Construction and validation of a forced-choice scale for rating clinical performance of physical therapy students

Margot Trimble

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CONSTRUCTION AND VALIDATION OF A FORCED-CHOICE SCALE FOR RATING CLINICAL PERFORMANCE OF PHYSICAL THERAPY STUDENTS

A Thesis
Presented to
the Department of Psychology
University of Richmond

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Margot Trimble
June 1962
ACKNOWLEDGMENTS

The author wishes to acknowledge with gratitude the assistance of her adviser, Dr. Robert Filer. She is also indebted to the Faculty of the School of Physical Therapy, Medical College of Virginia, and to all her professional colleagues who cooperated by providing the data which made this study possible.
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CHAPTER I

INTRODUCTION

One of the major objectives of education in the profession of physical therapy is to prepare the student to adequately perform in a clinical setting. A part of the education of each physical therapy student is devoted to full-time clinical experience under the supervision of qualified therapists. These therapists, designated as clinical supervisors or clinical instructors, are faced with the problem of evaluation of each student's performance during the period of clinical education. The problem of providing valid evaluation of clinical performance by a student is one common to many professions. It is not unlike the problem faced by many employers in seeking valid evaluations of performance in the job situation.

There are currently forty-one schools of physical therapy in the continental United States which are approved by the Council on Medical Education and Hospitals of the American Medical Association, in collaboration with the American Physical Therapy Association. Each of these schools uses a different form for rating and evaluating student performance during the period of clinical experience. (9) Rating methods utilized include ranking, scoring scales (with and without description of traits), graphic scales, and check lists or behavior descriptions. (1) (9) (21) These forms vary in length from one 5 x 8 card (Bouve-Boston School) to a check list of more than 125 items
The importance of evaluation of student performance during the clinical experience has been a subject of discussion at numerous meetings of physical therapists. The major purposes of student evaluations are: 1. to determine changes in the student in keeping with program objectives, 2. to determine effectiveness of instruction, and 3. to determine a 'grade' for the student. (1) Each of these purposes should be of equal importance in the mind of the rater. Too often, the emphasis is placed on the third, to the detriment of the first two. Evaluation is one of the basic tasks in the development of a curriculum, and should correlate closely with the objectives of the program, and should be utilized in determining the extent to which the program is successful in attaining its objectives. Therefore, the process by which students are evaluated during their clinical experience is of importance to all concerned with physical therapy education, whether occupied strictly in the didactic or clinical phase.

Excerpts from rating forms of some physical therapy schools help to illustrate the attempts to meet these several purposes.

1. "The following information is sought primarily as a means of helping the student as it furnishes an analysis of professional traits and characteristics of the student functioning in a 'life' situation."

2. "The purpose of this form is two-fold:
   a) To reflect your evaluation of the student as you
have observed him at work...an analysis of his present proficiency.

b) ...information which may enable the student to become a better physical therapist may be abstracted...

and used in...conferences with the student”.

3. "Remarks will aid us greatly in...planning a more correlated program." (1)

Rating scales have certain advantages over other methods of evaluation such as conferences, anecdotal reports, and examinations. A rating scale provides information in an economical manner, and may include quantitative description of the data. It provides accurate information free of extraneous ideas. It should help to focus attention on important areas of the student’s educational program.

The characteristics of a good rating scale include validity, reliability, and usability. Usability can be judged by the time, effort, and expense concerned with the utilization of the rating scale.

At a meeting of clinical supervisors and instructors in physical therapy schools held in March, 1956, the desirability of having a single rating form for all schools was discussed. (21) Important deficiencies mentioned in current rating procedures were questionable validity, inadequacy in ranges of scores received (with cluster at the high end) and tendency to overall subjectivity in rating (21). A new rating form should try to minimize these deficits and be useful in terms of universally
understood language and brevity of the overall form. Only observable traits or characteristics should be included in the scale, and raters should be encouraged to make judgments on the basis of definite observations made of the student’s work or behavior. (1)

E. D. Sisson reported in 1943 on a forced-choice rating scale which was found to reduce bias, provide a better range in distribution of ratings and be more valid than previous methods of rating performance of Army officers. (2) (27) The forced-choice scale was also found to be less subject to manipulation by the rater, diminishing the effect of favoritism and bias. (2) (33) This therefore appears to be a useful and workable technique for evaluating performance of physical therapy students during their clinical experience.

Basic assumptions underlying the development of a forced-choice rating scale are:

1. There are real differences between students which can be described in observable items of behavior.
2. These items differ in favorableness, and this tendency to differ can be determined statistically. This measure is called the Favorableness Index. (F.I.)
3. The items differ in the degree to which they are descriptive of physical therapy students along the continuum of effectiveness of performance in clinical training. This degree of differentiating power can be measured statistically and is called the Discrimination Index. (D.I.)
4. Items can be grouped which have approximately equal F.I.'s but differ in D.I.'s. A rater forced to select one as more descriptive of the rates is unable to tell which is more discriminating since favorableness values are equal. This lends objectivity to the rating procedure. (2) (4) (27)

A forced-choice rating scale consists of a series of items grouped according to D.I. (Discrimination Index or degree to which the items differentiate between criterion groups) and F.I. (Favorableness Index or degree of favorability of the phrase indicating willingness to use the phrase in describing people).

Development and testing of this type of rating scale for evaluating physical therapy students in clinical training is described in the following sections.
CHAPTER II

COMPILATION OF ITEMS AND INDICES

I. ITEM COMPIILATION

Items in a forced-choice scale should be as specific as possible, being concerned with only one characteristic or trait. In general, items should be descriptions of observable behavior. (13) They should be items of behavior which vary in degree or in frequency of occurrence in a given individual so that they can be compared. (15) It is desirable to have the items phrased in language of those who will later use the scale. (4) (20) (27)

With this in mind, it was decided to request local physical therapists to participate in the preparation of items. Twelve physical therapists, who were either instructors or clinical supervisors, were asked to submit two lists of behavior, one characteristic of an outstandingly good physical therapy student, and one for a poor student. In each case, it was requested that items be developed by thinking of a single student for each category, in order to avoid too general "likes" and "dislikes". (20) Items were developed from these lists, with an effort made to preserve the individual's wording.

Items were also drawn from a pool of rating forms currently in use by all approved schools of physical therapy. These items were selected and reordered if necessary to meet the criteria mentioned above.
Clinical supervisors of physical therapy students are often reluctant to utilize any derogatory or unfavorable items of behavior in describing students. Therefore only items of a positive nature were included.

A total of 246 items were developed and submitted to judges for determining the necessary indices. These items were used to calculate three different indices. Appendix A includes the list of items.

II. FAVORABILITY INDEX

The Favorability Index, hereafter referred to as the F.I., represents the degree of favorability of an item when used to describe a physical therapy student. In other words, it measures the willingness of a rater to use the item in describing a physical therapy student.

The 246 items were submitted to fifty-six judges, thirty-one of whom were local physical therapists who had experienced contact with physical therapy students, and twenty-five of whom were students enrolled in the School of Physical Therapy, Medical College of Virginia, during the academic year 1959-60.

Each judge was given written instructions (see Appendix II) to judge each item according to its degree of favorableness when applied to a physical therapy student. This was to be done on a five-point scale as follows:
5 = Extremely favorable
4 = Favorable
3 = Neutral
2 = Unfavorable
1 = Extremely unfavorable

Because only items of positive value were included it was expected that most of the ratings would be 4 or 5.

The F.I. is the mean weighted total for each item. It was calculated by:

\[ F.I. = \frac{\sum wf}{\sum n} \times 100 \]

where \( f \) is the sum of the response frequencies on each of the five points of the favorability scale, \( w \) is the numerical weight assigned to each of the different points of the scale, and \( \sum n \) is the number of raters or judges. (4) This figure was then multiplied by 100 to avoid the use of decimals. The possible range for the F.I. is then 100 to 500. The actual range found was 373 to 486. As mentioned previously, because of the manner in which items were selected, it was expected that the F.I.'s would cluster in the high end of the range. All but a small number turned out to be in the 400 range.

III. DISCRIMINATION INDEX

In order to determine which items can be utilized in describing almost all or the average physical therapy student, and which are applicable only to the above-average or superior student, it was necessary to obtain additional judgments.

The 246 items were compiled into rating forms and submitted to judges who were given written instructions to: (see Appendix C)
"Select two physical therapy students whom you have observed during some phase of clinical training - one should be an outstandingly good student - one a student who performed poorly. Fill out one form on each as indicated.

"On the enclosed forms you will find a number of phrases which have been used to describe physical therapy students. Mark each phrase from 1 to 5 according to how well it describes the particular student you are thinking of. For each phrase ask yourself the following question: Does this phrase describe the student I am thinking of?

5 = to the highest degree possible or all of the time?
4 = to an outstanding degree or most of the time?
3 = to an average or moderate degree or often?
2 = to a limited degree or seldom?
1 = to a slight degree, rarely, or not at all?

"Be sure you think of a single student when assigning ratings. Both good and poor students may have some of these traits to the same degree even though they differ in overall performance."

At the end of each form, the rater was asked to rank the student on a 20-point scale, (20 representing the highest score). The rater was asked to compare the student he was using in completing the form with a typical group of twenty students.

Descriptions of the meaning of each numerical rating were carefully worded to include differences both in frequency and degree of applicability. All forms were mailed to the judges, so that no oral interpretation was given to anyone regarding the instructions.

Two forms and a set of instructions were mailed to each of 165
physical therapists. These represented all those clinical supervisors and classroom instructors who had attended the aforementioned meeting on clinical education in March, 1958. In addition forms were mailed to all members of the Section on Education of the American Physical Therapy Association who were designated as clinical supervisors. To be a member of this Section one must be actively affiliated with an educational program for physical therapy students.

Of the 330 forms mailed out, a total of 160 were returned. This number included 79 rated for Poor students, and 81 completed for Good students. Several of the judges stated that they had never supervised a Poor student, so were unable to complete the form, or completed it for an average student. Only those forms on which the student was rated as 7 or below on the twenty-point scale were utilized for the Poor group. Twenty-nine forms were therefore discarded, so that the D.I. was based on fifty remaining forms. For the Good student, only those rated 18 or above on the twenty-point scale were used. A total of 31 forms were discarded leaving fifty from which to determine the D.I.

The D.I. is the sum of differences of frequencies of items in the Good and the Poor groups for each of the ratings 1 through 5. It was calculated as \( \sum |O-P| \). This method of calculating the D.I. involves no assumptions regarding the percent of students in each group. The method utilized by Lovell and Haner necessitates the making of such assumptions. (20)

Because only items of a favorable characteristic had been selected,
all of the D.I.'s were of positive value. The possible range was zero to 100. The actual range was 54 to 95. Therefore, it can be assumed that all items had some indication of discrimination between Good and Poor students.

IV. PREFERENCE INDEX

The Preference Index is defined as the mean degree of applicability of a statement to the entire population. (4) It is usually used in place of the F.I. to determine equally favorable statements to be contained in a block of items. Because this index is computed from the same forms from which the D.I. is figured both Good and Poor groups are included. The index is an average, and therefore tends to obscure differences between the actual favorableness value of an item.

Berkshire and Highland found both the F.I. and Preference Index to have bimodal distributions. They calculated the correlation between segments and found the resulting coefficients to be −0.53 and +0.66. On the basis of this they concluded that "the indices for preference and favorableness are not indices of the same thing." (4)

One advantage of utilizing the Preference Index to match items in a block is that it can be computed from the same forms which are used to determine the D.I. Therefore it is not necessary to obtain a separate set of judgments. The F.I., although necessitating a separate set of judgments, represents a more valid and direct measure of how
favorable a statement is, particularly to those who will be using it for rating purposes. For this reason, the F.I. was the major determinant in matching items for a block. When more than one item with almost equal F.I.'s was available, an attempt was made to match the items according to their Preference Index. The actual correlation coefficient between F.I. and Preference Index of items used in the final rating scale was +.12 which is only slightly higher than that found by Berkshire and Highland. (4)
CHAPTER XIII

CONSTRUCTION AND SCORING OF SCALE

Prior to construction of the scale, the 246 items were divided
by three judges (one of whom was the author) into six categories
according to which behavior of the student it pertained. These
categories were as follows:  A = Application of Knowledge of Basic
Sciences;  B = Application of Theory and Skill in Practice;  C = Pro-
fessional and Personal Qualifications = 1 = with patients;  2 = with
coworkers and others;  3 = work habits; and 4 = personal attributes.
The frequency distribution of the 246 items among these categories
is below:

A = Application of Knowledge of Basic Sciences  36
B = Application of Theory and Skill in Practice  42
C = Professional and Personal Qualifications
   1 = with patients  35
   2 = with coworkers and others  30
   3 = work habits  61
   4 = personal attributes  42

One can readily see that 168 of the total 246 items (representing
sixty-eight percent) pertain to the overall category of Professional
and Personal Qualifications. In general, one might conclude that in
the evaluation of the clinical performance of students, physical
therapy educators are more concerned with personality characteristics.
and with interpersonal relationships than with basic knowledge or technical skills. This trend toward emphasis on personal attributes rather than demonstrations of technical abilities was noted in a large proportion of the rating scales in use by physical therapy schools. (9) In considering this apparent disproportion or emphasis on the personality aspects in the evaluation of clinical performance, one must delve into the structure of most physical therapy curricula. In general, the period of clinical training comes after the student has satisfactorily completed the academic portion of the curriculum. During the didactic phase of his training the student may have little or no contact with patients. It may be assumed that if a student has adequately mastered the material to which he is exposed during the academic session, he must have acquired basic knowledge and technical skills necessary for the treatment of patients. These can be and in most instances have been evaluated by means of written and practical examinations. Therefore, it seems logical that the most important areas for evaluation during the clinical education phase should be those which were not previously measured in the academic setting; i.e., personal attributes in dealing with patients and others in the real-life treatment atmosphere.

To provide an instrument of workable length but with an adequate sample from each category it was decided to have a total of twenty groups of forced-choice items. Each group contained three items and therefore may be referred to as a triad. The number of triads for each of the six categories was determined by the percent of items in that category. The percentages and number of triads for each category is shown in Table I.
### TABLE I

**DISTRIBUTION OF TRIADS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Items</th>
<th>% of Total</th>
<th>Number of Triads</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>36</td>
<td>15</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>B</td>
<td>42</td>
<td>17</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>C-1</td>
<td>35</td>
<td>14</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>C-2</td>
<td>30</td>
<td>12</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>C-3</td>
<td>61</td>
<td>25</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>C-4</td>
<td>42</td>
<td>17</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Totals</td>
<td>246</td>
<td>100</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>
The frequency distribution of D.I.'s is shown in Table II. In order to make use of the maximum number of items it was decided that each triad should contain one item with low D.I., one with a moderately high D.I., and one with a high D.I. A D.I. below 70 was considered to be low. This means that such an item would pertain to almost all physical therapy students, average as well as superior. The moderate range of D.I.'s was 76-82. These items would pertain to an above-average but not exceptional student. A D.I. above 83 was considered to be in the high range. These items would be selected only for the superior student. The ranges of D.I.'s from 71-75, and from 83-87 were discarded in order to avoid overlap.

Triads were compiled so that each contained one low D.I., one moderate D.I., and one high D.I. Items in each triad were selected so that the F.I.'s were as closely matched as possible. The average range of differences in F.I.'s throughout the scale was 10.6. The total range of scores for the F.I. was 113, so this represents about ten percent of the total possible range.

For scoring of the scale, values were assigned to each item in the triad as follows:

- High D.I. = 2
- Moderate D.I. = 1
- Low D.I. = 0

If the difference between any two D.I.'s in a triad was less than ten, the assigned value was the same for both. This resulted in having
## TABLE II

**FREQUENCY DISTRIBUTION OF D.L.'s**

<table>
<thead>
<tr>
<th>Possible Range</th>
<th>Actual Range</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100</td>
<td>44 - 98</td>
<td></td>
</tr>
<tr>
<td>97 - 100</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>93 - 96</td>
<td></td>
<td>17</td>
</tr>
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<td>91 - 93</td>
<td></td>
<td>17</td>
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<td>88 - 90</td>
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<td>85 - 87</td>
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<td>82 - 84</td>
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<td>73 - 75</td>
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<td>70 - 72</td>
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<td>9</td>
</tr>
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<td>67 - 69</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>61 - 63</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>58 - 60</td>
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<td>3</td>
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<td>43 - 45</td>
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<td>1</td>
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one triad with two items scored as 1, and one as 0; one triad with
two items scored as 1 and one as 2; and one triad with two items
scored as 2 and one as 0. Therefore, the minimum possible score became
1 and the maximum possible score 39. A copy of the completed rating
scale is included as Appendix D.
CHAPTER IV

VALIDATION AND RELIABILITY STUDY

I. VALIDATION

In order to set up normative data, the rating form was sent out to clinical supervisors and instructors in all approved schools, with the request that it be used on an experimental basis with students currently undertaking clinical training. A cover letter (Appendix E) briefly explaining the purpose of the study went with each set of forms. A total of 275 forms was sent out to those who indicated a willingness to participate in the study. Of these 240 completed forms were returned, representing eighty-seven percent. Fourteen of the forty-one physical therapy schools participated by returning forms on one or more students. Several other schools indicated a willingness to participate, but did not have students in clinical training during the two month period of the study.

Approximately three weeks after receipt of the completed experimental rating form, a copy of a second form (Appendix F) was sent. This form asked for an overall rating of each student "in comparison with other physical therapy students at his level of training and experience whom you have supervised or observed during the past three years." Students were to be rated as:
1 - Poor  
2 - Below average  
3 - Average  
4 - Above average  
5 - Outstanding  

<table>
<thead>
<tr>
<th>Rating</th>
<th>Percentile</th>
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<tbody>
<tr>
<td>1 - Poor</td>
<td>Lowest 10%</td>
</tr>
<tr>
<td>2 - Below average</td>
<td>Next 20%</td>
</tr>
<tr>
<td>3 - Average</td>
<td>Middle 40%</td>
</tr>
<tr>
<td>4 - Above average</td>
<td>Next 20%</td>
</tr>
<tr>
<td>5 - Outstanding</td>
<td>Highest 10%</td>
</tr>
</tbody>
</table>

A total of 223 of the second forms was returned, representing ninety-three percent of the 240 sent out. Two hundred and four of the ratings were for students in the final year of training, and only 19 were for students in the initial phase of clinical education. Therefore the nineteen forms for first-year students were not included in the validation study.

Each experimental rating form was scored according to the weights which had been assigned to each item. As mentioned previously, the total possible score was 39. The actual range of scores for the 204 forms was from 5 through 36. Table III shows the percentile ranks for all scores. The distribution of the scores was skewed with the tail toward the lower end of the scale. However, there was a more equitable distribution of scores with less cluster toward the top than has been found with the use of other rating methods.

To measure the validity of the scale, each of the scores on the experimental scale was correlated with the number circled for the rating of overall performance. The r-biserial method of correlation was used because it could not validly be assumed that the numbers provided
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</tbody>
</table>
for the overall rating represented a continuum. The overall ratings
were dichotomized into a Low group consisting of ratings of 1, 2 and 3,
and a High group consisting of ratings of 4 and 5. There was a total
of 91 ratings in the Low group and 113 in the High group, which gave an
approximately even distribution. The fact that with five possible
ratings, (and the upper two defined as including only the upper 30% of
students) over half were in the upper two categories is a clear indica-
tion of the tendency of physical therapy clinical supervisors to "over-
rate" or give high ratings to a disproportionate number of students.

Individual correlations were done on each of four schools who
completed 20 or more rating forms. The validity coefficients for these
are tabulated in Table IV. The total validity coefficient for the 204
forms from fourteen different schools was .75. The standard error for
this was .05 which is significant at the .05% level.

There are no data available with which to compare this validity
coefficient. The only previous study of validity done on a scale
applied to physical therapy students was an item analysis which resulted
in deletion of all items which did not differentiate between highest
and lowest criterion groups. (1)

One might question the practice of using another rating method
as a criterion measure of the validity of a rating scale. However, in
this case, no other criterion was feasible. In a somewhat similar study
reported by Berkshire and Highland, scores on a forced-choice scale
### TABLE IV

**VALIDITY COEFFICIENTS**

<table>
<thead>
<tr>
<th>School</th>
<th>N</th>
<th>$r_{bis}$</th>
<th>$\tilde{r}_{bis}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Colorado</td>
<td>20</td>
<td>0.59</td>
<td>0.26</td>
</tr>
<tr>
<td>Medical College of Virginia</td>
<td>27</td>
<td>0.63</td>
<td>0.17</td>
</tr>
<tr>
<td>U. S. Army</td>
<td>35</td>
<td>0.76</td>
<td>0.11</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>50</td>
<td>0.75</td>
<td>0.10</td>
</tr>
<tr>
<td>Compilation of 10 schools</td>
<td>72</td>
<td>0.80</td>
<td>0.07</td>
</tr>
<tr>
<td>Total of 14 schools</td>
<td>204</td>
<td>0.75</td>
<td>0.05</td>
</tr>
</tbody>
</table>
were compared with rank order data. They found validity coefficients ranging from .60 to .66. (4) In comparison with these data, it appears that the present experimental rating scale represents a valid measuring device.

II. RELIABILITY STUDY

In order to determine the reliability of the rating scale a split-half correlation was done. Instead of dividing the items in the conventional odd-even method, they were divided so that an equal number of items from each category was included in each half-test. Because there were an uneven number of triads in category A - Application of Knowledge of Basic Sciences and in category B - Application of Theory and Skill in Practice, one half-test contained an extra item of A and the other half-test an extra item of B. Since these are measures of knowledge or skill rather than personality factors, it was determined that this difference would not affect the result.

The Pearson product-moment correlation coefficient for the two halves of the test was .97. When corrected by the Spearman-Brown Prophecy Formula it became .95.

A total of 244 forms was used in the reliability study. This included the 204 used in the validation study plus 21 for which no validation rating sheet had been returned plus 19 forms completed for first-year students. The level of experience of the student being rated should have no influence on the reliability of the measuring device.
For the 244 forms utilized the mean was 24.28 and the standard deviation 6.65.

Reliability is a necessary condition for a measuring device to have validity. "The theoretical calling for the validity coefficient of a test is the square root of its reliability coefficient." (28) On the basis of this estimate the rating scale could theoretically have a validity coefficient as high as .99.

It was mentioned previously that the validity coefficient of .75 found by using a separate rating form might be questioned. The use of a rating as a criterion measure for validity of a rating scale is not completely justified. However, no other criterion was available. According to Remmers and others, validity may be equated with reliability in rating scales. (29) Remmers in The Purdue Rating Scale for Instruction Manual states that "to the extent that each...(rator) is self-consistent in his judgments, we are able to say that the rating scale is valid. In this case validity is synonymous with reliability." (29)

On the basis of the statistical evidence one may conclude that the rating scale which has been developed is an adequate measuring device in terms of its validity and reliability.
CHAPTER V

DISCUSSION AND SUMMARY

I. DISCUSSION

As mentioned in the introductory chapter, a rating scale may be evaluated in terms of its validity, reliability, and usability. This scale adequately satisfies the criteria of validity and reliability. To determine the usability of the scale one must consider several factors.

The purposes of evaluation were identified in the initial chapter as "1. to determine changes in the student in keeping with program objectives; 2. to determine effectiveness of instruction; and 3. to determine a 'grade' for the student."

(1) The mechanics of a forced-choice rating scale are such that the only information which can be made available to the rater or user of the scale is a single numerical score and some means of evaluating the score such as percentile ranks for the normative group. With this limited information, one cannot identify specific areas of strength or weakness of the individual being rated. Therefore the scale is not a useful instrument for determining changes in a student's behavior. It likewise does not lend itself to providing information which may be of value in counseling the student, or in helping to identify specific problem areas for a student.

The scale is of limited value in determining effectiveness of instruction. Since 70% of the items pertain to personality factors,
and only 30% to knowledge and skills, it is obviously not a useful device for evaluating effectiveness of academic teaching. It appears that it might be helpful in measuring the end-product of a physical therapy school in terms of attitudes and professional behavior. According to discussions of physical therapy school directors at a meeting of the Council of Physical Therapy School Directors in November, 1961, these are areas which are not now being adequately evaluated by most schools. If several schools were to use this same rating scale, it would be possible to compare schools in their effectiveness of education in professional attitudes and behavior.

The scale is most readily applicable for determining a grade for a student. An objectively determined numerical score is given which by comparison among students or reference to the normative data can easily be converted into a percentile or letter grade. It is probably most usable for students in the final stages of education. There would be two major disadvantages to using the scale on students in the initial phase of clinical education. Many schools do not provide any clinical education for their students until all or almost all academic work has been completed. Therefore the items and the indices developed from the judgments would be applicable primarily to advanced students. That this is true was evidenced by the presence of numerous low scores in the few rating forms which were received on first-year students. In addition, the lack of information for analyzing areas of weakness and thereby assisting the student toward full development
during the remainder of his education would be a definite disadvantage.

An important factor to consider in discussing usability is rater acceptance of a measuring tool. Several comments were received by raters describing the form as ambiguous, misleading, unfair, and difficult to complete. The rater in this case was asked to select one of three items of behavior, all of which were favorable. Some raters felt that to select one implied that the student did not possess the other two at all. Additional instructions might be included to clarify that the one selected is the most characteristic, and not necessarily the only one that pertains to the student. One must remember that all forms were mailed out to raters, and no verbal instructions or explanations were offered. If raters were educated in the rationale behind the development of the form and were made aware of its merits in terms of validity and reliability, they might be more amenable to the method. Hewitt states that "the validity of the rating scale depends largely upon the rater - upon his understanding of the traits appraised and his accuracy in rating them," and that "use of the scale should be preceded by a period of orientation and practice on its use." (1) With sufficient orientation and practice, raters might find this scale acceptable. However, one must be aware that in general the rater likes (and feels that he needs) to know the results of his rating. He wishes to have the power to manipulate the rating to the fullest extent. The forced-choice technique removes this power from the rater. The rater is forced to choose among
items without knowing which will influence the result toward a higher or lower rating. He must put together a jigsaw puzzle without having the satisfaction of seeing the completed picture in the end. This is probably the most vital factor in influencing the consumer acceptability of this rating scale.

It is believed that a forced-choice rating scale is less subject to "fakibility" than the usual rating form. (21) Most rating scales are totally subject to manipulation by the rater. If asked to give someone the highest or lowest rating possible, the rater has no difficulty in carrying this out. With a forced-choice scale, the rater cannot readily select items to give the rates the highest or lowest possible score. Lovell and Baner reported success in substantially reducing deliberate faking when using a forced-choice scale. (20) The present study does not include information on attempts to deliberately fake a high or low score. However, the author plans to carry out such a study with a representative sample of clinical supervisors in the near future.

It was mentioned previously that problems with present evaluation forms in use by physical therapy schools are questionable validity, inadequacy in range of scores received with cluster at the high end, and tendency to overall subjectivity in rating. (21) It is believed that the present rating form has satisfactorily overcome these problems. The usability of the form is somewhat limited. It should be mentioned that at the present time no practicable method for distribution and
scoring of the scale for a number of schools is yet available.

The normative data and validation study are based on a sample of physical therapy students from several different schools. If all or a majority of schools would utilize this form as at least a part of the evaluation of clinical performance, interesting data would be available for comparison of the overall educational programs of different schools. With groups of students from each school being rated on this form, information might be provided to each school on its areas of weakness and strength. This information would be helpful in evaluating the total curriculum of the school.

It is planned to continue the use of the experimental rating scale in at least one physical therapy school in conjunction with the rating form currently in use. The currently used scale also provides a single numerical score and therefore the results obtained on each of the two forms may be compared statistically. Other plans are to consider the use of the forced-choice scale with another less structured form of rating such as reporting of critical incidents.

II. SUMMARY

1. This study is concerned with the construction and validation of a forced-choice type of scale for rating clinical performance of physical therapy students.

2. Two hundred and forty-six items which were descriptions of
observable behavior were collected from local physical therapists and from rating scales currently in use in approved schools of physical therapy.

3. These items were rated for favorableness by 56 judges, and a Favorableness Index was calculated for each item.

4. Additional judgments on the items were obtained for rating of an outstandingly good student and one who performed poorly. From these was determined a Discrimination Index for each item.

5. Items were separated into six categories according to the area of behavior to which each pertained.

6. Triads were formed by selecting three items from a single category which were similar in F.I. but differed in D.I. Each triad contained one item of high D.I., one of moderately high D.I., and one of low D.I.

7. Scores were assigned to each item as follows:
   High D.I. = 2; Moderately high D.I. = 1; Low D.I. = 0.

8. Two hundred and forty-four ratings were completed on students in clinical training in fourteen different physical therapy schools.

9. A second overall rating for each student was used as a criterion measure for validation. The validity coefficient (r biserial) was .75 with a standard error of .05.

10. The Pearson product-moment correlation coefficient for a
split-half reliability test was .98.

11. The rating scale meets criteria of reliability and validity.

12. The usability of the scale is somewhat limited. It is suggested that it be used for comparing student performance in different schools of physical therapy.

13. Future studies will include a "validity" test; and use of the rating scale in conjunction with another conventional method of rating.
BIBLIOGRAPHY
BIBLIOGRAPHY


9. Compilation of clinical training rating forms from approved schools of physical therapy. 1952.


19. Letters and comments from physical therapy clinical supervisors regarding rating scales.


APPENDICES
APPENDIX A

LIST OF ITEMS

Place the appropriate number on the line after the phrase. MARK EVERY PHRASE. GUESS IF YOU DO NOT KNOW.

Is neat and professional in appearance............................................................ 1.____
Willingly accepts new or modified methods or techniques................................. 2.____
Demonstrates knowledge of the properties of ultrasound..................................... 3.____
Systematically assembles necessary materials for work...................................... 4.____
Appreciates importance of maintaining careful records and statistics.................. 5.____
Demonstrates perserverance with difficult patients........................................... 6.____
Is not a "clock watcher"..................................................................................... 7.____
Pays attention to need for maintaining physical facilities.................................... 8.____
Follows prescriptions closely............................................................................... 9.____
Sees things to do and does them without being told............................................ 10.____
Assists patients in learning activities of daily living.......................................... 11.____
Plans well in advance for patient and other assignments.................................... 12.____
Shows skill and manual dexterity in working with patients................................ 13.____
Has dignified but friendly attitude toward patients............................................ 14.____
Has a good workable knowledge of the condition being treated.......................... 15.____
Shows interest in current professional affairs and advances................................ 16.____
Readily adapts to departmental routine............................................................ 17.____
Does not give unsolicited advice to physician.................................................... 18.____
Advises supervisor when supplies are low....................................................... 19.____
Shows improvement with increased experience................................................ 20.____
Does not become too wrapped up with patient's problems.................................. 21.____
Patients warm up to him quickly......................................................................... 22.____
Demonstrates knowledge of the properties of high frequency currents................... 23.____
Shows attention to detail where necessary....................................................... 24.____
Is able to translate basic knowledge into sound, practical, performance................ 25.____
Shows exceptional ability to motivate patient to a higher degree than usual............ 26.____
Is able to judge when to make modifications in treatment procedures learned in school in relation to procedures seen in clinics......................... 27.
Has exceptional ability in recognition of pertinent information and in organization of recording.......................................................... 28.
Respects confidential nature of patient's medical records............................... 29.
Grasps a situation and draws correct conclusions........................................ 30.
Contributes to orderly departmental management........................................ 31.
Knows the physiological changes of degeneration and regeneration............... 32.
Has unquestioned integrity........................................................................... 33.
Has unusual ability in recognition of pertinent information and clarity of expression................................................................. 34.
Offers suggestions for changes in methods that may improve the patient's treatment program............................................................... 35.
Applies principles in basic sciences to understand theory of procedures used................................................................. 36.
Is aware of response desired and maintains it at desired level..................... 37.
Shows intellectual curiosity and inquisitiveness.......................................... 38.
Recognizes signs of fatigue, pain, tenderness, and sensory changes............... 39.
Can be depended upon to carry through all assignments.................................. 40.
Appears self-confident when giving treatments........................................... 41.
Offers help freely when needed................................................................... 42.
Demonstrates some leadership ability............................................................ 43.
Has awareness of ultimate goal of treatment for patient.............................. 44.
Recognizes normal color, respiration, blood pressure, pulse and temperature.. 45.
Acquaints self with reasons for changes in treatment................................... 46.
Uses good principles of body mechanics in lifting and supporting patients, leaning, reaching and stooping........................................... 47.
Becomes informed of all aspects of a patient's illness - diagnosis, treatment, course in hospital, etc................................................... 48.
Has good powers of observation................................................................. 49.
<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrates basic knowledge of functional anatomy and kinesiology.</td>
<td></td>
</tr>
<tr>
<td>Maintains even temper.</td>
<td>50</td>
</tr>
<tr>
<td>Shows exceptional ability in dealing effectively with difficult patients.</td>
<td></td>
</tr>
<tr>
<td>Makes constructive suggestions regarding procedures or equipment.</td>
<td>53</td>
</tr>
<tr>
<td>Maintains cheerful and enthusiastic manner when imparting instructions to patients.</td>
<td>54</td>
</tr>
<tr>
<td>Has diversified knowledge and can converse with patient according to patient's interests.</td>
<td>55</td>
</tr>
<tr>
<td>Knows the physiological effects of different kinds of exercise.</td>
<td>56</td>
</tr>
<tr>
<td>Thorough in his treatment of every patient.</td>
<td>57</td>
</tr>
<tr>
<td>Does not blame others for his own mistakes.</td>
<td>58</td>
</tr>
<tr>
<td>Considers all factors relative to the total treatment program.</td>
<td>59</td>
</tr>
<tr>
<td>Is skillful in gaining patient's confidence.</td>
<td>60</td>
</tr>
<tr>
<td>Willingly takes on extra duties.</td>
<td>61</td>
</tr>
<tr>
<td>Maintains interest in treatment even over long periods of time.</td>
<td>62</td>
</tr>
<tr>
<td>Operates effectively under adverse conditions.</td>
<td>63</td>
</tr>
<tr>
<td>Knows the physiological effects of different types of electrical currents.</td>
<td>64</td>
</tr>
<tr>
<td>Has clear understanding of facts which are pertinent to the specific work performed.</td>
<td>65</td>
</tr>
<tr>
<td>Inspires confidence of medical colleagues.</td>
<td>66</td>
</tr>
<tr>
<td>Is efficient in handling equipment.</td>
<td>67</td>
</tr>
<tr>
<td>Knows the physiological effects of commonly used chemical agents and drugs</td>
<td>68</td>
</tr>
<tr>
<td>Works effectively without supervision.</td>
<td>69</td>
</tr>
<tr>
<td>Has understanding of pathological factors underlying medical disabilities.</td>
<td>70</td>
</tr>
<tr>
<td>Thinks through consequences before acting.</td>
<td>71</td>
</tr>
<tr>
<td>Establishes good rapport with patients.</td>
<td>72</td>
</tr>
<tr>
<td>Asks only diplomatic questions in front of patients.</td>
<td>73</td>
</tr>
<tr>
<td>Can adjust to the needs of the patient.</td>
<td>74</td>
</tr>
<tr>
<td>Shows good technique in modality application.</td>
<td>75</td>
</tr>
<tr>
<td>Knows the physiological effects of heat cold, and light.</td>
<td>76</td>
</tr>
</tbody>
</table>
Adjusts equipment and materials with ease and assurance........................................ 77.
Shows ability to instruct others................................................................................... 78.
Readily adjusts treatment procedures to meet needs of patient...................................... 79.
Gets along well with staff and other co-workers.......................................................... 80.
Readily adjusts to necessary changes............................................................................ 81.
Recognizes pertinent facts and expresses them in suitable words................................. 82.
Is mentally quick and alert.............................................................................................. 83.
Perceives own function and duties in relation to those of others.................................... 84.
Accepts people regardless of personality or cultural differences.................................. 85.
Is able to draw essential features of diagnosis together to plan suitable treatment program.......................................................... 86.
Establishes patient relationships easily and gains cooperation of his patients readily.......................................................... 87.
Is willing to inconvenience self for good of group and/or patients............................... 88.
Does not let difficulties get him down............................................................................ 89.
Shows interest and enthusiasm in work.......................................................................... 90.
Reports promptly for work and other obligations.......................................................... 91.
Returns equipment and materials in good condition to their proper place........................................ 92.
Shows understanding of principles and procedures of prescribed treatment............. 93.
Can analyze abnormal pattern of motion........................................................................ 94.
Instills confidence in patients and leaves them with sense of accomplishment following treatment.......................................................... 95.
Keeps records up to date................................................................................................. 96.
Is courteous to all............................................................................................................ 97.
Anticipates needs of co-workers..................................................................................... 98.
Asks pertinent questions................................................................................................. 99.
Can analyze complications possible from muscle imbalance or dysfunction........ 100.
Presents accurate, up-to-date, well-organized and pertinent oral and written communications.......................................................... 101.
Does not try to impress others with his knowledge...................................................... 102.
Exhibits pleasant agreeable manner to patients and to co-workers

Refrains from discussing personal problems with patients

Is willing to give and take

Shows enjoyment in work

Understands normal muscle action

Reacts appropriately to moods of others

Offers patient suitable goals

Understands explanations of new equipment

Gives instructions according to patient's level of understanding

Carries out directions of supervisors without argument, sarcasm or passive acceptance

Does not become emotionally involved in patients' problems

Exercises appropriate discretion at all times

Asks thoughtful questions and listens to the explanation

Demonstrates understanding of principles of leverage and torque

Plans ahead for proposed changes in the schedule

Is loyal to and cooperative with the staff

Patient is always oriented regarding treatment

Usually able to see all sides of a situation

Offers assistance without being asked

Takes advantage of opportunities for professional growth

Has cheerful disposition

Knows normal ranges of joint motion

Uses time effectively

Personal hygiene is above reproach

Makes an effort to answer own questions through reference to source material before requesting help from supervisors

Knows origin, insertion, and innervation of muscles

Pays careful attention to instructions
Thinks for himself while carrying out treatments..............................
Demonstrates neatness in work habits............................................
Uses appropriate safety measures.................................................
Understands the usual patient reactions to disease or disability........
Resourceful when assistance is not forthcoming..............................
Writes well-constructed progress notes........................................
Knows and stays within the limits of professional behavior.............
Demonstrates the ingenuity to make the patient's program interesting and
rewarding..........................................................................................
Understands use of polarity in testing and muscle stimulation.......... 
Uses well-modulated audible speaking voice.....................................
Has good posture in sitting, standing and walking..........................
Shows initiative in work, trying different methods until he finds the
best...................................................................................................
Exhibits general good health and vitality........................................
Uses good massage technique.........................................................
Understands use of polarity in iontophoresis...................................
Finds worth while and productive activities when not doing assigned
duties............................................................................................... 
Acts as if it is a pleasure for him to treat patients...........................
Demonstrates understanding of principles of buoyancy, hydrostatics, and
hydrodynamics..................................................................................
Gives exercises at proper rate of speed.............................................
Is not ashamed to admit lack of knowledge of specific things...........
Maintains patient's confidence in the doctor....................................
Adheres to assigned schedule.........................................................
Understands the healing process in such problems as fractures and ampu-
tations............................................................................................
Is alert to the feelings and to the comfort of the patient..................
Is able to improvise equipment to accomplish desired goals............
Uses accurate and appropriate medical terminology......................... 156.
Demonstrates maturity in dealing with patients.............................. 157.
Recognizes secondary symptoms and conditions.............................. 158.
Shows positive attitude toward suggestions and criticisms.................. 159.
Recognizes and appreciates the contribution of other services in patient care................................................................. 160.
Modifies approach to patient according to age, sex, disability and maturity................................................................. 161.
Understands remissions and exacerbations in progressive diseases............. 162.
Uses hospital charts and records intelligently and effectively............... 163.
Does his share toward maintaining appearance of the clinic................ 164.
Is eager to contribute to the advancement of his profession by participation in local and national professional activities.................. 165.
Is friendly with the patient within suitable limits.......................... 166.
Positions the patient for comfort, security, and ease of treatment....... 167.
Accepts constructive criticism well........................................... 168.
Makes effort to gain thorough understanding and investigate all possible factors................................................................. 169.
Exhibits firmness with patients who need it.................................. 170.
Seeks answers to questions by reading patient's chart and pertinent reference material................................................................. 171.
Does not show feelings about unusual conditions or behavior of patient.. 172.
Applies braces and checks for fit, alignment, etc............................. 173.
Has outstanding ability in planning and imparting instruction............ 174.
Shows proper respect for superiors........................................... 175.
Understands the abnormalities in bone and joint diseases and disabilities 176.
Needs minimal supervision following observation and direction.......... 177.
Is tactful................................................................. 178.
Is competent in a quiet manner............................................. 179.
Checks to be sure written and verbal instructions are understood....... 180.
Has insight concerning personal limitations................................ 181.
Has insight concerning personal limitations........................................ 181.
Is polite................................................................................................. 182.
Accurately performs measurements for fitting patient with crutches or cane................................................................. 183.
Knows the significance of common neurological tests......................... 184.
Exhibits kindness toward patients...................................................... 185.
Shows no resentment against authority.............................................. 186.
Is a good listener.................................................................................. 187.
Recognizes the clinical manifestations of peripheral nerve injuries...... 188.
Exhibits patience while treating a patient........................................... 189.
Accurately performs length and circumferential measurements........... 190.
Has a knowledge of the common neuromuscular disabilities................ 191.
Demonstrates and understands importance of rapport.......................... 192.
Exhibits ability to find needed information.......................................... 193.
Makes contribution to staff conferences............................................. 194.
Has and uses a good vocabulary......................................................... 195.
Exhibits independence in further study.............................................. 196.
Applies same rules of courtesy for subordinates as for superiors........ 197.
Participates actively in group discussions.......................................... 198.
Shows initiative in suggesting ways to improve safety measures........... 199.
Recognizes the clinical manifestations of upper motor neuron lesions... 200.
Works well as part of a team.............................................................. 201.
Profits from criticism........................................................................... 202.
Cooperates with other services in patient care.................................... 203.
Is able to discuss problems with department personnel without argument or emotional involvement................................. 204.
Satisfactorily performs and records ranges of joint motion................ 205.
Anticipates work and performs it with the independence desirable........ 206.
Recognizes the clinical manifestations of lower motor neuron lesions... 207.
Demonstrates self-control................................................................. 208.
Ideas and methods to improve patient's program are well thought out and suggestions are presented at proper time and place and to proper persons.

- Has a good sense of humor.
- Knows the physiological effects of ultrasound.
- Performs more work than the amount expected.
- Makes necessary preparations in advance for the patient.
- Maintains desirable rapport with hospital personnel other than those in the department of physical therapy.
- Treats patient as a person - not a pathological condition.
- Rarely complains of his own discomforts.
- Discusses personnel and patients only when appropriate and with the proper persons.
- Satisfactorily carries out and completes a manual muscle evaluation.
- Modifies patient's program in relation to patient's changing condition without exceeding authority.
- Maintains good working habits.
- Appears to understand individual differences in people and shows an understanding of the problems of each patient.
- Faces up to new and difficult situations with poise and confidence.
- Appreciates and maintains professional standards of conduct.
- Carries out a satisfactory posture analysis and evaluation.
- Can cope with an average treatment load without sacrificing quality of treatment.
- Has achieved a high level of understanding in assuming the role of the professional person.
- Checks patient frequently during heat or electrical treatment.
- Smiles readily and at the appropriate time.
- Assists patient without getting in his way.
- Uses good technic in electrical stimulation and testing.
- Recognizes errors and reports them.
- Remains calm when responsible for more than one patient under treatment.
- Shows willingness to learn.
Uses standard exercise equipment to advantage.......................... 234. -10- 
Adheres to the rules of the institution.................................................. 235. 
Is able to analyze abnormalities in gait patterns.................................. 236. 
Assumes responsibility.............................................................................. 237. 
Is aware of problems which he can solve without assistance and those for which he needs help................................................................. 238. 
Adequately instructs patient and/or parent in home program.................... 239. 
Plans and administers a suitable exercise program.................................. 240. 
Skillfully leads group activities where appropriate.................................. 241. 
Does not substitute own judgement for physician's judgement in treating patient................................................................. 242. 
Is reliable in execution of tasks and in following regulations.................... 243. 
Keeps up with professional journals and literature.................................. 245. 
Encourages the patient to be as independent as possible, assisting only as necessary............................................................. 246. 
Uses good technic in application of forms of heat..................................... 249. 

INSTRUCTIONS:

Now tell where this student would rank according to overall performance if he were compared with a typical group of 20 students. If he would be one of the poorest encircle a number near the "1" end of the scale which best shows his standing. If he would be one of the best, encircle an appropriate number near the "20" end of the scale. If he would be about average, encircle a number around 10 or 12.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
(Poor) (Average) (Good)

Please sign your name at the bottom of this sheet.
APPENDIX B

INSTRUCTIONS FOR F.I.

The School of Physical Therapy

Medical College of Virginia

We are asking for your judgment as a physical therapy student or a graduate physical therapist on the favorableness of certain items or characteristics as applied to physical therapy students.

Attached you will find a number of phrases which have been used to describe physical therapy students. Mark each phrase from 1 to 5 according to its degree of favorableness when applied to a physical therapy student:

5 - Extremely favorable
4 - Favorable
3 - Neutral
2 - Unfavorable
1 - Extremely unfavorable
Because of your interest and experience in educating physical therapy students, we are asking your cooperation in a research project concerned with evaluation of clinical performance of physical therapy students. We request that you complete each of the enclosed forms according to the directions below and return them in the enclosed envelope (second class mail) prior to June 10. These items will later be compiled into a forced-choice rating scale, which we hope will provide a more objective and valid method of evaluating clinical performance than is now in use.

Thank you for your assistance.

Margot Trimble
Assistant Professor

INSTRUCTIONS:

Select two physical therapy students whom you have observed during some phase of clinical training - one should be an outstandingly good student - one a student who performed poorly. Fill out one form on each as indicated.

On the enclosed forms you will find a number of phrases which have been used to describe physical therapy students. Mark each phrase from 1 to 5 according to how well it describes the particular student you are thinking of. For each phrase ask yourself the following question: Does this phrase describe the student I am thinking of

5 - to the highest degree possible or all of the time?
4 - to an outstanding degree or most of the time?
3 - to an average or moderate degree or often?
2 - to a limited degree or seldom?
1 - to a slight degree, rarely, or not at all?

Be sure you think of a single student when assigning ratings. Both good and poor students may have some of these traits to the same degree even though they differ in overall performance.
APPENDIX D

EXPERIMENTAL RATING FORM

School of Physical Therapy
Medical College of Virginia
Richmond 19, Virginia

CLINICAL TRAINING RATING FORM
(Experimental)

Name of student ____________________________ Date __________________
School attending ____________________________ r. Sr. Certif. __________
Name of Clinical Affiliation ____________________________
Address __________________________________________

How long has this student spent at your institution? ____________________________
Name(s) of Clinical Supervisors ____________________________

INSTRUCTIONS: Please complete this form by circling for each group the letter in front of the phrase which is most descriptive or most characteristic of the student whom you are rating. Circle only one under each number.

1. a. Does not become emotionally involved in patient's problems.
   b. Does not let difficulties get him down.
   c. Demonstrates some leadership ability.

2. a. Recognizes adverse psychological reactions.
   b. Applies principles learned in basic sciences to understand theory of procedures used.
   c. Has a knowledge of the common neuromuscular disabilities.

3. a. Asks only diplomatic questions in front of patients.
   b. Refrains from discussing personal problems with patients.
   c. Offers patient suitable goals.
4. a. Plans and administers a suitable exercise program.
   b. Offers suggestions for changes in method that may improve the patient's treatment program.
   c. Applies braces and checks for fit and alignment.

5. a. Is not a "clock watcher".
   b. Anticipates work and performs it with the independence desirable.
   c. Is eager to contribute to the advancement of his profession by participation in local and national professional activities.

6. a. Reacts appropriately to moods of others.
   b. Has good posture in sitting, standing and walking.
   c. Smiles readily and at the appropriate time.

7. a. Knows normal ranges of joint motion.
   b. Demonstrates and understands importance of rapport.
   c. Understands the usual patient reactions to disease or disability.

8. a. Inspires confidence of medical colleagues.
   b. Offers help freely when needed.
   c. Recognizes and appreciates the contribution of other services in patient care.

   b. Uses good principles of body mechanics in lifting and supporting patients, leaning, reaching and stooping.
   c. Adequately instructs patient and/or parent in home program.

10. a. Keeps up with professional journals and literature.
    b. Makes an effort to answer own questions through reference to source material before requesting help from supervisors.
    c. Adheres to assigned schedule.
11. a. Exhibits general good health and vitality.
   b. Has and uses a good vocabulary.
   c. Is competent in a quiet manner.

12. a. Can analyze complications possible from muscle imbalance or dysfunction.
   b. Is able to translate basic knowledge into sound practical performance.
   c. Understands normal muscle action.

13. a. Establishes good rapport with patients.
   b. Does not become too wrapped up with patient's problems.
   c. Is aware of response desired and maintains it at desired level.

14. a. Exhibits independence in further study.
   b. Makes necessary preparations in advance for the patient.
   c. Returns equipment and materials in good condition to their proper place after using them.

15. a. Maintains desirable rapport with hospital personnel other than those in the department of physical therapy.
   b. Discusses personnel and patients only when appropriate and with the proper persons.
   c. Asks thoughtful questions and listens to the explanation.

16. a. Thinks through consequences before acting.
   b. Exercises appropriate discretion at all times.
   c. Personal hygiene is above reproach.

17. a. Uses good massage technic.
   b. Is able to judge when to make modifications in treatment procedures learned in school in relation to procedures seen in clinics.
   c. Modifies approach to patient according to age, sex, disability, and maturity.
18. a. Works effectively without supervision.
   b. Reports promptly for work and other obligations.
   c. Appears self-confident when giving treatments.

19. a. Treats patients as a person - not a pathological condition.
   b. Instills confidence in patients and leaves them with sense of accomplishment following treatment.
   c. Respects confidential nature of patient's medical records.

20. a. Shows willingness to learn.
   b. Is neat and professional in appearance.
   c. Shows improvement with increased experience.

Signature of person completing this form ________________________________
Last year you helped us by completing forms consisting of items on which to rate physical therapy students in clinical training. Thank you for your assistance in completing the forms. From these items a rating scale has been compiled, and a copy is enclosed.

We are currently in the process of doing a validation study on this rating scale. For this purpose we would like to have it used on as many students as possible during the next two months. If you would be in a position to use it on the students currently in clinical training, please let us know, and we will be glad to provide you with as many forms as you desire.

Because the form is new, and we do not yet have any normative data, it cannot be used for actual ratings at this time. All forms have to be returned to us for scoring.

We are anxious to determine whether the enclosed form provides a more objective and valid method of evaluating clinical performance than is now in use. Therefore, we would like to encourage you to make use of it, and assist in the validation study if possible.

We appreciate your interest and assistance.

Margot Trimble
Assistant Professor
To:

As part of our validation study, we are requesting that you complete the information requested below on the student or students for whom you completed our Experimental Clinical Training Rating Form.

Thank you for your assistance.

Name of Student: ____________________________________________

Please rate the above-named student in comparison with other physical therapy students at his level of training and experience whom you have supervised or observed during the past three years.

Circle one number in front of the descriptive phrase which you believe best describes this student's total performance as a student physical therapist.

1 - Poor                           Lowest 10%
2 - Below average                  Next 20%
3 - Average                        Middle 40%
4 - Above Average                  Next 20%
5 - Outstanding                    Highest 10%

Your signature ____________________________

Date ________________________________
VITA

Margot Triable was born on October 18, 1926, in Orange, New Jersey. She graduated from Columbia High School in South Orange, New Jersey in June, 1944. She attended Vassar College in Poughkeepsie, New York, and graduated with a Bachelor of Arts degree with a major field of Psychology in June, 1947. She attended Stanford University, Stanford, California, beginning in March, 1948 and completed requirements for the Certificate in Physical Therapy in September, 1949. She began full-time study in Psychology in the Graduate School, University of Richmond, in February, 1959.