

*A CLASSROOM PROGRAM TEACHING DISADVANTAGED
YOUTHS TO WRITE BIOGRAPHIC INFORMATION¹*

HEWITT B. CLARK, SANDRA B. BOYD, AND JOHN W. MACRAE

WESTERN CAROLINA CENTER

Little attention has been given to how formal classroom instruction can be adapted to teach youths everyday skills such as the correct writing of biographic information frequently requested in transactions like applying for a job or a social security number and cashing a check. In this study, six youths in a special education classroom were taught to complete job application forms with the date, their name, signature, address, telephone number, date of birth, and a reference's name, address, and occupation. Each youth was trained on one item of biographic information at a time, after which he was tested on four application forms, including one on which he had not been trained. The tests show that after an item had been taught, it was correctly used in completing application forms on which the youths had been trained and forms on which they had never been trained. The study demonstrates the feasibility of teaching community-living, vocation-related skills to special-education youths in a classroom setting.

DESCRIPTORS: academic behavior, prevocational skills, disadvantaged children, education, generalization, job-finding skills, retardates, self-paced instruction, biographic information

Programs to teach social and vocation-related skills in the classroom have received little research attention. The existing studies have dealt with teaching elementary pupils such skills as creative writing (Brigham, Graubard, and Stans, 1972; Maloney and Hopkins, 1973); handwriting (Brigham, Finrock, Breunig, and Bushell, 1972), and spelling (Lovitt, Guppy, and Blatner, 1969).

The present study provided an experimental analysis of a classroom training program designed to teach youths to write biographic information, such as one's name, address, signature, telephone number, date of birth, and

reference's name, occupation, and address. This skill was chosen because many transactions in daily life such as cashing a check, applying for a driver's license, loan, or job, and filling out income tax forms require written biographic information. In this study, job application forms were used because these forms request an extensive amount of information in a variety of ways, and because the youths in this study would be seeking jobs within a year.

Although many books related to job seeking detail how a prospective employee should conduct himself in an interview, few present more than a paragraph on filling out job application forms (Edlund and Edlund, 1939; Ely and Hord, 1927; Lyons and Martin, 1939; Prosser, 1936; See, 1947). There are suggestions in vocational rehabilitation literature that clients should be prepared so that they can get a job without the aid of the counsellor (*e.g.*, Sinick, 1969), but discussions with vocational rehabilitation counsellors indicate that this preparedness is seldom achieved and jobs are usually secured by the counsellor. Programs described in the vocational rehabilitation and vocational education literature

¹This research was supported by the North Carolina Department of Mental Health. We wish to express our appreciation to Drs. James and Judith Favell and Mr. John Dineen for their suggestions, and to Ms. Cheryl Dineen and Ms. Saraveen Fields for their help in various aspects of manuscript preparation. We also gratefully acknowledge the continued support and cooperation of Dr. J. Iverson Riddle, Superintendent at Western Carolina Center; and Dr. Lawrence Larsen, Assistant Superintendent of Education and Research at Western Carolina Center. Reprints may be obtained from Hewitt B. "Rusty" Clark, Johnny Cake Child Study Center, Mansfield, Arkansas 72944.

suggest that training in job application forms is important, but do not describe how it should be carried out (Haasarud and Moore, 1950; Hesselbarth, 1970; Kähler, 1948; Mather and O'Toole, 1970).

The importance of developing a program for teaching biographical information is evidenced by many members of our society not having the skills to complete such materials. In the United States there are about 1.5 million non-institutionalized persons who are disadvantaged due to mental retardation (U.S. Bureau of the Census, 1972; U.S. News and World Report, 1972). Edgerton (1967) reported that the retarded usually retreat from situations that require them to write biographical information, rather than admit this skill deficit. According to the Illinois Superintendent of Schools, even many "normal" youths lack the skills to present biographical information: "Employers complain to me that the kids can't fill out a job application . . ." (Time, 1973).

The present study sought to develop a procedure to teach the skills needed to write some important and frequently requested biographical information. The procedure was designed to: (1) employ one teacher working with a group of youths in a classroom setting; (2) work each youth at his own pace; and (3) improve performance both on the training materials and on materials not used in training.

METHOD

Subjects and Setting

Four male and two female delinquent or mildly retarded youths, aged 14 through 16 yr, with IQ scores ranging from 65 to 86, lived and attended school at Western Carolina Center. They were enrolled in a Community-Living Prevocational class that met 6 hr each day, Monday through Friday. This class was designed to teach skills useful in living in a semi-independent environment (*e.g.*, group home, foster home, natural home) and in securing and holding a job.

Job Application Forms

The job application forms used in training and testing were randomly selected from a pool of forms collected from 24 different industries. The only criteria for an application form in this pool were that it be a single sheet with information requested on both sides and that it request all nine items of biographical information being tested in this study. The forms were drawn without replacement and randomly designated for use in particular aspects of training or testing.

Responses Trained and Tested

The youths were taught to fill out job application forms with the nine items of biographical information listed in Table 1. This table also gives two definitions for each item: one used before training and one used after training. Two definitions were used so that the youth's initial responses would not be scored as incorrect just because they did not meet the specific style and content used under training. The definition in the middle column was used when scoring an item during training and on tests administered after training. The second definition (Table 1, right column) lists variations accepted before any training on the item. Prior to training, the item was scored on content rather than capitalization, punctuation, or spelling; the important feature was that words were intelligible and correctly spaced. Before training, items could be printed or written cursively, but after training, items had to be printed to be scored as correct. An exception to this was the applicant's signature which always had to be written cursively.

Training Procedures

The study was conducted in the Community-Living Prevocational classroom during 30- to 40-min sessions held each morning and afternoon. During sessions, the teacher moved among the six youths, each sitting at an individual desk, and attended to youths who had raised their hands. She occasionally praised and gave tokens (plastic strips) to youths who were working

Table 1
Response Definitions for Nine Items of Biographic Information

<i>Item</i>	<i>Definition Used for Training and Testing</i>	<i>Variations Accepted Prior to Training on Item</i>
Applicant's Telephone Number	The telephone number was that of the youth's cottage (area code, blank space, prefix, hyphen, last four digits).	A list of acceptable telephone numbers (and addresses) was made up for each youth to include the number (and address) of his natural parents, his guardian, his older siblings, and place where he lived prior to his admission. Area code and hyphen not necessary as long as last seven digits correct.
Applicant's Date of Birth	The order was month, day, and year, and took the format of these examples: Dec. 15, 1957; May 2, 1956; Jan. 21, 1956.	Any of the following formats were acceptable: December 15, 1957; Dec. 15, 1957; 12-15-1957, 12/15/1957. Periods, commas, or the "19" on the year were not required as long as spaces were left between month, day, and year.
Reference's Address	Home address of the youth's social worker (e.g., 500 Union Street, Morganton, N.C. 28655).	A list of nonrelatives (e.g., teachers, social workers, principal, family doctor, close family friends) who would qualify as references was made up for each youth. Correct name, address, and occupation necessary. Zip code optional but if included, accuracy required.
Applicant's Signature	Youth's name written cursively (first name, middle initial, period, and last name).	Must have been written cursively and in order of first, middle, and last names. Middle initial without period, or the middle name in full, was acceptable. Also acceptable were first and last names without middle initial or middle name.
Reference's Name	Social worker's title (Miss or Mrs.) and first and last names.	Refer to "Reference's Address" above. Title and last name were sufficient.
Reference's Occupation	Social Worker	Refer to "Reference's Address" above.
Applicant's Address	Address at Western Carolina Center: 200 Enola Road, Morganton, N.C. 28655	Acceptable if showed name of institution, city, and state. Also accepted listing in "Applicant's Telephone Number" above.
Date	Date on which application was filled out. Refer to "Applicant's Date of Birth" above.	Refer to "Applicant's Date of Birth" above.
Applicant's Name	The youth's name printed, the last name first, followed by a comma, the first name, and the middle initial followed by a period. This order necessary unless specified differently on the application form.	Acceptable if middle name was written in full or if absent entirely.

quietly. Each youth also earned tokens contingent on completing various aspects of training and testing. The tokens, which were also given in the youth's other classes and in his cottage for appropriate social and academic behaviors, were redeemable for snacks and leisure time in school, desserts and second helpings at meal-time, admissions to recreational activities, and allowances. Additionally, tokens received for completing sections of training and testing

earned the youth added allowance. For each 10 tokens earned, one cent was placed in the youth's "allowance account". On Friday afternoon, they could draw out their allowances in exchange for tokens earned in their cottage or in school (10 tokens/one cent).

To ensure that the youths would be able to write in the relatively small spaces allowed on the job application forms, they were initially taught to print on 0.25-in. narrow-lined paper

with approximately seven letters per inch. Once handwriting training was completed, testing and training for the study began.

For all youths, the nine items were trained in the same order, which had been randomly determined. Although the items were presented to each youth in the same order, the youths were not necessarily trained on the same item at the same time, because the classroom training was individualized. Five phases of training were required on each item. Upon meeting the criterion for completing each phase of training, the youth received 50 tokens.

During all five phases of training, the following correction procedure was used for each error: (1) the teacher circled each error with a red pen, (2) she asked the youth to describe the error and its correction (*e.g.*, "the top of the 'o' needs to be closed"), (3) if the youth did not give an accurate description, the teacher provided the description, possibly writing a model of the correct letter(s) or word(s) if it was a consistent type of error, and (4) the youth erased the errors and rewrote the word correctly. This correction procedure was repeated until all errors had been written correctly.

Phase I. To train the youth to write, spell, and capitalize each item correctly, he was taught to copy the item from a model the teacher had printed at the top of a lined sheet of paper (8.5 in. by 11 in. sheet with narrow spaced lines). The youth was instructed to write the item 10 times under the teacher's model, skipping a line between each. When the youth finished, he raised his hand and the teacher checked his paper. If any errors were found, the correction procedure was employed and the youth was started over on this same phase of training. He was advanced to Phase II of training only after he had written the item correctly 10 consecutive times.

Phase II. The youth was next trained to write the item correctly without continuous reference to a model. The youth wrote the item on small pieces of narrow-lined paper (2 in. by 4.25 in.) and placed these in a small carton on his desk so that he could not see them. Initially, the

teacher gave the youth three pieces of paper, one of which had the item written on it (*i.e.*, teacher's model). The youth was instructed to: (1) look at the teacher's model as often as necessary, (2) write the item on the other two pieces of paper, (3) place them in the carton as he finished each, and (4) raise his hand and have the teacher correct them. If any errors occurred, the correction procedure was used until the youth was able to write the item correctly on both pieces of paper. He was then given 10 pieces of paper and instructed to write the item on each piece, placing it in the carton as he finished. These 10 were written without access to the teacher's model. Although the correction procedure was employed with each error, advancement to Phase III required that at least eight of the 10 had been written correctly. If fewer than eight were written correctly, the youth was given another 10 pieces on which to write the item without reference to a model.

Phase III. To teach the youth to write the item on an application form with the varied styles and spaces allowed, a page containing 12 examples of requests for the item from different forms was given to the youth. Examples varied in size, style of lettering, location of blank, and in the case of the youth's name, in the order of first, middle, and last name. The youth was instructed to write the item (*e.g.*, "your telephone number", or "your date of birth") in each of the blanks. When the teacher checked the handout, she employed the correction procedure on any errors and, if any errors had been made, started the youth on another copy of the handout. The youth advanced to Phase IV when all 12 blanks were correct the first time the teacher checked a handout.

Phase IV. In this phase the youth was taught to identify the item being trained when mixed with different items on a form. A handout containing four examples of each of the nine different items was given to the youth. The examples were taken directly from application forms and randomly ordered on the handout. The youth was instructed to complete only items on which

he had been trained (*e.g.*, "your telephone number, date of birth, and your reference's address"). When the youth completed the handout, he was to raise his hand. The correction procedure was used with any errors. The youth was advanced to Phase V after he had completed the handout correctly on the first try (*i.e.*, filled in all the examples of previously trained items and left all of the other items blank).

Phase V. In this phase, the youth was trained to complete application forms with the biographic information on which he had been trained. Four different application forms were used (items from these applications had been used as examples in Phases III and IV). The youth was given one application form at a time and instructed to write the items on which he had been trained (*e.g.*, "your telephone number, your date of birth, and your reference's address") and to raise his hand when he completed the form. If any errors were made, the correction procedure was employed and the youth was started on a new copy of this application form. Once the youth completed the form without error, filling in only those items on which he had been trained, he was given the second form, third form, *etc.*, until he completed each of the four application forms once without error.

These five phases of training were given on each of the nine biographic items. Two tests were administered after each item was trained through Phase V.

Test Procedures

Each youth was periodically tested on four application forms to determine whether training was effective in teaching the requested biographic information. Three of the four application forms used during a test were also used in Phase V training. The fourth form on a test was used to evaluate generalization of training, since the youth had not received specific training on this application form.

Before the first test was administered, the teacher instructed the youths that every few days or so they would be asked to complete some job

application forms to give them practice for when they started looking for a job. The youths were asked to complete the forms as if they were applying for a full-time job as a general maintenance man or, in the case of the females, a housekeeper. These two titles, along with a social security number, were written on a poster board and hung at the front of the classroom. The youths had previously been trained to read a calendar which they reviewed each morning, with the teacher calling on different students until the correct date was given.

Before each test, the youth was read the following instructions by the teacher: "I would like you to fill out four application forms. You will earn 20 token for some of the blanks you fill in correctly. I can't tell you exactly which blanks will earn you tokens, but I will tell you later today how many tokens you earned. Here's the first application form; when you have filled in as many blanks as you can, then raise your hand and I'll give you the next form." (If the youth had not raised his hand within 10 min, the form was picked up and he was started on the next form.) The youth was given 20 tokens for each of the nine items completed correctly on each of the four applications constituting a test. When a youth took a test, he was given his token earnings from that test later the same day.

Before training on specific items, four tests (pretests) were administered to each youth to determine his ability to complete job application forms. To evaluate the effectiveness of the training procedures, two tests were administered after the five phases of training were completed for each item. These tests were composed of the same four application forms and administered in the same manner.

Posttests of Generalization

After all nine items were trained, with two tests administered after each, additional training and testing was done to substantiate further the generalization effects and to show the conditions under which any incorrect responding to items other than the nine trained could be eliminated.

Elimination of responding to these untrained items was considered important, because, of these items attempted by the youths, only 23% were correct.

The training, still individualized, consisted of administering the four application forms, previously used in the tests, with the following instructions: (1) you will be given one application form at a time and have 5 min in which to complete it, (2) you are to fill in only those blanks on which you have been trained, and (3) you will earn 50 tokens for each application form that is filled in correctly. After all four application forms were completed, the teacher checked them with the youth, employed the correction procedure with each error, and then told him his token earnings based on the number of application forms initially correct. This training procedure was continued with these four application forms until he completed the set twice with no errors.

Once this training criterion was met, two posttests of generalization were given. These were composed of a set of four application forms that had not been previously used in training or testing. Each application form included all nine items. The youth was given one application form at a time, instructed to fill in only those items on which he had been trained, and told that he would earn 50 tokens for each application form

completed correctly. He was not given feedback on his completion of these forms, except that he was told the number of tokens earned about an hour after the set of four application forms had been completed.

Response Measurement and Reliability

Each test was scored by the teacher and by a reliability checker who was not aware of when the items were trained. Each item was scored as (1) correct, (2) attempted but incorrect, or (3) not attempted. The scoring was marked on separate sheets from the tests so that the scoring by the teacher and reliability checker were independent. Only items where one or both the teacher and reliability checker scored a correct were used in the reliability estimate. Agreement was calculated with the number of items on which both teacher and checker had scored a correct (agreements), divided by the number of items on which one or both had scored a correct (agreements plus disagreements). Reliability estimates for correct responses are shown separately in Table 2 for the nine trained items of biographic information.

RESULTS

Figure 1 represents a multiple-baseline analysis of the training procedures applied to the

Table 2
Reliability Estimates for Correct Test Responses Averaged Across all Youths

<i>Item</i>	<i>Tests Administered before Item Trained</i>	<i>Tests Administered after Item Trained</i>	<i>Posttests of Generalization</i>
Applicant's Telephone Number	88.2%	98.6%	90.3%
Applicant's Date of Birth	100.0%	95.2%	93.5%
Reference's Address	100.0%*	95.5%	88.5%
Applicant's Signature	100.0%	93.9%	93.0%
Reference's Name	92.5%	95.6%	97.4%
Reference's Occupation	81.8%	93.0%	92.1%
Applicant's Address	86.5%	93.4%	90.9%
Date of Application	87.5%	95.3%	87.5%
Applicant's Name	90.4%	88.0%	95.2%

*100% agreement that none of these items was correct.

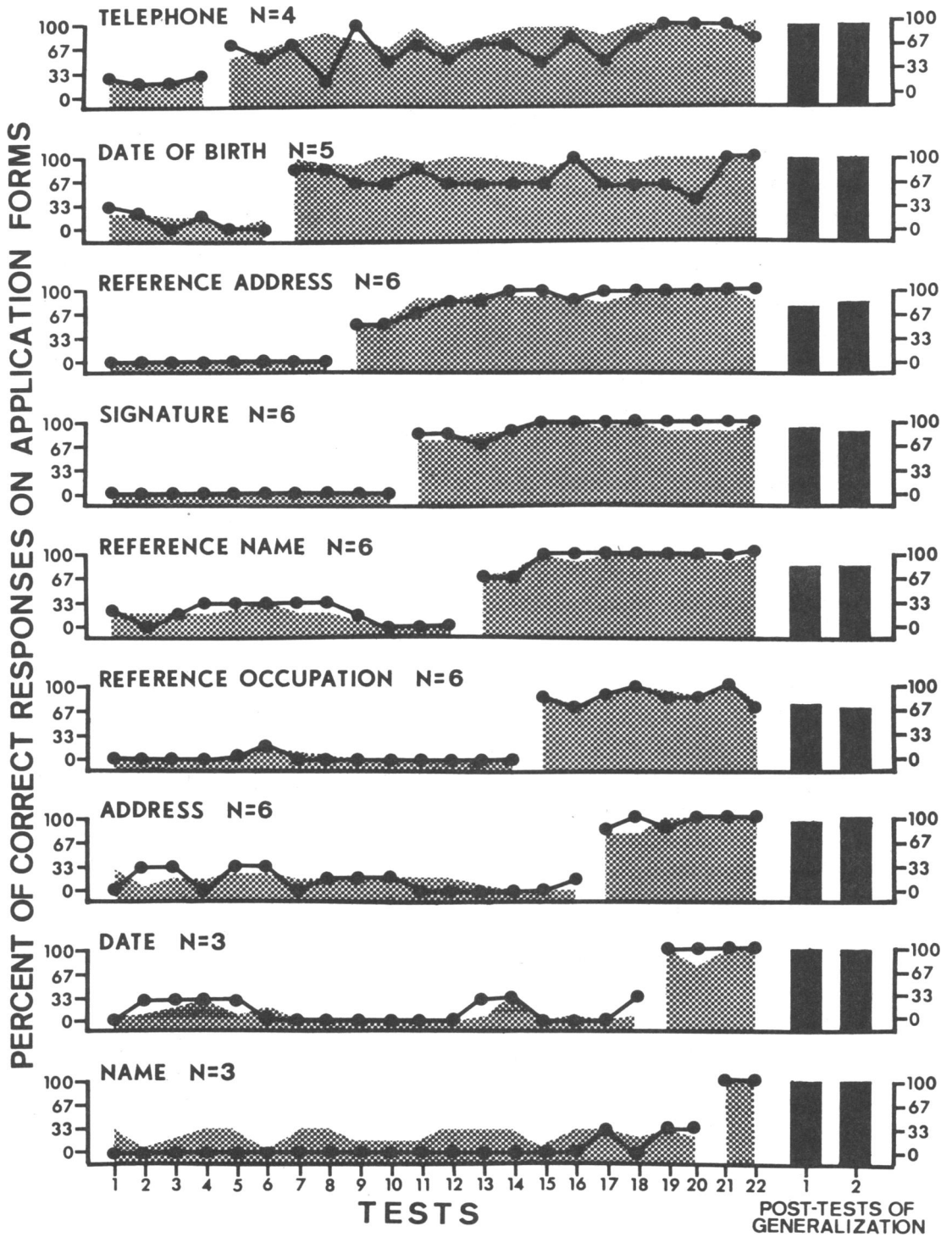


Fig. 1. Per cent of correct responses on tests. The gray background shows correct responses on application forms that had been specifically trained and the dots connected by lines show correct responses on forms that were not specifically trained (generalization). Bar graphs to the right show correct responses on additional application forms that were never used in training.

nine items of biographic information. The data are test results and are grouped for the youths. Although all six youths were trained on each item and in the same order, some graphs include data for only three youths, others from four, five, and six. Data were excluded when a youth had averaged over 50% accuracy on an item during the four pretests administered before training. Since these youths did well on the pretests, the effectiveness of the training procedures could not be demonstrated for these particular items.

The top graph of Figure 1 shows that before training (Tests 1 to 4), four youths wrote their correct telephone number on about 27% of the occasions requested on the three regular application forms (gray background) and 20% of the time on the generalization application form (connected dots). After training on the telephone item, these youths averaged 92% accuracy on the three regular application forms and 86% on the generalization application form on which the youths had not been trained (Tests 5 to 22). Similar improvements correlated with training are shown for each of the other eight items.

The bar graphs at the right of Figure 1 show the per cent correct obtained during the two posttests of generalization, which consisted of four application forms where no training had occurred. The youths achieved an average of 82% correct responses on these posttests in contrast to the pretests, on which they averaged 12% accuracy.

The youths occasionally completed items other than the nine listed in Table 1. Thus, they attempted to complete 37% of these other items during Tests 1 through 4 (pretests); 23% during two tests administered after all nine items had been trained (Tests 21 and 22); but only 1% during the posttests of generalization.

DISCUSSION

The classroom program was shown to be effective in teaching disadvantaged youths to write frequently requested biographic information. The program, which employed one teacher

working with six youths, permitted each youth to progress at his own pace, so that the more advanced youth would not be hindered, nor the slower youth forgotten. The program not only improved performance on the training materials, but also on new materials on which the youth had not been trained.

The effectiveness of the program was experimentally demonstrated with a multiple-baseline design by sequentially training nine different items of biographic information and testing the youths before and after each item was trained. In each case, it was only after training on a particular item that the youths established a high percentage of correct usage of that item.

The youths correctly completed an average of 70% more items on the posttests of generalization than they had on the pretests. This finding further substantiates the teaching as yielding a generalized skill that enabled the youths to complete application forms they had not previously seen. The posttest results also suggest that the youths had learned to complete only those items of biographic information on which they had been trained and to ignore other items, which were typically done incorrectly. During the pretests, and even on the two tests administered after all nine items had been trained, the youths attempted to fill in other items, getting 77% of these incorrect. However, after training the youths on four application forms to complete only the trained items, they rarely attempted to complete any of these other items, even when given new application forms (posttests of generalization).

Based on the amount of time involved in training during this study, it would appear that an average of 12 items of biographic information could be taught to disadvantaged students within a six-week term involving two 30-min sessions daily. The training rate is of course a function of several variables: type of subject population, student-teacher ratio, complexity of items being trained, and strength of reinforcers.

The present results demonstrate the feasibility of individualized classroom training as an effec-

tive means of training community-living, pre-vocational skills that youths can apply to new stimulus situations. Future research in classroom settings will need to address more directly the issue of cost-benefit analysis, comparing different programs with regard to the cost (time and money) per unit of behavior change. Although little research attention has been given to a cost-benefit analysis of educational programs, some recent analyses comparing the effectiveness of various programs (Born, Gledhill, and Davis, 1972; Golub, 1970; Hardy, 1971; Hipsher, 1961; Lackner, 1972; McMichael and Corey, 1969) may provide a basis and a model for a more complete cost-benefit analysis.

REFERENCES

- Born, D. G., Gledhill, S. M., and Davis, M. L. Examination performance in lecture-discussion and personalized instruction courses. *Journal of Applied Behavior Analysis*, 1972, 5, 33-43.
- Brigham, T. A., Finrock, S. R., Breunig, M. K., and Bushell, D. The use of programmed materials in the analysis of academic contingencies. *Journal of Applied Behavior Analysis*, 1972, 5, 177-182.
- Brigham, T. A., Graubard, P. S., and Stans, A. Analysis of the effects of sequential reinforcement contingencies on aspects of composition. *Journal of Applied Behavior Analysis*, 1972, 5, 421-429.
- Edgerton, R. B. *The cloak of competence*. Berkeley: University of California Press, 1967.
- Edlund, S. W. and Edlund, M. G. *Pick your job and land it!* New York: Prentice Hall, 1939.
- Ely, J. T. and Hord, C. M. J. *How to get a good position*. New York: Gregg Publishing, 1927.
- Golub, L. S. A model for teaching composition. *Journal of Educational Research*, 1970, 64, 115-118.
- Haasarud, F. I. and Moore, S. W. Vocational rehabilitation and education for the mentally retarded in Minneapolis. In S. G. DiMichael (Ed.), *Vocational rehabilitation of the mentally retarded*. Washington, D.C.: Office of Vocational Rehabilitation, 1950, 166-184.
- Hardy, C. A. Achievement and level of critical thinking in CHEM Study and traditional chemistry. *Journal of Educational Research*, 1971, 65, 159-162.
- Hesselbarth, M. Denver's residential program for young retardates. *Rehabilitation Record*, 1970, 11, 33-35.
- Hipsher, W. L. Study of high school physics achievement. *The Science Teacher*, 1961, 28, 36-38.
- Kähler, A. *Education for an industrial age*. New York: Cornell University, 1948.
- Lackner, L. M. Teaching of limit and derivative concepts in beginning calculus by combinations of inductive and deductive methods. *Journal of Experimental Education*, 1972, 40, 51-56.
- Lovitt, T. C., Guppy, T. E., and Blatner, J. E. The use of free-time contingency with fourth graders to increase spelling accuracy. *Behaviour Research and Therapy*, 1969, 7, 151-156.
- Lyons, G. J. and Martin, H. C. *The strategy of job finding*. New York: Prentice Hall, 1939.
- Maloney, K. B. and Hopkins, B. L. The modification of sentence structure and its relationship to subjective judgements of creativity in writing. *Journal of Applied Behavior Analysis*, 1973, 6, 425-433.
- Mather, R. J. and O'Toole, R. Counselors move out from behind their desks. *American Vocational Journal*, 1970, 45 (4), 24-26 ff.
- McMichael, J. S. and Corey, J. R. Contingency management in an introductory psychology course produces better learning. *Journal of Applied Behavior Analysis*, 1969, 2, 79-83.
- Prosser, C. A. *Information book on getting a job*. Bloomington, Illinois: McKnight & McKnight, 1936.
- See, I. *Want a job? Or a better job?* New York: Ronald Press, 1947.
- Sinick, D. Training, job placement, and follow-up. In D. Malikin and H. Rusalem (Eds.), *Vocational rehabilitation of the disabled: An overview*. New York: New York University, 1969, 129-153.
- Time*. They shall not pass. December 31, 1973, 102, 45.
- U.S. Bureau of the Census. *Statistical abstract of the United States: 1972*. Washington, D.C.: U.S. Bureau of the Census, 1972.
- U.S. News and World Report*. New help for the retarded. September 18, 1972, 73, 58.

Received 28 February 1974.

(Final acceptance 27 September 1974.)