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ABSTRACT

The effectiveness of short-term training on two communication tasks was assessed with seven and one-half olds. Twelve subjects were trained in trios for six sessions on tasks requiring complete description of a design for a listener to reproduce, and tasks requiring communication of critical information for a listener to discriminate the same design from a set. Roles of speaker, listener, and observer were alternated, followed by peer discussion. Compared to 12 control subjects, trained subjects at posttesting had significantly greater useful information and overall evaluation of messages, and showed a moderate transfer of skills. (Author)

Abstract

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The effectiveness of short-term training on two communication tasks was assessed with 7½-year-olds. 12 Ss were trained in trios for six sessions on tasks requiring complete description of a design for a listener to reproduce, and tasks requiring communication of critical information for a listener to discriminate the same design from a set. Roles of speaker, listener, and observer were alternated, followed by peer discussion. Compared to 12 control Ss, trained Ss at posttesting had signficantly greater useful information and overall evaluation of messages, and showed a moderate transfer of skills.

Training Communication Skills in Young Children

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One critical aspect of an effective communication is the degree to which a message is adapted to the informational requirements of the listener. Studies of the natural development of communication skills have suggested that young children are particularly deficient in making their messages contingent upon the listener's needs (Piaget 1926). The present study is an attempt to increase communication proficiency in young children by using training procedures which focus primarily on making the listener's needs more salient to the child as he formed and gave messages. First, each child was instructed to give a message about a design to a listener who was attempting to reproduce the design in its entirety, thus requiring a full description. Then each child was told to give a message about the same design to a listener who was attempting only to select that design from a set of designs, thus requiring little, but critical, information. Secondly, each child took different roles in communicating to provide an opportunity for experiencing the perspective of the listener and speaker. It seemed reasonable that this type of training would be most effective with children who, presumably, were beginning, on the average, to change from an egocentric to social orientation (Piaget 1926). Therefore, 7-1/2-year-olds were selected as subjects.

The hypothesis is as follows: children trained on description (DE) and discrimination (DI) tasks, compared to untrained children, show significantly better performance on such tasks and on three transfer tasks.

Method

Subjects

Subjects were 24 second-grade children attending a suburban Detroit school. Random selection from two classes yielded a sample of 11 boys and 13 girls ranging in age from 7.4 to 8.3 with a mean age for the experimental group of 7.8 and for the control group, 8.1.

Materials and Procedure

DE and DI tasks. A set of cards made up of a "standard" card to be communicated about and three comparison cards was used as the pre-training and post-training test. All cards were divided into quadrants with one of three geometric shapes in each quadrant in various colors and sizes. In DE, the speaker was given only the standard card and told that the listener (represented by a photograph) wanted to draw it, and thus needed to be told everything about it. In DI, the speaker identified the differences between the same standard card and comparison cards, was told that the listener only wanted to find the "right" (standard) card among the four, and thus the S was to tell as little as possible, but just enough to be sure the listener could select the right one. Half the control group and half the experimental group were administered a practice set of animal pictures and a test set with DE first and then DI. A second test set with different geometric shapes was given in the reverse order. The remaining Ss had opposite orders. At posttesting, orders within each set were reversed for each S. (For reasons of economy, DE and DI data on the first test set only are presented.)

At pretest, the Es made on-the-spot evaluations of DE and DI performance by the experimental group to form four training trios, each having a S of

high, medium, and low communication ability. Theoretically, this provided a peer-model of good communication in each group. Each trio met twice a week for six half-hour training sessions. Each S took alternately the role of speaker, listener-responder, and listener-observer once each session. For training, cards displayed meaningful objects in different colors and sizes in each quadrant. In DE, the listener used a choice board displaying 18 felt pieces (combinations of objects, colors and sizes) and a response card. Reproducing the design with felt pieces was used to avoid difficulties in evaluating drawings by young children. In DI, the speaker and listener had duplicate standards and comparison cards. DE and DI instructions were given, the speaker gave his message across a screen, the listener selected four felt pieces (DE) or a card (DI), the responses were compared to the standard by the trio and E, and a discussion of message adequacy followed. Roles were rotated, new materials given, and training continued.

Transfer tasks. One post-training test used a checkerboard divided into six squares and six toys for placement. The S took in turn any one toy and put it on any one square while the E turned his back and tried to reproduce the placements from S's description. A second test, novel forms, had duplicate sets of six blocks, one for the listener and one for the speaker, displaying low-codable nonsense design (Krauss & Glucksberg 1969; Krauss & Weinheimer 1964). The purpose was to build matching stacks of blocks on each of four trials based on the speaker's message to a listener behind a screen. The Ss were randomly paired within the control group and within the experimental group, except that no pairs of the latter were from the same training trio. Each S spoke on one set of forms and listener on an alternate set of forms with different partners. The third

transfer test was a persuasion task in which the S was to try to sell a necktie to a prospective buyer, represented by a photograph (see Flavell 1968).

DE and DI tasks were administered individually to all Ss as pretests, followed by three weeks of training for the experimental group, and then individual administration during the final two weeks of the following sequence of posttests: DE and DI, checkerboard, persuasion, novel forms test.

Judges and scoring. Useful information on DE was the sum of references to shape, position, color and size for all quadrants of the standard card, and, on DI, for any one quadrant. The latter reflected the most efficient strategy to discriminate one card from the set. All message units not scored as useful were labeled useless. A ratio score indicated the proportion of a message that was necessary information: useful information divided by the sum of useful and useless information. Overall evaluations were judged on seven-category systems for DE and DI generally reflecting increasing information and greater objectivity of terms. Interjudge reliabilities on overall evaluation, useful and useless information on DE and DI for pretests and posttests (a total of 12 reliabilities) ranged from .90 to 1.0.

Checkerboard performance was measured by (1) the number of criterial attributes given for each location and object, and (2) mean error scores of five adult judges who attempted to reproduce each S's placements from verbatim transcriptions. Novel forms task errors were non-matches between the speaker's and listener's stacks. Persuasive messages were scored by two judges for the number of reasons to buy and persuasiveness of

sales-pitch judged on a five-category scale. Interjudge reliabilities were respectively, r = .93 and rho = .79.

Intercorrelations among the five measures of DE and DI indicated that useful information and overall evaluations were highly related in both DE (r = .98) and DI (r = .99). In DI, the number of words did not related to overall evaluation or useful information (r = .08 and .06, respectively). These same variables related .25 and .38 in DE, reflecting the need for more information in that task.

Results and Discussion

DE and DI performance is presented in table 1. Two-way analyses of variance (groups X sessions) of DE scores indicate that the experimental

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Insert Table 1 about here

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group had significantly higher overall evaluations and useful information at posttesting than the control group. However, further analyses indicated significant gains <u>within</u> both the experimental group (p values $< .001$) and control group (p values $< .05$). This finding suggests that descriptive ability may improve substantially with minimal repetition and no feedback. The lack of significant training effects on ratio scores and useless information in DE appears to be a function of ceiling effects in the experimental group, i.e., high ratios and little useless information on pretest precluded significant gains on posttest. Therefore, these measures essentially did not provide a test of the hypothesis.

On DI, performance of the experimental group was significantly superior to the control group on overall evaluation, useful information, and ratio

scores. Simple main effects tests indicate significant gains only within the trained group. Brief exposure to the DI task does not seem sufficient for substantial improvement, in contrast to DE. This finding is consistent with Flavell's specualtion that "the ability not to say more than is necessary begins to look like a high-level communicative refinement rather than a low-level fundamental..." (1968, p. 135). It was possible, however, that the difficulty of DI was primarily an order effect since all Ss in Flavell's study had DE prior to DI. Order effects do not now seem a likely explanation in that comparisons in this study of pretest overall evaluations for Ss having DE/DI vs. DI/DE order were not significantly different on DE ($U = 69.5$) or DI ($U = 72$), both p values $> .10$.

On the checkerboard task, the mean number of criterial attributes mentioned on six placements was 21.1 for the trained group and 18.9 for the untrained, $t = 1.09$, $p > .05$. However, the mean "listener" errors were significantly lower for the experimental group (1.03) than for the control group (2.85), $t = 3.31$, $p < .01$. On the novel forms task, a two-way analysis of variance indicated a significant group X trials interaction, $F = 3.08$, $df = 3,66$, $p < .05$. The experimental group made more errors than the control group on the first trial, but showed a faster rate of learning with errors on the last trial being significantly lower for the experimental group ($t = 2.07$, $p < .05$). The median rank of persuasiveness of trained Ss' attempts to sell a tie was 2.5 as compared to 3.1 for the untrained Ss, a nonsignificant difference ($U = 67$, $p > .10$). However, the mean number of arguments for the trained group of 1.5 was significantly lower than that for the control group of 4.1, $t = 2.21$, $p < .05$.

What are possible reasons for the various indications of significant

training effects on DE and DI and the moderate degree of transfer found? First, the training in this study is unique in having the listener's needs vary while the material communicated about remained constant. This may have helped Ss focus on the listener variable. In contrast, other communication training studies with children have used a variety of DE and DI tasks, each having different materials and procedures (Fry 1966, 1969). Secondly, the E was active in training, exerting more control over the communication experiences of children than in previous studies (Fry 1966, 1969). Two other factors were probably less influential. The attempt to provide a peer-model of good communication was probably only marginally successful given that within two of the trios the range of skills was small (about one category difference). The importance of the Ss' age is an open question. Whether egocentrism, as an age-related, underlying factor in communication, is important as suggested previously is debatable. Indeed, it could be that the obtained training effects are as much a result of a good match between children's pre-existing skills and training as they are a function of any particular age. It should be noted that the various indications of superior performance of the trained group may be magnified to the extent that the greater interaction of trained children with the Es and each other, compared to the untrained group, facilitated performance.

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Footnote

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Table 1

Peformance on Description (DE) and Discrimination (DI) Tasks

		Mean Pre- to Posttest Change[a]		Group X Session	Simple Main Effects F Ratios			
					Pretest[c]	Posttest[d]	Pre- to Posttest Change[e]	
Measure	Task	E	C	F Ratios[b]	E vs. C	E vs. C	E	C
Number of words	DE	+7.83	+5.17	0.06	---	---	---	---
	DI	-30.67	-2.17	2.32	---	---	---	---
Overall evaluation	DE	+2.75	+1.33	7.17*	N.S.	13.53**	39.12***	6.08*
	DI	+3.08	0	25.69***	N.S.	20.04***	51.39***	N.S.
Useful information	DE	+5.58	+1.75	11.74**	N.S.	6.57*	49.88***	4.90*
	DI	+1.83	+0.08	14.14**	4.78*	5.79*	30.25***	N.S.
Useless information	DE	-0.17	+0.83	3.36	---	---	---	---
	DI	-9.92	-0.42	3.70	---	---	---	---
Ratio	DE	+0.02	-0.04	1.72	---	---	---	---
	DI	+0.48	+0.03	13.50**	N.S.	25.70***	30.83***	N.S.

[a]Lower scores indicated by -; higher scores indicated by +.

[b]Interactions from two-way analyses of variance for groups (experimental vs. control) and sessions (pretest vs. posttest).

[c]Experimental group gave significantly less useful information on DI.

[d]All means indicated better performance by the experimental group.

[e]Tests on changes from pre- to posttesting within the E group and within the C group.

*$p < .05$; **$p < .01$; ***$p < .001$.