Attribution Retraining Instruction with a Second-Grade Class

Sherri L. Horner¹,³ and Susan M. Gaither²

We investigated whether attribution retraining instruction (ARI) embedded in mathematics lessons in a second-grade classroom could help students (a) attribute their successes and failures to effort or lack of effort, (b) not attribute their successes and failures to uncontrollable factors, and (c) increase their mathematics scores. One second-grade classroom (n = 18) received ARI and the other classroom (n = 11) received mathematics-only instruction (MOI). The ARI consisted of specific strategy review, guided discussion, individual practice, and effort feedback. Results showed that ARI students’ mathematics scores increased and attributions to uncontrollable factors decreased from pre- to posttest. MOI students also increased their mathematics scores; however, these differences were not significant.

KEY WORDS: attributions; elementary education; mathematics.

INTRODUCTION

Over the past decade, there has been growing interest in decreasing the divide between research and practice in education. Much research related to educational practice has been done with experimenters, rather than teachers, in one-on-one or small group settings instead of in whole classrooms. Although this research has added to the educational community’s knowledge of children’s thinking, motivation, and behavior, translating this methodology into real-life classrooms can be difficult. Therefore, even though these techniques have been shown to be effective, classroom teachers might not use them.

One way to bridge the research-practice divide is for teacher-researchers to test the effectiveness of these research-based methods in their own classrooms. This article relates how one teacher-researcher (the second author) adapted research on attribution retraining to her second-grade classroom. Therefore, the purpose of this study was to investigate whether attribution retraining instruction, which has been shown to be effective in experimental situations, could influence children’s attributions and achievement when embedded in regularly occurring lessons in a typical elementary school classroom with a typical classroom teacher.

REVIEW OF RESEARCH

In their review of the recent literature on motivation, Murphy and Alexander (2000) developed a glossary of terms with definitions that were similar among the articles reviewed. For attribution, they used Peterson’s (1992, as cited in Murphy and Alexander, 2000) conceptual definition of “students’ search for understanding of their academic performances, making causal attributions to explain why they achieved a certain outcome” (p. 29). So, attributions are the reasons people give for their success or failure on a particular task. Some common attributions in an academic setting are effort, innate ability or intelligence, task difficulty, teacher help, and personal luck (Dweck, 1999; Weiner, 1986).

Research has shown that the attributions people hold are linked to their academic performance, persistence, motivation, and self-efficacy (Andrews & Debus,
Horner and Gaither, 1978; Dweck, 1999; Kistner, Osborne, & LeVerrier, 1988; Licht, Kistner, Ozkaragoz, Shapiro, & Clausen, 1985; Newman & Stevenson, 1990). For example, children who receive the same grade on a mathematics test might show differences in persistence and effort on the next mathematics test depending on their attributions. The children who attribute their success to hard work or effort, which are within their control, will tend to try hard and persist on difficult mathematics problems. Children who attribute their success to the teacher’s help or luck, which are not within their control, will tend to give up on difficult mathematics problems. Therefore, students who attribute success to effort and failure to lack of effort tend to achieve higher than those students who attribute success or failure to teachers’ help or luck.

Because there is this link between attributions and achievement, researchers have been interested in ways in which children with maladaptive attributions can be induced into changing them to healthier ones. Many studies have investigated the effectiveness of attribution retraining in either individual or small group experimental settings. In Craske (1988), students who spontaneously made effort attributions were reinforced by the experimenter and subsequently increased their attributions to lack of effort. Several researchers (Dweck, 1975; Fowler & Peterson, 1981; Schunk, 1982, 1983, 1984; Schunk & Cox, 1986) have shown that when experimenters give participants feedback related to effort (e.g., commenting that the participant’s failure was due to lack of effort), the participants increase their effort attributions and performance. In addition, Fowler and Peterson found a difference in the effectiveness of different types of feedback. Students who were encouraged to use self-talk to increase effort showed greater improvement than those students to whom the experimenter commented on their effort. Schunk and Cox also found that students who used self-talk along with adult feedback about effort increased their effort attributions and performance more than students who only received adult feedback. In two studies, Borkowski and his colleagues (Borkowski, Weyhing, & Carr, 1988; Reid & Borkowski, 1987) investigated attribution retraining in which the experimenter made a mistake conducting a strategy and then engaged the student in a discussion about why the mistake was made, including attributions to effort. In both studies, students who received the guided discussion attribution retraining increased their strategy use and attributions to effort more than students who did not receive attribution retraining.

Only a few researchers have investigated attribution retraining in classroom settings. In Thomas and Pashley (1982), special education teachers modeled verbalizing effort attributions while doing a puzzle. They then reinforced students’ effort attributions and discussed why they were important. Overall, students who received attribution retraining persisted longer and made more attempts on a difficult puzzle than those who did not receive treatment. There were no significant pre-post differences in attributions for the groups. Craven, Marsh, and Debus (1991) compared attribution retraining done by an experimenter in a small group setting to one done by teachers in whole classroom setting. The experimenter-led attribution retraining was found to be more effective than teacher led in enhancing self-concept and effort attributions. Although both the experimenter and the teachers were supposed to give the same amount of feedback, the teachers found that they could not maintain the high level of feedback required. Therefore, Craven et al. suggested that the differences in effectiveness could be due to differences in the amount of feedback that the children received.

Overall, the experimental studies, in individual or small group settings, show strong support for the usefulness of attribution retraining with young children. Unfortunately, the two studies in classroom settings are less encouraging. Due to monetary and personnel allocation difficulties, most schools cannot implement attribution retraining on an individual basis, even though it could be beneficial to their students. Therefore, it is imperative to continue investigating how teachers can implement attribution retraining effectively in whole group settings. In this research project, we further this research by using attribution retraining in a typical second-grade classroom. The specific questions we asked were: Does attribution retraining instruction (ARI) help second graders (a) increase attributing their successes and failures in mathematics to effort or lack of effort, (b) decrease attributing their successes and failures in mathematics to uncontrollable factors, and (c) increase their mathematics scores?

METHODS

Participants

Forty-eight students from two second-grade classes in an urban elementary school were invited to participate. None of the students in these classrooms received special education services for learning disabilities or giftedness. The students were predominately African American and of lower socioeconomic status.

Because the ARI and the pre- and posttests were embedded in the normal activities of these classrooms, all students received them. Only data from those stu-