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Effects of Role and Assignment Rationale on Attitudes Formed During Peer Tutoring

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Abstract

This study examined the role of contextual factors, such as assignment rationale, on the attitudinal effects of peer tutoring. Fourth-grade children engaged in brief tutoring experiences as either a tutor or tutee. Subjects received four rationales for being selected as tutor or tutee: (a) a competence rationale, (b) a physical characteristic rationale, (c) a chance rationale, or (d) no rationale. As predicted, tutors had more positive attitudes than tutees when they had been given a competence or physical characteristic rationale but not when the tutors were provided a chance rationale or no rationale. Additionally, the tutors' and tutees' attitudes were enhanced when no rationale was provided. Results are discussed in terms of their implications for a role-theory analysis of tutoring and their implications for applied programs.

Educators are increasingly using peer tutoring procedures in their work with underachieving students. Anecdotal reports suggest that peer tutoring may produce both academic gains and positive attitude changes in the tutor, including heightened self-esteem and increased motivation to learn (Gartner, Kohler, & Riessman, 1971). Systematic evaluations of peer-tutoring programs provide some support for such gains but also raise questions about the generality of these effects. Although positive gains in achievement for tutors are reported by Rust (1970), Liette (1972), and Allen and Feldman (1973), other investigators have found no specific achievement effects (Erikson & Cromack, 1972; Rogers, 1970). Similarly, gains in attitudes have been reported by some investigators (Haggerty, 1971) but not by others (Foster, 1972; Horan, DeGirolomo, Hill, & Shute, 1974). These empirical investigations of peer tutoring have left several questions unanswered. Only limited attention has been directed toward the attitudes of both tutor and tutee. Additionally, although not all studies have found measurable effects, the causes of success or failure of any one program are unclear. Apparently, peer tutoring is effective under some conditions but not under others.

Applied peer-tutoring programs often differ in many ways, making it difficult to isolate the factors that may be mediating attitude change. Outcome has been related to a variety of program characteristics, ranging from tutor sex (Cicirelli, 1972), race (Lakin, 1972), and previous training (Niedermeyer, 1970) to the amount of tutee imitation (Allen & Devin-Sheehan, Note 1) or the effects of tutor–tutee sibling relationships (Cicirelli, 1972). It remains unclear, however, how these diverse factors may mediate attitude change. Without a conceptual model of the attitude change processes involved in peer tutoring, it is difficult to integrate such findings.

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Recently, role theory has been suggested as a conceptual framework within which peer tutoring effects may be explored and analyzed (Allen, 1976). According to role theory, enactment of a role produces changes in behavior, attitudes, and self-perceptions consistent with role expectations. Allen and Feldman (1973) suggested that the role of teacher represents competence, prestige, and authority. A child playing the role of teacher in a peer-tutoring situation may be expected to show changes in attitudes along these dimensions. As tutors begin to perceive themselves as more competent, they should develop more positive attitudes toward school and learning. The prestige and authority of the tutor role should also increase their feelings of importance, power, and self-worth. Children's perceptions of their roles may be a central determinant of the attitude changes produced during tutoring experiences. Theoretically, the more that situational variables increase children's perceptions of themselves as teachers, the greater the impact their role enactment will have. For example, when situations are structured to maximize children's perceptions of the tutor role as a reflection of their own competence, greater positive changes in their self-concept may result.

One way in which contextual variables may exert influence on role perceptions is through the initial role assignment process. Different procedures of role assignment may generate perceptions of tutor roles that vary in degree and quality of similarity to teacher roles. For example, when children are told that they have been assigned the role of tutor because of demonstrated competence, perceived similarity to a teacher is high and based on an achieved and valued quality. When role assignment is based on a teacherlike physical characteristic, perceived similarity is also high but on a less important dimension. Similarity between the teacher role and the tutor role may be perceived as low when no teacher qualities are necessary for assignment to tutor, as when role assignment is based on chance. The effects of contextual variables on the attitudes of tutees are less clearly defined in a role-theory analysis. To some extent, however, one would expect that conditions bolstering the role of the peer tutor would reflect negatively on the status of the tutee role.

The purpose of this study was to evaluate a role-theory analysis of the attitudinal effects of peer tutoring on tutors and tutees. In particular, we hypothesized that attitude changes resulting from tutoring experiences are mediated by role perceptions and that contextual variables affect these role perceptions. To evaluate these hypotheses, fourth-grade children were assigned to be tutors or tutees, and they engaged in brief tutoring interactions. The assigned role was expected to have a major effect on role perceptions, and children enacting tutor roles were therefore expected to have more positive attitudes than children enacting tutee roles. The effects of contextual variables on role perceptions and attitudes were evaluated by providing children with four different rationales of role assignment.

Some children were told that their role assignment was based on their prior performance (competence), some were told that assignment was based on a teacherlike physical quality (a clear voice), and some were told that assignment was based on chance (a coin toss). In the fourth condition, children received no information about the basis for their role assignment. We expected that role enactment would produce the most substantial effects for tutors when role assignment was based on competence. We predicted that tutoring would be somewhat less effective when role assignment was based on chance. When no basis for assignment was given, we expected that the tutor's role perceptions would reflect the societal role of teacher and, hence, would produce positive attitudinal effects, similar to the role perceptions of children who were assigned on the basis of competence. The effects of the three rationales of role assignment on tutees' attitudes were expected to be the reverse of the effects on tutors' attitudes. When no rationale for role assignment was given, tutees were not expected to assume any deficiency in themselves relative to the tutor and were therefore expected to have attitudes similar to children assigned to tutees on the basis of chance.

Additionally, the effects of the tutoring experience on different dimensions of attitudes were assessed by including measures of self-evaluation, attitudes toward the role, and attitudes toward the task. It was predicted that the effects of role and assignment condition would be strongest on attitudes toward one's role, since role perceptions were expected to play a central function in mediating other attitudinal effects.

Method

Subjects

Subjects were 112 fourth graders (56 girls, 56 boys) from four elementary schools in the suburbs of a large metropolitan area. No child knew German, the task selected for tutoring.

Design

Subjects were arranged in pairs of same-sexed children from the same classroom. Children were randomly selected to be either tutor or tutee, and pairs were assigned to one of four rationale assignment conditions: (a) competence rationale, (b) physical characteristic rationale, (c) chance rationale, and (d) no rationale. In the competence condition, subjects were told that one would be the teacher because he or she had performed better on a pretest of German words than his or her partner had. Subjects in the physical characteristic assignment conditions were informed that both partners received the same score on the pretest, but one child had a clear voice like a teacher and so would be the tutor. In the chance condition, partners were informed that they had done equally well on the pretest, and roles were assigned on the basis of a coin toss. In the no-rationale condition, subjects were told nothing about their pretest scores and were assigned teacher and student roles with no explanation.

Procedure

Approximately 1 week before the start of the experiment, classroom teachers administered the Michigan Pupil Attitude Questionnaire (Michigan Educational Assessment Project, Note 2) to each class as a whole. The experimental procedure itself consisted of four steps: (a) a pretest on German words, (b) the role assignment manipulation, (c) the tutoring task, and (d) posttest measures on achievement and attitudes. Three female undergraduates served as experimenters.

Subjects were taken in pairs from the classroom to a separate room in the school. First, each child was given a pretest on German words and told that the experimenter could tell how well they could learn German by their performance on this pretest. The experimenter collected the pretests and pretended to grade them.

Next, the role assignment manipulation was made by giving the children a rationale for the assignment of tutor and tutee roles. Depending on the experimental condition, children were told that the tutor was selected because he or she did better on the pretest, had a clear voice, won a coin flip, or else they were given no rationale.

Then the subjects were given their workbooks and the tutor was shown how to teach the German words. The student was to guess which of four English words meant the same as a German stimulus word, and then the tutor provided the correct answer. Each pair worked for a period of 14 minutes. Following the tutoring task, the experimenter returned and gave each child the German Achievement Test and the Tutoring Attitude Questionnaire. A manipulation check following the attitude measure revealed that children understood and remembered the rationale they had been given for their role assignments.

Dependent Measures

The attitude pretest given to children by their teachers before the tutoring experience was the 1974 form of the Michigan Pupil Attitude Questionnaire. This questionnaire consisted of 30 3-point Likert items, with two subscales measuring attitudes toward school and attitudes toward self. Items on the Attitudes Toward School subscale measured the perceived worth or enjoyment of school (e.g., “Most of the things I learn in school are interesting”). Attitudes toward self were measured by statements about one’s own perceived competence and worth (e.g., “I feel I succeed at most things”). These scales were used as covariates in the final analyses to control for the effects of preexisting attitudes toward school and self. A preliminary set of analyses revealed that the assumption of homogeneous regression coefficients was met.

The German Achievement Test consisted of 20 items. Each item presented one German word and a choice of five English words to match it. Tutors and tutees received the same form of this test. Total number correct was used as the achievement measure.

The Tutoring Attitude Questionnaire consisted of 24 items. Attitudes were measured on a 9-point Likert scale, presented in the form of a thermometer. To assess internal consistency, Cronbach’s alpha was calculated and found to be .93. Answers for all 24 items were totaled to compute the measure of general attitudes.

Three 8-item attitude subscales were included within this measure. The first eight items of the questionnaire comprised the Self-Evaluation scale, which measured childrens’ assessments of their performance and ability in learning German words. A typical item was “How good were you with the German words?” The Role Perception scale consisted of eight questions asking about attitudes toward the assigned role. Questions involving preference and evaluation of the assigned role were included in this scale (e.g., “How much did you like being a teacher/student?”). The Task Preference scale was comprised of the last set of eight items. These items focused on enjoyment of the tutoring task and how much the child liked learning German (e.g., “How much did you like working with the German words?”). Answers for each subset of eight items were totaled for the three subscale measures. Internal consistencies for the three subscales all exceeded .88. Intercorrelations among the three scales were .28 between Self-Evaluation and Task Preference, .32 between Self-Evaluation and Role Perceptions, and .68 between Role Perceptions and Task Preference.

Results

The effects of role and assignment rationale on general attitudes were examined by a 2 (tutor/tutee) $\times$ 4 (role assignment rationale) $\times$ 2 (sex) analysis of covariance (AN-COVA) of the Tutoring Attitude Questionnaire scores. The ANCOVA revealed a significant main effect for role $F(1, 94) = 5.95, p < .05$, and condition, $F(3, 94) = 2.68, p < .05$. The mean attitude scores, adjusted for the covariates, are presented in Figure 1. As predicted, attitudes of tutors were significantly more positive than those of tutees. Follow-up analyses of the condition effect were conducted using Duncan’s multiple-range tests. These analyses revealed that subjects in the no-rationale condition had attitudes significantly more positive than subjects in conditions where assignment was based on competence, physical characteristics, or chance (all p s $< .05$). To assess the effects of role on attitudes within each assignment condition, separate matched-pair t tests were conducted on the attitude scores of tutors and tutees. When assignment was based on competence, tutors’ attitude scores were significantly more positive than tutees’ scores, $t(1, 13) = 2.89, p < .01$. Near significant differences were found when assignment was based on physical characteristics, $t(1, 13) = 2.01, p < .06$, and no differences were found when assignment was based on chance, $t(1, 13) = .46, p > .10$, or when no rationale for assignment was given, $t(1, 13) = .90, p > .10$.

Attitude Subscales

Next, separate analyses were conducted on the Role Perception, Self-Evaluation, and Task Preference subscales. On the Role Perception scale (see Table 1), significant main effects for role, $F(1, 94) = 9.57, p < .05$, and assignment condition, $F(3, 94) = 3.34, p < .05$, were found. Tutors preferred their roles and perceived them as more important than tutees did. The basis for the significant condition effect was evaluated by Duncan's multiple-range tests, which showed that subjects in the no-rationale assignment condition had more positive role perceptions than subjects in assignment conditions based on physical characteristics ($p < .05$), chance ($p < .05$), or competence ($p < .10$).

Matched-pair t tests were computed to assess whether the mean attitudes of tutors and tutees were significantly different in any of the role assignment conditions. Tutors had had significantly more positive attitudes than tutees when role assignment was based on competence, $t(1, 13) = 3.28, p < .01$, or physical characteristics, $t(1, 13) = 2.52, p < .05$, but not when assignment was based on chance, $t(1, 13) = .87, p > .10$, or when no assignment rationale was given, $t(1, 13) = 1.33, p > .10$.

The effects of both role and assignment condition were stronger on the Role Perceptions scale than on either of the other attitude subscales. Analyses did, however, reveal a trend toward a main effect for role on the Self-Evaluation scale, $F(1, 94) = 3.36, p < .07$, with tutors evaluating their ability on the German words more positively than tutees. No role or assignment condition effects were found on the Task Preference scale, and no sex effects or interaction effects were found on any of the attitude measures.

Achievement Scores

An achievement score was computed for each subject by summing the number correct on the German Achievement Test. An AN-COVA revealed a significant main effect for sex, $F(1, 494) = 14.37, p < .001$, with girls performing better than boys. There was also a nonsignificant trend for tutees to perform better than tutors, $F(1, 494) = 3.04, p < .10$.

Discussion

These findings provided strong support for the role-theory analysis of tutoring processes. Overall, children enacting tutor roles tended to form more positive attitudes than children in tutee roles, indicating that role had a major impact on attitudes. The most marked difference between tutors and tutees was in how favorably they perceived their roles, and the second greatest difference was in their perceived competence on the task. Tutors and tutees did not differ in their attitudes toward the tutoring task, suggesting that the attitudinal effect of the tutor role is not merely a global halo effect. Rather, children seem to perceive the roles of tutor and tutee as representative of particular characteristics (competence and prestige for the tutor) and, in the course of enacting these roles, begin to apply these characteristics to themselves, thus influencing their self-perceptions. Interestingly, the perceived competence of tutors and tutees in this study was independent of their actual ability on the German words. In fact, tutees tended to do better on the achievement test and yet did not feel as smart, quick, or skillful as tutors did.

Assignment rationale had two kinds of effects on children's attitudes. First, assignment rationale had a direct effect. When no external assignment rationale was provided, both the tutors and tutees developed self-enhancing reasons for being assigned their respective roles. The role perceptions of tutors given no rationale were significantly higher than the attitudes of tutors in the chance condition. Tutees in the no-rationale condition, in contrast, had general attitudes and role perceptions no different from tutees in chance conditions but

significantly more positive than tutees in conditions where assignment was based on (lack of) competence or (lack of) a physical characteristic.

Assignment rationale also served to moderate the general attitudinal effects of role. When teacher like role perceptions for the tutor were enhanced by assigning roles based on competence or a physical characteristic, tutors formed attitudes significantly more positive than tutees did. When role assignment was based on chance or when no role assignment rationale was given, the differences between tutor and tutee attitudes were not significant. Apparently, assignment rationales based on the tutor's competence or physical characteristics lead to an accentuation of perceived differences between the tutor and tutee roles. These two rationales are similar in that both reflect special teacherlike abilities that may be of equal importance from the viewpoint of a fourth grader. Several mechanisms may explain their accentuating effect. First, these rationales call attention to the fact that the child to be tutor is in some way better than the child to be tutee. These rationales provide the children with some direct information about their relative competence and may also lead them to believe that the adult prefers the tutor. Second, by suggesting that special characteristics are required for the tutor role, the differential status and prestige of the tutor and tutee roles are emphasized. This emphasis may increase the saliency of tutor role perceptions of competence and prestige and tutee role perceptions of relative deficiencies in competence and prestige. Third, by suggesting that the children deserve their different roles because of their personal qualities, the children may see their roles as more accurate reflections of themselves and, hence, role perceptions may be more influential in generating their self-perceptions.

Several aspects of our findings have particular relevance for applied tutoring programs. These findings suggest that the positive effects of peer tutoring on the tutor may, to some extent, be counterbalanced by less desirable effects on the tutee. For example, an emphasis on the competence of the tutor results in positive attitudes for the tutor, but the tutees tend to have more negative attitudes than when a chance rationale is assigned. One solution to this dilemma is to structure programs so that children switch roles periodically. The effects of tutoring arrangements in which roles are periodically reversed could be studied to determine whether such arrangements lead to any dilution of the role-playing effects or alternatively facilitate positive attitudinal outcomes by making the arrangements more equitable. Another alternative is to manipulate external conditions so that the tutees do not perceive their role assignments to be based on lack of ability or lack of other personal qualities. In the current study, when no rationale for role assignment was given, tutees were not confronted with any implicit negative information about their roles, and they did not have more negative attitudes but, in fact, had very positive attitudes. Finally, cross-age tutoring arrangements may be seen as more equitable than same-age tutoring interactions and, hence, might produce more positive attitudes for the tutee.

Of course, some caution must be used in generalizing these findings to applied tutoring programs because the current experiment was an analogue of a tutoring experience. The tutoring was more abbreviated and structured than is typical, and the role assignment was random. At the same time, however, several strong arguments can be made for the use of such analogues (Borkovec & Rachman, 1979; Kazdin, 1978). First, this paradigm provided a means for testing theoretical propositions regarding role perceptions and, in particular, role assignment rationales. As noted previously, prior research has been inconsistent, and little is known about the processes determining the effectiveness of tutoring. Allen's (1976) role-theory analysis has much promise but has little data to support it. In fact, our use of an analogue made our study one of the few direct tests of a role-theory analysis. Both ethical and pragmatic considerations have seriously restricted the opportunities for testing such

theories in applied tutoring programs. Simply too many factors and processes are present to permit one to either isolate or carefully manipulate a hypothesized process variable.

Additionally, it has been difficult to assess the effects of a specific component, such as assignment rationale, when the results have to be examined in the context of a larger treatment package. Spurious positive and negative findings seem inevitable when so much undesirable systematic and nonsystematic variance is present. In contrast, we were able to eliminate undesirable variance due to factors such as prior attitudes, or success or experience on the task. Clearly such factors play important roles in attitude formation, but they may mask other effects. The current study provides an important contribution by testing theoretical propositions and by identifying the role that contextual factors, such as assignment rationale, may have on attitudes. It seems likely that assignment rationales and other contextual factors would have similar effects in actual tutoring programs, but firm statements about generalizability will need to await empirical verification. In sum, we believe that tutoring research will make the greatest progress by testing theoretical hypotheses and isolating component effects in analogue paradigms and then examining their effects in actual tutoring context—an approach that psychotherapy research has found advantageous (Heller, 1971; Paul, 1969).

These results also have several important implications for both future theoretical and applied research. Greater focus should be placed on role perceptions as central mediators of the attitudinal effects of role playing. More generally, future research should be concerned with identifying the conditions under which peer tutoring is effective and specifying the processes involved in attitude change; it should not just determine whether a particular program had an effect or not. Although a few investigators have examined contextual factors, such as the effect of rewards based on performance (Garbarino, 1975), these factors have not received sufficient attention in the tutoring research. Within the area of social psychology, several variables have been identified that affect the amount of attitude change induced by counterattitudinal role playing. The level of improvisation required (King & Janis, 1956), the level of effort induced (Zimbardo, 1965), and the presence of prior commitment to a particular attitude (Greenwald, 1969) are all central factors in determining the extent to which role playing changes attitudes. It is likely that these variables may also affect attitudes formed during tutoring interactions, but their effects have not yet been tested in tutoring contexts.

Field research on the effects of peer tutoring should be expanded to include attitudinal measures for both tutor and tutee to enable evaluation of any possible detrimental attitudinal effects on the tutee. Additionally, a more systematic use of multidimensional attitude measures could clarify the processes responsible for the various attitude and achievement gains promoted by peer tutoring. To date, only the current study has included such multidimensional measures.

The data presented here suggest that peer-tutoring arrangements can be useful in fostering positive attitudes and self-concepts, but the nature and degree of their impact depends on the way in which such arrangements are presented to and perceived by the children involved. Further investigations of role perceptions and the contextual cues affecting them will provide a better theoretical understanding of the mechanisms governing attitude enhancement produced through peer-tutoring experiences and will enable more effective programs to be applied.

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Figure 1.
Adjusted scores on overall attitudinal scale.

Table 1

Tutors' and Tutees' Adjusted Mean Scores on Attitudinal Scales

Condition	Measure			
	Overall	Role perception	Self-evaluation	Task evaluation
Competence				
Tutor	124.38 _a	44.64 _a	33.12	46.62
Tutee	96.03 _a	30.24 _a	23.49	42.30
Physical				
Tutor	123.75 _b	44.19 _a	29.97	49.59
Tutee	91.62 _b	25.29 _a	30.51	35.82
Chance				
Tutor	111.34	35.91	32.85	42.58
Tutee	105.30	30.96	25.11	49.23
No rationale				
Tutor	138.66	51.12	35.70	51.84
Tutee	128.07	44.01	31.50	52.56

Note. Means with the subscript *a* differ significantly from each other at the .05 level; means with the subscript *b* differ significantly from each other at the .10 level.