A Study of Behavior Modification Practices in Work Oriented Rehabilitation Facilities

Robert Bruce Verplank

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A STUDY OF BEHAVIOR MODIFICATION
PRACTICES IN WORK ORIENTED
REHABILITATION FACILITIES

by

Robert Bruce Verplank

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
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Robert Bruce Verplank
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Western Michigan University, M.A., 1975
Psychology, experimental

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In 1963, the United States Congress passed the Community Mental Health Centers Construction Act (P. L. 88-164) to provide comprehensive mental health services to people within their own communities. This act is primarily concerned with providing outpatient services which will prevent the institutionalization of clients from their service area. In 1967, the State of Michigan approved Public Act 54 which provided matching funds to county governments who decided to provide mental health services to the residents of their counties. The primary goal of the mental health clinics in Michigan and the federal mental health centers act is to provide services to clients in the environment in which their inappropriate behavior occurs to increase the probability of preventing the commitment of these clients to large institutions.

The change in emphasis toward community based services rather than institutionalization has stressed the need for psychologists and other professionals to apply their skills in community environments where there is little or no control over the variables which maintain inappropriate or inadequate behavior. Applied behavior analysis has developed in recent years to encounter the problems of modifying behavior in the "natural environment" or the community of residence of the client. The development of applied behavior analysis is evidenced by the increase in the last ten years of journals which deal specifically with this topic (i.e., Journal of Applied Behavior Analysis, Behavior Therapy, Journal of Applied Behavioral Sciences, etc.).
The numerous published accounts on the use of behavior modification have demonstrated the generalizability of the principles in a wide variety of environments. An excellent example of a specific application of the principles of behavior modification in many different environments is the review of token economies by Kazdin and Bootzin (1972). In this review, token systems are evaluated for their effectiveness under many different environmental conditions. Although this report discussed the various applications of a specific aspect of behavior modification, many of the studies reviewed were performed in institutional settings where variables are relatively easy to control. The "natural environment" allows less control over variables which influence behavior, but Tharp and Wetzel (1969) have demonstrated that the principles of behavior modification can be effectively applied in community settings. Their report stresses the need to treat patients in the community rather than in an institution because behaviors which are modified in the institution often are not maintained when the client is returned to the community. This research involved the training of paraprofessionals to provide a higher degree of interaction and consistency of treatment to accomplish the desired behavior change of the client in his own community.

Applied behavior analysis has been increasing in popularity but the published accounts of its application are largely the result of research conducted by University staff (Bornstein and Spitzform, 1974). A survey of 246 articles published in the Journal of Applied Behavior Analysis from 1968 to 1974, has shown that 228 or 93% of the
senior authors had direct University affiliation. Of the remaining 18 articles, the senior authors of 16 appeared to have state institution or research center affiliation.

The present study is designed to investigate the use of behavior modification in community settings which do not have University affiliation. A study of this type can provide information concerning the environmental conditions necessary for the existence of a behavior modification program; the degree to which the students of behavior modification practice their skills in the "field"; the type of programming and experimental principles which can be readily applied in the "field"; the extent to which clients are affected by behavior modification practices; and the reasons why behavior modification programs, conducted without University affiliation, are not being published.

To study the use of behavior modification in the community, it is necessary to locate facilities which have a high probability of utilizing the principles of behavior modification; facilities which offer a very similar program; facilities which have a high degree of community orientation; facilities with a heterogeneous range of age, sex and behaviors to be modified; and a large population of facilities from which to draw a sufficient sample. A few community facilities which meet some of the above requirements are: schools, mental health clinics, juvenile homes, residential facilities, jails, day care centers, nursing homes, and rehabilitation facilities.

The author has selected rehabilitation facilities (sheltered workshops) because they meet the above criteria in that sheltered
workshops are usually private non-profit organizations with community boards; they have a wide base of financial support both public and private; their primary goal is to provide work training for handicapped clients. Their clients are very heterogeneous as they serve both sexes, a wide age range, usually all types of handicapping conditions; they are all licensed by the Federal Department of Labor to provide work experiences; there are slightly over 2,125 workshops in the United States; and workshops out of necessity provide contingencies in terms of salary for work produced.

Behavior modification has been proposed to be a necessary aspect of a sheltered workshop program. In Gardner (1971) behavior modification is presented as a method for "effective behavior change" in the rehabilitation of mentally retarded adults. Other proponents of behavior modification in sheltered workshops state that its application provides an objective means of evaluating and training clients. Consistency of treatment and immediacy of reinforcement are also necessary aspects to increase work skills and performance (Campbell, 1971; Day, 1970; Hunt and Zimmerman, 1969; Zimmerman, Stuckey, Garlick, and Miller, 1969). To provide a good behavior modification program in a complex rehabilitation setting, it is necessary that all staff involved with the client possess behavior modification skills (Fardyce, Sand, Trieschman, and Fowler, 1971).

Not all published accounts are by proponents of behavior modification in sheltered workshops. Some state that communication and counseling are the important factors in behavior change (Peckham, 1951; DiMichael and Terwilliger, 1953). Olshansky (1969) believes that the
behavioral sciences are limited in their potential and that workshops should offer a therapeutic milieu where clients can make their own decisions. Neff (1968) states that the work environment of a rehabilitative workshop provides the stimuli with which the client is encouraged to interact in order to change his own behavior. The effects of situational stimuli on behavior change in a workshop are stressed rather than the reliance upon confusing verbal therapeutic messages to change behavior. Other reports indicate that workshops are terminal placement centers which provide clients with "something to do" (Cristol, 1970). Still others state that the provision of work provides a "mystical experience" etc. which will enable the client to re-enter the community (Dunn, 1971).

Most research on the use of behavior modification in sheltered workshops is concerned with increasing productivity and decreasing inappropriate behaviors. These studies utilize a variety of behavior modification techniques to accomplish their objectives. One of the most popular and effective means of increasing work production has been token economies. Three related studies investigated various aspects of token economies. The first study by Hunt and Zimmerman (1969) achieved significant work production increases with institutional mentally retarded adults using coupons as tokens which were exchanged at the canteen. The second study by Zimmerman, Stuckey, Garlick, and Miller (1969), used points as tokens in a sheltered workshop. They found that verbal instructions (praise) when paired with token reinforcement did not significantly increase work production as compared to when only tokens were available. The
third study by Zimmerman, Overpack, Eisenberg, and Garlick (1969) was a continuation of the previous study, however, individual token exchange ratios rather than a group exchange ratio were used to significantly increase work production. This study also presented the use of isolation-avoidance techniques with a token economy to decrease inappropriate behavior and increase work production, as did another study (Campbell, 1971). Screven, Straka, and LaFond (1971) investigated many techniques of behavior modification in a sheltered workshop. They presented a highly developed token economy while investigating the many variables involved in operating an effective and efficient token system. They augmented their system by designing stimulus control devices, automation, elaborate exchange areas, avoidance techniques, etc. Token economies were also investigated in terms of the effects of different intermittent schedules of reinforcement, response effort and amount of reinforcement upon work performance (Schroeder, 1972). Automation has been an important aspect of token economies in that it has provided reinforcement, response recording, and discriminative stimuli to clients in sheltered workshop settings (Schroeder, 1972; Tate, 1968). Balcerzak and Siddell (1974) also investigated the cost effectiveness of utilizing a token economy in a sheltered workshop. The cost of various methods of operating a token economy were compared with the increased income to the workshop as a result of the increased work production by the clients under a token economy. This study demonstrated that a token economy which required extra staff to operate was most effective when either volunteers or clients were used to operate the system rather than salaried staff.
Token economies have not been the only behavior modification technique used to increase work production. Cleland and Swartz (1969) used reinforcement satiation for returning the client to work and work deprivation as a motivator for increasing work production. In a theoretical paper, Lustig (1970) refers to the importance of environmental influence upon work behavior. Behavior change can be accomplished by removing environmental stimuli or manipulating the situational components of the work setting (i.e., time, client location, rate, interpersonal relationships, quality of stimuli, etc.). Button, Kimberly, Lubow, and Kimberly (1969) also discuss the effects of the interrelated variables of a work setting (i.e., past conditioning, environment, other clients, etc.) upon client behavior in the development of a work behavior observation scale. Modeling and goal setting were found to significantly increase work production and the quality of work. Loos and Tizard (1955) demonstrated this effect without using a control group whereas Kliebhan (1967) validated these findings by using a control group and obtaining significant results. Jens and Shores (1969) also used goal setting to increase work production. They had clients graph their own daily production and establish a goal for the next day. The investigators question the validity of graphs as motivators because of the verbal reinforcement which was also available at the time of recording. Huddle (1967) demonstrated that production is not significantly different when the clients are working individually, competitively or cooperatively, but that production increases significantly when the clients receive money as compared to a non-payment type of condition. Evans (1969) also
found that paying a client on a piece rate basis increases work production significantly more than paying a salary.

Not all studies are primarily concerned with increasing work production. Two studies attempt to shape work skills rather than increase work production. Zastz (1969) devised a learning manual of specific activities of increasing complexity to train work skills to the adult retarded. Crosson (1969) studied the effects of breaking a job task into specific components and reinforcing the repeated completion of these components. The author then applied the principles of fading and chaining for the completion of the total job task before reinforcement was available. Follow-up studies after a 12 month period showed good retention of the previously learned job tasks.

The hypothesis presented in this study is that behavior modification is not being applied to any extent outside the University or research institution confines. Rehabilitation facilities have been shown to be appropriate community organizations in which the use of behavior modification may be studied because of the similarity in programs, large population, work contingencies, etc., which are available in these facilities. The previous studies demonstrate that behavior modification is an effective means of changing behavior in a rehabilitation facility. The primary emphasis of these studies was to increase work production which is highly consistent with the overall goal of sheltered workshops to develop work behavior. With the relatively few studies on the use of behavior modification in rehabilitation facilities, it is questionable if behavior modification is in the research phase or actually being applied on a general basis. A
study of applied behavior analysis in rehabilitation facilities can provide information on the various aspects of its application while determining the extent of the use of behavior modification in these facilities. The specific information which can be obtained from sheltered workshops are the environmental conditions which are necessary for the existence of a behavior modification program and the types of programming and experimental principles which can be readily applied in the "field". The results of this investigation should be valuable to University staff in providing directions for future training of students to apply their skills in the field and also to facilities to assist in determining which environmental conditions will increase the probability of establishing an appropriate behavior modification system.
METHOD

For the purpose of this study, rehabilitation facilities were defined as those facilities which provide work experience for handicapped clients and also provide remuneration for these work services; primary emphasis of these facilities is for work training rather than physical restoration. The population sampled was those rehabilitation facilities which have wage deviation certificates issued by the United States Department of Labor. The Fair Labor Standards Act of 1938 (26 U.S.C. 201) and the Fair Labor Standards Amendments of 1966 (Public Law 89-601, 80 Stat. 830) require that handicapped workers be paid a minimum wage for work produced unless a facility obtains a wage deviation certificate from the United States Department of Labor. This certificate allows facilities to pay handicapped workers at a rate commensurate to their individual work production (i.e., 50% of normal production, as determined by a time study of non-handicapped workers on the same job = 50% of wage commensurate to a similar job task in industry in the area). The United States Department of Labor refers to these facilities as sheltered workshops and work activities centers. Title 29 Part 525 of the Code of Federal Regulations, defines sheltered workshops and work activities centers:

"(b) "Sheltered workshop" or workshop means a charitable organization or institution conducted not for profit, but for the purpose of carrying out a recognized program of rehabilitation for handicapped workers, and/or providing such individuals with remunerative employment or other occupational rehabilitation activity of an educational or therapeutic nature."
(c) "Work activities center" shall mean a workshop having an identifiable program, separate supervision and records, planned and designed exclusively to provide therapeutic activities for handicapped workers whose physical or mental impairment is so severe as to make their productive capacity inconsequential. Therapeutic activities include custodial activities (such as activities where the focus is on teaching the basic skills of living), and any purposeful activity so long as work or production is not the main purpose."

This code also defines handicapped workers:

"(d) "Handicapped worker" or "client" means an individual whose earning capacity is impaired by age or physical or mental deficiency or injury, and who is being served in accordance with the recognized program of a sheltered workshop within the facilities of such agency or in or about his home."

The United States Department of Labor provided their most recent list (May, 1973) of sheltered workshops and work activities centers which have special wage deviation certificates. This list consisted of 2,123 facilities of which approximately 360 were branch offices of another certified facility. The original intention of this study was to compare the variability of responses between the ten regions of States as defined by the United States Department of Health, Education, and Welfare. Inspection of the list revealed that the large difference in number of workshops between the regions (from 69 to 593) would make a comparative study of the regions impractical. Therefore, the population for study was limited to those rehabilitation facilities in Region V because of the sufficient number of facilities available to complete the study in this region. The Department of Health, Education, and Welfare has listed 473 rehabilitation facilities excluding branch offices in the following six states in Region V: Michigan, Indiana, Illinois, Ohio, Minnesota, and Wisconsin. This study randomly sampled...
25% of the rehabilitation facilities by state for all states except Michigan. In Michigan, all 64 rehabilitation facilities were selected from a more recent list of certified facilities (November, 1974) provided by the Michigan Office of Vocational Rehabilitation Services. The total sample for this study is 172 rehabilitation facilities selected from the six states in Region V.

A questionnaire was utilized to obtain the data on behavior modification practices from the selected rehabilitation facilities. This questionnaire (see Appendix A) requires multiple choice and short answer responses on 22 questions which take a minimal amount of time to complete (approximately 15 minutes). Multiple choice questions should decrease the variability of response and increase the probability of a high return rate while providing the maximum amount of data. The questionnaires were mailed to the selected facilities with a cover letter (see Appendix B) and a return addressed envelope.

An explanation of each question on the questionnaire is as follows: The respondent is required to give the name of the facility, its address, the respondent's name, and the facility's phone number at the head of the questionnaire to facilitate a validity check. Question #1 requires the average daily client load rather than just the number of clients. This was done to standardize the response because some workshops vary greatly in the number of clients they serve from week to week and the average daily client load is more descriptive of the workshop's actual capacity. Question #2 concerns the total number of staff in the facility, full, part time, and student. By requiring identification of part time staff and students in the facility, a more accurate
estimate of full time equivalent staff in the facility (i.e., part-
time = 50% of full time and student = 25% of full time) is obtained.

Question #3 concerns the facility's operating budget rather than the
total budget. This figure is desirable because it directly concerns
clients and eliminates large capital expenditure amounts which may only
occur for one year (i.e., building expansion, etc.). The budget amounts
are in six categories for ease in answering and comparing responses.

Question #4 asks if the facility is certified by CARF (The
Commission on Accreditation of Rehabilitation Facilities). CARF is
a categorical council of the Joint Commission on Accreditation of
Hospitals. This organization is a private non-profit national organi-
ization supported by fees and federal grants. CARF developed stand-
ards and accreditation procedures for surveys of rehabilitation facil-
ities on a voluntary basis. Some states are now requiring that re-
habilitation facilities must be accredited by CARF in order to receive
government support (e.g., Michigan requires CARF accreditation for all
workshops by July, 1977). CARF standards require that workshops must
have specific behavioral objectives on an individual basis for all
the clients which will provide an objective assessment and training
method for the clients. These objectives must be periodically review-
ed for client progress and revision of objectives. The CARF standards
are an excellent basis for a well structured behavior modification pro-
gram in a rehabilitation facility. The initials, CARF, were used in
the questionnaire rather than the actual name to determine if the
facility was exposed to these standards before they could answer the
question.
Question #5 concerns the types of programs which the facility offers. The following six categories are listed on the questionnaire: adult activities, work activities, sheltered, training, community living skills, and education. A seventh, evaluation program which was not included on the questionnaire, will be discussed. The first program of adult activities generally is not concerned with providing work for the clients or any remuneration for being in the facility. This program is primarily concerned with socialization, recreation, etc., and is sometimes connected with a work activity program. Work activities, sheltered, training, and evaluation programs are all certified by the United States Department of Labor. Work activities and sheltered workshops have been previously defined. The Department of Labor definitions for a training program and an evaluation program are:

"(f) "Training Program" means a program of not more than 12 months duration, except that longer periods may be approved in unusual circumstances, designed to (1) develop the patterns of behavior which will help a client adjust to a work environment, or (2) teach the skills and knowledge related to a specific occupational objective of a job family, and which meets State agency or equivalent standards.

(g) "Evaluation Program" means a program of not more than 6 months duration, except that longer periods may be approved in unusual circumstances, using the medium of work to determine a client's potential, and which meets State agency or equivalent standards."

Training programs are usually referred to as work adjustment training and on-the-job training. Community living skills training refers to a program component which primarily trains cooking, housekeeping, budgeting, grooming, and discrimination skills. This program is almost always a component of another work program. Education refers
to providing a classroom environment with a certified teacher for teaching skills in reading, writing, and arithmetic, etc.

Question #6 refers to the disabilities which are served by the facility. The six categories of retardation, physical, emotional, juvenile and adult offenders, school dropouts and expulsions, and elderly should be self explanatory and are usually a description used by an agency which refers their clients to the facility. Many of the clients are also multi-handicapped (i.e., retardation and physical, etc.) and are usually classified according to their primary disability. Question #7 concerns the age range served by the facility (i.e., school age, working age, and elderly). Question #8 asks if the facility has a structured program which utilizes the principles of behavior modification. If the respondent answers yes, the remaining questions of #9 through #19 excluding #20 and #21 are to be answered. If the respondent answers no, only questions #20 and #21 are to be answered excluding questions #9 through #19.

Question #9 concerns the number of clients and staff involved in the facility's behavior modification program. Question #10 asks if the behavior modification program has a title which might be descriptive of the program. Question #11 concerns whether the facility's behavior modification program is associated with any institution of higher learning and the number of faculty and students associated with the program. This should help to determine if University staff are necessary for the existence of a structured behavior modification program.

Questions #12, #13, and #14 are concerned with specific aspects
of a behavior modification program. Experimental terminology is utilized to determine if the respondent is knowledgeable of the principles of behavior modification and consistent in answering the questions. Question #12 asks which major behavior modification principles the program employs. Question #13 asks which behaviors the behavior modification programs attempts to modify. Question #14 refers to the type of data which are maintained on a regular basis in the behavior modification program. All categories of Questions #12, #13, and #14 should be self explanatory for the behaviorists for whom this section of the questionnaire was intended.

Question #15 asks if the facility has a written set of objectives for its behavior modification program and requests that this material be included in the return envelope. A written set of program objectives would certainly be consistent with a structured behavior modification program. Question #16 asks if the facility's behavior modification program has met its initial objectives. This should provide information on the degree of development of the program. Question #17 asks if the behavior modification program can be replicated in other facilities. Behavior modification has the aspect of generalizability to other environments and "no" answers would be an indication of the lack of knowledge of behavior modification.

Question #18 asks if any of the results of the behavior modification program have been published. Question #19 concerns the reasons for not publishing the data of the behavior modification program. The four possibilities are: waste of time or lack of time, not a sufficient number of journals, no funds to support preparation and
publication, and sufficient data have not been collected.

Questions #20 and #21 are only to be answered by those facilities which do not have a structured behavior modification program. Question #20 asks if the facility has ever had any type of behavior modification program. This question would allow those facilities which do not have a structured program, but believe that they employ some of the principles of behavior modification, to answer in the affirmative. Question #21 asks what prevents the facility from having a continual behavior modification program. There are five possibilities and an area for comments. "Current program is sufficient" would be for those respondents who believe that other forms of training are more appropriate than behavior modification. "Principles cannot be applied in the 'field'" is for those facilities which feel that behavior modification can be detrimental to the clients. "External resistance" would refer to resistance by parents, other agencies, the board, the community, etc. to the concept of behavior modification. "Internal resistance" refers to resistance of the staff of the facility to apply the principles. "Money" refers to those facilities which think that operation of behavior modification programs requires a greater expenditure.

There are a maximum of 19 questions which can be answered by facilities which have a behavior modification program and a total of 91 possible answers from these questions. There are ten questions which could be responded to by facilities which do not have a behavior modification program and 52 possible answers from these questions. Questions #1 through #7 are questions which provide descriptive data on
environmental variables while questions #8 through #21 provide
descriptive data on various aspects of the behavior modification
program.

The validity of the responses to the questionnaire will be de­
termined on a selected sampling basis. The Michigan returns will be
validated by consulting with the staff of the Facilities Development
Section of the Michigan Vocational Rehabilitation Service. These
Facility Consultants are directly concerned with the approval of
wage deviation certificates, etc., for all rehabilitation facili­
ties in Michigan. Facility Consultants provide program expertise on
a regional basis to all rehabilitation facilities.
RESULTS

There were 104 questionnaires returned of the 172 questionnaires which were mailed. Seven of the returns were non-deliverable because of improper address or the facility had been closed. A total of 97 questionnaires were returned out of the 165 questionnaires which were actually delivered (see Table I). Of the 97 returns, five were not used in the study because one facility had closed and one facility has not opened; one questionnaire was not complete because the facility is undergoing extensive renovation and another questionnaire was not answered adequately because the respondent was confused by the questionnaire; one completed questionnaire was also returned after the data were analyzed and therefore, could not be utilized. There appears to have been very little confusion in answering the questionnaire. There were 1,253 questions to be answered by the 92 facilities; of which only 13 questions were not responded to at all. Some of the respondents answered a few of the questions in comment form rather than checking a specific category. Where possible, these comments were classified into specific categories with the assistance of the advisor. A check of these classifications by an independent observer provided an agreement of 92% of the categories in which the comments were classified. The 92 facilities which responded serve a total of 7,436 clients with a total of 1,823.5 full time equivalent staff and a mean of 80.8 clients and 19.8 full time equivalent staff per facility. The data obtained from the questionnaires were analyzed by the
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<tr>
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<td>7</td>
<td>97</td>
<td>5</td>
<td>92</td>
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Chi-Square statistic for determining the significance of the relationship between the variables in the questionnaire. A cross tabulation of all categories was not performed because some of the relationships obtained would not provide meaningful results or there were insufficient responses in a category to provide a reliable indicator of relationship (see Table II). There were a total of 1,033 significance tests performed on the data, of which 114 relationships were found to be significant at the .1 level of significance or less. The number of significance tests is quite high for 21 questions because seven of the questions did not provide independent data (respondent was asked to check those which applied) and therefore, each category of the question was analyzed as an independent response (see Table II).

The major hypothesis of this study concerned the existence of behavior modification in rehabilitation facilities and the variables necessary for its existence in these facilities. Questions #8 and #20 in the questionnaire address themselves to this point, and the data obtained from these questions will be presented prior to the relationships of the other questions. A total of 37 respondents stated they had a structured behavior modification program and 23 other respondents stated that they had some type of behavior modification program, while 32 respondents stated they did not use any type of behavior modification (see Table III).

The existence of a structured behavior modification program has specific significant relationships to various aspects of a rehabilitation facility. Facilities which offer training, community living
### TABLE II

**DATA SUMMARY**

Total Number of Responses In Each Category

1. **Average Daily Client Load**
   - (a) 0-10: 29
   - (b) 11-25: 15
   - (c) 26-50: 26
   - (d) 51-100: 6

2. **Full Time Equivalent Staff**
   - (a) 0-2: 21
   - (b) 3-5: 18
   - (c) 6-10: 26
   - (d) 11-20: 3
   - (e) 21-40: 15
   - (f) 41+: 9

3. **Operating Budget**
   - (a) $20,000 - Less: 23
   - (b) $20,000 - 50,000: 12
   - (c) $50,000 - 100,000: 6
   - (d) $100,000 - 200,000: 23
   - (e) $200,000 - 500,000: 28
   - (f) $500,000 - Above: 16

4. **Are you certified by CARF?**
   - (a) Yes: 81
   - (b) No: 11
5. What type of programs do you offer? (Check those which apply.)

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<td>(d) Training (OJT, Work Adjustment)</td>
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<td>42</td>
<td>(e) Community Living Skills</td>
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<td>37</td>
<td>(f) Education</td>
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<td>22</td>
<td>(g) Evaluation</td>
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<td>7</td>
<td>(h) Placement</td>
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6. What type of disabilities do you serve? (Check those which apply.)

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<td>(d) Juvenile &amp; Adult Offenders</td>
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<td>(e) School Dropouts &amp; Expulsions</td>
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<td>10</td>
<td>(g) Other (Blind, Substance Abuse, Hearing, etc.)</td>
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7. What age range do you serve?

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8. Do you have a structured program which utilizes the principles of behavior modification?

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9A. Number of clients in behavior modification program.

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<td>6</td>
<td>(d) 51-100</td>
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<td>2</td>
<td>(e) 101-200</td>
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<td>(f) 201+</td>
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9B. Number of staff in behavior modification program.

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9C. Actual number of clients and staff in sampled rehabilitation facilities.

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<th></th>
<th>Total Facilities</th>
<th>Facilities Reported</th>
<th>Mean</th>
<th>Total in Behavior Modification Facilities</th>
<th>Percent in Behavior Modification Program</th>
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<td>7436.00</td>
<td>92</td>
<td>80.8</td>
<td>3663.00</td>
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<td>Number of Staff</td>
<td>1823.50</td>
<td>92</td>
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<td>Number of Clients in Behavior Modification Program</td>
<td>1226.00</td>
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<td>35.0</td>
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<td>Number of Staff in Behavior Modification Program</td>
<td>275.75</td>
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10. Does your behavior modification program have a title?

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11. Is your behavior modification program associated with any institution of higher learning?

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</table>

Total number of faculty involved with project. 5
Total number of students involved with project. 6
12. Which major principles does your program employ? (Check those which apply.)

- 36 (a) Reinforcement (primaries, tokens, activities, etc.)
- 27 (b) Punishment (time-out, etc.)
- 24 (c) Extinction
- 16 (d) Stimulus Control (timers, S^D's, etc.)
- 29 (e) Shaping (successive approximations)
- 3 (f) Other: Modeling, Premack, Counseling

13. Which behaviors does your program attempt to modify? (Check those which apply.)

- 33 (a) Increase work production.
- 34 (b) Increase appropriate work behavior (attending, etc.)
- 36 (c) Decrease inappropriate social behavior.
- 28 (d) Shape work skills.
- 28 (e) Shape self care skills (cooking, grooming, etc.)
- 24 (f) Shape work related skills (reading, writing, verbal, job seeking skills, etc.)
- 2 (g) Other: Speech Therapy, Recreation

14. Which types of data do you maintain on a regular basis? (Check those which apply.)

- 20 (a) Baseline
- 31 (b) Production rates
- 25 (c) Reinforcement criteria
- 27 (d) Behavior check list (decrease or increase)
- 14 (e) Shaping criteria (approximations)
- 3 (f) Other: Case notes, Behavior notes, Quartile Objectives
15. Does your behavior modification program have a written set of objectives?
   
   19 (a) Yes  18 (b) No

16. Has your behavior modification program met its initial objectives?

   27 (a) Yes  10 (b) No

17. Could your program be replicated in other workshops?

   29 (a) Yes  7 (b) No

18. Have you published any of your project's results?

   1 (a) Yes  36 (b) No

19. If you have not published data, what are the reasons? (Check those which apply.)

   5 (a) Waste of time
   2 (b) Not a sufficient number of journals
   20 (c) No funds to support preparation and publication
   24 (d) Sufficient data has not been collected

20. Have you ever had any type of behavior modification program?

   23 (a) Yes  31 (b) No

21. What prevents you from having a continual behavior modification program? (Check those which apply.)

   17 (a) Current program is sufficient.
   4 (b) Principles cannot be applied in the "field".
   2 (c) External resistance
   9 (d) Internal resistance.
   21 (e) Money
18  (f) Staff not sufficiently trained

5  (g) Not structured but use individual behavior modification

8  (h) New Program
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<th>Use Structured Behavior Modification</th>
<th>Not Use Structured Behavior Modification</th>
<th>Use Some Type of Behavior Modification</th>
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skills, and placement programs, and which provide services to the physically handicapped are significantly more likely to have a structured behavior modification program (see Table IV). Also, facilities which have a median number of staff (6-20) and are certified by CARF appear to be significantly more likely to have a structured behavior modification program while the number of clients and size of budget have no relationship to the existence of a structured program. Facilities which use some type of behavior modification but do not have a structured program are significantly more likely to use behavior modification if they provide services to the physically handicapped, school drop-outs and expulsions, and the elderly (see Table IV). The use of some type of behavior modification has a significant relationship to the number of clients, and it appears that the greater the number of clients, the higher the probability of the use of behavior modification. There is a significant relationship of the use of some type of behavior modification to the factors which prevent a continual structured behavior modification program. It appears that programs which use some type of behavior modification are more likely to state that money and lack of staff trained in behavior modification skills prevent them from having a continual structured program, while they are less likely to state that a new program, internal resistance, or their present program are sufficient as reasons for not having a continual behavior modification program (see Table IV). Questions #8 and #20 on the existence of a structured behavior modification program or the use of some type of behavior modification were compared with many variables on the
### TABLE IV

CROSS TABULATIONS OF QUESTIONNAIRE VARIABLES
(Only Those Relationships at the .1 Level of Significance or Less are Presented.)

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<th>6.(c)</th>
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questionnaire which provided non-significant relationships. Question 20 had no significant relationship to any types of programs, while question 8 was significantly related to three types of disabilities which the facility served. Question 8 was significantly related to the number of staff and the existence of CARF accreditation and not to the number of clients and size of budget, while question 20 was significantly related to the number of clients and not the number of staff, size of budget, or existence of CARF accreditation (see Table IV).

Questions 1, 2, and 3 on number of clients, number of staff, and size of budget were significantly related to each other and also to many of the same variables on the questionnaire (see Table IV). It appears that the greater the number of staff and clients, and the larger the budget, the more likely it is that they will offer a training program and that they will serve the physically handicapped, emotionally disturbed, juvenile and adult offenders, and school drop-outs and expulsions. It also appears that the larger the number of staff and budget, the more likely it is that the facility offers a sheltered workshop program and serves the elderly. It appears that the greater the number of staff and clients, the more likely it is that the facility provides an evaluation program and serves other types of disabilities (i.e., blindness, alcoholism, deafness, drug abuse, etc.) and internal resistance is less likely to prevent a continual behavior modification program. Facilities which have a fewer number of clients are more likely to state that their current
program is sufficient, that they have a new program, or that they lack sufficient money as reasons for not having a continual behavior modification program. It also appears that facilities with the median range of clients are more likely to state that lack of staff training prevents them from having a continual behavior modification program. Facilities which have a larger number of staff are significantly more likely to provide work activity and education programs, and facilities which have a larger budget are more likely to shape work related skills in their behavior modification program.

Only three of the variables which were compared to question #4 (existence of CARF accreditation) were found to have a significant relationship (see Table IV). If a facility had CARF accreditation, it was more likely to shape self-care skills in its behavior modification program and less likely to provide an education program in its facility. The existence of CARF accreditation was also significantly related to the existence of a structured behavior modification program and was discussed earlier.

Question #5 had eight possible types of programs which had to be compared individually with the other variables of the questionnaire because the categories did not provide independent data. There were 352 cross tabulations performed between the type of program and the other questionnaire variables of which only 35 demonstrated a significant relationship (see Table IV). Various types of programs were more highly related to a greater number of the types of disabilities which the facility served than any other variable. Adult activity
programs were much less likely to serve clients who were emotionally disturbed, juvenile and adult offenders, and school dropouts and expulsions as were work activity programs to serve juvenile and adult offenders, the elderly, and "other" types of disabilities (i.e., blind, deaf, drug and alcohol abuse, etc.). The inverse is true of the remaining programs. A sheltered workshop program is significantly more likely to serve clients who are physically handicapped, emotionally disturbed, juvenile and adult offenders, and school dropouts and expulsions, as were training programs to serve physical, emotional, and "other" disabilities; community living skills programs to serve juvenile and adult offenders; and evaluation programs to serve physical and emotional disabilities. Facility programs were also significantly related to other variables from the questionnaire. Adult activity programs were less likely to serve clients over 65 years old and also less likely to shape work skills in their behavior modification programs. Sheltered workshop programs were significantly less likely to have met the objectives of their behavior modification programs. Training programs were more likely to shape work related skills in their behavior modification programs and were less likely to state that insufficient data prevented them from publishing but more likely to state that they had no funds to support preparation and publication. Community living skills programs were significantly more likely to shape work related skills, maintain shaping criteria, and to have met their initial objectives in the behavior modification program. Community living skills programs were also more likely to state that
lack of staff training and less likely to state that current program is sufficient and internal resistance prevented them from having a continual behavior modification program. Education programs are significantly more likely to have a written set of objectives for their behavior modification programs. Evaluation programs are less likely to maintain reinforcement criteria, and placement programs are significantly more likely to maintain baseline data in their structured behavior modification programs. Training, community living skills, and placement programs were all found to have a significant relationship to the existence of a structured behavior modification program and were discussed earlier.

The seven components of question #6, which concerned the types of disabilities that a facility serves, were also compared on an individual basis because the total question did not provide independent data (i.e., answer those which apply). A total of 252 Chi-Square significance tests were performed on the selected variables from the questionnaire of which only 13 were found to have a significant relationship (see Table IV). Significance tests which were performed on programs which serve the mentally retarded are not considered to be reliable (88 out of the 92 respondents stated that they served the mentally retarded) and therefore, will not be presented. Facilities which serve physical, emotional, and "other" handicaps were all significantly more likely to serve clients over 65 years old. Facilities which serve the physically handicapped are more likely to use extinction in their behavior modification programs. Facilities which serve
school dropouts and expulsions are less likely to state that money is preventing them from having a continual behavior modification program. Programs which serve the elderly are more likely to state that their current program is sufficient and internal resistance are the reasons for not having a continual behavior modification program and less likely to state that lack of staff training prevents them from having a continual behavior modification program. Programs which serve the elderly are less likely to shape work skills in their behavior modification programs. Facilities which serve the physically handicapped, school dropouts and expulsions, and the elderly were all found to be significantly related to the use of some type of behavior modification and were discussed earlier.

Question #7 concerns the age range of the clients which the facility serves. Eighty-five of 92 facilities reported that they served clients either between the ages of 16-65 or 16-95 (see Table II). Three facilities reported that they served clients under the age of 16 years; three facilities reported that they did not serve clients under the age of 26 years; while only one facility reported it served clients between 16-26 years old. Because of the lack of responses in certain categories, only two age ranges of 16-65 and 16-95 were used in establishing statistical relationships with the previous question variables. All other meaningful relationships have already been analyzed.

Question #8, which concerns the existence of a structured behavior modification program, was presented in the initial part of this section.
Question #8 could not be compared with questions #9 through #21 because those respondents which stated that they had structured behavior modification programs could only answer questions #9 through #19, and those respondents which stated that they did not have a structured behavior modification program could only answer questions #20 and #21.

Question #9 asks the number of clients and staff which are in the structured behavior modification program. There were a total of 1,226 clients reported to be in structured behavior modification programs from the 35 facilities which responded to this question for a mean of 35 clients in a structured program. There were 257.75 staff involved in the structured behavior modification programs from the 36 facilities which responded, for a mean of 7.16 staff per facility needed to implement the program (see Table II). Question #9A (clients) and #9B (staff) were each compared to 24 other variables in the questionnaire and only four relationships were found to be significant (see Table IV). Facilities which have a larger number of staff and clients in the structured behavior modification program are more likely to use extinction as a means of changing behavior. Also, facilities which have a greater number of clients in the behavior modification program are significantly more likely to use stimulus control and shaping procedures as aspects of their behavior modification programs.

Question #10 concerns whether the behavior modification program has a title. Only six of the respondents out of 37 answered the
question in the affirmative and only one of these responses utilized any type of operant terminology (behavior management) while the other five titled their program either work activities center or work adjustment training. Since the responses did not provide any useful information, they were not compared with any other variable.

Only four facilities out of 37 responded affirmatively to question #11 which asks if the behavior modification program is associated with any institution of higher education. There were a total of five faculty and six students reported to be associated with the facilities. Relationships between question #11 and any other variables will not be presented because of the questionable reliability of a significant relationship with only four responses.

Question #12, which asks what major principles are used in the behavior modification program, had 90 significance tests performed because the question did not provide independent data and each of the five categories had to be compared individually. A total of 10 comparisons to other questions were found to have significant relationships (see Table IV). Thirty-six of the thirty-seven facilities responded that they use reinforcement in their programs (see Table II). Facilities which used punishment were less likely to state that they had no funds to support preparation and publication of their data. Programs which used extinction were significantly more likely to maintain baseline data and state that their programs could be replicated in other workshops. Facilities which used stimulus control were more likely to shape work skills and self-care skills in their
behavior modification programs and also were more likely to have written objectives for their programs. Behavior modification programs which use shaping are significantly more likely to maintain baseline, production rates, and shaping criteria data, and also they are more likely to have met the initial objectives of their behavior modification programs.

Question #13, which is concerned with the type of behaviors that the behavior modification program attempts to modify, does not have independent data, and therefore, each of the six categories were compared individually. A total of 72 significance tests were run on the relationships of the six categories of question #13 to the remaining question variables and five areas were found to have significant relationships (see Table IV). Most facilities attempted to increase appropriate work behavior and decrease social behavior, with only four, three, and one facilities respectively which did not attempt to change these behaviors. There were no significant relationships to other variables from facilities which attempted to shape work skills. Facilities which attempted to shape self-care skills were significantly more likely to maintain data on reinforcement criteria, shaping criteria, and a behavior check list. Facilities which attempted to shape work related skills are more likely to maintain data on shaping criteria and are more likely to state that they had no funds to support preparation and publication of the data from their behavior modification programs.

Question #14, which is concerned with the types of data maintained
by each facility on their behavior modification programs, does not provide independent data, and therefore, all five types of data were compared individually. There were a total of 35 cross tabulations performed to determine the significant relationships of question #14 to the remaining question variables of which two relationships were found to be significant (see Table IV). Facilities which maintain data on the reinforcement criteria are more likely to have a written set of objectives for their behavior modification programs. Also, facilities which maintain data on the shaping criteria are more likely to have met the initial objectives of their behavior modification programs.

Questions #15, #16, and #17 did not have any significant relationships to the 15 variables in the questionnaire to which they were compared. Question #15 asks if the behavior modification program has a written set of objectives, and question #16 asks if these objectives have been met. Question #17 asks if the behavior modification program can be replicated in any other workshop.

Question #18, which asks if the facility has ever published any results of its behavior modification program, has one "yes" and 36 "no" answers. The one facility which reported that it had published its results, included the material in the return envelope. This publication was actually a brochure which was descriptive of the facility and only stated that behavior modification was used in their program.

Question #19 was concerned with the reasons for not publishing
the results of the behavior modification program. Only five respondents stated that publishing was a waste of time, or they had a lack of time, while only two respondents stated that there were not a sufficient number of journals in which to publish their results. These two categories were not related to the other questions because of lack of reliability of the relationships obtained. The other two categories of no funds to support preparation and publication and sufficient data have not been collected were treated as individual responses because the question did not provide independent data. The relationships to this question were discussed earlier.

Question #20, which asks if the facility has ever had any type of behavior modification program, was compared to the individual components of question #21 for determining significant relationships and was discussed earlier.

Question #21, which is concerned with what prevents the facility from having a continual behavior modification program, was compared for significant relationships through previous questions. The components of question #21 were not independent data and were therefore treated as individual responses to the comparisons by other questions. There were insufficient answers to "principles cannot be applied in the field", "external resistance" and "not structured but use individual behavior modification" as reasons for not having a continual behavior modification program to provide reliable, significant relationship to other variables (see Table II).

A validity check of the thirty-seven returns from Michigan with
the Facilities Development Consultants of the Michigan Department of Vocational Rehabilitation Services revealed that only two responses to the existence of a structured behavior modification program were questionable. There was also one facility which reported that it was CARF accredited while in fact it was not. Thirteen percent of the responses from Michigan on the existence of a structured behavior modification program are questionable, and 10% of the total responses to CARF accreditation are inaccurate.
DISCUSSION

It is apparent that the major hypothesis of this study, that behavior modification is not being applied to any extent outside University or research institution confines, can be rejected on the basis of the data obtained from this study's sample of rehabilitation facilities. Sixty-five percent of the facilities which responded reported that they were using some type of behavior modification, and 61.7 percent of these facilities said that they had used behavior modification in a structured program. It is also quite apparent that the use of behavior modification in rehabilitation facilities is in the development process because 18 facilities reported that they would have a structured program if they had staff trained in behavior modification skills and 21 facilities would have a structured program if they had sufficient funds to hire trained staff and operate the program. Only 20 facilities of the 92 respondents were totally against the use of behavior modification in stating that their current program was sufficient and that behavior modification principles cannot be applied in the field. Facilities which use some type of behavior modification are significantly more likely to state that lack of money and staff training prevents them from having a continued structured behavior modification program while they are less likely to state that the current program is sufficient, new program or internal resistance prevent them from having a continual program. A reliable relationship of the existence of some type of behavior
modification to the variables which prevent a continual behavior modification program; consisting of external resistance, principles cannot be applied in the field, and use of individual behavior modification but not structured; could not be obtained because of the lack of responses to these categories (i.e., #2, #4, and #5 respectively). The relationships in this area would seem to be consistent with what would be expected to prevent a continual behavior modification program. It is apparent that facilities which have not used behavior modification feel that internal resistance, new program, and current program are sufficient as reasons for not using behavior modification while facilities which use some type of behavior modification are more pragmatic in stating that money and lack of trained staff are the reasons for not having a continual program.

The fact that there were relatively few articles published on the use of behavior modification in rehabilitation facilities is probably more of an indicator of the development of the programs in rehabilitation facilities rather than the lack of use of behavior modification. The data obtained from the sample questionnaires demonstrate that none of the facilities have published the results of their programs largely because they have not collected sufficient data or they do not have sufficient funds to support publication rather than the non-existence of a sophisticated program. Also only four of the 37 facilities, which had a structured behavior modification program, had any University staff associated with the program. This lower number of facilities, which have University affiliation,
may be the indicator of the variable which is necessary for publishing the program's results.

Most of the structured behavior modification programs appear to be very well developed in that a majority of the programs employ reinforcement, punishment, extinction, and shaping to modify the total range of behaviors which were listed and maintain data in the form of baseline, production rates, reinforcement criteria and a behavior check list on their behavior manipulations. Only the application of the principle of stimulus control and data on shaping criteria were reported to be used by less than 50% of the structured programs (i.e., 43% and 38% respectively). Another indication of the development of the behavior modification programs is that 73% of the structured programs have met their initial objectives but only 51% have maintained written objectives to determine the extent to which their objectives have been met. Eighty percent of the facilities also reported that their structured behavior modification could be replicated in other facilities.

Although the structured behavior modification programs appear to be highly sophisticated, there is also an indication that most facilities only apply the principles to selected clients rather than a total program. Only 33% of the clients and 25% of the staff who are in facilities which offer a structured behavior modification program, are actually involved with the behavior modification aspect of the total program. Thirty percent of the facilities report that they use behavior modification with all of the clients in their programs.
Facilities which serve the physically handicapped are much more likely to have a structured behavior modification program or use some type of behavior modification and all facilities which have a structured program serve the mentally retarded. Also, facilities which serve the elderly and school dropouts and expulsions are more likely to use some type of behavior modification but do not have a structured program. It is difficult to determine which factors involved in serving these disabilities would make a facility more likely to use behavior modification, but it is possible that these disabilities require a more complex structured approach to change the behaviors which are more likely to be exhibited by clients with these disabilities.

It is also possible that facilities which serve clients who are emotionally disturbed, juvenile and adult offenders, and have "other" disabilities do not think that behavior modification is an appropriate method of dealing with these types of handicapping conditions. This area is further confused by the fact that facilities which serve the elderly seem to be inconsistent in the use of some type of behavior modification and in the reasons given which prevent them from having a continued behavior modification program. Programs which serve the elderly are more likely to state that internal resistance and current is sufficient and less likely to state that they need staff training as reasons for not having a continual behavior modification program.

All three of these relationships are inconsistent with programs which use some type of behavior modification, in that the type of relationship is exactly reversed. Therefore, it would seem questionable that
facilities which serve the elderly are actually more likely to use some type of behavior modification. Facilities which serve school dropouts and expulsions are also more likely to use some type of behavior modification and this is also inconsistent with the reasons for not having a continual behavior modification program. Facilities which use some type of behavior modification are more likely to state that money prevents them from having a continual program, but facilities which serve school dropouts and expulsions are less likely to state that money is a problem although they are more likely to use some type of behavior modification. This relationship is difficult to interpret because the size of the budget is also not related to serving this type of disability or providing a school program. It appears that caution should also be used in stating that facilities which serve school dropouts and expulsions are more likely to use some type of behavior modification. Facilities which offer training, community living skills, and placement programs are more likely to have a structured program. These programs are probably more likely to use a structured behavior modification approach because they are more likely to have clear behavioral objectives with specific time periods for the clients to complete the program. Training programs are usually funded by a state vocational rehabilitation agency which requires specific behavioral objectives and a time sequence prior to involving the client in the program. A placement service usually must provide specific data on the skills which a client exhibits and the rate of performance to the industry which will consider employing
the client. A community living skills program usually involves training a complex set of behaviors which would enable a client to live independently and therefore would require a complete study of existing behavior and behaviors to be modified. Facilities which provide community living skills programs are very consistent with the reasons given for programs which use behavior modification that do not have a continual behavior modification program. Community living skills programs are less likely to state that their current program is sufficient and that they have internal resistance while they are more likely to state that a lack of staff training prevents them from having a continual behavior modification program. Community living skills programs would seem to have a high probability of providing a structured behavior modification program. The above programs are considerably more specific in terms of behavioral objectives than the other more general programs of adult activities, work activities, sheltered and education. Evaluation is a specific program which measures the existing behaviors of the client but does not attempt to change the behavior. Therefore, these programs would seem to be less likely to use behavior modification.

The three variables of the number of clients, number of staff, and size of budget were all found to be significantly related to each other but they all are not significantly related to the use of behavior modification. Only the facilities with a median number of staff are found to be more likely to have a structured behavior modification program and facilities which have a larger number of clients are
more likely to use some type of behavior modification. The size of budget is not significantly related to the use of structured or unstructured behavior modification. These three factors were also found to be significantly related to only one aspect used in a behavior modification program in that the larger the budget, the more likely that the structured behavior modification program would shape work related skills. It is difficult to determine why all three variables of number of clients and staff and size of budget are all not significantly related to the use of behavior modification, but it appears that all three variables did have some relationship to the use of behavior modification as they approached but did not reach the significance level of .1. These three questions were also related to the aspects which prevent a facility from having a continual behavior modification program. It appears that larger facilities with a greater number of staff and clients are less likely to encounter internal resistance by the staff and clients to the use of behavior modification while smaller facilities, with fewer clients, are more likely to have a new program, insufficient funds or feel that their current program is sufficient as reasons for not having a continual behavior modification program. Facilities which have a median number of clients are more likely to state that lack of staff training prevents them from having a continual behavior modification program. There are no relationships to the size of budget which is consistent with the previous discussion. It does seem that a larger facility would be less affected by resistance to behavior modification because the program
is more likely to be physically separate from the remainder of the workshop. Smaller facilities would also be more likely to have a new program and insufficient funds to have developed a behavior modification program and it also appears that smaller facilities feel that behavior modification will complicate their program or they will not accept clients who might "need" behavior modification, when they state that their current program is sufficient.

As was expected, the existence of CARF accreditation was signifi­cantly related to the use of a structured behavior modification program since CARF standards require specific behavioral objectives and time periods for meeting these objectives. The existence of CARF accreditation was not found to be related to having a written set of objectives for the behavior modification program, as would be required by these standards. It is difficult to determine the importance of CARF accreditation to the existence of a behavior modification program or elements of the program from this study, because only 11 facilities reported that they were accredited (of which seven had a structured program). It would appear that a further investigation of CARF accredited facilities would be necessary before any valid conclusions could be drawn.

Various elements of a structured behavior modification program were found to be related to descriptive aspects of a facility. Ex­tinction was more likely to be used in facilities which serve the physically handicapped. There are no other types of principles of behavior modification which are related to any other types of
disabilities or programs which a facility might offer. Therefore, it might be likely that this significant relationship was by chance, as there does not appear to be a logical reason for extinction to be more likely to be used with the physically handicapped. Adult activity programs and facilities which serve the elderly are less likely to shape work skills. This is consistent with the purpose of adult activities to provide "something to do" (i.e., recreation, arts and crafts, etc.) rather than the main emphasis of providing work. It is also consistent that most workshops would treat the elderly in much the same way. Behavior modification programs which attempt to shape work related skills would also seem to be consistent in the relationship of use in training and community living skills programs where the emphasis is upon behaviors other than just work skills. The programs of work activities and sheltered workshops which are primarily concerned with work behaviors are not related to increasing work production, work behavior, or shaping work skills, and education programs are not related to shaping work related skills (reading, writing, etc.). This is another area of inconsistency which would require further investigation. Baseline data would most likely be taken for placement programs in order to provide employers with information concerning the individual skills of the client. Community living skills programs are more likely to maintain a behavior check list which seems to be consistent with the need to maintain a more complete behavioral inventory in this type of program. The
data indicated that evaluation programs are less likely to maintain reinforcement criteria probably because of this is primarily a baseline program designed to measure the client's existing skills. Production rates should be related to work activities and sheltered programs as should shaping criteria be related to training programs. Apparently these relationships are not significant and would require further investigation. Education programs are more likely to have a written set of objectives for their evaluation program, which would be consistent with the daily teaching plan used by most teachers. A written set of objectives is not dependent upon any other types of programs or any type of disabilities. Sheltered workshop programs are less likely to have met the initial objectives of the behavior modification program while community living skills programs are more likely to have met their objectives. This may be an indication that sheltered workshop programs set more long term goals than do community living skills programs especially since neither of the programs is related to having a written set of objectives.

The various aspects within the structured behavior modification programs were also compared. Extinction was more likely to be used if the facility had a greater number of clients and staff in the behavior modification program. Also facilities which had more clients in the behavior modification program were more likely to use stimulus control and shaping procedures. Apparently the size of the behavior modification program is a determinant for using these more complex principles of behavior modification. The number of clients and staff
in the behavior modification program are not related to the use of any other types of behavior modification principles, behaviors to be modified, data maintained, or program objectives. Apparently, most of the aspects of a behavior modification program can be utilized with any number of clients or staff involved in the program. The use of punishment and shaping work related skills are both related to not having funds to support preparation and publication of results but these relationships are not meaningful.

Programs which use extinction are more likely to maintain baseline data and state that the behavior modification program can be replicated in other facilities while facilities which use stimulus control are more likely to shape work and self-care skills and have a written set of objectives for the behavior modification program. Programs which use shaping are related to maintaining data on baseline, production rates, and shaping criteria, and they are more likely to have met their initial objectives. Programs which shaped self-care skills and work related skills were more likely to maintain shaping criteria data and also programs which shaped self-care skills were more likely to have data on reinforcement criteria and a behavior check list. Programs which maintained data on reinforcement criteria were more likely to have a written set of objectives while programs with data on shaping criteria were more likely to have met their initial objectives. All of the above relationships appear to be very consistent with the principles of behavior modification. These relationships seem to demonstrate that the respondents were very...
familiar with the principles and application of behavior modification and probably did a very accurate job in describing their behavior modification programs. Programs which use reinforcement and attempt to increase work production, increase appropriate work behavior, and decrease inappropriate social behavior appear to be necessary aspects of almost all behavior modification programs in rehabilitation facilities.

The questionnaire also provided data which may be meaningful to rehabilitation facility administrators but does not concern the existence of a behavior modification program. The number of clients, number of staff, and size of budget all have a linear relationship to various types of programs which the facility may offer and the types of disabilities that the facility serves. Facilities with a greater number of clients are positively related to the existence of training and evaluation programs and service to the physically handicapped, emotionally disturbed, juvenile and adult offenders, school dropouts and expulsions, and "other" types of disabilities (i.e., blind, alcoholism, drug abuse, etc.). Facilities which have a greater number of staff are more likely to have work activities, sheltered, training, education, and evaluation programs, and they are more likely to serve the physically handicapped, emotionally disturbed, juvenile and adult offenders, school dropouts and expulsions, elderly and "other" types of disabilities. An increased size of a facility budget is positively related to the existence of sheltered and training programs and also positively related to serving the physically handicapped,
emotionally disturbed, juvenile and adult offenders, school dropouts and expulsions, and the elderly. Only the programs of adult activities and community living skills were not related to the size of budget and number of staff and clients. Community living skills programs would probably be an aspect of an adult activities program since both programs are not primarily concerned with providing work for the clients.

The types of programs which a facility provides are also related to the type of disability which the facility will serve. Adult activities programs would be more likely to serve the emotionally disturbed, juvenile and adult offenders, elderly, and "other" disabilities. Sheltered programs are more likely to serve the physically handicapped, emotionally disturbed, juvenile and adult offenders, and school dropouts and expulsions. Training programs are more likely to serve the physically handicapped, emotionally disturbed, and "other" disabilities. Community living skills programs are more likely to serve only juvenile and adult offenders. Evaluation programs are more likely to serve the physically handicapped and emotionally disturbed. Education and placement programs are not related to any type of disability. The mentally retarded are likely to be served by all types of programs since 88 of 92 respondents reported that they serve the retarded.

Facility administrators could use these data to assist in the development of their total program. These relationships can provide a general idea as to the establishment of programs which are dependent
upon the number of clients, number of staff, or size of budget. The data obtained does not demonstrate a continuum of programs which could be offered as the numbers of clients and staff and size of budget increases. A further study of the variables involved would be necessary to determine the exact factors involved in the establishment of individual programs. The types of disabilities which a facility serves were also dependent upon various types of programs and size of the facility. It is also difficult to determine at what point on the continuum of increasing number of clients, staff, and size of budget that a facility is more able to serve a specific type of disability. It can be assumed that the provision of service to all of the disabilities which were listed except mental retardation are dependent upon either the number of clients, number of staff, or size of budget. A more exact statement of the relationship of these variables would require further investigation. It was more specifically demonstrated as to what type of program would be more likely to serve a specific disability. It has been shown that all programs can serve the mentally retarded, while it is possible that the other disabilities are better served in specific programs which might have training elements that are better equipped to serve these specific disabilities. A further investigation would be necessary to determine the specific variables of a program which would make it more likely to serve a specific disability.

A validity check of all rehabilitation facilities in Michigan which responded to the questionnaire was conducted with the regional
Facilities Development Consultants of the Michigan Department of Vocational Rehabilitation Services. The consultants were asked to respond to the validity of the responses on the questionnaire from the information they had obtained as consultants to these individual facilities. The only area of the questionnaire which had any questionable responses was the existence of a structured behavior modification program. The consultants doubted if two facilities had a structured behavior modification program, but it was likely that they occasionally used some form of behavior modification. One respondent stated that his facility was CARF accredited, and the consultants confirmed that this response was totally false. This response occurred on a questionnaire which stated that the facility did not have a structured behavior modification program. If the two questionable responses on the existence of a structured behavior modification program were taken as incorrect responses, only 13% of the questionnaires would be considered invalid on the existence of structured behavior modification. This would not change the overall percentage of facilities which use some type of behavior modification because their responses could still be classified as using some type of behavior modification but not a structured program. Fifty-three percent of the facilities which use some type of behavior modification would have a structured program rather than 61.7% as determined before the validity check. This still appears to be a high occurrence of behavior modification programs and does not affect the conclusions which were drawn earlier.
CONCLUSION

It appears that behavior modification is utilized to a considerable extent in facilities which do not have University affiliation. It seems that facilities are not motivated to publish the results of their behavior modification programs, but they do seem to have fairly sophisticated programs which apply many of the principles of behavior modification. Published literature is certainly no indication of the extent to which behavior modification is practiced in rehabilitation facilities. The fact that 65% of the rehabilitation facilities which responded use some type of behavior modification should be considered a very high percentage since the use of applied behavior analysis has only begun to emerge in the last ten years. The development of programs offered by rehabilitation facilities does point to the increasing popularity of behavior modification as an integral part of these programs.

Some of the conclusions which can be drawn could be very helpful in training students to apply their behavior modification skills in the "field". It appears that the lack of trained staff to implement a behavior modification program could be alleviated if universities established short training programs for the staff of rehabilitation facilities. It would also seem helpful if the students of behavior modification were instructed in methods of training para-professionals to apply specific principles of behavior modification. Another area of concern for establishing a behavior modification program was lack
of money. Students of behavior modification should be taught to simplify and design programs which would meet a specific situation. Also, the behavior modification programs appear to have stressed dealing with behavior problems when rehabilitation facilities could probably benefit more by using behavior modification to increase and shape work behaviors. The use of behavior modification in rehabilitation facilities demonstrates that the principles of behavior modification can be readily applied with adults in a complex training program. This study only provides an indication of the trends in the use of behavior modification in the "field" and a more descriptive analysis of these behavior modification programs would require a more detailed study of the individual programs.

The results of this study should also provide a general reference to facility administrators as to the types of programs which can best be offered by their facilities and the disabilities which they can best serve.

This study had many areas which would require further investigation before a more accurate analysis of the relationships of certain variables could be offered.

Rehabilitation facilities could be considered to be unique community facilities. For this reason, it is doubtful that the results obtained in this study could be generalized to other community facilities.
APPENDIX A

Name of Organization: __________________________________________

Address: _______________________________________________________

Person Completing Form: _________________________________________

Phone Number: ________________________________

1. Average daily client load ________________________________.

2. Number of staff: ________, Full: ________,
Part time: ________, Student: ________.

3. Operating budget (Please check)

□ $20,000 - Less □ $100,000 - $200,000
□ $20,000 - $50,000 □ $200,000 - $500,000
□ $50,000 - $100,000 □ $500,000 - Above

4. Are you certified by CARF?

□ Yes □ No

5. What type of programs do you offer? (Check those which apply.)

□ Adult Activities □ Training Programs (OJT, etc.)
□ Work Activities □ Community Living Skills
□ Sheltered □ Education

6. What type of disabilities do you serve? (Check those which apply.)

□ Retardation □ Juvenile & Adult Offenders
□ Physical □ School Dropouts & Expulsions
□ Emotional □ Elderly
□ Other: ______

7. What age range do you serve? ________________________

8. Do you have a structured program which utilizes the principles
of behavior modification?

□ Yes - If yes, complete remaining questions, except last page.
□ No - If no, complete questions #20 & #21 on last page only.
9. How many clients are involved in your behavior modification program? _______________; Staff _________________

10. Does your program have a title? ________________________.

11. Is your behavior modification program associated with any institution of higher learning?

□ Yes  □ No

Name of Institution ______________________________________
Number of faculty involved with project ______________
Number of students involved with project _____________

12. Which major principles does your program employ? (Check those which apply.)

□ Reinforcement (primaries, tokens, activities, etc.)
□ Punishment (time-out, etc.)
□ Extinction
□ Stimulus Control (timers, S’s, etc.)
□ Shaping (successive approximations)
□ Other: _______________________________________________

13. Which behaviors does your program attempt to modify? (Check those which apply.)

□ Increase work production
□ Increase appropriate work behavior (attending, etc.)
□ Decrease inappropriate social behavior
□ Shape work skills
□ Shape self-care skills (cooking, grooming, etc.)
□ Shape work related skills (reading, writing, verbal, job seeking skills, etc.)
□ Other: _______________________________________________

14. Which types of data do you maintain on a regular basis? (Check those which apply.)

□ Baseline
□ Production rates
□ Reinforcement criteria
□ Behavior check list (increase or decrease)
□ Shaping criteria (approximations)
□ Other: _______________________________________________

15. Does your behavior modification program have a written set of objectives?

□ Yes - Would you include □ No any material in return envelope.
16. Has your behavior modification program met its initial objectives?
   □ Yes
   □ No

17. Could your program be replicated in other workshops?
   □ Yes
   □ No - It is specific only to the present environment.

18. Have you published any of your projects' results?
   □ Yes - (please cite ____________________________)
   □ No

19. If you have not published data, what are the reasons? (Check those which apply.)
   □ Waste of time
   □ Not a sufficient number of journals
   □ No funds to support preparation and publication
   □ Sufficient data has not been collected

20. Have you ever had any type of behavior modification program?
   □ Yes
   □ No

21. What prevents you from having a continual behavior modification program? (Check those which apply.)
   □ Current program is sufficient
   □ Principles cannot be applied in the "field"
   □ External resistance
   □ Internal resistance
   □ Money
   □ Other: ____________________________
APPENDIX B

May 8, 1975

Dear Workshop Directors:

The enclosed questionnaire is designed to provide information concerning the presence or absence of behavior modification practice in rehabilitation facilities.

The results of this study should provide valuable information to Universities and Facilities concerning the variables necessary for the existence of a behavior modification program. It should also provide information concerning the relative popularity of behavior modification in highly developed facilities and possible future directions for training of students to apply their skills in the field.

The questionnaire should require no more than 15 minutes of your time and is primarily composed of multiple choice and one word answers.

Your cooperation in this study would be greatly appreciated. A return envelope is enclosed for your convenience.

Sincerely,

Paul T. Mountjoy, Ph.D.
Professor of Psychology
REFERENCES


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Huddle, D.D. Work Performance of Trainable Adults as Influenced by Competition, Cooperation and Monetary Reward. American Journal of Mental Deficiency, 1967, 72, 198-211.


