

An Attribution Training Program with Learning Disabled Children¹

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Abstract:

Based on the success of attribution training programs in alleviating learned helplessness and upon current research suggesting that some learning disabled children may be experiencing learned helplessness, it was the purpose of the present investigation to determine whether altering causal attributions for failure would enable helpless learning disabled children to deal more effectively with failure in an experimental reading situation. Sixteen "helpless" learning disabled students were assigned to an attribution training group or to an assessment control group. The results revealed that following training, the subjects in the attribution training group demonstrated greater reading persistence, showed significant increases in effort attributions for failure as well as more internal attributions for achievement situations when compared to subjects in the control group. Treatment gains for effort attributions and for reading persistence were maintained at follow-up. Implications for remedial programs are discussed.

Article:

In the field of learning disabilities, increasing attention has been directed towards the emotional and motivational difficulties experienced by learning disabled (LD) children. Among those cited include a lack of self-confidence (Bader, 1975), poor self-concept (Griffiths, 1970), and a lack of task persistence (Torgersen, 1977). Several researchers have suggested that the LD child's prolonged experience with failure is a major determinant of these difficulties (Bloom, 1976; Covington & Beery, 1976; Shelton, 1984; Thomas, 1979). Licht (1983), in a review of the literature on the effects of failure on LD children, concluded that the "kinds of failures that LD children are likely to experience are the ones that are most likely to lead to the development of 'helpless' beliefs" (p. 484). Furthermore, LD children hold causal beliefs that are likely to foster maladaptive patterns of achievement-related behaviors.

As Licht (1983) notes, results from several training programs with normally achieving "helpless" children have suggested that debilitating responses to failure can be altered by changing children's attributions for failure (Andrews & Debus, 1978; Chapin & Dyck, 1976; Dweck, 1975; Fowler & Peterson, 1981; Rhodes, 1977). In one of these studies, Fowler and Peterson (1981) sought to extend Chapin and Dyck's (1976) results to normal achieving learned-helpless children. They also investigated whether a "direct" method of attribution training (e.g., having the children repeat attributional statements) would be more effective than the "indirect" method previously used (e.g., experimenter repeating statements). Using 28 "helpless" students, Fowler and Peterson (1981) found that a multiple failure length schedule (e.g., two to three successive failures prior to success) combined with the direct attribution training was the most effective in increasing reading persistence and in modifying maladaptive attributions.

While the benefit of similar programs has been demonstrated with non-LD populations, Licht (1983) points out that there have been few applications of this technique to LD populations demonstrating such helplessness

despite the apparent similarity between the LD children and "helpless" children. Therefore, the purpose of the present investigation was an extension of the Fowler and Peterson (1981) study to a LD population demonstrating such a naturally occurring learned helplessness. A "direct" method of attribution training was employed as well as another procedure, whereby children receiving training were asked to complete the training task correctly. In this manner it was predicted that LD children would benefit not only from verbalizing more adaptive attributions, but also from observing behaviorally the benefits of their own increased effort. It was expected that LD subjects receiving attribution training would report more effort attributions for success and for failure, report more internal attributions for achievement situations in general, and would evidence greater improvement in reading persistence than would LD subjects not receiving training. While this type of program is similar to those employed successfully with helpless, normally achieving children, the present training program included procedural modifications that have not been tested empirically with "helpless" non-LD populations. Thus, while the major focus of the study was the evaluation of program efficacy with LD students, a non-LD "helpless" group was included in order to compare the efficacy of this program with previous programs. In addition, as Licht's (1983) review indicates that many LD children possess attributions similar to learned helpless children, the inclusion of the non-LD "helpless" group would allow a comparison of the two groups' responsiveness to attribution retraining. As such, it was predicted that LD children would respond in a way similar to the "helpless" regular classroom students.

METHOD

Subject Selection and Subject Variables

Seventy (41 males, 29 females) fifth grade and 46 (23 males, 23 females) fourth grade students from regular classrooms and 18 (14 males, 4 females) fifth grade and 8 (6 males, 2 females) fourth grade LD students served as subjects for the initial screening. LD students had been identified previously by the school system as evidencing normal or near normal potential as measured by the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974) and by a severe discrepancy (i.e., at least 1.5 grades) between the child's current grade placement and reading achievement. The following screening measures were administered in order to identify a subsample of LD and non-LD children evidencing motivational deficits similar to learned helplessness.

The Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky, & Crandall, 1965) and the Effort versus Ability (E/A) Failure Attribution Scale (Chapin & Dyck, 1976; Dweck, 1975; Fowler & Peterson, 1981) were administered first. The IAR is a forced choice measure of attributional style that presents academic achievement situations with positive or negative outcomes that can be attributed to effort or to ability. Reliability and validity characteristics for the IAR in the present sample were comparable to those reported in the literature. The five question E/A Scale was developed to assess a child's attribution for failure in more detail. A score of 5.00 indicates that the child attributes failure to a lack of effort while a score of 1.00 indicates an attribution to a lack of ability. Internal consistency as estimated by Chronbach's alpha coefficient was high (.91). To be eligible for the study, LD and non-LD children received scores of at least one standard deviation below the mean IAR Total score as reported by Crandall et al. (1965) (sample mean = 19.22, SD= 1.6), scores below 11.00 on the IAR Effort score (sample mean = 8.07, SD= 1.49), and scores less than 3.00 on the E/A Scale (sample mean = 1.63, SD= .57). These scores indicate that when faced with failure, these children attribute failure to a lack of ability and view it as insurmountable.

In an effort to ensure that the teacher's criteria for helplessness matched those of the investigator, subjects also were rated by the classroom teacher on a 14-item helplessness rating scale developed by Dweck (1975) and employed by Fowler and Peterson (1981). Each teacher was asked to rate on a scale of 1.00 (e.g., little or no helpless behavior) to 5.00 (e.g., large amount of helpless behavior) the degree to which each child evidenced helpless reactions in stressful academic situations. Internal consistency, as estimated by Chronbach's alpha, was high (.87). Subjects participating in the training received an average score of 2.00 or greater (sample mean = 3.02, SD= .84). An additional constraint in selecting subjects was that the reading level (as measured by the comprehension, word recognition, and total grade equivalent scores on the reading subtest of the Science

Research Associates Achievement Series) of the non-LD children was at least .33 but not more than 1.00 grade below current grade placement (sample mean = .64, SD=.28).

After screening, a final sample of 32 children was obtained. Among this group were 11 (9 males, 2 females) fifth and 5 (all males) fourth grade LD students and 13 (8 males, 5 females) fifth and 3 (2 males, 1 female) fourth grade non-LD students, ranging in age from 9.58 to 13.5 years.

Instruments and Materials

Individual differences measures. In the event that differences in measured intelligence might differentially affect performance in the training program, an attempt was made to monitor the influence of this factor across training groups. The Vocabulary and Block Design subtests from the WISC-R were used as estimates of verbal and nonverbal intelligence, respectively. As socioeconomic (SES) status has been shown to be correlated with academic achievement and with some measures of locus of control, the SES of subjects was assessed by the Hollingshead Two-Factor Index of Social Position (Hollingshead, 1957). In the present sample, SES was not correlated significantly with either the Block Design or Vocabulary scaled scores nor with internality as measured by the IAR.

Reading ability. Grade equivalent scores on the Word Recognition Grade Level Test of the Brigance Diagnostic Inventory of Basic Skills and on the reading subtest from the appropriate level of the Wide Range Achievement Test (WRAT) were used as measures of the graded word reading level of each child. On the basis of the child's individual graded word reading level, sentences at two levels of difficulty were developed. These sentences, designated as Type I (containing words within the child's reading level) and Type II (containing three words above the child's reading level), were developed in cooperation with the child's teacher. These sentences were used in the persistence task and training aspects of the study.

Dependent measures. The IAR Total and Effort scores and the E/ A Scale scores were used as dependent measures. In addition, the Coopersmith Self-Esteem Inventory (Form B; CSEI; Coopersmith, 1967) was used to assess any individual differences in self-esteem as a function of the child's attributions. Finally, a reading persistence task was administered individually to assess changes in school behavior as a function of the training program. While the previous measures were administered by male and female graduate students in Clinical Psychology, this task was administered by the classroom teacher. The persistence task consisted of two sets of sentences printed on an index card. The beginning of each set consisted of three Type I sentences. After reading these sentences the subject was asked if he/she wished to go on to the next sentences which were Type II. No feedback was given regarding the subject's reading accuracy. Baseline performance was the number of sentences that the subject attempted.

Procedure

Following the pretesting, the 16 LD and 16 non-LD subjects were assigned randomly to one of two conditions: Attribution Training (AT) or Assessment Control (AC). Assignments were made in an effort to equate the training groups on sex of subject and school the subject attended. A comparison of the four treatment groups (LD-AT, LD-AC, non-LDAT, non-LD-AC) at pretest revealed no significant differences on the individual difference measures (e.g., Block Design, Vocabulary, SES, teacher ratings) or on the dependent measures (IAR Total and Effort, E/A Scale, CSEI, and reading persistence scores). LD subjects demonstrated significantly greater reading delays and were older than non-LD subjects: $F(1, 28) = 126.13, p \leq .001$ and $F(1,28) = 6.14, p \leq 1.02$, respectively.

Attribution training. The 8 (7 males, 1 female) LD subjects and 8 (5 males, 3 females) non-LD subjects in this group received six training sessions: two, one-half hour sessions per week for three weeks. Training was conducted by the senior author who was not involved in the pre-, post-, or follow-up assessments. During each training session subjects were asked individually to read aloud 16 sentences, one at a time. Within each training session were ten Type I sentences and six Type II sentences. These sentences were similar to, but different from the sentences used in the Reading Persistence Task. Subjects were given the following instructions:

"I am going to show you some sentences, one at a time, that I want you to read aloud. Some will be easy and some will be hard, but I want you to read all of them. Do the best that you can."

After these instructions, subjects received 16 sentences in a specific order that varied with each training session.² This ordering has been shown to be the most effective in increasing task persistence (Chapin & Dyck, 1976; Fowler & Peterson, 1981).

At the beginning of each of the first two training sessions, each child in the training group listened to a recording of a child (same sex as the subject) saying "I got that right. I tried hard and did a good job." Then, "No, I didn't get that quite right, but that's okay. Even if I make a mistake, I can go back and try a little harder to get it right." The children were told that these were good things to say to themselves when they succeed or do poorly in school. Each subject was asked to practice saying these statements aloud, in a whisper, and silently. Subjects were prompted by the investigator until each subject could repeat the attributional statements without assistance. At the beginning of each of the remaining training sessions the children did not listen to the readings but were reminded to use these statements and asked to verbalize them aloud, in a whisper, and silently. After practicing the statements, the following procedure was used during all training sessions.

Following a scheduled easy (Type I) sentence subjects were told, "That's good. Quietly tell yourself what you should say when you succeed." After a scheduled difficult (Type II) sentence they were told, "No, that's not quite right. What should you say to yourself?" After failing a Type II sentence the child was instructed to read the sentence again with the necessary assistance of the trainer until he/she was able to read the sentence correctly. Following a successful reading of the Type II sentence the child was told, "That's good. See, even if you make a mistake you can go back and try again to get it right. Tell yourself what you should say when you do well."

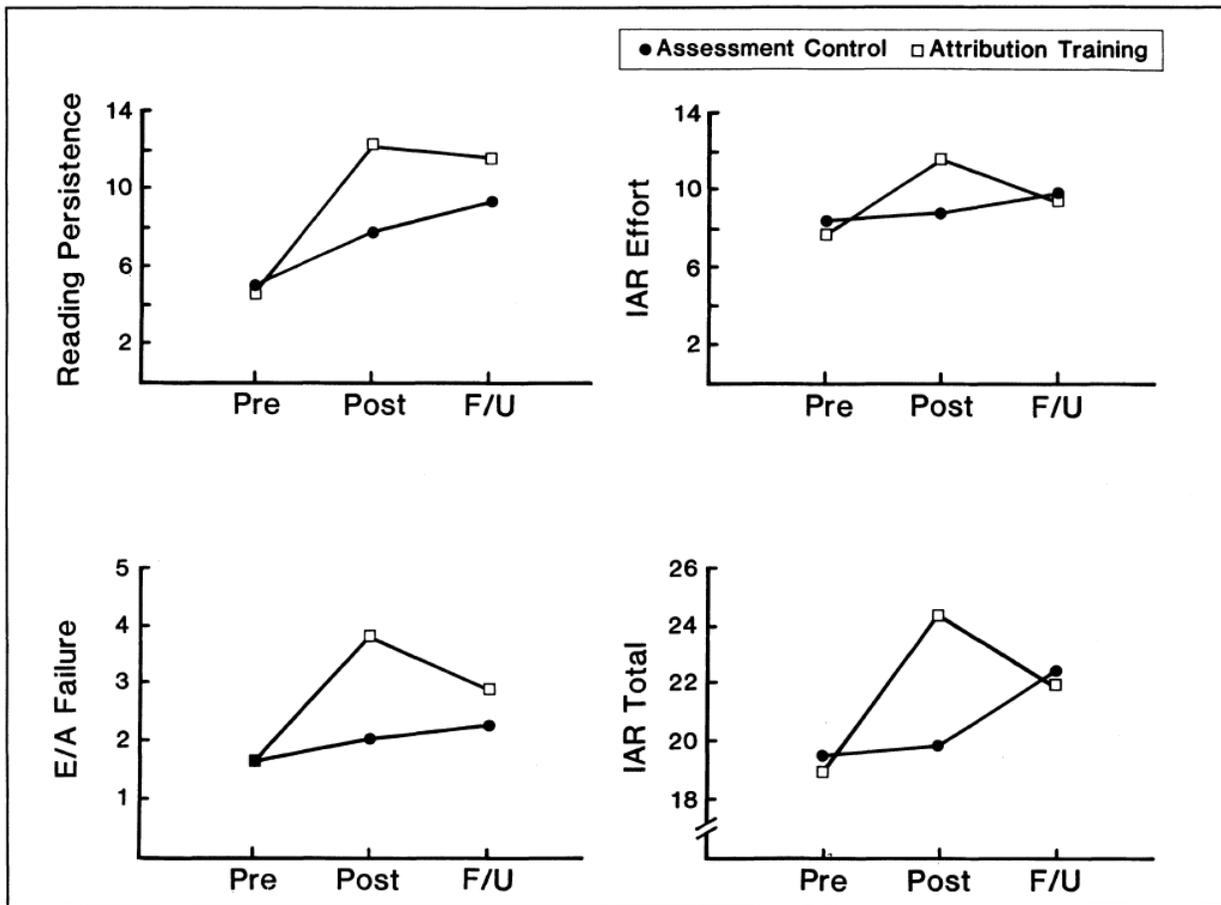


Figure 1. Pretest, posttest, and follow-up means for reading persistence, IAR Total and Effort, and E/A Failure Attribution scores by Treatment Condition.

Assessment control. LD and non-LD assessment control groups were incorporated to control for 1) the possible influence of repeated exposure to the dependent measures, and 2) the increased likelihood of regression to the mean effects given the extreme characteristics of the screened subjects. Each of the LD (7 males, 1 female) and non-LD (5 males, 3 females) subjects in this condition received the same assessment procedure as the training subjects at pre-, post-, and follow-up evaluations in the absence of attribution training. At the completion of the study, all assessment control subjects were provided with similar attribution training.

Post-treatment and follow-up assessments. To determine the effectiveness of the training program, the dependent measures were administered to subjects one day following and two weeks after the completion of the training program.

RESULTS

Two (Treatment Condition: Attribution Training, Assessment Control) by two (Academic Status: LD, non-LD) by three (Trials: Pretest, Posttest, Follow-up) repeated measures analyses of variance were computed on the reading persistence, IAR Total and Effort, E/A Scale, and CSEI scores. Statistically significant Trials by Condition interactions were found for reading persistence ($F[2,56] = 12.36, p \leq .01$), IAR Total ($F[2,56] = 7.79, p \leq .01$), IAR Effort ($F[2,56] = 10.07, p \leq .01$) and the E/A Scale scores ($F[2,56] = 10.49, p \leq .01$). A summary of these findings is presented in Figure 1.

Neuman-Keuls analyses indicated that subjects receiving attribution training were significantly more persistent on the reading task than control subjects at both posttest and follow-up ($F[1,84^a] = 22.90, p \leq .001$ and $F[1,84^a] = 6.72, p \leq .01$, respectively). Thus, LD subjects benefited from the training program in the same manner as did non-LD "helpless" subjects. Regarding the IAR Total scores, analyses revealed that LD subjects and non-LD

"helpless" subjects receiving training attributed a significantly greater number of achievement outcomes to internal factors at posttest than did control subjects ($F[1, 84^a] = 11.13, p \leq .01$). This change was not maintained at follow-up. Regarding the IAR Effort scores, analyses indicated that LD and "helpless" non-LD subjects receiving training reported significantly more effort attributions for failure than did the assessment control group at post-test ($F [1,84^a] = 14.02, p \leq .01$). Similarly, subjects receiving training reported significantly more effort attributions for failure on the E/A Scale at posttest and at follow-up than did control subjects ($F[1,84^a] = 24.88, p \leq .01$, and $F[1,84^a] = 3.58, p \leq .5$, respectively.)

DISCUSSION

Descriptions of LD children have indicated that many of these children fail to use available abilities efficiently because they experience learned helplessness in the face of failure. While previous studies have indicated that changing maladaptive attributions in normally achieving children is successful in improving performance, few studies have attempted to implement such a procedure with LD students. The results from the present investigation provide initial support that an attribution training approach can be effective in helping LD students persist in the face of a difficult academic situation. Moreover, because training subjects reported concurrent increases in the number of effort attributions and in the number of internal attributions in general, there is additional support for believing that altered attributional styles were related to the increased task persistence. In addition, the similarity of responsiveness to treatment by the LD students and non-LD "helpless" subjects further supports Licht's (1983) conclusions that LD students share many of the behavioral and attributional characteristics of non-LD "learned helpless" children.

Contrary to initial expectations, attribution training did not result in significant improvement in self-esteem. This finding occurred despite the fact that other indications of learned helplessness improved. However, it is likely that explicit and repeated generalization training is needed before changes in an individual's more static and more global level of self-esteem can be realized. Another purpose of the present investigation was the examination of the stability of improvements as a result of the training program. Increases in reading persistence and effort attributions for failure were maintained at follow-up. While the sustained changes in these areas may be related to some similarity between the training procedure and these measures, it is possible that the fact that subjects were encouraged to correct reading errors on difficult sentences, rather than merely repeat attributional statements, may have contributed to the maintenance of gains.

In conclusion, the fact that increases in task persistence were obtained with relatively brief training (e.g, one hour total training per week) suggests that a similar program could be incorporated with individual students within classroom instruction (cf. Thomas & Pashley, 1982). While the scope of this study primarily addressed the alteration of *effort* attributions, more appropriate reading strategies were modeled when the children incorrectly read a sentence. However, attributing failure to *ineffective strategies* were not trained specifically. As Licht (1983) notes, training in appropriate attributions to ineffective strategies as well as to insufficient effort would be an important component to any attribution training program with LD students. Thus, when an LD student encountered a difficult situation, rather than discontinuing the task, he/she would be trained to analyze the task and determine whether increased effort alone or increased effort plus an alternative strategy was needed. It appears that the inclusion of this type of attribution training within special education curricula is important. It is hoped that future investigations and curricula will address not only the *content* of the LD student's failures but will also provide the student with strategies for *coping* with these difficulties in a way that improves motivation and self-esteem.

Footnotes

1. This article is based on a thesis submitted by the first author in partial fulfillment of the requirements of the doctoral degree at Purdue University. Thanks are extended to the parents, children, teachers, and the Lafayette, Indiana public school system for their participation.
2. The specific order of presentation of the sentences may be obtained from the senior author.
 - a. Satterthwaite, 1946

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