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ABSTRACT

This study investigated the effects of advanced organizer instruction on 3- to 5-year-old preschoolers' learning of general prosocial skill concepts, rules for using prosocial skills, and spontaneous prosocial behavior. The six prosocial skills considered included cooperation, sharing, taking turns, helping, demonstration of awareness of another's feelings, and verbal resolution of conflicts. Seventeen preschoolers from an Ausubelian preschool program (experimental group) and 17 preschoolers from a community day care center (control group) were selected randomly. Subjects were from middle-class families of different ethnicities. The children received six weeks of intruction in the prosocial behaviors. Instruction in the experimental group was based on Ausubel's theory of learning, and instruction in the control group was based on a traditional method. Tests were administered to assess the children's ability to resolve hypothetical social conflicts between two puppets. Children's spontaneous prosocial behavior was observed. Testing and observations occurred prior to, immediately after, and six weeks after instruction. Children in the experimental group performed significantly better than those in the control group on both tests after instruction and in observed helping behavior. The study includes a list of 41 references. (RJC)

Effects of Advance Organizer Instruction on Preschool Children's Prosocial Behavior

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Abstract

The objective of this study was to investigate the effect of advance organizer instruction on preschool children's learning of general prosocial skill concepts, rules for using prosocial skills, and their spontaneous prosocial behavior. Principles of instruction, derived from Ausubel's theory of learning, were used to instruct preschool children in the general concepts of, and skills for, cooperating, sharing, taking turns, helping, showing awareness of another's feelings, and verbally resolving conflict. Preschoolers from middle class families and with an ethnic mix were selected from an Ausubelian (experimental) and Community (control) preschool program. Tests were administered in story form to assess children's ability to resolve hypothetical social conflicts between two puppets. Children's spontaneous prosocial behavior was observed prior to and post instruction. A six week period of instruction followed pretesting and pre-observation. Children in the Ausubelian program received advance organizer instruction followed by related learning activities. Children in the Community preschool program were taught the six prosocial skills using a "traditional" teaching method. Posttests and post-observation were completed immediately following instruction and delayed posttests were administered six weeks following completion of instruction. Compared to children in the control group, children in the experimental group performed significantly better on both post- and delayed posttests. However, the only significant between-group difference for spontaneous prosocial behavior was with respect to helping, favoring the experimental group.

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Effects of Advance Organizer Instruction on Preschool Children's Prosocial Behavior

The objective of this study was to examine the effects of advance organizer instruction on preschool children's learning of six prosocial concepts and related strategies for resolving social conflicts; namely, cooperating, sharing, helping, taking turns, showing awareness of the feelings of others, and the verbal resolution of conflict. In a previous study (Lawton & Berning, 1985) results indicated that children receiving advance organizer instruction in general strategies for resolving hypothetical social conflicts, compared to children encouraged during socio-dramatic play to consider the use of prosocial skills to resolve conflict, were significantly better at using these skills. However, a limitation to this study was the fact that children were only requested to solve hypothetical social conflicts as presented in stories. In the present study an examination was also made of the immediate and long-term effects of improved understanding of these six prosocial skills on children's spontaneous social behavior during free-play.

The six prosocial skills were selected on the basis of a review of categories of social behavior used in previous research. Three prosocial behaviors most frequently referred to are sharing, helping, and cooperating (for example, Barrett & Radke Yarrow, 1977; Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Neal, 1981; Friedrich & Stein, 1973; Friedrich, Stein, & Susman, 1975; Levine & Hoffman,1975; Hay, 1979; Iannotti, 1985; Mussen & Eisenberg-Berg, 1977; Ross & Goldman, 1977; Stein & Friedrich, 1975, to mention but a few). Taking turns is frequently described as one aspect of sharing, and showing awareness of others' feelings is sometimes included as an aspect of cooperation between children (for example, Baumrind, 1980; Eisenberg, Lennon, & Roth 1983; Staub, 1975, 1979).

Previous research has indicated that preschool aged children spend considerable time in social interaction (Garvey & Hogan, 1973) and that their prosocial behavior can be sometimes sophisticated and elaborate (Yarrow & Waxler, 1977). It has also been suggested that teachers can play a crucial role in establishing and maintaining prosocial behaviors in children (Ladd & Mize, 1983; Smith, Neisworth, & Green, 1978). Other research has demonstrated the

effectiveness of structured learning in developing a better understanding of prosocial behavior. As long ago as 1942 Chittendon reported that instruction in problem solving strategies resulted in preschoolers' improved ability to share, take turns, engage in cooperative play, and verbally resolve conflict. And Thompson (1944) used an "intervention instruction strategy" successfully in improving young children's interpersonal relations and their cooperative use of play materials. Sapon-Shevin (1980), in summarizing a review of research where strategies had been used to establish appropriate social skills in young children, concluded that children need to be taught specific repertoires for dealing with situations of social conflict and for using appropriate prosocial behaviors. More recently, researchers have examined the number of strategies children can produce for various social situations (Spivack & Shure, 1974; Marsh, Serafica, & Barenboim, 1980) and the extent and quality of strategies children use (Ladd & Oden, 1979). Previous studies of most import to this present study are those where verbal instruction has been used to enhance children's understanding of social knowledge. In a comprehensive survey of models of social skill training, Ladd and Mize (1983) mention that the most widely cited examples of studies using this approach are social problem solving programs (Spivack & Shure, 1974; Spivack, Platt, & Shure, 1976; Weissberg, et al., 1981; Zahavi & Asher, 1978).

Of special interest here is the instructional procedure used in the Zahavi and Asher study, since it has some similarities with instruction used in this study. The teacher focused on particular, or target, classes of social behavior, suggested behavioral strategies for dealing with social situations, and summarized each skill concept. In this case, instruction was successful in reducing aggression in children and increasing prosocial behavior toward peers. However, as Ladd and Mize point out, in these studies, the effectiveness of training has been assessed only in terms of behavioral outcomes and, "with the exception of Spivack et al. (1976) and Weissberg et al. (1981), they have not evaluated change in children's social knowledge." (Ladd & Mize, 1983, p. 142). There have been relatively few studies that have sought to enhance both children's knowledge of prosocial skills and subsequent, related prosocial behavior, especially that which is spontaneous rather than contrived. In surveying this group of studies (for example, Bornstein,

Bellack, & Hersen, 1977; Evers & Schwartz, 1973; O'Conner, 1972), Ladd and Mize comment that "the knowledge-plus-performance procedures ... do not appear to yield long-lasting effects." (Ladd & Mize, 1983, p. 144).

We can conclude from previous research that teacher directed instruction in particular prosocial concepts or skills can be most effective in improving children's understanding of those skills. Improving the corresponding performance of prosocial skills, especially those which occur spontaneously, seems to be much more difficult.

The instructional procedure used in this study was based on Ausubel's theory of learning (Ausubel, Novak, & Hanesian, 1978). According to this theory, superordinate concepts, high-order rules, or both, are presented during "advance organizer lessons" *in advance of* related more particular information. The related information can be subsumed under the superordinate concepts and high-order skills.

This sequence of instruction is considered of importance to meaningful learning for a number of reasons. First, it is expected that individuals will tend to organize knowledge into hierarchical structures of related super and subordinate concepts. General concepts and skills tend to be retained longer in memory than more particular information. Second, the learner should find it less difficult to grasp the relatedness of the differentiated aspects of general concepts and rules as presented in final form than to construct the general concept or rule from its differentiated parts. And this is of particular importance in the case of young children who are likely to have limited experience in the processing of information.

A distinction is made here between superordinate concepts (also described as "subject matter" concepts) and high-order skills (also referred to as "high-order rules"). Put simply for the sake of space, a superordinate concept taught to young children might be that of living things, non-living things, mammal, or transport, to mention a few. A high-order skill or rule might be that of classification or conservation (Lawton & Leckwee, 1989). An important feature of a superordinate concept or high-order rule is that it is relatively easy to learn. For example, in presenting examples of "mammal" to children, the teacher focuses their attention on the defining

characteristics of the concept. In this case:

That mammals have hair on their body.

Mother mammals give birth to baby mammals.

Mother mammal provides milk from her body to feed her baby until it is able to feed itself.

The defining characteristics are few in number, are easily exemplified in different types of mammals, and can be easily committed to memory. Children can use this information to identify mammals and to discriminate them from other animals. They can also use this information, plus additional limited information, to learn the related subordinate concepts of "animals that live on the land", "animals that live in the sea", and "animals that fly". The sequence of learning always requires the child to transfer (or generalize) from the more general (superordinate) concept to related subordinate concepts and particular information. Subordinate concepts and particular information are related to the overarching superordinate concept, and this is what is meant by "subsumption".

In the literature, social behaviors such as sharing, helping, and taking turns, are sometimes referred to as social concepts and sometimes as social, or prosocial, skills. Such skills are rule governed. Social conventions, though arbitrary and changeable, are based on rules of social behavior. Being socially competent means knowing the rules for appropriate social behavior and how to apply them to social contexts. In this study, the six target behaviors are referred to as prosocial skills. In the format for presentation in advance organizer lessons, they are referred to as high-order skills.

Scandura, in his description of his Structural Learning Theory makes the point that, high-order rules can serve to combine related, component rules, and to generalize given rules (Scandura, 1977a, 1977b; Scandura & Scandura, 1980). Although we substitute the term "high-order skill" for the term "high-order rule" and do not describe it in as precise a manner as Scandura describes "high-order rule", the importance of these skills is essentially the same. As Scandura puts it, high-order rules simplify learning because they account for a related structure of subordinate rules (concepts) and factual information (Scandura & Durnin, 1977). They allow for generalization,

including unanticipated outcomes. And they provide a general means for representing the potential for actual human behavior (Scandura & Scandura, 1980). Teachers need to describe what children can be expected to learn as an outcome of instruction. And it is important to organize instruction to best achieve these outcomes. The sequence of advance organizer lessons coupled with related learning activities appears to be an efficient method for achieving these ends.

In this study, then, each of the six prosocial skills already referred to were presented first in separate advance organizer lessons. Each advance organizer lesson was followed by a number of "related learning activities" containing more particular information which served to exemplify and discriminate the previously presented general concepts and skills.

Advance organizer instruction has previously been found successful in enhancing preschool children's understanding of social studies concepts (Lawton, 1977; Lawton, 1987; Lawton & Wanska, 1979), math concepts (Lawton & Fowell, 1978), natural science concepts (Fowell & Lawton, 1988), and logical operations (Blue Swadener & Lawton, 1983, Lawton, 1988, Lawton, Hooper, Saunders, & Roth, 1985). As already mentioned, this method of instruction has also proved successful in improving children's learning of prosocial concepts and in their use of strategies to solve hypothetical social conflicts (Lawton & Berning, 1985) In this experiment two questions were asked:

Q1. Will advance organizer (AO) instruction followed by related learning activities (RA), aimed at enhancing preschool children's understanding of high-order prosocial skills, result in an improved ability to resolve hypothetical social conflicts ?

Q2. Will such instruction result in an improvement in children's spontaneous prosocial behavior in free play situations ?

Method

A pretest - training - posttest- delayed posttest format was used in the study with observations of children's spontaneous social behaviors prior to instruction, immediately following instruction, and five weeks after instruction.

Subjects

For the experimental group, seventeen preschoolers were randomly selected from a total of 30 children enrolled in an Ausubelian preschool program. Seventeen preschoolers were randomly selected as the control group from 28 children enrolled at a community day care center. The experimental group consisted of 8 boys and 9 girls ranging in age from 3 yrs, 4 months to 4 yrs, 10 months (mean age, 4 yrs, 3 months). The control group consisted of 9 boys and 8 girls ranging in age from 3 yrs, 1 month to 4 yrs, 5 months (mean age, 4 yrs, 1 month). Children were from middle class families and there was an ethnic mix, though all children were fluent in English.

Tests

In previous research, testing procedures using short stories about particular social conflicts between two puppets, followed by questions to children asking for possible solutions to the conflict, have been used successfully to measure young children's understanding of prosocial skills. For example, Ball & Bogatz (1970) examined the extent to which children's social behavior might be influenced following observation of segments of Sesame Street programs teaching cooperation using puppets, Chittendon (1942) asked for solutions to conflicts over possession in doll play situations, Friedrick & Stein (1975) assessed young children's "helping behavior" to resolve conflicts between puppets, and Spivack & Shure (1974) used puppets in story completion problems. On the basis of procedures used in previous research and the successful use of a similar procedure used in the previous study by Lawton and Berning (1985), six "puppet stories" were used at three times of testing. Each story concerned a different hypothetical social conflict related to one of the six target prosocial skills (see Table 1).

Insert Table 1 about here

At each occasion of testing, the six tests were administered in random order to control for effects of test sequence. The tests were administered to children individually and each testing session lasted about 20 minutes. For each tests, two puppets acted out incomplete stories describing a social conflict between them. The child was asked to help the puppets solve their

problem. At each time of testing the two puppets and content of the stories changed but the six types of social conflict remained the same. Children's responses to each social conflict situation were tape recorded. Transcripts made from the tapes and used to score responses. For each conflict situation, the child was asked to think of three possible ways of resolving the conflict. Each appropriate response was given a score of 1 making it possible to achieve a maximum score of 3 for each conflict situation. Pretests were followed by a period of six weeks of instruction which, in turn, was followed by immediate posttests. Delayed posttests followed five weeks later.

Observations

During free-play activities, four trained observers, two male and two female, recorded children's spontaneous social behavior according to the six categories of prosocial behavior already described. Each target child was observed for five minutes at a time for a total of twenty minutes during each of the three observation segments. Overall inter-rater reliability was .82. Definitions and examples of coded behaviors are given in Table 1.

Instruction

During the six week long instruction period, children in the experimental group were presented with advance organizer lessons aimed at teaching the high order skill of each of the six target prosocial skills and related strategies for resolving social conflicts. Each advance organizer lesson was presented to children in groups of five and lasted approximately 15 minutes. During advance organizer lessons, children were actively involved in listening, in taking part in story telling, in questions and answers, in offering suggestions to story characters, in role playing story characters, and in describing personal experiences related to each story. Each advance organizer lesson was followed by a number of related activities which required the use of a prosocial skill in various particular instances of social conflict. Each related activity took the form of a game. The entire session of related activities lasted for about 20 minutes. The following is an example of an advance organizer lesson and accompanying related learning activities.

Advance Organizer Lesson--Cooperating

The teacher tells a story as though it were a personal experience. The teacher and children act out the story as it progresses. At various key points in the story the teacher asks questions such as, "What do you think happened next" . Children were thus involved in brief question and answer sessions as the story unfolded.

Once I was visiting a different school, but one just like our school. I was watching the children play in the playground. One boy was playing alone He was in the sandbox shoveling sand into a wagon. He kept putting in more sand until the wagon was very full. I heard the boy say, "Now I'm going to pull the wagon over to the sand tray." He tried to pull the wagon, but it wouldn't budge. He kept trying, but he couldn't get the wagon to move very far. After a little while, some other children came over to him. They said they would help him pull the wagon. When all the children pulled together it was much easier to move the wagon.

The teacher then asks the children for other examples, either imaginary or from their own experiences. The teacher emphasizes that when the children cooperate they all work together to pull the heavy wagon.

After the children played outside for a while longer I heard the teacher say, "It's time to put the toys away and have lunch now." One of the children began to put the bikes away. Some of the children started to go inside to get ready for lunch. The teacher suggested they all help put away the bikes and other toys. So together they put away all the toys. It was a much faster job to put the toys away will all the children working together.

Again, the teacher involves the children in a question and answer interlude and emphasizes that when the children cooperate they all work together to put the toys away.

When the children were eating lunch, three of the children were sitting at one table. They were talking, being friendly with each other, and eating their lunches.

Some other children were sitting at another table. And they were enjoying having lunch together. When they had finished lunch, the teacher asked them to clean-up their tables. The children in each of the groups worked together to clean- up their table. It made the job of clean-up very easy. When children work together like this to pull the heavy cart along, to put away the toys, and to clean-up the tables we say they cooperate. They work together with each other to get the jobs done easily and quickly.

It is clear that qualities of helping and sharing and of showing awareness of another's feelings come into these activities. But the focus here is on cooperating.

Related learning Activities

1. Play a game requiring the cooperation of a number of children. For example, "Duck, Duck, Goose".
2. Take part in a cooking activity that requires a group of children to work together.
3. Have children organize a game with a teeter-totter with first one child on each side, then two children on each side. Focus children's attention on the need to cooperate to get the teeter- totter to work.
4. Have children play with a construction game where each child has the job of completing some particular part of the construction, or of finding suitable pieces as part of the construction, etc. Again, focus children's attention on cooperating to complete the construction.

Instruction for the Control Group

Teachers of the control group children had agreed to introduce the six target prosocial behaviors using what might be described as "traditional" teaching methods found in regular day care centers and preschools in our communities. They described these methods in terms of reading stories, playing games, encouraging appropriate prosocial behaviors in various spontaneous activities, and in the more structured organization of socio-dramatic play activities. For example, these teachers were observed helping children think about cooperating, sharing,

taking turns, and helping each other in a "grocery store" game. Observations of the control group program during the six weeks of instruction indicated that children in this program participated in social skill activities, which included reference to each of the six target prosocial behaviors, for about as long a period of time as children participated in the structured learning sessions used in the Ausubelian program. By observation it was also possible to ascertain that the teaching method in the control group program was principally "child-directed", versus "teacher directed" as in the Ausubelian program. Teachers did not attempt to directly teach prosocial skills. Nor did they refer to prosocial skills or their use in general terms. Rather, through suggestion and questions, children were encouraged to consider the use of particular prosocial skills in various spontaneous and teacher organized activities.

Results

First, results from the three times of testing will be given, followed by results from observations. Data from tests are provided in Table 2.

Insert Table 2 about here

Initial ANCVAs indicated no significant performance or sex differences on the pretests. Since no significant differences were found for each group on immediate posttest compared to delayed posttest performance, data from these two times of testing were combined for further analyses. There was a main effect indicating a significant between group performance difference favoring the E group ($F=8.39$, $p<.01$). There was no sex difference or interaction effect. Post hoc Tukey t-tests indicated significant performance differences between the two groups for all six tests favoring the E group in each case: cooperating, $t=4.62$, $p<.01$; sharing, $t=3.89$, $p<.01$; helping, $t=2.35$, $p<.05$; taking turns, $t=3.27$, $p<.01$; showing awareness of another's feelings, $t=2.43$, $p<.05$; verbally resolving conflicts, $p=2.37$, $p<.05$

Observations

Children's spontaneous social behaviors were coded from a total of 400 minutes of

observations during free play activities. Table 3 provides frequencies of prosocial behaviors in each of six categories. For each category, the number of occasions that prosocial behavior was observed for each group was expressed as a percentage of the total number of occasions of that behavior by all target children (see Table 3).

Insert Table 3 about here

Chi-square comparisons were made between frequencies of behaviors in each category for the two groups of children. There were no significant differences between the frequencies of prosocial behaviors for the E and C groups at the first time of observation. At the second time of observing, children in the E group were seen helping significantly more frequently than children in the C group: $X_2 = 20.48$, $p<.01$. This was also the case for the third time of observing. Of the six types of prosocial behavior, this was the only one where significantly different frequencies of the behavior occurred.

Discussion

In response to the first question asked, it is clear that advance organizer instruction significantly improved the experimental group children's ability to suggest prosocial behaviors appropriate for resolving various hypothetical social conflict situations and social problems. In that respect, they demonstrated an ability to learn and understand general social studies concepts and to transfer this knowledge to at least a limited number of related social conflict and problem situations. And this ability was maintained over time. Therefore, it is clear that at least their knowledge of prosocial skills and how they might function improved. These results support those obtained in a previous related study by Lawton and Berning (1985). Vygotsky (1962) has mentioned that young children are likely to have difficulty in deducing the critical attributes of concepts and skills. Ladd and Mize suggest that it may be necessary to not only provide children with examples of prosocial skills and their functions, but also their defining features (1983,

p.133). The advance organizer lessons used in this study were designed to do exactly that, and the procedure obviously proved effective.

The second question asked whether instruction in prosocial skills and their functions might also influence children's spontaneous social behavior in free-play activities. The only behavior which appears to have been enhanced was that of helping.

In this study prior to instruction, at least during free-play, these children appeared, in fact, to be quite socially competent. Very young children do not tend to spontaneously engage in rule governed games. This was certainly the case for these children during free play activities. Occasions where it was necessary to observe the niceties of sharing or taking turns, as for example in taking turns on a slide, were frequently overseen by a teacher. Teachers were observed reminding children of the rule for using such equipment, partly, one might imagine, for the sake of safety. Thus, appropriate social skills were constantly reinforce in these particular contexts. We do not know whether these children's social behavior might have changed as a function of changing social contexts and situations. In other situations such as using building blocks, working together on an art activity, or playing in a socio-dramatic activity children's play is more focused and they are usually more confined in a fairly small space. The need to use various social skills is likely to be emphasized. We had considered completing observations of children's social behavior in a variety of classroom activities, but time and resources mitigated against this. In studies such as this, more broadspread observation of children's social behavior is obviously needed.

We must also acknowledge that instruction was not geared to helping children transfer knowledge of prosocial skills and their function to performance in real-life social situations. Advance organizer lessons presented essentially hypothetical social conflict situations. During these lessons and related learning activities, particular social problems were highlighted for children. Attention was drawn to the problem at hand and children were prompted to suggest appropriate strategies to resolve these conflicts. In real-life situations, social skills can be used in various ways, including the solving of social conflicts. The instructional procedure used for this study needs further development to take this requirement into consideration.

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Table 1.

Descriptions of Six Categories of Prosocial Skills

Category	Code	Description
Cooperating	Co	*Offer to include someone in a game, task, or activity,* e.g., "Do you want to play?"; stop the teeter-toter for someone else to get on; "Let's play house. I'll be the mother. You be the father."
Sharing	Sh	*Offer to share objects, activities, or space.* e.g., "Here, this can be yours."; Divide playdough to share; Read one book together; Put a puzzle in place together; Make space for another.
Helping	He	*Offer to help, or respond to a request for help.*, e.g. "Do you need help?"; "Do you want a band-aide? I can get it for you."; Help clean up a mess when asked by another child; Help lay tables for snack.
Taking Turns	TT	*Offer to take turns, take turns while having a common goal, or take turns spontaneously.*, e.g. "You get it first, then me."; Play a game that requires turn taking, such as "Duck, Duck, Goose"; Stand in a line at the water fountain, or in line at the slide.
Showing Awareness of Others' Feelings	SA	*Show affection, be comforting, help someone in need, or compliment someone.*, e.g., Hug, kiss hold hands, walk with arms around each other; "Don't cry. You'll feel better soon."; That's hard. I'll help you."; "You did a great job."
Verbally Resolving Conflict	VRC	*Express a need, feeling, or statement of a problem.*, e.g., "You'll have all the pieces. Can I have some?"; "You make me mad. I'm so mad. Why won't you share? There's lots of pieces. Let's share them."; "I have an idea. You have this part, and I'll have this part."; "You have to give it back to me now, 'cos it belongs to me. I'm going home."

Table 2

Mean Scores and Standard Deviations for Pretests, Posttests and Delayed Posttests

Test	Pretests		Posttests		Delayed Posttests	
No.	E	C	E	C	E	C
1	1.03(.54)	0.89(.71)	2.14(.85)	1.21(.88)	2.59(.83)	1.17(.73)
2	0.63(.43)	0.71(.92)	2.03(.71)	1.01(.83)	2.48(.81)	1.03(.54)
3	0.84(.63)	0.91(.42)	1.88(.73)	1.27(.81)	1.78(.73)	1.00(.75)
4	0.91(.75)	1.01(.76)	2.14(.76)	1.11(.67)	2.31(.65)	1.17(.73)
5	1.06(.75)	1.11(.89)	2.12(.77)	1.25(.88)	1.57(.83)	1.13(.85)
6	1.17(.94)	1.33(.76)	1.89(.83)	1.57(.81)	1.81(.85)	0.76(.73)

Test 1: Cooperating
Test 2: Sharing
Test 3: Helping
Test 4: Taking Turns
Test 5: Showing Awareness of Another's Feelings
Test 6: Verbally Resolving Conflicts

Standard Deviations are given in parentheses
E: Experimental Group; C: Control Group

Total possible score for each test is 3.

Table 3

Observed Frequencies of Prosocial Behaviors Expressed as Percentages

Prosocial Skill	Pretests		Posttests		Delayed Posttsests	
Category	E	C	E	C	E	C
Co	51	49	47	53	47	53
Sh	52	48	44	56	55	45
He	49	51	66	34	66	34
TT	47	53	45	55	47	53
SA	52	48	54	46	55	45
VRC	56	44	53	47	51	49

Co, Cooperating;
Sh, Sharing;
He, Helping;
TT, Taking Turns;
SA, Showing awareness of another's feelings;
VRC, Verbally resolving conflict.