

FURTHER DEVELOPMENT OF THE VOCATIONAL DECISION-MAKING INTERVIEW FOR HANDICAPPED POPULATIONS

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ABSTRACT: The research investigation considers the complex issues facing clients and students when making vocational decisions. Using an instrument developed earlier by the Research and Training Center at the University of Wisconsin-Stout, the vocational Decision-Making Interview (DMI), this investigation sought to examine the effect that vocational evaluation may have in changing vocational decision-making capacities and to determine the stability of the DMI scores over a time period of one week.

Many clients receiving vocational rehabilitation services must make some major decisions concerning their vocational future. Like nonhandicapped individuals, such clients vary greatly in their ability to make vocational choices and decisions. They can range from those who have made a vocational decision and are actively pursuing that choice, on the one hand, to those who lack the skills required to go about acquiring information, making a vocational decision, and/or implementing that decision. This end of the continuum may display the "indecisive personality" (Holland and Holland, 1977). In addition, however, compared to non-handicapped individuals, clients may have somewhat more difficulty in making such decisions, because of the limitations imposed upon them by their disability, and because of the limited period of time that they receive rehabilitation services.

The issues involved in vocational decision-making, and the problems surrounding these issues, have been widely studied, and cover a broad spectrum. An extensive review of these issues can be found in a number of sources (e.g., Czerlinsky et.al, 1982). An important point needs to be made concerning these studies, however. And that point is, while vocational decision-making and vocational indecision is relevant to all individuals (including rehabilitation clients), most of the research addressing these areas has considered only high school and college populations (Fugua and Hartmen, 1983; Hartman, Fugua, and Hartman, 1983; Taylor and Betz, 1983; and Thorensen and Ewart, 1979). Rehabilitation clients have been studied very little in this regard. In fact, there is little literature available dealing with the vocational choice problems of special populations in general (Phillips, Strohmmer, Berthaume, and O'Leary, 1983). Considerable work has been done in the area of vocational choices, yet only a few articles (e.g., McCarthy, 1983; Holder,

Friel, and Tyler, 1979; and Rosenberg, 1979) have dealt specifically with special populations served by rehabilitation. Phillips, et.al. points out, in addition, that despite some increase in studies dealing with special populations since 1975, caution must be used in interpreting some of these studies, since they may be based upon insufficiently founded assumptions and/or weak and inadequate research. Thus, little is in actuality known about the vocational decision-making problems of these special populations, or about possible remediation or treatment strategies directed toward these problems.

There is a definite need in vocational rehabilitation and special education to consider the complexities which clients and students face in making vocational decisions. Such individuals receive a variety of services which deal specifically with this area, yet there is no real adequate means for effectively assessing these special populations in this realm. For example, one service that is directed toward the area is Vocational Evaluation, a service that is concerned with systematically gathering client information for planning and prediction purposes in the vocational realm. In addition, Vocational Evaluation ideally should use the information collected to determine what problems the individual may have in making vocational decisions, and to assist the person to make these decisions. To be an optimally effective service, Vocational Evaluation should enable the client to be an active participant in his/her rehabilitation, not an observer to a process in which he/she is involved. To do this, however, requires considerably more than collecting vocational aptitude data. It requires exploring with the client or the student exactly what the strengths or weaknesses in making vocational decisions are, so that action can be taken to remediate any weaknesses which may be present. Although Vocational Evaluation has been singled out here these comments apply to a number of other services as well.

A basic need in this area is to develop a means by which service providers can effectively and efficiently pinpoint such areas. The development and use of an accurate tool for assessing rehabilitation client and special education student vocational decision-making strengths and weaknesses would enable service providers to pinpoint specific problem areas, and to develop strategies for the remediation of these difficulties.

In a line of prior research conducted at this Center, such an instrument was developed, and reliability and validity tests were conducted. The instrument -- the Vocational Decision-Making Interview (DMI) -- is an eighty-item structured interview addressing the very real day-to-day problems faced by handicapped individuals in making vocational decisions. The DMI items fall into three broad sub-scales Employment Readiness, Self-Appraisal, and Decision-Making Readiness. The DMI is designed to be individually administered and read to a client. The client then responds whether, for him/her, the item is true, whether it is false, or whether the client is not sure. Sample DMI items are appended. Preliminary results with the DMI were encouraging, and are fully detailed by Czerlinsky, et.al., 1982; and Strohmmer, et.al., 1984. Simply put, the initial version of the DMI showed very encouraging reliability and discriminant validity data. Indicators of internal consistency of the scales showed that the three subscales indeed were adequately internally consistent. The validity criterion was that the three scales be able to discriminate between two groups of clients chosen a priori to differ in level of vocational decision-making capacity. This criterion was met, in that clients entering Vocational Evaluation scored significantly lower than clients in vocational training. One caution with this between-groups design was that, since the subjects were different between

the two experimental groups, factors other than those hypothesized (for example, selection factors that may influence which clients enter vocational training) may have had an influence upon the differences found between the evaluation clients and the training clients. The research presented below will address this, since the data is gathered in a pre-post test design. Readers interested in a closer inspection of the data gathered in the initial study should refer to the previously mentioned publications.

In a current series of four research projects, the reliability, validity, and utility of the DMI is being further investigated. This series of studies is being conducted with vocational rehabilitation clients at Stout Vocational Rehabilitation Institute's Vocational Development Center, and at several Special Education sites in three different states. Studies are investigating: 1) the stability of DMI scores over varying intervals of time (and, in one study, with and intervening treatment directed at changing vocational decision-making capacity); 2) the concurrent validity of the DMI with independent ratings of the clients by professional evaluators working with the clients; and 3) the demographic characteristics of clients and students who may be particular types of vocational decision-making problems. The results presented in this paper are the first to come out of this series of studies.

Methodology

As described above, the data presented in this report stems from a number of ongoing studies. The primary study utilized here was concerned with testing vocational rehabilitation clients with the DMI as they entered the Vocational Development Center for evaluation. The same clients were then retested at the end of the same week (evaluations at the VDC are of a one week duration). In addition, extensive demographic data was gathered

on each client at the beginning of the evaluation.

Some of the purposes of this project were: 1) to investigate the effect that an active treatment (Vocational Evaluation) may have in changing vocational decision-making capacities, as indicated by changes on DMI scores; and 2) to determine the stability of DMI scores over a week's interval.

Subjects

The primary group of subjects yielding the data for the present report were eighty-six vocational rehabilitation clients receiving Vocational Evaluation services at the Vocational Development Center, the service component of the Stout Vocational Rehabilitation Institute. The subjects were randomly sampled from the population of clients receiving these services. The only deviation from the random sampling was that scheduling constraints ruled out a small number of potential subjects from participation. The majority (84) of the subjects were referred for Vocational Evaluation by the Division of Vocational Rehabilitation. For 67 of the subjects, the primary source of income was from their own families. Demographically, they were primarily caucasian (81) males (53). The average age was 28, with a range extending from 16 to 59. The most frequently indicated primary disabilities were as follows: Orthopedic, Musculo-Skeletal, MS, MD, Stroke (34); Learning Disability, Developmentally Delayed (18); and Alcoholism (10). Regardless of the primary disability, twenty-two percent of the clients (19) were industrially injured.

In presenting the results, reference will also be made to Special Education students. These were recruited for some of the studies at two sites. One was 916 Vo-Tec at White Bear Lake, Minnesota. The other was the W.A.T.C.H. (Work Adjustment and Training Center for Handicapped) program of

Cincinnati, Ohio. Both of these facilities serve large numbers of handicapped youth referred primarily by the public school systems. These subjects were also randomly selected for participation in one of three studies. This sample is ancillary to the present report, and full reports utilizing their data are forthcoming.

Instruments

The vocational Decision-Making Interview (DMI) is the primary instrument of concern in these studies, as it is the instrument being developed and validated. It has been summarily described above. Only a short description will be given here, and the reader is referred to the two previous publications mentioned above (Czerlinsky et. al., 1982; Strohmer et. al, 1984). Basically, the DMI is a structured interview format comprised of eighty questions. It taps three general topic areas, which have been labeled Self-Appraisal, Employment-Readiness, and Decision-Making-Readiness. Each of these topic areas is in turn comprised by sub-categories directed toward the actual problems faced by handicapped individuals. The eighty items of the DMI are read to the client, and the client answers whether the item is true for him/her, whether the item is false, or whether he/she is not sure. Being an interview, rather than a test, interpretation and elaboration by the tester (within specified limits) is permitted and, with certain types of clients, encouraged. Each of the items is scored on a three point scale (True, Not Sure, or False). In addition, about half of the items are followed by open-ended stems, for which the client indicates actual choices corresponding to the items. Depending upon the particular characteristics of clients being interviewed, total DMI administration takes from twenty minutes to fifty minutes. The average administration time is about a half-hour.

Procedures

At the Vocational Development Center, Vocational Evaluations are typically of a one-week duration, beginning on Monday and ending on Friday. At the beginning of each evaluation week, the manager of the evaluation services compiled a list of clients who were to receive Vocational Evaluation, and who could be considered as potential subjects. The experimenter then approached each potential subject to inquire whether he/she would be interested in participating in the study. The procedures of the study were fully explained to all potential subjects, and any questions which they had were answered. Clients were totally free to decline to participate.

Subjects who agreed to participate were scheduled for their first interview on Monday or Tuesday of the week. At this interview, the informed consent form was read to them. After subjects signed this form, extensive demographic data was collected in a structured interview. Then the DMI was administered. It was read to each subject individually, in a testing room which was quiet and private. If a subject did not understand an item, the experimenter would elaborate and explain the item before proceeding to the next item. At the completion of the DMI, subjects were scheduled for their second interview later in the week. Scheduling was conducted so that all subjects would have a four day pre- to post-evaluation interval (e.g., subjects interviewed on Monday would be re-interviewed on Thursday, while those interviewed on Tuesday would be re-interviewed on Friday).

At the second interview, the post-evaluation DMI was administered, in the same manner as the pre-evaluation DMI. After completion, subjects returned to their evaluator to complete the Vocational Evaluation process. All subjects who completed the study were paid \$5.00 for participation.

In the "Results" section below, reference will be made to some comparisons of means based upon students. The students were subjects in a different study, which was carried out in Special Education settings (mentioned previously). These students also received Vocational Evaluation at their respective settings, but only one DMI was administered, and this DMI corresponds to the pre-evaluation DMI in the VDC client study.

Results

The results are presented in several sections. The primary results for purposes of this paper concern the relationship between the pre-evaluation DMI scores and the post evaluation DMI scores. Table 1 presents the pre-post rank-order correlations for the three DMI subscales as well as for the DMI total score. Rank-order correlations were utilized so that relative stability could be determined in a situation in which an active treatment intervened between the two measurements. As can be seen from this Table, there is a significant positive correlation for Employment Readiness ($r=.61$), for Self-Appraisal ($r=.73$), and for Decision-Making Readiness ($r=.71$) when correlating pre with post scores. DMI Total score pre-evaluation also correlated quite highly ($r=.78$) with the corresponding Total score at the end of evaluation. Each of these correlations was well past the .01 level of significance. These correlations indicate that overall, DMI scores at the beginning of the Vocational Evaluation are quite satisfactory predictors of DMI scores at the end of Vocational Evaluation. Or at least (regardless of the evaluation that was conducted), that DMI scores at one point in time are relatively stable at a point four days later. An important point to keep in mind is the word "relatively," since this will play an important part in the

interpretation of the next set of data, and will be discussed later.

Table 1

Pre-Post Evaluation Rank-Order Correlations for the Vocational Decision-Making Interview

	Pre-Post Corr	p
Employment Readiness	.61	<.01
Self Appraisal	.73	<.01
Decision Making Readiness	.71	<.01
<u>DMI</u> Total	.78	<.01

The next set of analyses was concerned with whether the active intervention of Vocational Evaluation appeared to have an effect on the clients in this study, in terms of their scores on the subscales and total on the DMI. That is, all clients participated in four days of Vocational Evaluation between the pre-test and the post-test. Presumably Vocational Evaluation addresses issues such as those tapped by the DMI, and thus, if the Evaluation is effective in such a short period of time on these dimensions, an effect of the Evaluation may be detectable by looking at differences between the pre-Evaluation and the post-Evaluation DMI scores. The means for the sample of clients on the pre and the post test are shown in Table 2. Again, this Table

Table 2

Pre-Post Evaluation Means for the Vocational Decision-Making Interview

	MEANS		t	p
	Pre	Post		
Employment Readiness	11.37	13.56	7.83	<.01
Self Appraisal	15.92	18.54	7.40	<.01
Decision Making Readiness	16.69	19.85	8.94	<.01
<u>DMI</u> Total	43.98	51.94	11.09	<.01

is broken down into the three DMI subscales as well as a total score. The Table shows the pre-Evaluation

means, the post-evaluation means, and the results of tests for any differences between these means. Inspection of this Table shows a very clear pattern over the course of the Evaluation. Every subscale of the DMI (and thus also the total score) showed an increase over the four day period in which the clients received their Vocational Evaluation. The mean for Employment Readiness showed an increment from 11.37 at pre-Evaluation to 13.56 after the process. The Self-Appraisal scores went from a 15.92 pre-score to 18.54 after the Evaluation. And Decision-Making readiness changed from a pre-Evaluation mean of 16.69 to 19.85 after the Evaluation. The score of the DMI total score therefore increased also, going from 43.98 to 51.94. Table 2 also shows the significance of all of the differences between the means, utilizing a correlated t-test. This pattern of change from the beginning of Evaluation to the end of Evaluation is also shown in the histograms appended to this paper, labelled Fig. 1.

The above two sets of data will be fully addressed in the discussion. At this point, however, it should be made clear that two different patterns have been delineated in the pre- and post-Evaluation DMI scores. First, the scores remained relatively stable over the course of the Evaluation, as were indicated by the significant rank-order correlations. Secondly, scores changed significantly over the course of the Evaluation, being higher at the end of the Evaluation than at the beginning. What this pattern indicates is the DMI scores were stable in a relative sense, with clients roughly maintaining their relative ranking within the group of subjects from beginning to end of the Evaluation. That is, clients who had relatively fewer problems in making vocational decisions (as judged by the DMI) at the beginning of evaluation still, in a relative sense, had fewer problems than the other clients at the end of the Evaluation. Imbedded within this pattern,

however, is a significant effect of the active Evaluation treatment. Without question, the clients in this study scored better on the DMI at the end of the Evaluation than they did at the beginning. Another way of saying this is that the Evaluation appeared to have a positive effect on the majority of the clients.

One last pattern of means will also be mentioned. As pointed out earlier, DMI data, in a somewhat different design, was also collected at two Special Education sites (White Bear Lake, Minnesota, and Cincinnati, Ohio). The overall results of these studies are currently being analyzed. However, Figure 2 shows a comparison of DMI subscore means for both the Special Education and VDC client populations. It can be seen that the Special Education Students are somewhat lower than the clients on all three of the DMI scales. Note that the client means are based upon the pre-Evaluation DMI's, before any influence of the process of Evaluation would have increased the scores. Age and life experience may be showing their influence in these differences.

Discussion

The data that has been presented above represents several in a series of studies concerned with further reliability, validity, and utility testing of the Vocational Decisions Making Interview (DMI). The development of the DMI has been carried out in a series of successive research projects, with the current projects marking the end of the developmental phase. The results that were obtained before the initiation of the current project have been described at the beginning of this report. References have been given for any readers who would like to become more familiar with the basic structure of the instrument, or with specifics of the prior research. In this earlier research, the DMI was developed, tested, and revised. Reliability and validity indicators

were promising for an initial version of a new instrument.

The current series of projects is comprised of a number of studies conducted at rehabilitation and special education sites, and subjects are recruited from both vocational rehabilitation and special education populations. The research designs of these studies have already been detailed. The data of the present report comes primarily from a rehabilitation client study in which clients were interviewed with the DMI as they began Vocational Evaluation and again as they completed the evaluation. The primary purposes of this design were 1) to evaluate the stability of DMI scores over an interval of time, while 2) determining whether an active treatment (Vocational Evaluation) would have a discernible effect on DMI scores.

The results showed a number of clear patterns. First, the rank-order correlations between pre-evaluation DMI scores and post-evaluation DMI scores were positive and significant. Secondly, on all of the DMI subscales as well as on total score, the post-evaluation means were significantly elevated over the pre-evaluation level. This was an interesting pattern of results. The differences between the pre- and post- means indicates that during the course of the Vocational Evaluation, clients significantly improved in their scores on the DMI. However, the correlations between pre- and post- suggest that while clients improved on the DMI during the study, their relative scores were fairly stable. This suggests that, during the evaluation, a positive influence appears to have been exerted on a large number of clients. Thus, the best predictor of post-evaluation scores appears to be a combination of pre-evaluation score and average change during the process of Vocational Evaluation. This is a positive statement both for the DMI and for the process of Vocational Evaluation. From looking at these results, one can conclude that 1) DMI scores exhibit relative

(to one group) stability over a period of four days, and 2) the process of Vocational Evaluation seems to exert a positive influence on vocational decision-making capacity (as measured by the DMI).

One criticism that can be directed against a research design of this nature is that the post- test may have been influenced by the pre- test, since it is the same instrument administered only four days apart. However, this criticism seems rather unlikely, since, in the previous study mentioned earlier (Czerlinsky, et.al., 1982), a between-subjects design (which used a group of vocationally undecided and a group of vocationally decided clients as subjects) found a comparable difference between the means. Conversely, in the previous between-subjects design, a potential criticism was that the vocationally decided clients (clients receiving vocational training) may have been higher on the DMI simply because of selection factor that prevented the less vocationally decided clients from entering vocational training. The present results, utilizing a within-subjects design, makes this second criticism also appear less likely. When the same pattern is found utilizing both a between- and a within- subjects design, the results become more convincing. An additional comparison is currently being conducted, but the data is not yet completely collected. This is a test-retest design with no intervention, which will be utilized as a comparison no-treatment control group. If the above interpretation is correct, then this test-retest study will show significant correlations between the two DMI administrations (as the present results) but no significant difference between the two administrations.

The last comparison presented in this report was shown on Figure 2. This concerns the means on DMI scores of clients and of students. This figure was not a statistical

comparison, but rather was presented as a point of interest. In general, the special education students scored fairly close to the means of rehabilitation clients, but they were consistently somewhat lower. This may be an indication that the special education students, when compared to the rehabilitation clients, were somewhat less job ready, or have had less life experiences. In general, it may be indicative simply of less maturity.

The results presented in this report are a further step in the development of the DMI. When evaluating these and previous data, it is important to keep in mind that the instrument is still evolving and changing, and that further refinements will undoubtedly still take place. Several points, however, need to be addressed concerning the data presented. First, as was mentioned above, the present design (within-subjects test-retest-design) has certain limitations as well as strong points. But when combined with the previous between-subjects design, the overall results of each one support the other, and the data from both series of studies are consistent with each other and help rule out experimental artifacts.

A second point to be addressed concerns the nature of the treatment intervention in this study. The data has suggested that Vocational Evaluation has an effect on elevating scores on the DMI. The evaluation is an active treatment, and Vocational Evaluation is directed toward the realm that is measured by the DMI. But the results do not indicate specifically which aspects of Vocational Evaluation may be most related to this change. Something within the process of Vocational Evaluation appears to be effective, but what the specific aspects are which contribute to this effect is open to speculation and to further research. As the DMI becomes more refined as a result of additional research and utilization within the field, it is hoped that such questions can be addressed and answered, since answers to such questions

could be very beneficial to the fields of Vocational Rehabilitation and Special Education.

The ultimate criterion for an instrument, such as the DMI, once its reliability and validity have been established, is concerned with its utility. It must provide something useful to the field. It is expected that the DMI will impact at a number of different levels.

First, it should be of benefit to handicapped individuals themselves. It can provide feedback which should be helpful for such individuals in defining their own areas of strength and weaknesses in terms of vocational decisionmaking. It can be utilized in a manner that enables such individuals to become more actively involved in the process of making their own vocational decisions. This should be quite important while they are receiving a service such as Vocational Evaluation. An important point in the regard is that the DMI will not be restricted to a very narrowly defined population. It should be useful not only for rehabilitation clients, but also for a range of other special handicapped populations. Its mode of administration (a verbally administered structured interview with allowance for clarification and interpretation) contributes to making it useful to a variety of populations. It may be found that the DMI is more suitable for some types of persons (on a basis of disability, age, etc.) than for others, but this will remain to be seen as the instrument begins to be utilized and evaluated in the field with a variety of populations in a variety of settings.

Secondly, the DMI should be very helpful to service providers (such as counselors and vocational evaluators) concerned with vocational decision-making of their clients or students. It is designed to provide information which can be used by these professionals in providing the appropriate services. It should

provide an efficient means of gathering this information, since the data can be collected rather quickly and efficiently, and it can be collected early in the treatment process, which means that treatments can be individualized right at the beginning of the treatment.

Thirdly, the instrument can be used to help improve services. It can point out areas of vocational decision-making which may not effectively (or at all) be addressed by a treatment, and greater emphasis can be placed upon aspects which the DMI shows to be in need of such. In addition, by providing information about a person's vocational decision-making strengths and deficits out front at the beginning of a treatment such as Vocational Evaluation, the program/ service can be individualized and tailored to

the specific needs of the particular individual it is intended to serve.

Lastly, the DMI has the potential to be very useful in designing new programs directed toward alleviating vocational indecision. For example, it has been used by a public school system as one input for developing a new curriculum for handicapped high school students to help them plan for their vocational future. The DMI data provided indicators, in this case, which were used for determining the areas which the new curriculum is addressing.

All in all, as the above indicates, the DMI should have a broad spectrum of utility, ranging from the handicapped individual, on the one hand, to the development of new programs, on the other hand.

APPENDIX A

Figures 1 & 2

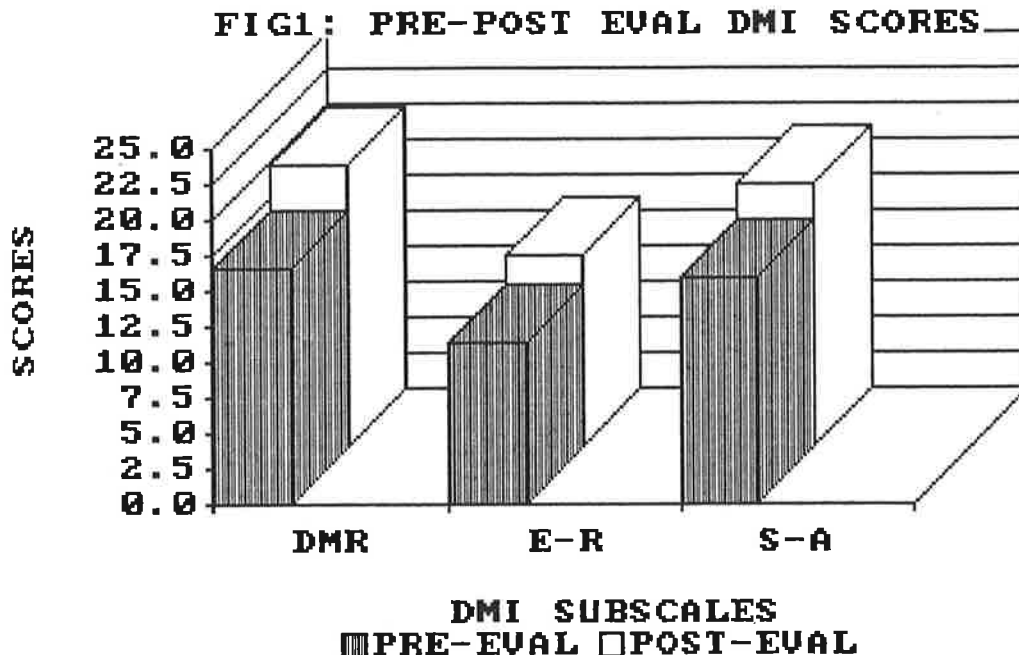
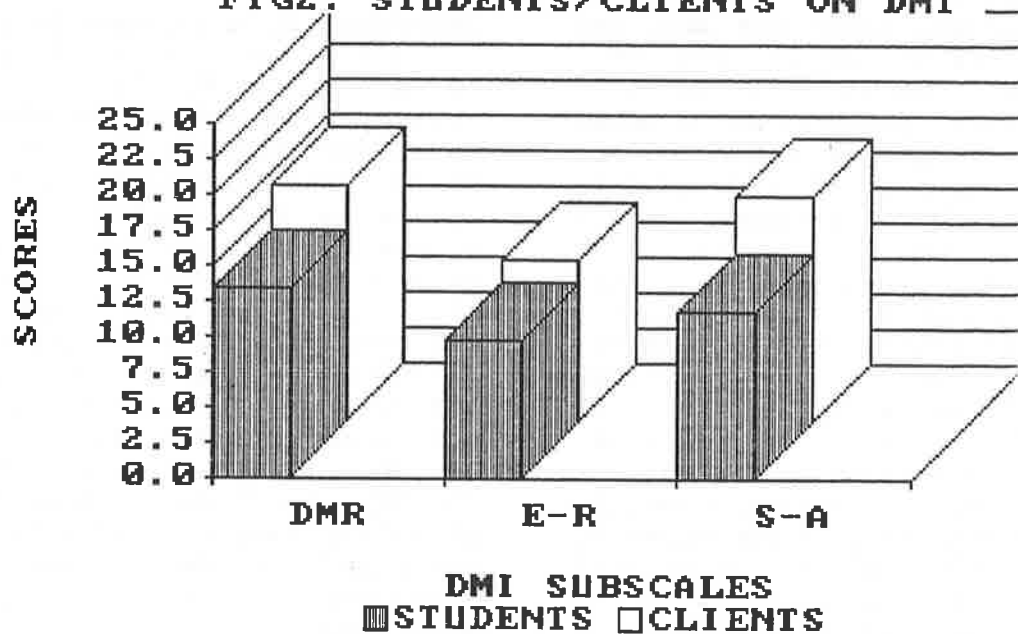


FIG2: STUDENTS/CLIENTS ON DMI



APPENDIX B

Sample DMI Items

DMI Employment Readiness Scale -- Sample Items

I have few job choices, because it is hard for me to get around.
I would take a job that my family and/or friends didn't approve of.

DMI Self Appraisal Scale -- Sample Items

I feel sure of myself when I have to make a decision about a job.
I have let others decide which job was best for me.

DMI Decision Making Readiness Scale -- Sample Items

I would be good at choosing a job on my own.
If I know what a job is like, I can decide if I could do the work.

REFERENCES

Czerlinsky, T., Strohmer, D.C., Menz, F.E., Coker, C.C., and Engelkes, J.R. (1982). Assessing vocational decision-making in the rehabilitation process: Instrument Development. RTC Research Report, 1982.

Fugua, D.R., and Hartman, B.W. (1983). Differential diagnosis and treatment of career indecision. The Personnel and Guidance Journal, 1983, September, 27-29.

Hartman, B.W., Fugua, D.R., and Hartman, P.T. (1983). The construct validity of the Career Decision Scale administered to high school students. The Vocational Guidance Quarterly, 1983, June, 250-258.

Holder, T., Friel, T., and Tyler, N. (1979). Career planning for disadvantaged youth: The Flint experience. Thrust: The Journal for Employment and Training Professionals, 1979, 1, 353-362.

Holland, J.L, and Holland, J.E. (1977). Vocational Indecision: More evidence and speculation. Journal of Counseling Psychology, 1977, 24, 404-414.

McCarthy, H. (1983). Understanding motives of youth in transition to work: A taxonomy for rehabilitation

- counselors and evaluators. Journal of Applied Rehabilitation Counseling, 1983, 14, 52-61.
- Phillips, S.D., Strohmer, D.C., Berthaume, B.L.J., and O'Leary, J.C. (1983). Career development of special populations: A framework for research. Journal of Vocational Behavior, 1983, 22, 12-29.
- Rosenberg, H. (1979). Job satisfaction and social interactions of mildly retarded males in uni- and multi-disability workshops. Journal of Applied Rehabilitation Counseling, 1979, 10, 204-207.
- Strohmer, D.C., Czerlinsky, T., and Menz, F.E. Assessing vocational indecision in rehabilitation clients. Rehabilitation Counseling Bulletin, (in press).
- Taylor, K.M., and Betz, N.E. (1983). Applications of Self-Efficacy Theory to the understanding and treatment of career indecision. Journal of Vocational Behavior, 1983, 22, 63-81.
- Thoresen, C.E., and Ewart, C.K. (1976). Behavioral self-control and career development. The Counseling Psychologist, 1976, 6, 29-43.

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