teacher must define clearly the team roles, such as manager, recorder, or presenter.

- *Individual and group accountability*

Define the group goal clearly so that each group member knows what is needed to accomplish the task. Examples of group goals include creating a team product or becoming an expert on a specific topic. Develop a method for assessing the effort and contribution of each member of the team. Each must feel responsible for contributing to the success of the task. Cooperative learning is designed so that the contribution of each team member is essential. No one gets a free ride.

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- *Direct interaction*  
Design the cooperative task to promote interaction among students, either face-to-face or by other means. As students work to meet the group goal, they provide assistance and feedback to team members, exchange information, discuss issues, and offer encouragement.
- *Interpersonal and small-group skills*  
Require students to work together. Students must know and trust one another, listen to and accept others' ideas and points of view, and develop strategies for dealing constructively with conflicts. Teachers may have to teach students these interpersonal skills before initiating the strategy.
- *Group processing*  
Provide time for the team to reflect on the cooperative process. Encourage members to consider the group's strengths and weaknesses and plan improvements. Students need opportunities to provide specific, constructive feedback. Teachers initially may need to provide formal group-evaluation forms to focus students' feedback.

Effective cooperative groups incorporate the five elements by first having the educator intentionally determine the group membership and size according to the activity or lesson. Groups should be heterogeneous and small in number to allow for the most divergent perspectives to be shared for maximum learning. Once students are divided into groups, they must all be clear on the goal. The goal must be such that the members are dependent on each other to accomplish the goal. The evaluation of the goal must promote positive interdependence rather than individual grades that have no bearing on what happened in the group. Groups are to be assisted with social skills and the group process. The educator is available to guide the group with both the academic issues and the group interactions.

Groups will need help to develop the necessary cooperative skills. According to Johnson and Johnson (1994), these skills are: "1) forming bottom-line skills vital to functioning groups, 2) functioning skills needed to manage activities to complete [a] task, 3) formulating skills for building deeper-level understanding of the material being studied, and 4) fermenting skills needed for stimulating reconceptualization of the material being studied" (p. 65). When a new group begins meeting, members will also need guidance as they go through the four stages of group development: 1) *forming*, when the group comes together and gets to know each other; 2) *storming*, which is a chaotic process of vying for leadership when conflicts arise; 3) *norming*, when agreement is reached on how the group operates and when the roles and responsibilities are clear; and 4) *performing*, when the group is effective at meeting its objectives with interdependence and flexibility (Stahl, 1995). Progression through these stages will allow students to develop the ability to understand their own perspective, and that of others, as they figure out how to work together for a common goal. Once the group accomplishes the goal, the students will need to debrief the experience of working together in the group in order to continue to develop their group and interpersonal skills.

Formal cooperative groups last from one class period to several weeks and include all the essential elements of cooperative learning. These groups can be used for any academic assignment, course requirement, or objective. Informal cooperative learning groups are ad hoc groups that meet briefly during direct teaching to assist students in processing information or focusing their learning. While informal groups include many of the essential elements of cooperative learning, they may not go through the stages of group processing or require debriefing after completion of the goal, as their goal is limited and accomplished in one brief meeting. Cooperative base groups are longer-term groups, lasting for the semester or for the year, whose purpose is for members to give each other the support and assistance that they each need to succeed, rather than the completion of a product for a project or assignment (Johnson & Johnson, 1998).

### 2.2 Why use cooperative learning?

As interpreter educators, we are concerned with both the student's learning process and the preparation of the student to become an interpreter. We must consider both as we structure our curriculum, syllabi, course activities, and assessment strategies. Although interpreters need to have proficiency in meaning transfer between ASL and English, they also need to be able to interact with a variety of people, have good interpersonal skills, and use critical thinking in decision making. The importance of these skills is recognized in the ASL/English interpreters'

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Entry-to-Practice Competencies (Witter-Merithew & Johnson, 2005), in which Human Relations and Professionalism are two of the five competency domains. The Human Relations domain includes “a cluster of interpersonal competencies that foster effective communication and productive collaboration with colleagues, consumers, and employers” (p. 143). The Professionalism domain includes the ability to “demonstrate self-awareness and discretion by monitoring and managing personal and professional behaviors and applying professional conflict resolution strategies when appropriate” (p.145). When the Authority Opinion Group, convened by Witter-Merithew and Johnson, was considering the ideal interpreter preparation program, they included the need to integrate diversity education, critical thinking skills, and better decision making within the curriculum. This is reinforced by the inclusion of interpersonal and critical thinking competencies in the Standards Rubric of the Commission on Collegiate Interpreter Education, the accreditation board for ASL/English interpreter education programs in the United States (Commission on Collegiate Interpreter Education, 2009). The Knowledge and Competencies section of Standard 5: Curriculum includes “logical thinking, critical analysis, problem-solving, and creativity, and human relations, dynamics of cross-cultural interaction, and intercultural communication, knowledge, [and] competency” (p. 14).

Interpersonal skills are important to working interpreters as they use these skills to get along with, not only the various deaf and hearing people they work with, but also other interpreters. The Registry of Interpreters for the Deaf (RID) Code of Professional Conduct emphasizes the importance of interpersonal skills and the ability to resolve conflicts within Tenet 5: Respect for Colleagues (RID, 2005). The guiding principle for this tenet shows the importance of learning to work together with others. “Interpreters are expected to collaborate with colleagues to foster the delivery of effective interpreting services. They also understand that the manner in which they relate to colleagues reflects upon the profession in general” (RID, 2005). It is this attitude of collaboration that creates good teamwork among interpreters (Hoza, 2010). The elements of a shared goal and positive interdependence in cooperative learning are the same as what is used by interpreters working as effective teams. “Keys to a team effort, then, are having a clear, shared goal; having good rapport and a good working relationship; and having a clear view of how the team can work together to successfully achieve that goal” (Hoza, 2010, p. 10). The Registry of Interpreters for the Deaf also lists good interpersonal skills as a requirement for certification under Task 5 of the NAD-RID National Interpreter Certification Examination Test Outline, “Recognizing the impact of personal values and professional conflicts” (RID, n.d.).

Two interpreter educators, Patrie and Taylor (2008), emphasize the importance of interpersonal skills and critical thinking as individual attributes for interpreters who work in educational settings. They list the following interpersonal skills:

- identifies problems related to interpreting and seeks solutions
- seeks resolution to conflicts in a professional manner
- requests assistance from supervisors and administrators as necessary
- demonstrates negotiation strategies
- identifies problems related to communication
- seeks assistance from mentors as appropriate
- shows respect and professional decorum during interactions with all parties
- applies culturally and situationally appropriate behavioral norms (e.g., introductions, turn taking, follow up)

Macnamara (2009) notes the importance of interpersonal skills in her investigation of the aptitudes of successful interpreters. She states that:

The ability of the interpreter to function in dynamic settings with a variety of people and content is first considered. Broadly defined, social-cognition is the science of cognition affected by social encounters and structures, including one’s view of one’s self in relation to others. Social cognitive aptitudes include interpersonal and intrapersonal skills. (p. 11)

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She explains that this aptitude is manifest when interpreters “perform complex problem solving, consider various perspectives, and make decisions based on analysis as opposed to opting for the least cognitively effortful choice” (p. 13). Without this aptitude, individuals are not well suited to interpreting and have trouble with boundary balancing.

Clearly the interpreting profession recognizes the importance of interpersonal skills, yet they are often overlooked in interpreter education. In conversations with stakeholders about the entry-to-practice competencies, Witter-Merithew and Johnson (2005) state that “many of the associate level students reported that they felt insufficiently prepared in the human relations and professionalism domains” (p. 51). They also noted “when employers perceive a lack of professionalism and detect no united voice expressing a spirit of cooperation, the scope of the field’s [interpreting] influence is further diminished” (p. 97).

These human relation and critical thinking skills cannot be developed by students merely listening to lectures in the classroom, nor is that the best way for students to learn. Interpreting educators need to move beyond “static measurement of products and behaviors” (Winston, 2005, p. 210). Instead we need to look to approaches such as cooperative learning to develop critical thinking and interpersonal skills. Bentley-Sassaman (2009) showed the importance of including experiential learning in the interpreting curriculum and the power of group interactions. Adult learning theories, such as Kolb’s (1984) experiential learning theory, show the power of group interactions for enhanced learning as students engage in higher order thinking such as application, analysis, synthesis and evaluation (Bentley-Sassaman). Students who have worked in groups commented that they gained “deeper levels of understanding” by reflecting on their learning experiences with each other (Witter-Merithew & Johnson, 2005, p. 45). While interpreting educators know these skills are important, we still struggle with how to teach in a way that fosters these skills. “Interpreting educators need to learn how to structure, implement, and assess active learning approaches that will lead to active learning by their students, and, therefore, to competent interpreting” (Winston, 2005, p. 208).

Cooperative learning is one approach that addresses interpersonal and critical thinking skills. Johnson and Johnson (1995) argue that working in cooperative groups increases student achievement and has substantial effects on the development of positive social relationships and improved social skills, such as those needed for interpreter competencies. “Within cooperative learning groups there is a process of interpersonal exchange that promotes the use of higher-level thinking strategies, higher-level reasoning, and metacognitive strategies thus creating a better learning environment” (Johnson & Johnson, 1994, p. 21). Johnson and Johnson’s conviction to use cooperative learning is supported by over 600 experimental studies and over 100 correlational studies conducted on cooperative, competitive, and individualistic efforts (see Johnson & Johnson, 1989, for a complete review of these studies). These studies show that when compared with competitive and individualistic efforts, cooperative learning typically results in the following:

- *Greater efforts to achieve:* this includes higher achievement and greater productivity by all students (high, medium, and low-achievers), long term retention, intrinsic motivation, achievement motivation, time-on-task, higher-level reasoning, and critical thinking;
- *More positive relationships among students:* this includes esprit-de-corps, caring and committed relationships, personal and academic social support, valuing of diversity, and cohesion;
- *Psychological health:* this includes general psychological adjustment, ego-strength, social development, social competencies, self-esteem, self-identity, and ability to cope with adversity and stress (Johnson & Johnson, 1998, pp. 1–7).

Increasingly in North America, our classrooms are becoming more ethnically and culturally diverse. It is important that we recognize the variety of experiences and learning styles our students have and also assist students in appreciating a greater variety of perspectives on the world. As educators, we have our own preferred learning and teaching style that may not be the same as that of the students. “Discrepancies between learning and teaching styles are a source of conflict, frustration, and discouragement among students and teachers” (Grasha, 1996, as quoted in Kreke et al., 1998, p. 2). Cooperative learning acknowledges these differences and creates controversy that students learn from as they solve problems, give presentations, or prepare for quizzes or exams (Kreke, et al.; Ellis & Whalen, 1990). This allows students the opportunity to develop skills in seeing problems from various perspectives.



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Using cooperative learning techniques can help us, as interpreter educators, to teach in a way that fosters development of respect for diversity, interpersonal skills, and critical thinking. It is important to understand that cooperative learning groups are not the same as traditional small groups. The next section will explore these differences in more depth, and the methodology section will explain how cooperative learning was used specifically in this action research project.

### *2.3 Differences between cooperative learning groups and traditional small groups*

Many educators have students work in small groups and may think that this is all that is needed to develop interpersonal and critical thinking skills. There is more to it than just having students do group projects or talking to each other in small groups. Cooperative learning gives much more structure to the small group work and acknowledges the goal of learning to work as a group and use interpersonal skills, as well as the goal of the group product or project. Johnson and Johnson (1998, p.2) summarize some of the differences in Figure 1:

*Figure 1: Differences between cooperative learning groups and traditional small groups.*

<b>Cooperative learning groups</b>	<b>Traditional small groups</b>
High positive interdependence Members are responsible for own and each other's learning Focus is on joint performance	Low interdependence Members take responsibility only for self Focus is on individual performance only
Both group and individual accountability Members hold self and others accountable for high quality work	Individual accountability only
Members promote each other's success They do real work together and help and support each other's efforts to learn	Assignments are discussed with little commitment to each other's learning
Teamwork skills are emphasized Members are taught or expected to use social skills All members share leadership responsibilities	Teamwork skills are ignored Leader is appointed to direct member's participation
Group processes quality of work and how effectively members are working together Continuous improvement is emphasized	No group processing of the quality of its work Individual accomplishments are rewarded

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These differences emphasize the structure of the essential elements of cooperative learning that require the positive interdependence of group members in order to accomplish a shared goal. The educator is actively involved in assisting the group members with the interpersonal skills they need to move through the stages of the group process that lead to effective teamwork. The educator determines the make-up of the goals, monitors the group's progress, assists in the debriefing of the group experience, and assesses the group's work in a manner that rewards the interdependence of the group rather than the individual.

This literature review section has provided an overview of where cooperative learning fits in the context of the field of education, what cooperative learning is, why it is important to us as interpreter educators, and how it differs from traditional small groups. From this we can see how the benefits of cooperative learning can provide the desired competencies in the application of critical thinking skills and social skills for graduates of interpreter education programs. We have also seen the structure and support that are necessary to effectively use cooperative learning skills and the essential elements that differentiate it from traditional small group activities. Next, the methodology section will explain more about cooperative learning as we look at the specific types of cooperative learning activities used in this study, the participants in the study, the data collection, and the method of data analysis.

### 3. Methodology

The methodology for this project is known as action research, and it is based on a multi-method approach, drawing upon quantitative and qualitative approaches. As was explained in the introduction, the purpose of this research was to determine the impact on students of augmenting teaching with cooperative learning techniques. Like many other action research projects done by educators, the focus was on trying to improve something within the teaching by implementing a changed item, describing the effect through analysis of pre- and post-course survey questions and field notes, and then reflecting on those effects to determine the effectiveness of the change. These reflections will then lead to more ideas about how to improve something else, and the action research cycle will begin again.

In this specific situation, the goal was to see if the use of some cooperative learning techniques would result in more positive student perceptions of small group work. While learning activities conducted in small groups are beneficial for student learning, educators often face negative attitudes from many students when they are asked to work in small groups that become a barrier to their learning process. Similar to the action research done by Kreke, et al. (1998) the focus of this action research project was on the students' attitudes toward small group learning specifically. To do this, open-ended questions were designed to survey students' attitudes before and after the courses. The intervention of cooperative learning was applied during the teaching of the courses. An undergraduate student, who had taken the ASL and English Text Analysis course the previous year, worked in the fall course as a teaching assistant through the Assistant Mentorship Program at the university. She assisted in the research by taking notes on student comments during debriefing sessions and by assisting in data analysis of the survey responses.

Whereas Kreke et al. (1998) used a post-course survey only, both a pre- and post-course survey were used in this study to note any differences in the students' stated perception of working in small groups, strengths of working in small groups, and weaknesses of working in small groups. In addition, one question, unrelated to the research and about how to evaluate group work, was included to elicit input from students on the grading system. The survey consisted of the following questions:

- 1a. Pre-course survey: Having participated in many classes with small group activities and projects, please tell me your perception or opinion about doing small group work.
- 1b. Post-course survey: Now reflect back on your experience with small group work in this course as you answer these questions: Has your perception of working in small groups changed? If so, in what ways? If not, can you describe what your experience was that contributed to that view?
2. What is your view of the strengths of working in small groups? How were they helpful to you?

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3. What is your view of the weaknesses or challenges of working in small groups? How were they not helpful to you?

4. How should small group work be evaluated for grading purposes?

Due to the fact that the number of participants in the one-week intensive summer course was small (i.e., eight people), the research was also conducted in the fall (autumn) semester course. The action research project was given Institutional Review Board (IRB) approval by the university at which the courses were taught and by Northeastern University in Boston as part of the Master's in Interpreting Pedagogy program. The following sections will describe the specific cooperative learning activities used, the participants in both courses that were part of the study, and the data collection and analysis methods.

*Figure 2: Cooperative learning activities used.*

Cooperative learning activity	Summer course	Fall course
Base group	X	X
Cooperative formal group/jigsaw	X	X
Cooperative formal group graded project	0	X
Cooperative informal group	X	X

The study was based on data from two different courses in which various cooperative formal, cooperative informal, and base groups were utilized. While the cooperative learning techniques for the groups were the same in each course, the type of group and the number of groups was not. Students in both courses were placed in a base group after the first session of each course, and they continued to meet with these groups throughout the course. Base groups do not have a specific product or project they are working on but rather meet throughout the duration of the course for peer support. These base groups, limited to three students, were intentionally heterogeneous to allow for the greatest variety possible. Within the summer course, students were grouped by diversity of skills (i.e., certified, experienced interpreters with interpreters who are uncertified or less experienced) and different geographic locations. In the fall course, students worked with classmates whom they knew the least and with a heterogeneity of signing skills (i.e., more skilled signers with less skilled signers). In the summer course, the base groups met briefly at the beginning and end of each day; during the fall course, they met at the beginning and end of each week. During these brief meetings, they discussed assigned questions in order to help them get to know each other and to support each other in the work in the course. Examples of questions were: What do you hope to learn from this course? How can others help you to learn in this course? What are barriers that we can help you with? In this particular assignment, what is your greatest frustration? What kind of help can the group give you? When the class is taught in American Sign Language only, how does that affect you? What are strategies that can help overcome those frustrations? How is this class working with your learning style, and what can you do to advocate for yourself more? These questions guided the students in providing support for each other as part of building positive interdependence, and this led to the realization within the class that everyone was assisting each other in their learning.

In both courses, students also worked in formal cooperative groups using a technique known as 'jigsaw' to learn material in the course. Jigsaw is one of the types of cooperative learning techniques where the "work of a group is divided into separate parts that are completed by different members and taught to their groupmates" (Johnson & Johnson, 1998, pp. G-3). The idea is that by teaching something to another student, the student actually learns the material better and that by members being responsible for a different part of the whole, they are dependent upon each other in the shared goal of learning. During the action research, each member of each group was assigned a

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section of the material that the students needed to learn, such as reviewing the ten-step discourse analysis process by Witter-Merithew and Johnson (1999) for students in the summer course, or understanding specific linguistic concepts presented in an ASL linguistics video (Valli, 1991) for students in the fall course. All the people with the same section of the material met together to learn the material and plan how to teach it. Then they went back to their original groups, where they taught each other their section. Finally, for clarification, they met again with the people who had their same topic, compared what they had learned about the other topics, and discussed any remaining questions. Any questions that group members could not answer were brought to the teacher when the whole class reconvened. Later, individual students were required to apply what they learned, either in an activity during the summer course or in a test during the fall course. For example, there was no lecture to review the ten-step discourse analysis process, but students read an article on the process and had access to an independent study packet, *Analyzing Discourse* (Digiterp, 2003), with each person in the group focusing on separate sections of the process (e.g., prediction and content mapping, visualization, and salient linguistic feature analysis). Each of the students responsible for prediction and content mapping met together to plan how to teach that while the students responsible for visualization or salient linguistic feature analysis did likewise. Then the students taught members of their base groups their different sections. For added clarification the students who taught the same section (all who had the prediction and content mapping, for example) met again to see what others had learned about the other two sections and to ask clarifying questions. This knowledge that they obtained from each other was then used to conduct a discourse analysis of a text they were interpreting.

The students in the fall course also were in formal cooperative groups for a group presentation of a linguistic concept, such as prosody or register. Each group had a linguistic concept that they needed to teach to the students by using an assigned research article and additional research of their own finding. The group was graded as a whole on their presentation, with each member receiving an individual grade for their contribution to the group, based on a group participation evaluation and an individual reflection paper. These groups shared the common goal of a group presentation with a common evaluation, and each person needed to be responsible for the group's success as well as their own, thus creating positive interdependence. After the experience, the groups debriefed about their group experience to give each other feedback on what they thought went well and how they could improve in working together the next time. Each person also reflected on what they learned about themselves in the group experience and how they assisted the group in achieving its goal. When the groups met during class time, the professor and the teaching assistant observed the working groups to provide support with any group process issues or conflicts, such as disagreements on roles or how to handle the work or presentation. Prior to the group beginning its work, students were told that the group process, as well as the presentation, was important to their learning and both the product of the group presentation and the group experience would be evaluated as part of their grade. Students were reminded of the importance of collaboration and interdependence within their group projects and how that is similar to working as team interpreters (Hoza, 2010) in the future. They were also reminded that it was important to learn to understand other people's perspective within their group just as it will be in the future when working with a wide diversity of people.

Both courses used informal cooperative groups when they worked in pairs to discuss a topic during a class or met to review their individual videos of interpretations or translations. The fall course also had informal groups that met during one class period with community interpreters who joined the class to discuss cultural influences on interpreting or provide feedback on the students' translations during the process. These groups had a shared goal of gaining knowledge or improving a product that each student was creating within a project. None of these informal groups created a group product.

### 3.1 Participants

The research was conducted with both the participants in a summer intensive course in advanced interpreting skills and the first interpreting skills course, ASL and English Text Analysis, in a bachelor's degree program. The eight participants in the summer course were all certified interpreters with experience ranging from one to twelve years. There were seven females and one male; ages ranged from 25 to 45. All the participants were from the Midwest but did not all know each other prior to the course. Seven of the participants were European-Americans and one was an African-American. All but one had graduated from an interpreter education program. This course was a non-credit summer course that interpreters chose to take to learn more about consecutive interpreting and

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working with certified deaf interpreters. Students received hours toward the RID Certification Maintenance Program but were not graded in the course. Half of the participants knew the instructor/researcher from previous experiences.

The six participants in the fall group were students in the interpreting major at a university in the Midwest. The students ranged in age from 20 to early 40s. All the students were European-American females, and all but one was in her junior year. The course is required for the major, with students needing to earn a B- or above to continue in the interpreting major. Although some of the students knew each other from previous courses, one was a transfer student in her first semester at the institution, and one was originally in a different cohort. None of the students knew the instructor/researcher previous to the course.

The researcher and the teaching assistant were both European-American females. The researcher was in her 50s and had been teaching the fall course at this institution for five years. It was her first time offering this particular summer intensive course, although she had taught other intensive courses or workshops before. She had not met any fall participants before but previously had met half of the summer participants in interpreting situations. The teaching assistant was a senior in the interpreting program at the university and had taken the fall course the previous year. She knew all of the fall course participants. Neither the researcher nor the teaching assistant had previously done any formal research.

### *3.2 Data collection*

Data about student perceptions of small group work were gathered through anonymous written responses to an in-class pre- and post-course survey. The survey contained four open-ended questions with one question about the student's perception of working in small groups, a question about the strengths of small group work, one about the weaknesses of small group work, and one about the evaluation of group work. All surveys were given a code number by the students so that the pre- and post-course surveys could be matched, and all participants would remain anonymous. Participants could elect to take the survey, or not, without any consequences and could choose to stop filling out the survey at any point, so that no one was coerced into being part of the study. The paper survey was administered on the first and last day of each course without the instructor in the room.

## 4. Data analysis

The researcher and the teaching assistant analyzed the data using an open coding scheme that is the "process of generating initial concepts from data" through qualitative data analysis (Strauss & Corbin, 1990, p. 10). All the responses to the surveys were transcribed by question on the pre- or post-course survey. Then the researcher and the teaching assistant independently reviewed the transcript, question by question, to look for themes or concepts in the responses. The two then met to compare the concept coding system and themes. Within the first question, the focus was to determine which comments were positive, as compared to a negative statement about the participant's experience with small group work. Although participants were asked in the post-course survey if their perception of small group work changed, most people did not answer with a yes or no. Instead the responses were descriptions of their experiences that led to the researcher and assistant deciding whether the comments were negative or positive.

When reviewing the responses to questions two and three, there were themes that became apparent when types of comments were repeated more than once. In the responses to question two, concerning the strengths of working in small groups, the themes that appeared were: a) diversity of perspectives, b) increased sharing of ideas, c) building trust and rapport, and d) having more people to do the work. In responses to question three, regarding the weaknesses of working in small groups, the themes were: a) unequal participation, b) group conflicts, and c) off-topic discussions. Question three also had a sufficient lack of responses to the question to warrant this becoming a category in reporting the findings. These themes were then used to code each survey for the frequency of the themes.

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### 4.1 Findings

The first three questions on the surveys (i.e., perception of working in small groups, strengths of working in small groups, and weaknesses of working in small groups) reflect student perceptions of working in small groups. The final question (i.e., opinion on evaluation of small groups for grading purposes) was asked only as information about student perception on evaluation and is not part of this study. The findings of the first three questions are reported separately by summer and fall courses in this section. The discussion of the findings and their implications follows in the next section.

#### 4.1.1 Please tell me your perception or opinion about doing small group work

*Figure 3: Question 1: Perception of doing small group work. Comparing pre-course survey and post-course survey responses*

Changes in perceptions	Fall course	Summer course
Negative to positive	2	3
Positive to negative	1	0
Negative to negative	3	0
Positive to positive	0	5

#### *Summer course*

There was a positive shift in student responses about their perceptions of working in small groups in the summer course; all students responded with a positive perception in the post-course survey. Three of the eight students' responses showed that their perception changed to positive from negative after the course that included cooperative learning activities. The remaining students showed no change; the perception of working in small groups was positive before the course and remained positive (Figure 3). There were many positive comments related to social interactions in the small group work:

The small groups helped me be more involved in a female environment, these groups helped me be involved more socially.

Yes! The way you mixed us was terrific. Base groups and discussion topics you gave us were very helpful. Helped me feel safe, and like I "belong."

This specific small group had more positive experiences than others I have experienced.

#### *Fall course*

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In the fall course, five of the six students started with a negative perception of working in small groups. That perception changed to a positive perception for two of the students while the other three maintained a negative perception (Figure 3). The shift from a negative to a positive perception is reflected by one student's post-course survey comment: "My previous experiences with group work were completely different than group work here in such a small program." This was in contrast to her earlier comment: "It's usually harder to get together with a larger number of people and feel like you are on the same page."

One student started with a positive perception: "I enjoy small group work. More questions get answered and it is not as overwhelming as doing a project alone." The response became more negative in the post-course survey: "It's less fun because we only do busy work."

### 4.1.2 What is your view of the strengths of working in small groups?

The responses to question two, about the strengths of working in small groups, can be categorized into four themes: diversity of perspectives, increased sharing of ideas, building trust and rapport, and having more people to do the work. Many of the students made comments that fit into more than one theme.

Figure 4: Question 2: Strengths of working in small groups.

	Summer pre-course survey	Summer post-course survey	Fall pre-course survey	Fall post-course survey
Diversity of perspectives	3	5	2	5
Increased sharing of ideas	7	7	4	3
Builds trust and rapport	4	3	3	1
More people to do the work	1	2	2	2

### Summer course

The summer participants listed strengths in all four themes. The importance of increased sharing of ideas was listed with the most frequency, with seven comments in the pre- and post-course surveys. The strength of small groups helping to build trust and rapport had frequent comments, with four comments in the pre-course survey and three in the post-course survey. The strength of diversity of perspectives was also listed frequently with three comments in the pre-course survey and five in the post-course survey (Figure 4). Many of the respondents listed comments that included more than one theme. Some of the comments from the post-course surveys follow:

The overall size of the group was nice which allowed all of us to get to know each other better, helped with the comfort level.

Trust the group to have the 'work the puzzle together' with me.

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A majority of the responses from the students in the fall course were about learning from a diversity of perspectives and the increased exchange of ideas (Figure 3). All six participants made comments about strengths in both the pre- and post-course survey and often more than one theme was included. Even when students had commented that their perception of working in small groups had not improved, due to a conflict, they still made comments about strengths of working in small groups:

You can get ideas from people and feedback on what you're doing. You can bounce ideas off of others and brainstorm together.

Several people with different experiences to lead the group one way or the other, can help one another.

Students in both groups listed many strengths of working in small groups even if they did not always like small group work.

### 4.1.3 What is your view of the weaknesses or challenges of working in small groups?

Figure 5: Question 3: Weaknesses of working in small groups.

	Summer pre-course survey	Summer post-course survey	Fall pre-course survey	Fall post-course survey
Unequal participation	3	2	4	3
Group conflict	4	0	0	3
Off-topic discussions	1	2	2	0
No response	1	4	1	0

### Summer course

A strong positive perception of working in small groups was present in the summer participant responses even when they were asked about the weaknesses of small groups or how they are not helpful. Comments expressing concern in the pre-course survey about unequal participation decreased in the post-course survey from three to two. Similarly, there was a decrease in people's concerns about group conflict; no one mentioned it in the post-course survey, after four people had in the pre-course survey. Three of the eight people left the weaknesses question blank on the post-course survey after having answered it in the pre-course survey (Figure 5). One person even answered the weaknesses question in the post-course survey by stating, "This was a good experience for me."



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### *Fall course*

Over half of the fall course participants listed in their pre-course survey that a weakness of small group work is having unequal participation; that improved slightly in the post-course survey, with one less person mentioning it. This group showed an increase in the concern about group conflict in their post-course survey, with three of the six people commenting. Prior to the course, two people had mentioned the concern of off-topic discussions; no one mentioned that in the post-course survey (Figure 4).

## 5. Discussion

Upon review of the findings, there are several things that merit further discussion. Some of these relate to what the findings reveal about student perception of small group work after experiencing cooperative learning techniques, and others are about limitations and factors that influenced the study. The findings show evidence of a shift in perception about working in small groups and also some trends related to the types of comments made by participants.

The perception of working in small groups for the summer course students was completely positive in the post-course survey (Figure 3). Three people shifted from a negative to a positive response, and five remained positive. Their comments about strengths of working in small groups included comments in all four themes (Figure 4). This positive attitude is also noted when participants were asked about weaknesses and four of the eight in the post-course survey had no response after having responded in the pre-course survey (Figure 5). One person in the summer group even commented in the post-course survey question about weaknesses, "This was a good experience for me."

The fall course participants made a slightly positive shift in perception, with two of the six changing from negative to positive, three of the six maintaining a negative perception, and one shifting from positive to negative (Figure 3). These participants showed concern about weaknesses of small group work when group conflicts arise; three of the six people mentioned this in their post-course survey (Figure 5).

Both the fall and the summer participants made negative comments that were related to the lack of positive interdependence that comes with trusting each other, one of the essential elements of cooperative learning. The following comments capture the sentiment of the people with a negative perception of working in small groups:

In every small group I've been in, someone ends up doing all/most of the work. Either people don't chip in or they aren't willing to trust someone else with the work.

I find group projects unfair to the individual participants.

When the essential elements of cooperative learning are part of the small group process, positive interdependence lessens the inequity of workload and can create a positive, equitable relationship. Students are then pleasantly surprised, similar to one person in the summer course who started out with a negative perception because she usually had to take the lead but then noted how well people worked together in this course. In the Kreke, et al. (1998) study, the authors noticed similar comments in seven of the nine participants whose perceptions changed from negative to positive. The shift from a negative perception of working in small groups, often due to lack of positive interdependence, to a positive perception appears to be a result of the use of cooperative learning techniques in the courses. Without controlling for other factors that influence student experience, we cannot be definitive about this; however, cooperative learning techniques were applied in all small group activities in the course and appeared to influence student perceptions.

Both groups also made comments about building trust and support or rapport. These comments were most frequent in the summer group's responses to question two, about strengths of working in small groups (Figure 3).

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Several people also made comments in their post-course survey response about their perception of working in small groups:

Built rapport with groups, great discussions at length. Laughed and vented. Found out I'm not alone in some things I questioned.

Base groups and discussion topics you gave us were really helpful. Helped me feel safe and like I "belong."

The small groups helped me be more involved in a female environment; these groups helped me be involved more socially.

Yes I prefer the small groups-it is not as scary.

These types of comments demonstrate the influence group work (in this case, cooperative learning), such as base groups, can have on building a "community spirit" or improving social relationships. This same effect was noted in other studies carried out by Johnson and Johnson (1998).

Both the fall and summer participants in this study listed the opportunity to experience diverse perspectives as a major strength of working in small groups; five of the summer participants commented on this in the post-course survey, as did five of the six in the fall course. As Johnson and Johnson (1994) and others have noted, this experience leads to more acceptance of diversity and an increased ability to manage conflict. These are attributes that are key to successful interpreting and required for RID certification (RID, n.d.).

It is important to discuss possible explanations of why these two groups were not equally positive in their responses to their group experiences. The summer group was composed of working interpreters who had chosen to take the course and were not graded. The fall group was filled with students who were enrolled in an interpreter education program and who were required to take the course; they had to receive a grade of B- or above to remain in the major. The summer group participants were older and started with a more positive perception of working in small groups. The length of the courses, one being a one-week intensive and the other a semester long, may also have contributed to differences. In order to determine if the age and experience of participants, length of a course, or grading are factors on the effect of cooperative learning, additional research would need to be done that focuses on these features. Additional studies by Johnson and Johnson (1989) would need to be reviewed to learn more about successful techniques with post-secondary students in graded situations, including grading methods. Action research could be conducted again with specific attention on grading methods, or it could be done with only activities that do not have a group grade to see how that influences students' perceptions of working in small groups.

Another difference was that the fall group had to participate in a cooperative learning formal group project that was graded. The summer group did not have to participate in such a project (Figure 1). It is possible that the additional graded project did not create positive interdependence and, therefore, contributed to negative feelings about small group work. During the debriefing session of the groups that did the graded project, there were several comments about the conflicts within one group in particular. Students commented that others did not do their share of the work and two students had personal conflicts with each other. If this had been recognized earlier, the instructor might have provided assistance with these interpersonal skills, which is part of cooperative learning. Also, if the group members had the opportunity to continue to work together, they might have been able to move beyond this conflict, the storming stage, of the group process.

As the group begins to solve problems together, struggles are inevitable as they learn to interact with each other and accomplish tasks. Reminding the group to use their operating rules and leading the group through this processing discussion are two methods that faculty can use to help the group move through this storming stage. As

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the group proceeds into the norming stage, a feeling of community and mutual commitment grows. Group members share mutual goals, solve problems, and accomplish tasks by sharing insights and different perspectives. Finally, the group reaches the performing stage where they use effective interpersonal and communication skills to nurture and maintain the group, focus on solving problems, and complete difficult tasks. (Kreke et al., 1998, p. 15).

There were also limitations in this study that may have contributed to the different findings between the two groups. First, both groups were small, which means there is less data and also that individual differences or conflicts will have a greater impact on the data. For example, there were only two small groups, of three people each, in the fall course. When there was a conflict between two people in one of the groups, the experience for half of the participants was affected. If there was a larger sample, the effect of periodic conflicts between people may have had less impact.

The research survey questions also posed a challenge because the open question format did not require people to state overtly if their perception about small groups changed or if their perception was positive or negative. Instead, the responses were open to interpretation by the researcher and the undergraduate teaching assistant. While each coded the data separately and then compared the coding in an attempt to corroborate the findings, interpretation of responses was still open to biases. Using a forced-choice scale, such as a Likert scale, would have given more reliable ratings on participants' perceptions of working in small groups. The questions also were not piloted or reviewed by other researchers. There may have been better questions for determining the extent to which the cooperative learning techniques influenced student perceptions of working in small groups.

A factor in this study is related to how thoroughly the cooperative learning techniques were followed by the instructor in the courses. It was easier to be consistent with base group meetings during the one-week summer course than to maintain the twice-weekly meetings during the entire semester course in the fall. The fall course also had an additional formal cooperative learning group activity that the summer course did not have. It was during this group project that two members of one group had a major conflict that was not resolved well. It is difficult, as an instructor, to know how to assist students with interpersonal interactions. While this is one of the essential elements for cooperative learning, it is one that the instructor lacked, especially related to assisting groups when they did have conflicts. While debriefing was helpful to the group to talk about the problem, group members were not required to do additional projects as a group; hence, they did not have the opportunity to move past this storming stage of the group process to finally reach the performing stage. Prior to doing more work with cooperative learning, the researcher will need to learn more about how to address interpersonal issues within groups and consciously think about how to assist groups through the stages of the group process.

Despite the limitations of the study, it provided insight into how the use of small groups influenced student learning. The cooperative learning techniques provided a tool for addressing small group work. Small group work shows the power of students learning from their peers, and cooperative learning helps to facilitate that. When incorporating small group activities, it is important to be intentional about applying the essential elements of cooperative learning, including being sure students understand what contributes to effective group functioning and why that is valuable to them; making sure students know what their shared goal is and the role each of them has in the plan to achieve that goal; and assisting students in developing the skills they need for working together effectively, both interpersonally and as a group.

## 6. Implications for interpreter educators

There are several observations that can be drawn from this study about the use of cooperative learning in interpreter education. These are issues that I will continue to explore within my teaching and that merit review by other educators. The positive shift in perceptions of working in small groups after the students experienced cooperative learning activities within a course is worth noting, as it shows the reduction of student resistance to working in small groups. When students are more open to small group work, they are more open to the benefits of developing better interpersonal skills and peer learning. There were also specific benefits that the students commented on that are assets within a classroom, such as learning to see other perspectives, developing more trust or rapport, and having an increased exposure to various ideas. As educators, it is well worth learning more about

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cooperative learning and applying its essential elements to our classrooms to maximize the benefits of peer learning in small groups. Cooperative learning techniques can provide specific tools to facilitate small group learning. There were also the challenges of group grades and interpersonal conflicts noticed while students were working in cooperative learning groups that need further study.

In this study, cooperative learning techniques were used to create a sense of trust and support or rapport. Students commented on the importance of positive interdependence, building trust, and sharing diverse perspectives as the results of cooperative learning. These attributes can be advantageous, especially when working with interpreting students in high trust situations, such as doing self-assessments and peer assessments of interpretations. The use of base groups and formal cooperative groups by interpreter educators can be especially effective during workshops in which students do not know each other and need to develop trust quickly.

This action research project caused me to rethink how I use small groups to facilitate student learning and to be more intentional in facilitating the small group process. I had left the group process to luck or focused on the goal of a product only. I now realize that there are essential elements of cooperative learning that can be included when establishing and utilizing small groups. I understand that group work serves a key role in developing the interpersonal and social skills of interpreting students that is as important as their ability to transfer meaning between two languages. It is important to help students understand why they are working in small groups and how that will assist them in their work as interpreters. As the educator, I need to make this overt to the students by being intentional in my use of small groups. Social skills development needs to be stated as a goal in addition to the goal of the product of the project. I also need to teach the social skills needed for the group process and conflict resolution to students, as well as interpreting skills.

Frequently, students have not liked small group work because of the conflicts between members or the unfair division of work. Cooperative learning addresses both of these concerns but requires that we, as educators, know more about the stages of group development and how to assist group members through the process. This will not only reduce the conflicts that can arise during small group work but also will empower students to develop better interpersonal communication skills. Personally, the results of this action research have demonstrated to me that I need to deepen my skills in these two areas and to continue to grow in how I assist students in working in small groups. Clearly, this is valued in the field of interpreting with the inclusion of human relations and interpersonal skills in the requirements for certification by the Registry of Interpreters for the Deaf (RID, n.d.) and in the domains of the entry-to-practice competencies (Witter-Merithew & Johnson, 2005) for interpreting students.

## 7. Conclusion

Through this action research project, we have seen how cooperative learning techniques may have improved students' perceptions of working in small groups. I have shared why student perception of working in small groups in previous classrooms concerned me and why I chose the structured approach of cooperative learning to address it. In the literature review section of this paper, I have explained what cooperative learning is, why educators would use it, how it is different from competitive or individualistic efforts, how it is different from traditional small group work, and the ways cooperative learning is structured. I have explained how I used cooperative learning in two classroom settings and gathered data by surveys and field observations as part of action research. This data was then analyzed to determine any findings that might have implications for me, as an interpreter educator. All of this has convinced me of the value of using cooperative learning in interpreter education and the importance of being intentional in the use of small groups. I also realized I need to develop additional skills in the essential elements of assisting students with group development and interpersonal communication. So, I continue the cycle of action research by seeking to improve this aspect of my teaching and determine its effect on student learning.

I am also personally convinced of the merits of action research as a tool to improving teaching and determining whether what we are doing, as educators, is facilitating student learning in the way we had hoped. Prior to doing this action research I would use various methods of teaching and then wonder about the responses I was getting from students or from the evaluations of student learning. I had not done the literature review to place that teaching method, activity, or theory within a context; nor did I have a way to evaluate its effectiveness. Often

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educators have shared with me that they take little time to reflect on what is effective teaching from year to year; action research would give them that opportunity and tools for reflection. By adding some evaluative tools, such as student surveys, that are focused on a specific aspect or teaching approach, I will be able to continue to improve my teaching within the cycle of action research.

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