

WHAT SUPPLEMENTAL INSTRUCTION TELLS US ABOUT EFFECTIVE TUTOR TRAINING

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One of the first steps in developing a tutor training program is to identify the tutoring techniques to include. Most training programs are somewhat limited in the time allotted, so it is important to include those techniques that will have the most immediate effects on the tutoring sessions that will be conducted by the new tutors.

A MODEL LEARNING SITUATION

One approach in determining the essential elements of productive learning situations is to identify known successes and study the elements found there. The Supplemental Instruction (SI) model (Blanc, DeBuhr, & Martin, 1983) has been used successfully to support high-risk college courses for over 20 years. The success of SI in facilitating learning, improving grades, and increasing retention is well documented (Kenney, 1989; Lundeberg, 1990; Kochenour et al., 1997; Gattis, 2000).

Successful SI programs, such as the one at North Carolina (NC) State University, have numerous satisfied customers. Like many SI programs, the one at NC State surveys users regarding what they like and do not like about the SI sessions. The results are overwhelmingly positive, semester after semester.

The positive comments from a recent semester were classified into five beneficial aspects of SI sessions. The same benefits cited by these SI participants are supported by the research in education, so we may postulate that students would profit from similar features in tutoring sessions. The following list contains a sample survey comment for each SI benefit,

techniques that successful SI leaders use to provide such benefits to the students, and ways that tutors can use the same techniques in their work.

Relaxed atmosphere

“If there was anything I had a question about, I could always ask it [in the SI session], unlike in the lecture where it felt uncomfortable.”

Students enjoy the non-threatening atmosphere of SI sessions. College lectures can be intimidating because of the high volume of new information without adequate opportunity for asking questions. Many students report that questions during lecture are discouraged and sometimes even ridiculed. It is no wonder that they need a relaxed atmosphere for learning outside of lecture.

There is a research basis for learning in more relaxed settings. In a large, comprehensive review of educational research findings, Walberg (1984) found that “classroom atmosphere” was one of the variables (over which teachers have control) that had a large positive effect on student achievement.

There are several things that tutors can do to make their sessions comfortable for students, and they all relate to the concept of positive reinforcement. In Walberg’s study (1984), positive reinforcement was the single variable associated with the highest increase in student achievement. Positive reinforcement, both verbal and non-verbal, can help bolster students’ confidence, making them more comfortable with the tutoring relationship. The more uncertain the student, the more positive reinforcement he or she needs (Lepper & Chabay, 1988). Positive reinforcement is most effective when congratulatory words and actions are varied and intermittent (Bloom, 1976). When tutors use positive reinforcement, it increases the likelihood of students sharing their ideas (Fox, 1991). The increased student

participation gives the session more of a conversation-like quality, which works to relax both the tutor and the tutee.

An important variation of positive reinforcement is the technique of partial, or qualified, reinforcement. This can be used to reassure students while at the same time correcting them. An example of partial positive reinforcement in math might be, “That’s right, it’s four, but what’s the sign?” as opposed to “No, it’s not negative four.”

Students have control over content and pace

“I liked the fact that she would go over any question that was asked and make sure everyone understood before she went on.”

Students set the agenda in productive SI sessions. They propose the topics for discussion, usually homework problems or lecture points with which they are having difficulty. An SI leader is there to facilitate the discussion and make sure that each student’s concern gets addressed.

There is ample support in the educational literature for such a student-centered approach. According to the educational philosophy of constructivism (Brooks & Brooks, 1993; Fosnot, 1996; Pope & Gilbert, 1983), the current ideas of a student may be seen as the raw material out of which new ideas are constructed. Effective learning takes place when students are allowed to guide the process of knowledge construction. The constructivist theory also posits that each student’s conceptions of a particular course topic are necessarily unique, having been derived from that student’s unique life experiences, educational background, and cognitive style.

Tutors need to realize that their students’ ways of understanding may be quite different from their own. For this and other reasons, tutees must be allowed to set the agenda

in the sessions. Tutees' abilities to do this will vary considerably, but the tutor should always yield as much control of the session to the tutees as possible. When working problems, for example, tutors should use students' ideas as starting points in each discussion.

Opportunity for peer interaction

“Listening to other students' questions and approaches to problems is always helpful.”

Students like being able to discuss course content with their peers in SI sessions. Unlike the usual technical level of explanation provided by instructors, peers often use a common vocabulary in talking about course concepts. Effective SI leaders use techniques that encourage students to comment on each other's conceptions and help answer each other's questions.

There is research support for students' positive feelings about peer interaction in SI sessions. Vygotsky's well-accepted theory of the social construction of knowledge notes the cognitive advantages of peer interaction in learning (Vygotsky, 1978). Capable peers are likely to operate within the student's “zone of proximal development” — a term that Vygotsky coined to designate interpersonal interactions that effectively challenge students while communicating with them at an appropriate level.

The most effective way for tutors to encourage a collaborative approach is to limit their talking in the sessions. Without training in the collaborative style, tutors often tend to lecture as though they were instructors. Tutors should be encouraged to talk no more than half the time, allowing tutees ample opportunities to express their understandings of the concepts.

Student verbalization, an inherent byproduct of peer interaction, provides a number of

learning benefits by helping the reasoning process, improving retention of information, and building confidence (Chi, Bassok, Lewis, Reimann, & Glaser, 1989; Chi, deLeuw, Chiu, & LaVancher, 1994; Graesser, Bowers, Hacker, & Person, 1997; Dominowski, 1998).

Furthermore, verbalization by a student in a tutoring session is often productive, even if it does not result in an immediate, complete, and/or accurate answer. Chi (Chi et al., 1989; Chi et al., 1994) has shown how students can integrate new information into existing knowledge with the use of verbal “self-explanations.” These explanations can help students improve their understanding, whether or not the explanations are completely accurate and whether or not the tutor truly understands the student’s reasoning (Graesser et al., 1997).

Opportunity for guided practice

“[The SI session] gave us the opportunity to try to do more problems on our own, with her guidance and support.”

Solving problems is a major component of many college courses, especially courses in math or science. Students attending SI sessions appreciate the opportunity to work through problems on their own while having the leader and the other students available to answer questions.

Guided practice is recognized by researchers to be a key instructional strategy (Rosenshine, 1986). In teaching concepts and skills, effective teachers guide students through initial practice examples, ask questions to check for understanding, and provide opportunities for additional practice with feedback until students are independent and confident.

Likewise, tutors should encourage students to work through a number of problems in tutoring sessions, intervening with corrections or questions when necessary. Instructors

generally provide the initial example in class, so students should be in a position to work independently and ask the tutor specific questions. However, if the tutee is not able to understand the steps for working a problem from the text and notes, it is good practice for the tutor to first work an example and then give the tutee similar examples to work.

Improves motivation for studying

“[The SI session] was a way to make me study when I found it hard to motivate myself.”

Self-efficacy theory (Bandura, 1982) can help explain why SI sessions motivate students. Bandura states that self-efficacy is “concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (p. 193). As a form of expressed confidence to perform specific tasks, self-efficacy is a measure of motivation.

Studies have shown that a student’s perceived self-efficacy is a powerful predictor of course grades, sometimes even more so than past achievement (Lent, Brown, & Larkin, 1984). In fact, increases in self-efficacy will often result in grade increases. Bandura (1977) lists four ways that self-efficacy can be increased, and SI helps with each:

1. Reducing negative emotions. SI sessions provide a psychologically safe environment for asking questions. SI leaders may also provide sample quizzes, simulating the test environment in ways that calm students on test day.
2. Verbal persuasion. Through words of encouragement and positive acknowledgements of student contributions to the sessions, SI leaders urge students to read their texts, take good notes, and do their homework. Leaders know that simply completing the tasks associated with the course is a large part of getting good grades.

3. Vicarious experience. Students at SI sessions see students of similar abilities asking questions and completing tasks needed for success in the course. Usually the SI leader is also a peer who at times has to struggle along with the students to make sense of the course material
4. Performance accomplishments. SI sessions are productive; students spend time performing tasks that are needed for success. When, as often happens, success follows such productive work, student self-efficacy is increased, leading to more successes.

In these same ways, tutors can motivate their students. We have already seen the power of the tutor's using positive reinforcement to help students relax, thereby improving their confidence and increasing their participation in tutoring sessions. Positive reinforcement can also be used to encourage students to put more effort into all aspects of their studies. For example, tutors can insist that students perform additional homework problems and praise them when they do.

CONCLUSION

Studying documented positive educational experiences can help us structure training programs that contain important elements. Based on feedback from SI participants, tutors should be trained to create a relaxed atmosphere in their sessions, allow students control over content and pace, make the sessions interactive, provide opportunities for guided practice, and motivate the students to complete all the tasks necessary for success in the course.

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