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The Nominal Group Technique- An Approach for Specifying Career Objectives and Methods

Michael Bullis

Research and Training Center on Deafness and Hearing Impairment, Little Rock, Arkansas

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Michael Bullis, Ph.D. Research and Training Center on Deafness and Hearing Impairment Little Rock, Arkansas

The University of Arkansas' Rehabilitation Research and Training Center on Deafness and Hearing Impairment (RTC) initiated a career education project in the fall of 1982. The objectives of this project were (Second Annual Report, 1983, p. 125-126):

- To review existing career education programs, materials, curricula, techniques and procedures used in order to assess their potential applicability for use with hearing-impaired clients in rehabilitation settings.
- To field-test the selected curriculum materials/program in one or more rehabilitation programs serving hearing impaired clients, evaluating the utility of the experimental career education unit for increasing the amount and quality of occupational information and understanding in hearing impaired client groups.
- To package those materials of demonstrated utility for distribution and use in deafness rehabilitation career education.
- 4. To publish and disseminate the career education program for hearing impaired rehabilitation clients through a training of trainers approach, reporting the full aspects of the research conducted, gains made by the research subjects, and guidelines for use and or adaptation with other client groups.

Clearly, the project objectives were broad and required specification to facilitate the development and analysis of a thorough and effective career education package.

Campbell (1973) states that in order to develop an effective career education curriculum it is first necessary to define the needs of the student population and to establish programmatic goals. This approach ensures that the needs of the students are met by the focus of the program. However, career education is a broad and varied discipline encompassing educational, vocational, personal, and social

training. This breadth of content poses a distinct problem in program delineation. The problem is one of limiting the program's scope in order to meet the most pressing needs in the most effective fashion. Consequently, questions such as, "What student groups should be emphasized?" and "What types of training should be given to these groups?", assume primary importance in planning these programs. An issue related to these questions is "How should such questions be answered?"

One way in which to resolve such problems is through a group process approach called the Nominal Group Technique (NGT) (Delbecq, Van de Ven & Gustafson, 1975). This model was adopted for use in a national workshop on the RTC's career education project. Specifically, the workshop was conducted to delineate a clear focus for this research.

The purpose of this article is two-fold. First, the NGT and its procedural steps will be described. Next, the workshop conducted at the RTC and the results of that workshop will be discussed. It is hoped that in this way the reader will be introduced to the NGT as a viable tool for use in the professional setting.

THE NOMINAL GROUP TECHNIQUE: AN INTRODUCTION

It is intuitively obvious that decisions that rely only on an individual's opinion are often narrow in scope and/or miss the crux of the presenting problem. For example, one person's opinion of a problem may be so jaded that the position, if operationalized, will fail to resolve or meet the issues at hand. Thus, it seems logical to utilize a group approach. The concept of pooling individual's knowledge and skills is a widely accepted method of facilitating the completion of a work task. Unfortunately, this same pooling of talents can also act as a deterrent to the problem-solving process. Sometimes individuals will dominate such meetings, interjecting their own biases and desires into the interaction

Vol. 18 No. 4 April 1985

and impeding a successful outcome of the group process. In other situations; groups flounder in discussion without meainingful outcomes being reached.

The NGT strives to resolve these problems by structuring the group process to insure that each person contributes to the group effort and that a pre-specified product is completed in a set period of time. This model has been used in the field of rehabilitation (Brummer & Browning, 1973; Foss & Bostwick, 1981; Steinbock, Close & Browning, 1975) to specify agency and client problems and to delineate strategies to resolve these issues, but such usage is not widespread. It is possible that at least part of the reason for this lack of widespread usage is due to a general lack of knowledge about the NGT. Therefore, the purpose of this section is to describe the procedural steps of this process.

It must be realized that before implementing the NGT with a group it is necessary to identify a group leader and to provide a general focus for the group activity in the form of a question or instructions. Given this general focus, the NGT consists of four basic steps:

- Silent generation of problem statements as perceived by each individual participant;
- 2. Round robin listing of problem statements;
- Structured and time-limited discussion of problem statements (Clarification and combining of these statements occurs in this step.);
- 4. Prioritization of problem statements.

Each of these steps is discussed in more detail below.

Silent Generation

The group is given a question or instructions relating to a specific issue (e.g., "Identify the five most pressing problems facing rehabilitation counselors."). Subjects are then asked to individually generate a set number of responses (e.g., three to seven) to the specified group focus within a set time frame (e.g., 10 to 15 minutes) silently and without consultation with other group members. These statements are written on index cards. The leader instructs the members of the group to be as specific as possible and to phrase their responses in a comprehensive, yet brief, fashion.

Vol. 18 No. 4 April 1985

Structured Discussion

A structured discussion of each response that was listed comprises the third phase of the NGT. The group is asked to review the statements with respect to the following criteria: (1) Is the statement clear? (2) Does the statement overlap with any other statement? (3) How important is the response? As a result of this type of discussion, statements are rewritten, combined, eliminated, or added. It is up to the group leader to structure and facilitate this interaction. In general, five minutes will be devoted to the discussion of each problem statement.

Prioritization

After completing the structured discussion, the group members are asked to select and to rank a set number of statements (usually three to five) in order of importance. Each participant is given index cards on which he is to identify the most important statements generated by the group. After this initial selection, group members are asked to rank the items from most to least important. After this process is finished, the trainer totals the rankings and gives a weighted score to each statement. For example, it may be decided to give a score of five to a number one ranking, a four to a number two ranking, and so on. Thus, if an item receives four number one rankings and two number two rankings the composite score for that item is 28 $(4 \times 5 + 2 \times 4 = 28)$. After prioritization is completed, the group leader presents a summary of the scores and the rankings to the group.

In summary, the NGT is a relatively simple, yet effective, method of structuring group interactions. It is designed to maximize individual input to the group process and it facilitates the completion of a product within a specified period of time by forcing the group participants to follow a sequence of steps. In the next section of this chapter the application of this technique to the RTC's career education project will be described.

THE NOMINAL GROUP TECHNIQUE AND CAREER EDUCATION PLANNING BACKGROUND

As noted in the beginning of the chapter, the initial objectives for the RTC's career education project were too broad to define a clear programmatic focus. Given this shortcoming, it was

decided that the following project parameters should be established: 1) the subject population should be delineated, 2) the general program structure (e.g., length of training, context in which the program would be implemented, etc.) should be described, and 3) the content priorities of the program should be identified. In response to these research requirements a workshop on the career education project was held in September of 1983 at the RTC. In this section the workshop participants and the NGT procedures that were followed in this workshop are described. The results of the workshop are also summarized.

Participants and Procedures

This author served as the leader for the NGT. The other individuals involved in this workshop all possessed an extensive background in deafness, career education, and vocational rehabilitation. Briefly, the participants were:

- An instructor in a counseling program for deaf students:
- 2. A director of career education programs for the deaf students:
- A counselor who teaches a career exploration class to deaf students at a community college;
- A program coordinator for a career education project located at a community college;
- 5. A state supervisor of vocational rehabilitation services for deaf persons; and
- 6. A research director for a research and

training center with an extensive background in deafness and hearing impairment.

There were three distinct phases of the workshop. The first phase of the workshop was designed to describe and identify an appropriate subject population for the career education project. In order to stimulate the NGT process, the following directions were given to the participants:

Identify five different populations of deaf/ hearing-impaired persons who should be served through a career education program. In your description of this population, include such things as:

- 1) The age of the population
- 2) The age at onset of hearing loss
- Presence or absence of a secondary disability
- 4) Academic abilities
- 5) Educational background
- 6) Vocational background

The NGT process was initiated and 12 subject population descriptions were generated. Participants were then asked to identify the five populations in need of career education training and then prioritize these groups by giving a number one ranking to the population most in need, a number two ranking to the second group, and so on. Weighted scores were then given each group. Descriptions of the groups produced by the NGT, the weighted scores, and the ranks given the groups are presented in Table 1.

TABLE 1
Priority Groups

Population Description	Score	Rank	
Community college students, ages 18-20, quite possibly from the Rubella group. Some academic ability, but with inconsistent and/or unrealistic work goals. Hearing loss varies and secondary disabilities are most probably present.	23	1	
Deaf, secondary level students who are potential dropouts. This group is academically able (third to sixth grade abilities) but possess no vocational experience nor do they have a secondary disability that limits their functional capacity.	12	2	
Middle and secondary level students (ages 14-18), with a prodound hearing loss, approximately one-third will have a secondary disability. The group will have a fourth grade reading level and have technical career interests.	12	2	
Mild to profound hearing-impaired adults (ages 18-60) who have lost their jobs. This group is educable, with work experience and has an immediate need for retraining.	8	3	
Post high school students with a severe to profound hearing loss, who are academically bound (e.g., NTID).	7	4	
Adult (age 18-60) deaf persons with a varied hearing loss. Individuals in this group have finished some type of high school training but are unemployed. They are essentially illiterate but educable, and have blue collar job experience.	5	5	

Vol. 18 No. 4 April 1985

TABLE 1, Continued Priority Groups

Population Description	Score	Rank	
Young adults with a severe hearing loss and a complicating secondary disability (e.g., cerebral palsy). This group has a poor academic background and no vocational experience.	4	6	
Community college students, ages 18-20, quite possibly from the Rubella group. Some academic ability, but with inconsistent and/ror unrealistic work goals. Hearing loss varies and secondary disabilities are most probably present.	23	1	
Young adults with a severe hearing loss and a complicating secondary disability (e.g., cerebral palsy). This group has a poor academic background and no vocational experience.	4	6	
Secondary level students who are hard of hearing and oral. They are academically talented, but they are in need of some program that will promote skills and interest for pursuing postsecondary training.	4	6	
Young deaf students (ages 16-20) with varied hearing losses, who are entering a state school. This group has little academic skill and desires training in a blue collar job.	4	6	
Young deaf persons who are just out of high school. This group has minimal academic skills and is vocationally unskilled. Approximately one-half are multiply handicapped and they are desires of some type of short-term training (e.g., CETA).	2	7	
Secondary level students who are profoundly deaf. This group is not multiply handicapped, but are uneducable and possess no vocational experience.	1	8	

The second phase of the workshop dealt with describing and evaluating general program formats that would meet the career education demands of the two highest ranked priority groups. The following directions were given the participants:

For the target group identified in the previous exercise, describe three possible forms the career education program may take. In your description of these program forms, include such things as:

- 1) Who would be in charge of such a program
- 2) The setting in which the training should take place
- 3) Ancillary staff that would be needed

4) Meeting times (e.g., a one hour meeting held four times a week)

The NGT process was initiated and completed for the top two priority groups. For both groups the participants were asked to identify the five best programmatic approaches and then rank order these models. The rankings were used to compute weighted scores for each program. Program descriptions, weighted scores, and the final ranks given to programs for the top ranked group are presented in Table 2. Program descriptions, weighted scores, and the final ranks given programs generated for the second ranked group are presented in Table 3.

TABLE 2
Program Descriptions – Top Ranked Groups

Population Description	Score	Rank	
This type of program would be conducted either at the end of high school or during the first year of the post secondary experience. A preparatory program utilizing vocational evaluation, interest testing and career exploration activities would be developed and conducted by school counselors. This couse would serve as the foundation of a core year in which weekly classes would be held to develop a career plan that would be implemented at a later date.	26	1	
A counselor at a secondary or postsecondary will provide individual guidance to subjects. It is possible that this type or program will be augmented by career exploration activities managed through a computer.	14	2	
An in house program in a vocational/technical school. This program would involve vocational evaluation, instructors skilled in job training and a career exploration component. This approach would occur over the space of a semester and involve small groups.	12	3	

Vol. 18 No. 4 April 1985

TABLE 2, Continued
Program Descriptions – Top Ranked Group

Population Description	Score	Rank	
A program centered in a vocational/technical center where the work evaluator and a vocational counselor would head up the program. Evaluation, job exploration and counseling would comprise the program and ancillary staff would be involved (i.e., guest speakers, employers). This type of program would consist of several intensive half day sessions spread over a period of one month.	11	4	
Develop an infusion approach to career education that would be implemented by specific instructors.	9	5	
A community service liaison would serve as the coordinator of this type of program. Students would receive school credit and would sample jobs based in the community on a revolving basis (e.g. job shadowing).	7	6	
This type of program would occur in a rehabilitation facility with a vocational evaluator or counselor in charge of the program. This administrator would implement a vocational evaluation program that would be conducted over a three to four week period.	6	7	
A traditional classroom approach in which the program will be taught by the counseling staff. In addition ancillary staff (e.g., guest speakers, employers) will be included. This type of program will probably meet for an hour session three times per week.	2	8	
Vocational rehabilitation would arrange a job fair for a weekend experience.	2	8	
A work study approach implemented in the secondary or postsecondary setting. The students would spend two days per week in an employment setting. Such a program would call for cooperation between vocational rehabilitation and employers.	1	9	
Vocational rehabilitation counselor would perform individual counseling with subjects one time per week for four hours.	0	10	

TABLE 3
Program Descriptions – Second Ranked Group

Population Description	Score	Rank	
In this type of program a number of staff (e.g., vocational evaluator, job coach) would be involved and the program would be based in a rehabilitation setting. The program would be designed to assist in securing employment through a job sampling and short-term training approach that may be implemented in the community. In addition an independent living training component would be included.	12	1	
A group home setting in which independent living skills would be taught by group home staff.	9	2	
In a residential school a teacher would coordinate a program that was one hald day in vocational training or placement and one half day in training in independent living skills.	4	3	
In a residential school a half day would be devoted to academics and a half day would be spent in a sheltered workshop environment to build work skills.	3	4	
A home based program in which parents would be intricately involved in independent living skills and vocational training and goal setting.	3	4	
This type of program would be implemented in a sheltered workshop and emphasize basic vocational skill training (e.g., assembly work) and life skill training (e.g., self-care).	3	4	
An individual guidance approach in which a vocational rehabilitation counselor would assume primary responsibility.	2	5	

The purpose of the third segment of the meeting was to identify appropriate content foci for each of the priority groups and their respective program formats. Participants were asked to evaluate Brolin's (1978) 22 career/living competencies on a Likert-type format for each priority

group in terms of that population's unique needs. Specifically, the following directions were presented in written form to each participant:

Evaluate the competencies in relation to the target group according to the following scale:

- 4—the competency of critical importance to the group
- 3-the competency is of importance to the group
- 2-the competency is somewhat important to the group

1-the competency is not important to the group These ratings were totaled and a mean rating for each competency was computed. The individual competency ratings for both the first and second ranked groups are presented in Table 4. It should be noted that means for each of the three major areas (Daily Living Skills, Personal-Social Skills, Occupational Guidance, and Preparation) are also calculated for each group.

TABLE 4

Competency Ratings –

Number 2 and Number 2 Ranked Groups

	Rat I	Ratings 1 2	
DAILY LIVING SKILLS			
1. Managing Family Finances	2.67	3.50	
2. Selecting, Managing and Maintaining a Home			
	2.00	2.17	
3. Caring for Personal Needs	1.50	3.17	
4. Raising Children, Family Living	2.33	2.33	
5. Buying and Preparing Food	1.83	3.50	
6. Buying and Caring for Clothing	1.16	3.33	
7. Engaging in Civic Activities	2.00	1.33	
8. Utilizing Recreation and Leisure	2.50	2.33	
9. Getting Around the Community	2.83	3.83	
Area <u>x</u>	2.09	2.83	
PERSONAL-SOCIAL SKILLS			
10. Achieving Self-Awareness	3.33	3.17	
11. Acquiring Self-Confidence	3.67	3.17	
12. Achieving Socially Responsible Behavior			
13. Maintaining Good Interpersonal Skills	2.83	3.67	
14. Achieving Independence	3.50	3.83	
15. Achieving Problem-Solving Skills	3.33	3.00	
16. Communicating Adequately with Others	3.33	3.50	
Areax	3.28	3.43	
-		0.40	
OCCUPATIONAL GUIDANCE ANI PREPARATION)		
17. Knowing and Exploring Occupational Possibilities	3.83	3.33	
	0.00	0.00	
18. Selecting and Planning Occupational Choices	4.00	3.33	
19. Exhibiting Appropriate Work Habits and Behaviors	3.17	4.00	
20. Exhibiting Sufficient Physical and Manual Skills	2.17	3.50	
21. Obtaining a Specific Occupational	4.11	3.00	
Skill	3.50	4.00	
22. Seeking, Securing, and	4.00		
Maintaining Employment	4.00	3.67	
Area <u>x</u>	3.45	3.64	

Summary of Results

The top ranked group – i.e., the group that was considered most appropriate for the career education project by the workshop participants – was:

Community college students, ages 18-20, quite possibly from the rubella group. Some academic ability, but with inconsistent and/or unrealistic work goals. Hearing loss varies and secondary disabilities are most probably present.

The programmatic option that was chosen as the best career education approach for this group was:

A program that would be conducted either at the end of high school or during the first year of the postsecondary experience. A preparation program utilizing vocational evaulation, interest testing, and career exploration activities would be developed and conducted by school counselors. This course would serve as the foundation of a core year in which weekly classes would be held to develop a career plan that would be implemented at a later date.

Finally, for this group, two career education competencies were given ratings of 4.0 (i.e., a skill of critical importance) by the workshop participants. These competencies were:

- 18. Selection and Planning Occupational Choices
- 22. Seeking, Securing, and Maintaining Employment

Two different groups were tied for the second ranked priority group. A vote was conducted by the workshop participants and it was decided that the following group should be considered as the second ranked population:

Deaf, secondary level students who are potential dropouts. This group is academically able (third to sixth grade abilities) but possess no vocational experience nor do they have a secondary disability that limits their functional capacity.

The program option that was chosen as the best career education approach for this group was:

A program in which a number of staff (e.g., vocational evaluator, job coach) would be involved and the program would be based in a rehabilitation facility. The program would be designed to assist in securing employment through a job sampling and a short-term training approach that may be implemented

in the community. In addition, an independent living training component would be included.

Again, two competencies were given ratings of 4.0 (competency of critical importance) by the workshop participants. These competencies are:

- 19. Exhibiting Appropriate Work Habits and Behaviors
- 21. Obtaining a Specific Occupational Skill

DISCUSSION

It is apparent that the NGT was appropriate and effective for the purposes of this workshop. Specifically, the nominal group approach helped to: 1) delineate two subject groups, 2) define general programmatic approaches for those subject groups, and 3) provide an avenue for rating the educational importance of 22 career competencies. At least two questions, however, can be raised about the results of this workshop. These questions are relevant to both the project and the field of deafness. These questions are presented and discussed in the following paragraphs.

Question 1: "How should the information be integrated into the final project's definition?"

This question relates to using the workshop results to define the research thrust of the career education project. A series of faculty discussions utilizing the information from the workshop as a foundation were held. The results provided the impetus for debate and further conceptualization of the project within a solid framework of research priorities. Thus, this data was integrated with the administrative demands and resource limitations of the project to formulate the final structure of the study.

It has been decided to focus this project on deaf students from both of the two highest ranked priority groups in order to maximize the impact of the research. Second, it has been concluded that the secondary grades would be an appropriate training avenue for this group of students. This decision relates to the cross-sectional nature of the subject populations and the workshop participants' perception that career education training should be initiated prior to the students' departures from the public schools. Finally, in order to specify suitable content parameters for this training, it was decided to look at only the highest ranked objectives

from Brolin's (1978) list for both groups. This inspection revealed that the highest composite ranking of an objective that was consistent with the academic thrust of the project and that did not duplicate other areas being researched in the RTC was Competency 18 – Selecting and Planning A Career.

The NGT, then, provided guidelines from which to guide research and administrative decisions regarding the career education project. The information from the workshop was combined with the administrative and resource demands of the project to create a workable outline for the research. To reiterate, it has been decided to work with students who may go to community colleges after their public school and those students who may drop-out during the secondary grades. The content of the program will emphasize career planning and choice.

Question 2: "How generalizable are the results to the field of career education in deafness?"

The second question strikes at the issue of the external validity of research and the meaning of all empirical investigations. Indeed, the question of generality of research results is often pondered. It can be asked, "Would the subject population, program approach, and objectives chosen by the workshop participants be repeated by another group of professionals? Would these results be repeated if the group was composed of other types of participants, such as deaf students?"

The answers are both disheartening and interesting. Quite simply, we don't know. Such doubt, however, indicates further research. For example, it would be both practical and enlightening to conduct the NGT with other groups of professionals and consumers in order to validate the results of this initial workshop and identify other research priorities. Such a programmatic approach to research would establish a firm foundation to future research efforts as well as serve as a vehicle for the active involvement of both practitioners and deaf consumers in the research process. Hopefully, this type of endeavor will be considered for use in other research efforts - both at the RTC and in other research arenas.

SUMMARY AND CONCLUSION

The NGT was introduced and its procedural steps described. This group process method was implemented with a small number of vocational experts to define the subject population, general program format, and program content for a career education project being conducted at the Research and Training Center on Deafness and Hearing Impairment. The results of this workshop indicate that: 1) the NGT was appropriate to the goals of the project and 2) informa-

tion was produced that was relevant in defining the parameters of the research. Specifically, it has been decided to work with deaf students who may go on to community college or who would drop out of high school during the secondary grades. The content of this type of career education will relate to making and planning career choices. Finally, it is possible that other workshops of this type will be utilized in shaping other RTC research projects.

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- · Coordinator of Clinical Services for the Hearing Impaired
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