COMMUNITY APPLICATIONS OF INSTRUCTIONAL TECHNOLOGY: TRAINING LOW-INCOME PROCTORS¹

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A community education system might be most effectively implemented in low-income communities if it were deliverable by neighborhood residents. A proctor training manual, designed to teach neighborhood residents how to administer standardized learning units to their peers, was analyzed in two experiments. The results of Experiment I showed that the percentage of occurrence of proctor behaviors increased after completion of the manual. Supplementary data suggest that specified proctor behaviors generalize to actual instructional situations. The results of Experiment II showed that the percentage of occurrence of trainee behaviors was higher when instructional packages were administered by trained proctors than when administered by untrained proctors. This study demonstrates an effective procedure for training low-income community residents to serve as proctors for a community education system.

DESCRIPTORS: community education, counterbalanced group design, instructional packages, learning units, neighborhood service centers, nonprofessionals, proctors, role playing, adults

Public policy makers have called for universities to apply their expertise to meet the instructional needs of community residents (*e.g.*, Title I, Higher Education Act of 1965). Educational theorists (*e.g.*, Gould and Cross, 1972), psychologists (*e.g.*, Caplan and Killilea, 1976),

and political scientists (*e.g.*, Long, 1976) have similarly called for the development of community education systems. Such a system might include instructional materials designed to shape performance competencies in neighborhood residents (*e.g.*, Briscoe, Hoffman, and Bailey, 1975; Fawcett and Miller, 1975) and procedures for delivering learning units to community residents.

A community educational system might be most effectively implemented in low-income communities if it were deliverable by low-income neighborhood residents. The therapeutic (*e.g.*, Goldberg, 1969; Riessman, 1965), instructional (*e.g.*, Pearl and Riessman, 1965), and practical (*e.g.*, Zax and Specter, 1974) value of training nonprofessionals to teach skills to their peers has been noted. The use of low-income community proctors, similar to the use of student proctors in PSI classrooms (Keller, 1968; Weaver and Miller, 1975), might allow a community education system to be administered at a local level.

Delivering prepared learning units with the assistance of residents of low-income communi-

¹This study is based on a thesis submitted by the first author to the Department of Human Development, University of Kansas, in partial fulfillment of the requirements for the MA degree. The preparation of this manuscript was supported, in part, by a grant from the Kansas Board of Regents under Program IMPACT, Title I of the Higher Education Act of 1965 (Community Service and Continuing Education), and by the Institute of Public Affairs and Community Development of the Division of Continuing Education, University of Kansas, Lawrence, Kansas. The authors wish to thank L. Keith Miller and R. Kay Fletcher for their many insightful comments on the development of a community educational system. Thanks to Donald A. Jackson, Alice Lies, Curtis J. Braukmann, and Montrose M. Wolf for their helpful comments on an earlier draft of this manuscript. The authors also wish to thank the entire Penn House family for their participation in the project. Reprints may be obtained from either author, Department of Human Development, University of Kansas, Lawrence, Kansas 66045.

ties would presumably require an instructional format interpretable by these low-income community proctors. The availability of learning units prepared according to a standardized format (Fawcett and Fletcher, 1977) would allow for the specification of proctoring behaviors required to administer packages prepared according to this format. The present study reports two experiments evaluating a manual designed to teach neighborhood residents to administer standardized instructional packages to their peers. Experiment I was designed to analyze the effects of the manual on the performance of specified proctor behaviors by low-income neighborhood residents. Experiment II was designed to compare the effectiveness of trained and untrained community proctors in administering instructional packages to their peers.

EXPERIMENT I

Trainees and Setting

Two low-income neighborhood residents working as staff members at Penn House, a neighborhood service center, served as trainees. Lynne, the first trainee, was a 25-yr-old white woman. Marlee, the second trainee, was a 36-yr-old black woman. Both had worked at Penn House as volunteers for about 4 yr and were enrolled in the U.S. Department of Labor's W.I.N. program. Before this study, both women had been administered several packages, but neither had experience as a community proctor.

The setting for this experiment was the instructional room at Penn House. The instructional room contained a table, chairs, and a portable audio cassette recorder.

Observation

Proctor behaviors were observed during scripted role-playing evaluation sessions (Fawcett, Mathews, Fletcher, Morrow, and Stokes, 1976; Fawcett, Miller, and Braukmann, 1977). One of the authors, following a written script, played the part of a person to be trained. One standardized instructional package (*i.e.*,

"How to Handle Emergency Medical Requests") was used for each evaluation session. No training was ever provided on how to administer this particular package.

Community proctor behaviors were divided into three categories for observation: (a) written instructions and quiz behaviors, (b) evaluation behaviors, and (c) rehearsal behaviors.² Each category was designed to teach the proctoring behaviors associated with the respective instructional element: delivering the written instructions section and providing corrective feedback for quiz questions, conducting role-playing evaluation sessions using behavioral checklists, and providing feedback on practice performance during behavior rehearsal sessions. Table 1 shows the target behaviors for each category of proctor behavior.

Each evaluation session was recorded on audiotape. Two independent observers using checklists scored the occurrence or nonoccurrence of proctor behaviors from these recorded evaluation sessions. Item-by-item reliability averaged 99%. Nonoccurrence reliability (Bijou, Peterson, and Ault, 1968) averaged 93% and ranged from 86% to 100%.

Community Proctor Manual

A manual entitled *Administering instructional packages: a manual for trainers*,³ was designed to teach neighborhood residents to serve as proctors. This manual consists of a series of lessons on how to administer each component of a standardized instructional package (Fawcett and Fletcher, 1977). (The manual itself was written according to the standardized instructional package format.) For each behavioral category, the trainee read the instructions and answered study guide and situational example questions. Praise was delivered for correct answers, corrective feedback for errors.

²Detailed behavior specifications may be obtained from the first author upon request.

³Copies of *Administering Instructional Packages: a manual for trainers* are available from either author on request for \$6.00 per copy.

Table 1
Proctor Behaviors

<p>A. Role-Playing Evaluation (Pretest and Posttest):</p> <ol style="list-style-type: none"> 1. Read the title of the package to the trainee. 2. Read the instructions to the trainee orally. 3. Act out the numbered script lines. 4. Pause after each scripted statement. 5. Place a checkmark on the checklist for each target behavior the trainee performs correctly. 6. Place a zero on the checklist for each target behavior the trainee performs incorrectly. 7. Do not give the trainee specific feedback on performance. 8. Compute the proportion of target behaviors performed correctly. 9. Compute the percentage of target behaviors performed correctly. 10. Make decision regarding completion of training (90% on pretest; 100% on posttest). 	<ol style="list-style-type: none"> 8. Request trainee practice for each incorrect answer. 9. Praise the trainee for all correct practice attempts. 10. Reread the written instructions for any step that the trainee misses in the practice attempt. 11. Request the trainee to practice any step after reading the written instructions.
<p>B. Administering Written Instructions & Quizzes:</p> <ol style="list-style-type: none"> 1. Ask the trainee if he/she would like help in reading the written instructions. 2. State that questions will be asked. 3. State that there will be a chance to practice the behaviors. 4. Ask if the trainee has any questions. 5. Ask the trainee to answer all questions orally. 6. Check the answer key for the correct answer. 7. Praise the trainee for each correct answer. 	<p>C. Running Behavior Rehearsal Sessions:</p> <ol style="list-style-type: none"> 1. Read the title of the package. 2. Read the instructions to the trainee orally. 3. Act out the numbered lines. 4. Place a checkmark or zero for each behavior on the checklist. 5. Compute the proportion and percentage correct. 6. Read all correct target behaviors from the checklist to the trainee. 7. Praise the trainee for correct target behaviors. 8. Read all incorrect target behaviors from the checklist to the trainee. 9. Request the trainee to practice all incorrect target behaviors. 10. Provide corrective feedback for the trainee's practice attempts. 11. Repeat the behavior rehearsal sessions until the trainee has completed behavior rehearsal twice consecutively at 100%.

After criterion was met for the quiz questions, the trainee rehearsed the proctor behaviors in simulated teaching situations until performing all target behaviors correctly in two consecutive sessions.

Experimental Conditions

The effect of the manual on proctor performance was analyzed by a multiple-baseline design across behavioral categories. The experimental design consisted of the following five conditions:

Request only. The proctor was asked to administer a standardized instructional package with no specific instructions for administering the package.

Written instructions baseline. The proctor

read the instructions and answered the study guide questions for the three categories of proctor behavior. The proctor did not answer the programmed situational examples nor participate in behavior rehearsal sessions for any category.

Written instructions and quiz package. The proctor completed the sections of the manual for administering written instructions and quizzes. No training was provided to the subjects on how to conduct evaluation or rehearsal sessions.

Evaluation package. The proctor completed the section on conducting role-playing evaluation sessions. No training was provided on how to administer rehearsal sessions.

Rehearsal package. The proctor completed

the section on conducting behavior rehearsal sessions.

Generalization Tests

Generalization of proctor behaviors to different stimulus conditions was measured. These generalization tests were administered in sessions just before the first evaluation session and immediately after the last evaluation session. Generalization of proctor behaviors to a novel instructional package was assessed by requesting the proctor to administer a different package (*i.e.*, "How to Accept Cash Donations") to a trainee in a simulated training session. The trainee followed a different script from that used during the other experimental sessions.

Fig. 1. The percentage of target behaviors for each category of proctor behavior for the first trainee in Experiment I. The vertical dotted lines indicate the point at which the proctor manual was introduced for each category.

Generalization of proctor behaviors to actual, unsimulated training sessions was assessed by requesting the proctor to administer a novel instructional package (*i.e.*, "How to Make a Legal Aid Referral") to a low-income neighborhood resident who served as a Penn House staff member. The staff member trainee had no script and was not informed of the training status of the proctor.

RESULTS

Figure 1 shows the effect of the manual on the percentage of occurrence of the three categories of proctor behavior for Lynne. Overall proctor behaviors averaged 6% during request-only sessions, 19% during written instructions baseline sessions, and 89% following completion of the proctor manual. Marked increases for all categories were observed after the manual was introduced.

Figure 2 shows the effect of the manual on proctor behaviors for Marlee. Combined proctor behaviors averaged 8% during request-only sessions, 34% during written instructions baseline sessions, and 91% after completion of the manual. The results show that the percentage of proctor behaviors associated with administering evaluation and rehearsal sessions increased after introduction of the proctor manual, while the proctor behaviors for administering quizzes maintained at a high rate.

The results of the assessment of generalization to novel instructional packages showed an overall increase in proctoring behaviors from a pretraining mean of 3% to a posttraining mean of 94%. The assessment of generalization to actual proctoring situations showed increases from a mean of 11% before training to 90% after completion of the manual.

EXPERIMENT II

Experiment II was designed to measure the effectiveness of the specified proctor behaviors in improving the performance of low-income neighborhood resident trainees. It was hypothesized that trained proctors would be more effective

MARLEE

Fig. 2. The percentage of target behaviors for each category of proctor behavior for the second trainee in Experiment I. The vertical dotted lines indicate the point at which the proctor manual was introduced for each category.

tive than untrained proctors in teaching skills to neighborhood residents. Proctor effectiveness was measured by trainee performance of the skills specified in the packages that were administered. Performance of specified proctor behaviors was also assessed.

Community Proctors

Two other staff members from Penn House served as community proctors. Neither had any formal training or experience in administering packages before this experiment. The proctors required a mean total of 4.5 hr to complete the entire manual.

Trainees

Two staff members from Penn House served as trainees. The first trainee was a 19-yr-old male high-school graduate; the second, a 42-yr-

old AFDC mother who had only 6 yr of formal education. Both trainees had worked at Penn House for less than three months before their involvement in this study, and neither had been administered the packages employed in this study.

Observation of Trainee Performance

Scripted role-playing evaluation sessions served as the framework for the observation of trainee performance in two skill areas. One of the experimenters, following a written script, played the role of another neighborhood resident in need of two types of assistance. The skill areas were "How to Handle a Legal Aid Referral" and "How to Handle Emergency Medical Requests".

Each role-playing evaluation session was recorded on audiotape. Two independent observers used checklists to score the occurrence or nonoccurrence of trainee target behaviors (e.g., offer to help the client) in these recorded evaluation sessions. Item-by-item reliability was 100% for all evaluation sessions for both service tasks.

Observation of Community

Proctor Behaviors

Proctor performance was observed during the actual administration of an instructional package to an assigned trainee. Each proctor administered both instructional packages (i.e., Legal Aid Referrals and Medical Requests); one before training for the proctor behaviors, and one following training. The order of package administration was counterbalanced across the two community proctors to control for package difficulty. Two independent observers scored the occurrence or nonoccurrence of proctor behaviors. The mean percentage of interobserver agreement was 100% for all training sessions in Experiment II.

Experimental Conditions

Pretest. Before any formal training, the performance of both trainees was observed for each of the two skill areas to be trained.

Training. Each proctor administered the packages to an assigned trainee. Each trainee was administered a package by an untrained proctor for one task; by a trained proctor for the other.

Posttest. The posttraining performance of the two trainees was observed for each of the two tasks.

RESULTS

Figure 3 shows the mean percentage of occurrence of trainee performance on instructional packages administered by both untrained and trained community proctors. For packages administered by untrained proctors, trainee performance increased from a pretraining mean of 17% (ranging from 14 to 20%) to a posttraining mean of 42% (ranging from 40 to 43%). After proctor training, trainee perform-

ance increased from a pretraining mean of 12% (ranging from 10 to 14%) to a posttraining mean of 100%.

Untrained community proctors were observed to complete 20% (ranging from 16 to 23%) of the specified proctor behaviors. For the same proctors after training, the mean percentage of proctor behaviors was 95% (ranging from 94 to 96%).

DISCUSSION

The combined results from both experiments suggest that the proctor manual was effective in teaching indigenous staff members of a low-income neighborhood service center effectively to administer instructional packages to their peers. The community proctors in Experiment II completed a self-rating sheet after each actual training session. Proctors were asked: "How confident were you as a trainer?" (where seven is "very confident" and one is "very unconfident") on a seven-point Likert-type scale (Likert, 1932). The rating data showed an increase from a pretraining mean of 3.0 ("slightly unconfident") to a posttraining mean of 6.5 (between "moderately" and "very confident"). After completion of the proctor training program, proctors were also asked: "How happy are you with the trainer program?" All staff members indicated that they were "very happy" with the trainer program (7.0 on a seven-point Likert-type scale). The combined information obtained from behavioral observations and rating data suggests that trainees liked the manual that had improved their confidence and skills as community proctors.

Such community living skills as applying for a job and preparing nutritious meals, notably absent in many residents of low-income neighborhoods (Roth, 1976), suggest instructional objectives for a competency-based community education program. The delivery of a community education system, incorporating prepared learning units (Fawcett and Fletcher, 1977) and procedures for training proctors (as de-

Fig. 3. The overall mean percentage of trainee behaviors for the service tasks for both trainees in Experiment II. The left-hand pair of bars represents trainee performance on instructional packages administered by untrained community proctors. The right-hand pair of bars represents trainee performance on instructional packages administered by trained community proctors. The solid bars represent the mean percentage of trainee behaviors for both trainees before introduction of the instructional package. The hatched bars represent the mean percentage of trainee behaviors for both trainees after introduction of the instructional package.

scribed in this study), would appear to involve a number of additional considerations, including the selection of an appropriate setting, methods for personalizing instruction, and procedures for motivating participation in the program.

Neighborhood service centers (Perlman and Jones, 1969) might be particularly suitable settings for community education programs. Such settings frequently offer support services (e.g., transportation and child care) necessary for resident participation and are staffed by other residents of the low-income community. Other easily accessible settings (e.g., neighborhood markets, laundromats, and churches) might also be appropriate locations from which to deliver a community education program.

The applicability of personalized systems of instruction (e.g., Johnston, 1975; Sherman, 1974) to community education has been noted (Fawcett, Mathews, Fletcher, Morrow, and Stokes, 1976). In particular, the self-pacing feature of this approach suggests a method for "personalizing" instruction, allowing neighborhood residents to select from available learning units according to their own interests, learning abilities, and personal commitments.

Finally, perhaps neighborhood token economies (e.g., Miller and Miller, 1970) might be designed to promote the completion of learning units selected by neighborhood residents. Thus, it would appear that a combination of instructional materials, motivational procedures, setting characteristics, and system elements would be necessary for the delivery of a community education program. Further research might usefully explore the application of the present community proctor training procedures to designing ongoing, resident-administered education systems for residents of low-income neighborhoods.

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Received 8 December 1975.

(Final acceptance 27 January 1977.)