The effects of proctor feedback on implementing behavior change projects in a fieldwork setting: a thesis...

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The Effects of Proctor Feedback on Implementing Behavior Change Projects in a Fieldwork Setting

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Abstract

The present study examined the effects of proctor feedback on college students' accuracy at implementing a behavior change project in a fieldwork setting. Two music therapy students enrolled in an applied behavior analysis course served as subjects. The results did not demonstrate a positive effect on the students' accuracy. Several variables, however, were identified that might account for the results.
The Effects of Proctor Feedback on Implementing Behavior Change Projects in a Fieldwork Setting

College students enrolled in behavior analysis courses are usually required to design and implement behavior change projects. These requirements are frequently fulfilled in fieldwork settings such as community agencies, prisons or mental hospitals (Lanson & Benassi, Note 1). In several studies, the procedures that have been successfully employed to train people to implement behavior change projects accurately are instructions and feedback (e.g. Cooper, Thomson, & Baer, 1970; Loeber, 1971; Martin & Pear, 1970; Solomon & Wahler, 1973). However, three of these studies indicated that instruction alone may not be effective (Cossairt, Hall & Hopkins, 1973; Gardner, 1972; Loeber, 1971). This is of consequence where course enrollment is large, making it unlikely that the instructor will be able to employ the feedback component in the fieldwork settings. Therefore, ways in which the students' environment can be structured in the fieldwork settings to provide performance feedback should be explored.

Johnson, Katz and Gelfand (1972) provided a description of a training environment used to affect undergraduates' implementation of behavior change projects on a token
economy ward. Each student received instructions and feedback from supervising graduate students. These investigators implied that this experience was very advantageous for the students. Yet, they did not report an analysis of the students' accuracy at implementing the behavior change projects or any measure of how effective the procedures were in influencing the students' performance.

Willis, Hobbs, Kirkpatrick and Manley (1975) conducted a course to teach counseling students how to design and implement a behavior change project. The goals of the course were to: (a) Describe the basic principles of changing behavior in school settings; (b) Identify and illustrate the appropriate use of applied research designs; and (c) Design, implement and evaluate the behavior change project. The first two goals were evaluated by paper and pencil tests. The third was evaluated by the degree to which the students met the criteria established for each step in the behavior change project (e.g. precise, objective and measurable definition of the problem behavior). However, it is unclear whether the students implemented their projects accurately since the investigators did not report an analysis of the students' skills at implementing the behavior change projects.

Zimmerman, Zimmerman, Rider, Smith and Dinn (1971) conducted a behavior change workshop to teach elementary school teachers to design and implement behavior change projects. During the first three weeks of the workshop, one of the
authors observed and conferred with each teacher in his/her own classroom at least twice on problems and potential methods of implementing the methodology being presented and discussed in the weekly workshop sessions. These investigators reported that the participants designed and implemented acceptable behavior change projects. Yet, it is uncertain how well the projects were implemented since the investigators did not employ a system to measure the performance of the teachers in the classroom settings.

In summary, the aforementioned investigators conducted courses to affect student performances in fieldwork settings. However, it is uncertain how much the students' accuracy at implementing the behavior change projects was improved since none of the investigators objectively measured student performance.

The task of arranging the students' environment in academic settings to improve their academic performance has been studied by numerous investigators (e.g. Ferster, 1968; Keller, 1968, 1969; Malott & Svinicki, 1969; McMichael & Corey, 1969). The most prominent model is Keller's (1968) Personalized System of Instruction (PSI). PSI is based on behaviorally defined objectives which are aimed at maximizing the opportunity for the students to emit the desired behaviors in academic settings. The components which characterize this system are: (a) Students progress through the course with relatively more choice about their pace than in more
traditional courses; (b) Students are permitted to move on to new material only after mastering all prior material; (c) Lectures are used for demonstration and motivation rather than for dissemination of information; (d) Written performance of the student is stressed in teacher-student communications; and (e) Undergraduates are used as proctors for repeated testing, immediate feedback and tutoring on an individual basis. The effectiveness of the Keller Model has been objectively demonstrated in a wide variety of classroom settings (e.g. Keller, 1968; McMichael & Corey, 1969).

More recently, Fawcett and Miller (1975) have demonstrated that the proctoring components used in PSI in conjunction with a point system and the specification of the desired student behaviors can be effective for monitoring and maintaining community service behaviors (e.g. promptness, attendance and completion of work assignments). While the Fawcett and Miller (1975) study did not investigate how accurately students implement behavior change projects, it suggests the possibility of using personalized systems of instruction to positively affect the students' performance in fieldwork settings.

Two of the procedures employed in the Fawcett and Miller (1975) study to monitor and improve the students' performance in the fieldwork setting were: (a) The specification of the desired student behaviors, and (b) Performance feedback given by proctors for the desired student behaviors.
in the fieldwork setting. The need for actual feedback on the desired student behaviors to improve their performance has been demonstrated in numerous investigations (e.g. Clark, Maereae, Ida & Smith, 1973; Kazdin & Moyer, 1975; Panyan & Patterson, Note 2).

The critical task that has to be carried out in order to use feedback in fieldwork settings is to clearly specify the desired performances (Kazdin, 1973). The specification of the desired student behaviors was facilitated in the present study by employing Loeber and Wiesman’s (1975) Heterogeneous Chains Model. Their analysis of trainer performances are described as heterogeneous chains of behavior. These chains are sequences "of discriminative operants such that responses in the presence of one stimulus are followed by stimuli that reinforce these responses and set the occasion for subsequent responses" (Catania, 1968, p. 328).

As an example, the trainer asks a question or physically prompts a trainee which may evoke a trainee response(s) which can then be reinforced by the trainer. In this manner, one may view the college student as emitting a variety of responses to evoke a desirable client response(s) more frequently so that behavior change can be adequately reinforced by the student. The model is important not only because it may increase the likelihood of client behaviors, but also because it may provide more opportunities to reinforce desired student behaviors.
In the present study, a practicum course was conducted to teach students to design and implement a behavior change project. Procedures similar to the Willis et al. (1975) course and the Zimmerman et al. (1971) workshop were used to teach students how to design acceptable behavior change projects. Since both studies indicated that students can design practical projects, the author chose to solely investigate the students' performances while implementing behavior change projects in fieldwork settings. Specifically, this study reports the effects of proctor feedback (proctoring in conjunction with the specification of the desired student behaviors) on college students' accuracy of implementation of a behavior change project in a fieldwork setting.

**Method**

**Subjects**

Two female undergraduate Music Therapy students (A & B) spent one summer semester at the University of the Pacific in a practicum to learn how to design and implement a behavior change project with a developmentally disabled client. Neither student had received formal supervision in the use of applied behavior analysis techniques prior to their participation in this study. Student B had taken five hours of academic instruction in applied behavior analysis principles.
The students were enrolled in a two-week behavior analysis based Music Therapy Practicum. The course required one hour per day in a fieldwork setting and one hour per day of instruction in an academic setting for ten school days. This practicum course was conducted to train students to independently design and implement a behavior change project.

**Academic setting and course requirement.** During the initial hour of academic instruction the course instructor specified the criteria for an acceptable behavior change project. In the behavior change project, the student had to specify: (a) The instructional stimulus and the number of seconds the student would wait to deliver the instructional stimulus if the client did not respond following the previous presentation; (b) The targeted client behavior; and (c) The consequence and how soon (number of seconds) the student would deliver the consequence after the client emitted the targeted response. In addition, the instructor presented a set of tasks that the students were to complete to assist in designing a behavior change project. In order to complete each task, the students had to observe a client in the fieldwork setting. The tasks in sequence were:

1. Record anecdotal data to identify and target a client behavior.
2. Complete exercises in defining client behaviors.
3. Identify and specify stimulus events (instructional and reinforcing) for the assigned client.

4. Baseline the targeted behavior.

Prior to implementing the behavior change project, the students conferred with the instructor to determine if the project met the criteria for an acceptable project. The instructor allotted a portion of the class time (30 minutes) for client-oriented discussions on each of the tasks. The remainder of the class time was used for discussion and testing of assigned chapters in the book entitled "Teaching/Discipline" by Madsen and Madsen (1975).

Fieldwork setting, clients and proctor. At the initial fieldwork hour, each student was assigned an individual client at the Alan Short Art Center for the Developmentally Disabled. The clients resided at Stockton State Hospital. The staff at this center selected the clients based on their accessibility for the scheduled behavior change sessions. During the first week, the students performed the tasks (e.g. record anecdotal data) to assist them in designing an acceptable behavior change project. At the end of this week each student gave the proctor a written copy of her project. Also during the first week, the investigator trained the proctor (an undergraduate) in the observation and feedback procedures that were used in this study. Initially, the investigator explained the Heterogeneous Chain Model (Loeber and Weisman, 1975) that was used to monitor the students'
performances. The investigator and the proctor then independently observed the students and recorded their performances using this model. Following each of these sessions they compared their results, and the investigator gave the proctor information about his performance. In terms of feedback training, the proctor was simply instructed to provide praise for accurate student behaviors prior to providing corrective feedback for inaccurate student behaviors. During the second and last week of the study, the proctor provided feedback to the students after they implemented their behavior change projects.

The client behavior change sessions were conducted in a carpeted room (9m by 7m) that contained chairs, tables, musical instruments, and videotaping equipment. All persons and equipment were in the same part of the room throughout the study.

**Experimental Procedures and Design**

**Independent variable.** The proctor provided the students with feedback on their accuracy at implementing their behavior change project. This feedback served as the independent variable. The proctor administered the descriptive feedback (i.e., praise and/or corrective) immediately following each behavior change session. Praise was defined as any statement of approval specifying the desired student behavior. For instance, "Great, Sally, your're getting
those reinforcers in there immediately just as you said you would." Corrective feedback was given whenever the student made an incorrect response. For instance, "Sally, during my observations, I noted that you were delivering a prompt that is not specified in your project." In this last example, the proctor would ask the student to discontinue the incorrect response and would then answer student questions. In every instance, the proctor would show the student the data that he had collected. The proctor could only provide feedback on the objective data that he was collecting. If the proctor could not answer a question, he was instructed to refer the student to the instructor.

Dependent variable. The proctor monitored each behavior change session to determine if the student was implementing her project as specified. The desired student behaviors were monitored in terms of the Heterogeneous Chain Model (Loeber et al, 1975). In this model the student evokes a targeted client behavior by presenting an instructional stimulus. If the client performs the targeted behavior, the student presents the consequence.

In the behavior change project, the student specified: (a) The instructional stimulus and the number of seconds the student would wait to deliver the instructional stimulus if the client did not respond following the first presentation; (b) The targeted client behavior; and (c) The consequence and how soon (number of seconds) the student would
deliver the consequence after the client emitted the target ed response.

A single performance of a link in a chain was scored as one accurate student behavior when the student presented the instructional stimulus or consequence as specified. For instance, when Student A presented the instructional stimulus, "John, say I," then this response was scored as accurate since she had specified this response in her behavior change project. When the student incorrectly presented an instructional stimulus or consequence then the proctor scored the student performance as one inaccurate student behavior. The total number of accurate performances was divided by the total number of attempts which yielded a percentage correct measure that was employed as the dependent variable, the percentage of accurate student behaviors.

Observation procedures. The proctor recorded the student and client behaviors during each one minute interval for the duration of the behavior change sessions. The clients' responses were recorded because the number of opportunities for accurate student behaviors varied as a function of the clients' performance. The sessions conducted by both students were usually 5 minutes in length. A revised copy of Panyan and Patterson's (1973) data collection sheet employed in this study is contained in Appendix A.
The categories of client behaviors were recorded as: a plus (+) if the client performed the targeted response within the number of seconds specified in the project, and a minus (-) if the client did not perform the targeted response. The categories of student behaviors were recorded as: an "I" if the student presented an instructional stimulus as specified in the project; and as a "P" (physical stimulus event such as a hug or pat), "S" (social praise) or "T" (token) if the student presented the consequence as specified in the project.

Each session was videotaped and the tapes were scored by two independent raters using the same procedures employed by the proctor. The tapes were shown in a random order and reliability was taken twice during each experimental condition per student. Inter-observer reliability was computed by dividing the total number of agreements by agreements plus disagreements times 100.

Design. A multiple baseline design was used to measure the effect of proctor feedback on the students' accuracy at implementing their client behavior change project. The baseline condition was in effect for three sessions for Student A and six sessions for Student B. The proctor feedback condition was in effect for Student A for eight sessions and five sessions for Student B. The following conditions were in effect during the study: (a) Baseline, in which the students implemented the behavior change project and the
proctor provided with specifications of the desired student
behaviors monitored the responses (i.e. client and student),
but did not provide feedback; and (b) Proctor feedback, in
which the proctor provided descriptive feedback on the
student responses.

**Results**

The reliability taken at least twice during both con-
ditions per student averaged 97%. Figure 1 illustrates the
students' accuracy at implementing their behavior change
projects. Student A's accuracy improved when proctor feed-
back was administered. Student B's accuracy improved during
sessions 7 through 9 of the proctor feedback condition in
comparison to baseline. Student B's performance, however,
deteriorated during the last two sessions of the proctor
feedback condition and was identical with baseline. During
the baseline condition the mean for Student A was 50% and
during the proctor feedback condition the mean was 93%.
The mean for Student B in the baseline condition was 52%
and during the proctor feedback condition the mean was 66%.

Figure 2 illustrates a breakdown of the students'
accuracy at implementing the links in a heterogeneous chain,
the presentation of the instructional stimulus and the
delivery of the consequence. Student A's accuracy at pre-
senting the instructional stimulus improved during the
proctor feedback condition. Student B's accuracy improved
Figure 1. Students' accuracy at implementing a behavior-change project.
Figure 2. A breakdown of the student's accuracy of both segments in a heterogenous chain, the presentation the instructional stimulus and the delivery of the consequence.
during sessions 7, 8, and 9 but returned to baseline during sessions 10 and 11. During baseline conditions the mean for Student A's accuracy at presenting the instructional stimulus was 7% and during the feedback condition it was 86%. Student B's accuracy at presenting the instructional stimulus was 5% during the baseline condition and 36% during the feedback condition. In terms of delivering the consequence, the students performed very accurately during both conditions. Student A's mean was 94% during baseline and 100% during the feedback condition. During baseline, Student B's mean was 100% and during the feedback condition it was 96%.

Figure 3 illustrates the clients' performance of the targeted responses. Student A's client's performance was consistent during both conditions. Student B's client's performance was erratic during both conditions. Student A's client performed the targeted response at a mean of 87% during the baseline condition and at 85% during the proctor feedback condition. Student B's client performed the targeted response at a mean of 59% during the baseline condition and at 20% during the proctor feedback condition.

**Discussion**

This study attempted to analyze the effects of proctor feedback on the accuracy of college students' implementation of a behavior change project in a fieldwork setting. The accuracy of the students' performance was higher for each
Figure 3. Clients' performance of the targeted responses.
student during the proctor feedback condition than it was during the baseline condition. However, since Student B's accuracy deteriorated during the last two sessions it cannot be concluded that proctor feedback had a positive effect on the student's accuracy.

A thorough analysis of these results, however, would not be complete without considering the clients' performance. Several investigations have demonstrated that a client's performance can affect a trainer's performance (e.g. Bemberich, 1971; Ebner, 1968; Gelfand, Gelfand & Dobson, 1967; Gericke, 1968; and Loeber, 1971). For example, Loeber (1972) indicated that the frequency of delivering consequences accurately improved when the client performed the targeted responses consistently.

In this present study, Student A's client performed the targeted responses during each session of the proctor feedback condition while Student B's client only performed the targeted responses during the last session of the proctor feedback condition. It should be noted that Student A's accuracy improved substantially during the proctor feedback condition while Student B's accuracy did not improve. These results support those of the previous study conducted by Loeber (1972).

A client's performance or lack of performance of a targeted response may be interpreted as another form of feedback to the student and as such may be directly related
to a student's accuracy. As stated by Kazdin (1975) feedback refers to the knowledge of the results of a person's performance and may serve as a powerful reinforcer. As such, Student A may have been reinforced by her client performing the targeted responses rather consistently while Student B's performance may have been punished by her client's lack of performance of the targeted response.

In summary, there were two known forms of feedback, or potential reinforcers, available to the students for their performance of the desired behaviors; proctor feedback (i.e. descriptive praise) and client feedback (i.e. performance of the targeted response).

In the case of Student A, one or both forms of feedback may have had some reinforcing value since the student's accuracy improved. In the case of Student B, the reinforcing value of either form of feedback is questionable since her performance did not improve substantially. A possible hypothesis might be that client feedback may have been a more powerful reinforcer for Student B than proctor feedback. The possibility that this hypothesis may have merit is also supported by other studies that have shown that verbal feedback alone has not altered behavior substantially (Kadzin, 1973 (b); Salzberg, Wheeler, Devar, & Hopkins, 1971), but that feedback in addition to other reinforcers has been demonstrated to be successful (Page, 1958).

Fawcett and Miller (1975) employed proctor feedback
in conjunction with grades contingent upon the desired student behaviors. This combination of procedures had a positive effect on the desired behaviors (i.e. promptness, attendance and completion of work assignments) in a fieldwork setting. It should be noted that the same results were achieved in this present study with regard to promptness, attendance and completion of work assignments. The students' grades in this present study were solely contingent upon the aforementioned behaviors. Thus, it may be necessary to employ proctor feedback in conjunction with other reinforcers to improve the students' accuracy at implementing behavior change projects. Possibly, the additional reinforcer may have some control over the potentially adverse effects of client feedback when there is a lack of client performance of the targeted behavior.

Another recommendation that emerges as a suggestion for future investigators is to redefine proctor feedback to include proctoring behaviors that would assist the students in redesigning unsuccessful projects. If this process could be accomplished, possibly this would increase the reinforcing value of the proctor.

In summary, this study attempted to analyze the effect of proctor feedback on the students' accuracy at implementing a behavior change project in a fieldwork setting. It cannot be concluded that proctor feedback had a positive effect on the students' accuracy. One client's lack of performance
of the targeted behavior may have affected one student's accuracy. This might have been circumvented by the delivery of feedback in conjunction with other reinforcers contingent upon accurate student behaviors. It is also suggested that proctors be trained in assisting students in redesigning unsuccessful behavior change projects.
Reference Notes


References


Appendix A