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AUTHOR Burk, Jill Bridget; Lawton, Joseph T.
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ABSTRACT

The extent to which advance organizer instruction about social behavior could affect preschool children's social problem-solving abilities was investigated. The study followed a pretest, training, posttest, and delayed posttest format and included periods of observation of children's spontaneous social behaviors before, immediately following, and five weeks after instruction. An experimental group was formed of 20 preschoolers in a university's preschool lab, and a comparison group was formed of 20 children attending a community day care facility. Observers recorded the occurrence, sequence, and duration of single and simultaneous social interactions and vocalizations during free-play and snack-time situations at both schools. Target behaviors included cooperating, helping, sharing, taking turns, verbally resolving conflicts, and showing awareness of the feelings of others. Findings indicated that preschool children receiving advance organizer instruction on social problem solving strategies showed increased understanding of social problem solving processes and maintained improved understanding over time compared to the control group. The only behavior that seemed to be affected by advance organizer instruction was that of showing awareness of the feelings of others. The frequencies or durations of most spontaneous prosocial interactions in preschool classrooms seems not to have been directly affected by advance organizer instruction. (RH)

# EFFECTS OF ADVANCE ORGANIZER INSTRUCTION ON PRESCHOOL CHILDREN'S SOCIAL PROBLEM-SOLVING SKILLS

Jill Bridget Burk & Joseph T. Lawton
University of Wisconsin - Madison



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The objective of this study was to investigate the degree to which children's social problem-solving abilities could be affected by their learning of general rules, principles and strategies of social behaviors through advance organizer instruction. Target behaviors included cooperating, helping, sharing, taking turns, verbally resolving conflicts, and showing awareness of the feelings of others. The study of children's acquisition of social problem-solving skills incorporated some basic assumptions of Ausubel's subsumptive learning theory.

Ausubel has suggested that meaningful and useful learning is most likely to occur when subject matter is presented in a hierarchically organized fashion, and when young children are provided with sufficient physical examplars and opportunities for supervised practice and further discovery. Meaningful learning occurs when the child acquires an understanding of the relationships among the concepts and information in the hierarchy.

Ausubel proposes that expository teaching can lead to meaningful learning when concepts, skills, and thinking strategies are presented initially. General subject-matter, concepts, or high-order skills are presented first, followed by related subordinate concepts. This sequence of teaching is necessary for meaningful learning to occur for two reasons. First, it is expected that basic ideas, learned

through advance organizer instruction will be retained in memory over lengthy periods of time. Second, when new ideas are meaningfully related to previous concepts they become potential subsumers to later ideas, thus strengthening the retention process and the usefulness of information even further (Ausubel, Novak, & Hanesian, 1978).

The initial presentation of the general concept or superordinate idea is labeled an "advance organizer" by Ausubel (1963). The advance organizer lesson includes general information about a basic concept or about a high-order skill, or it may incorporate both.

Learning activities following the advance organizer involve the children in learning related information at a more particular level. At this time, related facts and subordinate ideas are examined. The related activities allow the children to consider details relevant to the organizer concept, to subsume particular related information into the general concept or high-order skill, as well as to attempt generalization of the concept or skill to new situations.

Advance organizer instruction has been found to enhance preschoolers' learning in several areas: social studies concepts (Lawton, 1977; Lawton & Wanska, 1979), math concepts (Lawton & Fowell, 1978), natural science concepts (Fowell & Lawton, 1983), and logical operations (Blue Swadener & Lawton, 1983; Lawton, Hooper, Saunders, & Roth, 1984). Lawton & Berning applied the advance organizer technique to the development of preschool children's social

problem-solving abilities (1979). Findings indicated that "children exposed to advance organizers presenting general rules or strategies for interaction in conflict situations clearly demonstrated greater gains in social problem-solving abilities" than did children who were presented the content in a more traditional manner" (Lawton & Berning, 1979, p. 16). The present study attempted tc further investigate Lawton & Berning's application of advance organizer teaching to the realm of children's social capabilities by exploring children's use of target behaviors in the natural classroom setting as well as in test situations.

## METHOD

The study followed a pretest - training - posttest - delayed posttest format and also included periods of observation of children's spontaneous social behaviors prior to instruction, immediately following instruction, and five weeks after instruction.

### Subjects

Two groups of children were involved in this study. Twenty preschoolers enrolled in the U. W. Preschool Lab. were randomly chosen from a total of 30 children as the experimental group. Twenty children were selected at random from 28 children at a local community day care facility to

serve as a comparison group. During the study three children from each group became unavailable, leaving 17 children in each group. The experimental group consisted of 8 boys and 9 girls with ages ranging from 34-58 months (mean age = 51.41 months). The control group had 9 boys and 8 girls ranging in age from 31-59 months (mean age = 49.41 months). Children were from middle or upper-middle class families and there was an ethnic mix in both groups. Each group included a small percentage of foreign children who spoke English fluently as a second language.

Observations

Four University students of education or child development (two male and two female) were trained by the first author to collect observational data for the study.

Observers recorded the occurrence, sequence, and duration of single and simultaneous social interactions and vocalizations during free-play and snack-time situations at both schools. Social interactions were coded according to a clearly defined list of 23 behaviors which were classified into six general categories; namely, cooperating, sharing, taking turns, helping, showing awareness of others' feelings, and verbally resolving conflict. Table 1 displays the 23 behaviors observed.

Observers recorded the behaviors and interactions of each child for five minutes at a time on specially designed

observation forms for a total of at least 20 minutes per child in each of the three observation segments. This gave about 405 minutes of observational data per treatment group for each of three observation segments. Observers recorded the behavior of children and teachers occurring during each ten second period.

In addition to recording occurrences of the 23 target behaviors, observers also provided indications of children exhibiting none of the codes and brief narrative descriptions of the interactions taking place. These remarks made it possible for the author to insure that codes were used consistently and that behaviors were being interpreted properly. When narrative remarks were not sufficient for this purpose and codes were unclear it was always possible for the observer to verbally clarify the observation to the investigator. Interobserver reliablity reached a level of 82% for codes of physicial behaviors and 65% for verbal behaviors.

Tests

For pretests, posttests, and delayed posttests each social problem-solving task, lasting about 20 minutes, was administered individually by one of seven trained female undergraduate child development students. Testers became familiar to the children by spending time in the classroom for at least five hours before each testing period.

At the three times of testing six "puppet stories" were used, each concerning a different hypothetical social conflict. The six tests were administered in a random order for each child so as to control for the effects of test sequence. In each school, subjects were individually tested in an empty classroom they were familiar with in order to minimize distractions.

For each social problem-solving test puppets "acted out" incomplete stories involving social interactions and each child was invited to help the puppets decide what to do when a social conflict became apparent. Each puppet story was aimed at generating thinking about the prosocial skills being examined (cooperating, sharing, helping, taking turns, showing awareness of the feelings of others, and verbally resolving conflict). At each time of testing stories and puppet characters changed, but the category of prosocial behavior associated with each story remained consistent.

Test Scoring

Children's responses to pretest situations were tape recorded and scored according to whether or not each response appropriately included a positive social interaction among the characters. A score of "zero" was given for answers which did not refer to prosocial behaviors, indicated a refusal or inability to incorporate any of the target skills, or did not appropriately address the situation. A score of

"one" was allotted when the answer indicated the suggested use of an appropriate social skill that could be used to solve the particular conflict.

After the child was given time to provide one solution, the experimenter twice asked for other possibilities, thus providing each child with time and encouragement to think of three solutions to the problem. A total of six situations were presented to each child, allowing for a total score of 18 for each testing period.

Instruction

It is not possible to provide in this paper a detailed description of the instructional procedures used. An example of an advance organizer and related activity set is attached. Interested readers can obtain more detailed information by contacting the second author.

Children in the experimental group were presented with advance organizer lessons aimed at the teaching of general principles governing cooperating, sharing, taking turns, helping, showing awareness of the feelings of others, and verbally resolving conflicts. The high-order social problem-solving strategies presented by the teacher were accompanied by appropriate exemplars.

Each advance organizer was presented to children in groups of five, and lasted approximately 15 minutes. The children then participated in related activities (also

lasting about 15 minutes) which required the use of subordinate skills related to the high-order skill presented in the organizer.

During the six week instruction period, teachers of the comparison group introduced the prosocial skills content area using what they stated to be "traditional" teaching methods; that is, reading appropriate stories, playing games, and encouraging prosocial interactions in spontaneous situations. Through teacher interviews it was ascertained that the teaching methods and organization of learning material of the experimental group differed from the control group while the learning materials remained constant and the facilitation of prosocial behaviors remained a goal of both groups.

## RESULTS

### Tests

T-test results indicated no significant differences between E and C group performances on pretests. A MANOVA was used for post-instruction test score analysis for two reasons. First, children were not allocated randomly to E or C groups. Secondly, the pretest measure involved six scores which were independent of one another, and although no significant differences were found between any of the six tests, mean scores and variances were not exactly the same.

The group comparison for post- and delayed posttests combined indicated a signifant difference ($F=3.39$, $p<.01$)

favoring the E group. Interaction effects of school X time were not significant.

Univariate analyses were performed to obtain more particular information about post-instruction task performance differences between groups. Results for post- and delayed posttest are provided in Table 2.

This information reveals that the overall significance of the E group gain at posttesting can be explained primarily by scores on three of the tests. The content of these involved (1) sharing by dividing one unit ($F=15.1$, $p<.01$), (2) solving a conflict by taking turns ($F=10.7$, $p<.01$), and (3) helping ($F=5.5$, $p<.05$).

At delayed posttesting, test (1) sharing by dividing one unit ($F=4.0$, $p<.05$), and (6) verbally resolving conflicts ($F=16.1$, $p<.01$) revealed significant differences between the two groups, favoring E. Differences in performance on test (5), inviting others to play and playing cooperatively ($F=3.16$), approached significance favoring the E group.

Observations

Naturalistic observations afforded accounts of behavior initiations and durations during about 405 minutes of activity at each school during each of three observation periods (Time I = pre-instruction; Time II = immediately post-instruction; Time III = delayed observations).

$X^2$ comparisons between schools for initiations of

non-verbal behaviors were not calculated because the figures never increased or decreased more than 7% across time and differences between schools was never more than 5%. These behaviors include being alone; conversing; interacting cooperatively; sharing by using object together, dividing a group of objects, or dividing a unit; acting in a negative fashion; and helping.

Within schools, cooperating, conversing, and being alone occurred significantly more frequently than helping. For the C group sharing also was significantly more frequent than other behaviors throughout the study as it was for the E group at time III.

Occurrences of verbal behaviors were analyzed separately because of their inherent differences from non-verbal behaviors. These include expressing a possible conflict resolution; expressing a need, feeling, or statement of a problem; and making suggestions or giving directions. Although none of these occurred significantly more frequently than the others, and they occurred at a rather steady rate throughout the study, $X^2$ analysis was carried out to compare the frequencies of verbalizations which were granted a positive, appropriate response from another child. Calculations indicate that at time II, the percentage of verbalizations receiving positive responses significantly increased ($X^2 = 5.22$, $p < .05$), favoring the E group. At time III, $X^2$ calculations revealed no significant difference between schools. However, while the C group never

significantly increased their frequency of positive responses to verbal expressions the E group's gain from time I to time II was highly significant ($X^2 = 11.74$, $p<.01$). This gain remained significant at time III ($X^2 = 5.88$, $p<.05$).

## DISCUSSION

### Tests

After a five week period of instruction, preschool children receiving advance organizer instruction on social problem-solving strategies showed increased understanding of social problem-solving processes in hypothetical situations, and more importantly, maintained this improved level of understanding over time compared to a control group. At time II the E group's success can be primarily attributed to their significantly superior performance on three of the six tests; namely, sharing by dividing one unit, solving a conflict by taking turns, and helping.

At time III E group children retained their ability to solve the sharing by dividing one unit test more appropriately than the C group. Although no significant difference was apparent on the immediate posttest concerning verbally resolving conflict, a strong difference was found at time III.

On tests of resolving conflict by taking turns and helping, significant levels of differences between groups at time II was not maintained through time III. Because few

social skills training programs provide follow-up data, the decline in solution generation at follow-up in this study can hardly be compared to other social skills training findings. However, in an examination of advance organizer influences on preschool children's classification, conservation, and seriation performances, Lawton, et. al. conclude, "results support the efficiency of structured . . . early childhood programs in promoting and developing short-run competencies" (1978, p. 190). It has also been shown that longer instruction periods have a stronger influence on retention of general concepts and high-order rules than do brief interventions (Lawton, et. al., 1985).

Observations

The fact that advance organizer instruction seems not to have directly affected the frequencies or durations of most spontaneous prosocial interactions in preschool classrooms may be accounted for in several ways. Perhaps the coding system was not sufficient to capture subtle changes in the children's interaction patterns. More important is the fact that advance organizer presentation of social conflicts between puppets or other story characters were artificial compared to children's real-life experiences. Even so, teachers and parents reported satisfaction with the level of social cooperation maintained in school and at home for both groups throughout the project.

The only behavior that seemed to be affected by advance organizer instruction was that of showing awareness of the feelings of others. This "behavior" was measured by the frequencies of positive appropriate responses given by children when someone else expressed a need, problem, or voiced a suggestion. After the instruction period E group children provided significantly more positive responses to these verbalizations during free-play, and maintained the increase through time III.

## IMPLICATIONS

Although frequencies of spontaneous classroom behaviors such as sharing, cooperating, and taking turns remained unaffected by the advance organizer instruction, the fact that E group children's awareness of the feelings of others significantly increased is of special interest to preschool educators. In order to improve other prosocial behaviors it is suggested that advance organizer instruction more closely resemble real-life social conflicts experienced by young children. Also, a longer advance organizer instruction period combined with longer-term follow-up assessments may also be helpful in examining the intervention program more effectively.

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TABLE 1

DEFINITIONS AND EXAMPLES OF CODED BEHAVIORS

| Category | Code | Examples; Definitions |
|---|---|---|
| Cooperating | IN | Interact with others in a cooperative manner without sharing, helping, or taking turns. e.g.: sociodramatic play; using blocks while talking to one another; following one another driving separate trucks; obviously working or playing a mutual task or game without actively sharing, taking turns, or helping. |
| Cooperating | VI | Offer to include someone. e.g.: "Do you want to play?" "You can play." "Come with us." "We have room for you." |
| Cooperating | I | Include someone in game, task, activity; may or may not follow a verbal offer to include someone; may result in sharing, taking turns, or IN. e.g.: stop the teeter-totter for someone else to get on; allow someone to join a group game. |
| Cooperating | MS | Make a suggestion or give directions. e.g.: "Let's play house." "I'll be the mother, you be the father." "First you color yellow, then blue." "It's time to clean up now." |
| Cooperating | US | Use suggestions or follow directions. |
| Sharing | VS | Offer to share. e.g.: "Here, this can be yours." "Do you want some of mine?" "I have six of these; do you want one?" |
| Sharing | G | Give an object, part of an object, or a commodity to someone; may or may not result in sharing or in taking turns. |
| Sharing | SM | Share by dividing one unit or commodity; e.g.: divide clay or playdough, divide a liquid, or break an object into pieces. |

TABLE 1 (continued)

| Category | Code | Examples; Definitions |
|---|---|---|
| Sharing | SO | Share by dividing a group of objects. e.g.: divide a set of blocks, crayons, cookies, or other items evenly or unevenly between two or more people. |
| Sharing | UT | Share by using one item simultaneously. e.g.: read one book together, put a puzzle in place together; involves both participants physically involved with the same object at the same time. |
| Taking Turns | VT | Offer to take turns. e.g.: "You get it first, then me." "I'll give you the juice, then you give it back to me." |
| Taking Turns | T | Taking turns without having a common goal. e.g.: standing in line at water fountain; alternate use of truck, bike, swing, paint, but not using it together. |
| Taking Turns | TG | Take turns while having a common goal or a mutual interaction. e.g.: playing a game that requires turn taking; "Duck Duck Goose," or "Hide and Seek;" take turns wearing the special hat while playing fire station or other socio-dramatic interaction. |
| Helping | VH | Offer to help. e.g.: "Do you need help?" "I'll get the teacher for you." "Do you want a band-aid?" "I can reach it for you." |
| Helping | H | Respond to someone's quest for help. e.g.: help clean up a mess; get a towel for someone to use when cleaning; show someone how to do something. |
| Showing Awareness for the Feelings of Others | HK | Show affection physically. e.g.: hug, kiss, hold hands, walk with arms around each others' shoulders. |

TABLE 1 (continued)

| Category | Code | Examples; Definitions |
|---|---|---|
| Showing Awareness | VC | Verbally compliment someone. e.g.: "I like you." "You're pretty/good/nice, etc." "You did a great job." |
| Showing Awareness | C | Comfort, show compassion in response to someone in need; give emotional support to someone. e.g.: "Don't cry." "You will feel better soon;" hug or kiss in response to someone's emotional need. |
| Verbal Resolution of Conflict | E | Express a need, feeling, or statement of problem. e.g.: "Can I have some?" "You made me mad!" "I am so mad!" "I want that now." |
| Verbal Resolution | ER | Express a possible resolution to problem; resolution may or may not refer to sharing, helping, taking turns, or cooperating. e.g.: "I have an idea - you have this part, and I will have this part." "You have to give it back to me now because it belongs to me." "I'll give it back to you later." |
| Verbal Communication Skills | CON | Participate in a conversation or discussion on a general topic. |
| - - - - - - | N | Negative behaviors, refusal to cooperate, share, help, or take turns; abuse of person or property. e.g.: tearing up a book; knocking over someone's block structure; teasing someone physically or verbally. |
| - - - - - - | A | Being alone; not interacting with anyone else, not near others or participating with them in any way. |

Negative behaviors were not coded in detail, but were used only to make general comparisons between "positive social interactions" and negative actions.

TABLE 2

EXAMPLE OF AN ADVANCE ORGANIZER LESSON AND RELATED ACTIVITIES

Cooperating #1

Major Concept: When people do things together (cooperate), it can be easier, faster, or more fun.

Advance Organizer: Teacher tells story from personal point of view; children and teacher act out the story as it progresses.

Once I was visiting a different school. I was watching the chidren play on their playground outside. One boy was playing alone - shoveling sand into a wagon. He kept putting in more sand until the wagon was full. I heard the boy say "Now I'm going to pull the wagon over to the other sandbox." He started to pull but the wagon wouldn't budge. After a little while, some other children came; they helped to pull the wagon. When all of the children did it together it was much easier.

After the children played outside for a while I heard the teacher say, "It's time to put the toys away and have lunch now." One person began to put the bikes away. The other children went inside to get ready for lunch. It was taking a long time for the one person to put all of the bikes and toys away. Some other children came back to the playground, and together they put the toys away. It was a much faster job with the children working together.

When the children were eating lunch, three children were sitting at one table - talking, being friendly, and eating. Five children were sitting at another table - talking and eating. One girl sat alone at another table. She had a nice lunch, but wasn't having a very happy time. What could happen so that the girl has a happier lunchtime? She can sit with the others, or one of them can join her. Being together is more fun.

Let's find out more about doing things together: the group tries to lift a heavy box one at a time, then as a group (easier); tries to play ball one at a time, then as a group or pair (more fun).

Related Activities:

1. Play a game for more than one person: "Duck, Duck, Goose;" "Musical Chairs." (more fun)

2. Decorate the room or do a cooking activity as a group. (work for a common goal)

3. Clean the room or playground together. (faster)

TABLE 2 (continued)

Related Activities:

4. Use a three-collumn board. Place cards with words or pictures of activities under the appropriate collumn. Collumns are labelled "faster," "easier," and "more fun."

5. Write "faster," "easier," and "more fun" on a set of cards. Tape the cards onto objects or activities in the school that represent doing things together. (example: tape an "easier" or "more fun" card on the teeter-totter.)

TABLE 3

ANOVA SUMMARY FOR POSTTEST
AND DELAYED POSTTEST SCORES

| | Test Number | F value | p value less than |
|---|---|---|---|
| Posttests | | | |
| | 1 | 15.1 | .01 |
| | 2 | 10.7 | .01 |
| | 3 | 5.5 | .05 |
| | 4 | | ns |
| | 5 | | ns |
| | 6 | | ns |
| Delayed Posttests | | | |
| | 1 | 4.0 | .05 |
| | 2 | | ns |
| | 3 | | ns |
| | 4 | | ns |
| | 5 | 3.16 | ns* |
| | 6 | 16.1 | .01 |

Tests 1: Sharing by dividing one unit
2: Solving a conflict by taking turns
3: Helping
4: Sharing by dividing a group of objects
5: Inviting others and playing cooperatively
6: Verbally resolving conflicts

* approaching significance favoring Experimental group (E).

All significant differences favor Experimental group (E).