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ABSTRACT

The usual reason for using the Q-sort technique has been to acquire information about the subjects doing the sorting, but this paper concerns the construction of a Q-sort which deals with information about the items comprising the Q-sort; more specifically, the knowledge and ability competencies of teachers of graduate level courses. A list of competency items was compiled from the state requirements for certification, the course descriptions in the university catalog, the faculty involved, and a critical incident questionnaire completed by a sample of students. The items were placed on the backs of cards; students were asked to sort them as to relative importance; and teachers were asked to sort them using their own level of adequacy as the criterion. In this way, the level of adequacy for each competency for each teacher can be determined and compared with the results of the student data, identifying gaps between what the students feel is important for the faculty to be competent in and what the faculty feel they are actually competent in. (BW)

A Use of the Q-sort Technique in Educational Evaluation

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There are various instruments which can effectively be used to evaluate an educational program. One practical and informative instrument which has been used is the Q-sort technique. The usual reason for using the Q-sort technique has been to acquire information about the subjects doing the sorting rather than information about the items comprising the Q-sort. Many of the studies which used a Q-sort technique such as Stephenson(1953,1967), Kerlinger(1972), and Broen(1957) were basically attempting to classify groups of persons according to their responses to the items. There have been relatively few studies which dealt with the items of the Q-sort itself and the information acquired about them. One of those that did was a study by Sontag(1968) in which the task was to determine which behaviors of elementary and secondary school teachers would be rated as desirable. A Q-sort of items which were brief descriptions of teaching behaviors was presented to a large sample of elementary and secondary teachers. The teachers then rank ordered the items according to desirability. Now that it was determined by consensus of this sample which behaviors were desirable, present and incoming teachers could be evaluated according to this established criteria. Another example of using a Q-sort to acquire information about the items of the Q-sort was a study by the Far West Laboratory For Educational Research and Development(1973). This Q-sort was sent through the mail to various personel associated with Early Childhood Education or Head Start programs. It asked that various competencies of teachers in child development programs be ranked in order of importance. From this general survey, the most important com-

petencies could be determined and incorporated into the training programs for teachers in this field. The particular use of the Q-sort to be explained follows close to the Far West Laboratory study since information about competencies wishes to be acquired rather than information about the sample responding to the instrument. More specifically, this paper concerns the construction of a Q-sort which deals with the knowledge and ability competencies of teachers of graduate level courses. Through this technique it is possible to determine the amount of importance that graduate students place upon certain competencies of a graduate level teacher.

By again using this same technique, it can be determined in which areas the actual teachers concerned feel that they have their strongest competencies. The function of educational evaluation is achieved by comparing the competencies rated important by the students to the actual competencies possessed by their teachers. For areas of expertise that the students feel are important, it can be determined if there exists among the faculty a person or persons who feel the adequately possess this expertise. Gaps between what competencies the students feel are important for the teacher to have and what the teachers actually have could be identified. From such identifications, recomendations could be made as to how the curriculum and/or the faculty could be changed to fill these gaps. For any given program, therfore, its faculty could be evaluated by this technique in terms of their fufilling the areas of competency considered important by the students.

This Q-sort technique was incorporated into a larger evaluation design of the Master's program of a small, private, graduate institution. In this institution the Master's program was subdivided into four separate programs (Counseling and

Guidance, Early Childhood Education, Educational Administration and Supervision, and Learning Technology). It was necessary, therefore, to evaluate each program separately according to the specific competencies required for teaching that field or specialty.

Method of Construction

The first step was a method for determining the list of competency items for the Q-sorts in each specific program. Lists of competencies needed to be formed which were appropriate for a specific program but would obviously differ between programs. In other words, no general list could be formed because many competencie were specific to certain programs. There were four sources of information which determined the list of teacher competencies for any given program. One basic source was the state requirements of competency for certification. This was only applicable to those programs related to state certification. Another basic source was the course descriptions given in the university's catalogue. From these detailed descriptions it was easy to derive certain competencies that a person teaching such a course must possess. Thses course descriptions also brought to light both the practical (things a teacher should know how to do) and the theoretical or knowledge(things a teacher should know about) competencies for each program. A third source was the faculty involved. Each teacher was requested to add on to the lists of competencies acquired from the first two sources. In this way certain specific competencies not otherwise revealed would be included. It would have been better if a large survey similar to the Far West Laboratory survey could have been made of several teachers in each field, so that a truly comprehensive list of competencies might be formed. Due to time and economic limitations this survey was not attempted.

Therefore, only the additions (and biases) of the faculty involved were included. A fourth source which also revealed specific competencies was a critical incident questionnaire completed by a sample of students. From the critical incident responses, both positive and negative, additional competencies could be recognized and included in the lists. The combination of these sources created reasonable lists of competencies for a teacher in each of the four specific graduate programs.(see Appendix A).

The items on the lists were transfered by means of a computer to adhesive lables which were placed on the back of individual computer cards. Each card was randomly numbered and the set of containing all the items of a particular list were combined into a deck. These Q-sort decks were then administered in a group setting to several graduate classes. Each student recieved a deck which contained only the items pertaining to his particular program (i.e. Counseling and Guidance), a list of instructions, and a score sheet. The general instructions were to manipulate the deck of cards in the following fashion:

1. Shuffle the deck and look over each card quickly.
2. Sort the competency cards into three piles based upon the criteria of pile A containing those competencies which you feel are the most important for a teacher of graduate level courses to have. Pile B should include those competencies which you feel are not quite as important, and pile C those which are least important.
3. Record the competency card number on the score sheet in either column A, B, or C depending upon which pile it was placed in.

The same decks of competency cards were also given to the faculty with the same general instructions except that they were to use their level of adequacy as the criteria for separation. Pile A

would be those competencies in which they as a teacher of graduate level courses felt they were more than adequate to teach. Pile B were those in which they felt they had at least minimal adequacy, and pile C were those in which they felt they were inadequate to teach. An added requirement for the faculty was that they also take each pile separately and rank order the items in that pile according to strength of adequacy. The responses on their score sheets therefore represent a rank ordering of all the items in three categories of adequacy. This involved method of rank ordering was initially attempted by the students but was abandoned due to many tied ranks between which they felt discrimination was impossible. This was discovered by administering the Q-sort to a small pilot sample of students. These sample students voiced negative responses toward the Q-sort task since it was forcing them to differentiate between items which they felt were equal. Since there are arguments in the literature such as Block(1956) and Jones(1956) as to the benefits of Forced vs. Unforced sorting procedures, it was decided to allow Unforced sorting as it was more agreeable for the students.

Analysis

For each item, the mean and the frequencies of the students' responses for the three categories of importance could be graphically depicted with a histogram (see Appendix B). For each item, the mean of the students' responses could easily be determined by giving scores of 1,2,3 to piles A,B,C respectively. The lower the mean, the greater an items importance. Inspection of the histogram and a rank ordering of the means both revealed the relative importance of each item to the students. The responses of the teachers per item could also be depicted through a histogram.

The means, however, did not have to be determined because if at least one teacher had an expertise in a particular field and was teaching this field then there was no gap. Gaps appeared if a particular competency had recieved a high rating of importance by the students but there were no faculty members which gave it a rating of at least minimal adequacy. By this method it could be seen where the competencies desired by the students were not within the repetoire of adequate competencies reported by the faculty.

A more complete method of analysis would be to compute a modified rank order correlation to reflect the degree of consensus among the students involved. A possible result of this would be to identify clusters of correlations from a matrix which would indicate different groupings of students (Kerlinger, 1973). By this method it could be seen if perhaps there are two opposite student orientations of importance such as "proactical application competencies" vs. "theoretical knowledge competencies". If this were the case then an item may get highly rated by one group and very low by another which would result in a misinterpreted, compromised mean. The recognition of differing groups would be an aid in reforming the curriculum and faculty to either include both orientations equally in courses or have two separate courses. If student intercorrelations are homogenous which would denote a fair amount of agreement among the students, then merely rank ordering the means of their responses will represent a reasonable estimate of the amount of importance placed upon a particular competency.

Final inspection of the results completes the evaluation of this aspect of a program. If there are gaps then they will

have been recognized. From this point it can then be recommended that certain faculty members increase their present levels of particular competencies, or that new or adjunct faculty be hired that have adequate competencies to fill positions not covered by the present faculty. Another interpretation of the results can show if the emphasis of the present curriculum is being placed upon the wrong areas. This would suggest a reallignment toward areas considered more important by students. For example, in this study it was found that students in Counseling and Guidance rated "research and techniques of Bio-feedback" as rather important, but ther were not any classes offered in this area even though there were two qualified instructors on the present faculty. The obvious suggestion to be made is that there be a course concerning Bio-feedback. The other results of this study were basically positive for the teachers reported expertise in most of the competencies rated important by the students. In the few areas that the teachers did not have expertise there were highly qualified adjuncts which taught this specialty.

In conclusion, it appears that this particular use of the Q-sort technique is a productive tool in educational evaluation. First it can be determined which competencies should be within the range of the faculty. Then it can be shown through a histogram which competencies are considered important by the students. It can also be shown if the data analyzed from the students represents a homogenous group or not by intercorrelating each student's responses with each other. The resultant intercorrelation matrix can be inspected for groupings of students who correlate well among themselves but not with others. The level of adequacy for each competency for each teacher can be determined and compared

with the results of the student data. Inspection of these comparison can reveal gaps between what the students feel is important for the faculty to be competent in and what the faculty feel they are actually competent in. Thus an educational program can be evaluated in terms of the specific competencies of its faculty.

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Appendix A

Examples of items comprising the Q-sort for Counseling and Guidance for which teachers in this field should know about or know how to do.

1. Abnormal behavior and common disorders such as neuroses, psychoses, organic conditions, etc.
2. The physiological processes of behavior.
3. Approaches and applications of marriage and family counseling.
4. Various theoretical approaches to the explanation of social chang
5. Theories, terminology, and research in the learning process.
6. Theory and principles involved in operant conditioning and contingency management.
7. Methods of diagnosis and treatment of learning disabilities.
8. Actual experience with the practical aspects and procedures involved in counseling.
9. In depth analysis of those factors which put particular children to a disadvantage in our present public educational system.
10. Principles of descriptive and inferential statistics.
11. The physical and mental stages of human development.
12. Techniques and practical applications of behavior modification.
13. The various approaches and methodologies of counseling including research evidence and current issues.
14. Actual testing of children 3-8 years old to assess learning styles and diagnose potential problems.
15. Aspects of verbal and non-verbal interpersonal communication.
16. Actual experience with the practical aspects and procedures involved in counseling.
17. Use of Bio-feedback as a research and therapy technique.
18. This card may be filled in and placed if desired.

Appendix B

Example of histogram representation of students responses to item number 16 on the Counseling and Guidance Q-sort.

1- very important
2-minimal importance
3-not important

item 16: Actual experience with the practical aspects and procedures involved in counseling.

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VARIABLE NUM 16  LOWEST SCORE =  1.0  HIGHEST SCORE =  3.0  SCALE = X 1
RANGE =  3.0  MEAN =  1.1 STANDARD DEVIATION =  0.4 STAN ERROR =  0.05 NUM SUBJ =  65
CUM FREQ FREQ     RANGE
                       ..............................................................
 60   65   60   0.50 - 1.50 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 63    3        1.50 - 2.50 XXX
 65    2        2.50 - 3.50 XX
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