

Delp, P., Thesen, A., Motiwalla, J., & Seshardi, N. (1977). Systems tools for project planning. Bloomington, Indiana: International Development Institute.

Nominal Group Technique

PREREQUISITE TOOLS

None.

USAGE

PURPOSE

The Nominal Group Technique (NGT) is a group process for eliciting opinions and aggregating judgments to increase rationality and creativity when faced with an unstructured problem situation.

USES

NGT may be used to:

- 1) Identify the elements of a problem, especially where there are political, social, and cultural elements.
- 2) Identify and rank goals or priorities.
- 3) Identify experts whose experiences or skills may be useful in other decision-making techniques.
- 4) Involve personnel at all levels in the decision-making process in order to promote the acceptability of the final decision.

KEY DEFINITIONS

1) A *nominal group* is a group process in which the members work independently but in each other's presence.

2) An *interacting group* permits discussion between participants (e.g., Brainstorming, BSG, page 3, is an interacting group process).

3) *Rank-ordering* is the process of weighing one item against others and then ordering the items by weight on a scale such as importance or priority.

SHORT DESCRIPTION

The Nominal Group Technique is a structured process which taps the experiences, skills, or feelings of participants. A question is posed to the group. Each member writes down as many responses as possible. The group leader asks each member in turn to state an idea from his or her list and writes it on a flip chart placed before the group. No discussion is permitted until all ideas have been listed. Each item is then briefly discussed in an *interacting group* format. The participants indicate their preference for important items by *rank-ordering*, a process which may be repeated with intervening discussion and argument.

The outcome of the process is the mathematical aggregation of each member's preferences to give the group's ranking of responses to the question.

ADVANTAGES

1) Dominance by high-status, aggressive, or articulate members is reduced since each has an equal opportunity to participate.

2) The group remains problem-conscious; and premature evaluation, criticism, or focusing on ideas is avoided.

3) The silent generation of ideas minimizes the interruptions in each person's thought processes.

4) A written record increases the group's ability to deal with a large number of ideas. It also avoids the loss of ideas.

5) Discussion only to clarify items helps eliminate misunderstanding, without reducing the group's efficiency.

6) Some studies have shown that, compared to interacting group processes, e.g., Brainstorming (BSG, page 3), the Nominal Group Technique (NGT) enhances the conditions for creativity when generating information on a problem. It avoids rambling discourse and other deficiencies found in group processes.

LIMITATIONS

1) Cross-fertilization of ideas is diminished due to the structure imposed by the NGT.

2) The NGT may reduce flexibility, e.g., some group members may feel that the purpose of the meeting or the question posed is irrelevant or misleading, but they have no opportunity to change it.

3) Bringing group members together may be cost-prohibitive.

REQUIRED RESOURCES

LEVEL OF EFFORT

Some administrative effort is required to determine the purpose of the meeting and to structure the proposed question. Potential group members need to be identified, notified, and assembled.

SKILL LEVEL

The leader of the nominal group should not bias the group toward his view; yet he must control unwanted group behavior without alienating people.

TIME REQUIRED

In a study quoted by Delbecq, et al. (1975), the total administrative man-hours to prepare, conduct, and follow through for one group required an average of 4.4 hours for NGT, 4.2 hours for interacting processes, and 7.1 hours for the Delphi process (DLP, page 168).

SPECIAL REQUIREMENTS

A flip chart and marking pens are needed for each group. Index cards (or similar small cards), approximately six per participant, facilitate the voting process.

The seating arrangement must allow all members to easily focus on the ideas listed on the flip chart. Some means of displaying the completed chart pages is necessary (e.g., tacks or masking tape to affix them to the walls).

DESCRIPTION OF TOOL

SUPPLEMENTAL DEFINITION

Round-robin is a process for serially recording ideas where each participant provides an idea in turn. No discussion occurs, although the leader may ask for a show of hands on how many participants had a similar idea. (This is noted next to the item on the list.) Those responding then eliminate that idea from their respective lists. The process may continue in a circular fashion until all participants' lists are exhausted.

REQUIRED INPUTS

The nominal group generally includes five to nine members. Less than five members may not allow for the quality and diversity of opinions required. Large groups produce more interpersonal differences, which lengthens the process without a substantial increase in the quality of output. If more than ten persons must participate, it is better to divide the group for the round-robin and combine them for final discussion and voting.

The group leader may be directly involved in generating and discussing ideas. The composition of the group may be homogeneous or heterogeneous. Studies have shown that heterogeneous groups exhibit more creativity (Delbecq, 1975). But interpersonal differences and communication problems may increase for such groups.

The NGT question provides the basis for generating the ideas. It should be worded to prevent misunderstanding and should be stated as objectively as possible.

TOOL OUTPUT

The NGT produces a list of ideas and a rank-ordering of their importance. The group leader may wish to combine overlapping ideas under a common heading.

METHOD OF USE

GENERAL PROCEDURE

The general procedure for the Nominal Group Technique is straightforward. But because it runs counter to

the experience of most people in leading groups or participating in committee work, the steps must be followed closely. With this in mind, the guidelines prescribed by the originators of the Nominal Group Technique have been reproduced below (Delbecq, et al., 1975, figure 3-7, page 67-69):*

1. Silent generation of ideas in writing.

- 1.1 Present the nominal question to the group in writing.
- 1.2 Verbally read the question.
- 1.3 Illustrate level of abstraction and scope desired with example which does not distort (lead) group responses.
- 1.4 Avoid other requests for clarification.
- 1.5 Charge the group to write ideas in brief phrases or statements.
- 1.6 Ask group members to work silently and independently.
- 1.7 Model good group behavior.
- 1.8 Sanction disruption of the silent, independent activity by comments addressed to group as a whole.

Benefits:

- 1) Provides adequate time for thinking.
- 2) Facilitates hard work by the model of other group members reflecting and writing.
- 3) Avoids interruption of each other's thinking.
- 4) Avoids premature focusing on single ideas.
- 5) Eliminates dominance by high-status or aggressive members in idea generation.
- 6) Keeps the group problem-centered.

2. Round-robin recording of ideas on a flip pad.

- 2.1 Indicate objective of the step is to map the group's thinking.
- 2.2 Explain need to present ideas in brief words or phrases.
- 2.3 Explain process of taking one idea serially from each member.
- 2.4 Explain group members must decide if items are duplicates.
- 2.5 Explain that an individual may "pass" when he has no further items, but may "re-enter" later.
- 2.6 Express the desirability of hitchhiking and adding new ideas even if they are not on individual nominal worksheets.
- 2.7 Explain inappropriateness of discussion prior to completion of listing.

*From *Group Techniques for Program Planning* by André L. Delbecq, Andrew Van de Ven and David H. Gustafson. Copyright (c) 1975 by Scott, Foresman and Company. Reprinted by permission.

- 2.8 Record ideas as rapidly as possible.
- 2.9 Record ideas in the words used by group members.
- 2.10 Provide assistance in abbreviating only in special situations.
- 2.11 Make the entire list visible by tearing off completed sheets and taping them on an area visible to all group members.
- 2.12 Sanction group as a whole if individuals engage in side conversations or attempt to discuss items prior to completing the listing.

Benefits:

- 1) Equalizes opportunity to present ideas.
- 2) Assists in separating ideas from personalities.
- 3) Provides a written record and guide:
 - a) Increases group's ability to deal with a larger number of ideas.
 - b) Avoids loss of ideas.
 - c) Confronts the group with an array of clues.
 - d) Encourages hitchhiking.
- 4) Places conflicting ideas comfortably in front of group.
- 5) Forces the group to fully explore the problem.

3. Serial discussion for clarification.

- 3.1 Verbally define the purpose of the step:
 - a) To clarify the meaning of items.
 - b) To explain reasons for agreement or disagreement.
- 3.2 Indicate that final judgments will be expressed by voting, so arguments are unnecessary.
- 3.3 Pace the group so that all ideas receive sufficient time for clarification.
- 3.4 Avoid forcing the member who originally lists the idea to be solely responsible for clarifying the item.

Benefits:

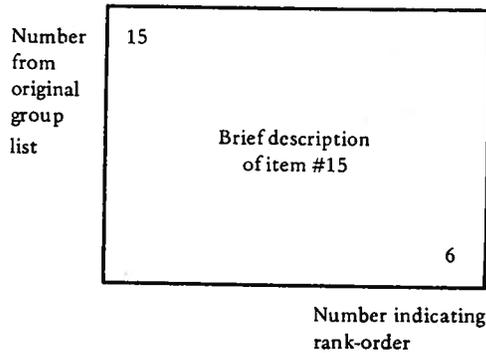
- 1) Avoids having discussion focus unduly on any particular idea or subset of ideas.
- 2) Helps eliminate misunderstanding.
- 3) Provides opportunity to express the logic behind items.
- 4) Allows members to disagree without argumentation.

4. Preliminary vote on item importance.

- 4.1 Ask the group to select from the entire list a specific number (7 ± 2) of priority (important) items.*

*Five to nine items are all that can be effectively ranked on one dimension of discrimination (see Rating Scales, RTS, page 29).

FIGURE 1
Index Card Illustrating
Rank-Order Voting Process



- 4.2 Place each priority item on a separate 3 x 5 card or rating form [see figure 1].
- 4.3 Rank-order or rate the selected priority items.
- 4.4 Collect the cards or rating forms and shuffle them to retain anonymity.
- 4.5 Tally the vote and record the results on the flip chart in front of the group.

Benefits:

- 1) Obtaining independent judgments in writing helps eliminate social pressures.
- 2) Expressing judgments mathematically by rank-ordering or rating increases accuracy of judgments.
- 3) Displaying the array of individual votes clearly highlights areas needing further clarification or discussion.

5. Discussion of the preliminary vote.

- 5.1 Define the role of the step as clarification, not pressure toward artificial consensus.
- 5.2 Keep the discussion brief.
- 5.3 Caution group members to think carefully about any changes they make in their voting.

Benefits:

- 1) Provides group members a final opportunity to clarify their positions.
- 2) Ensures that "spread" votes really reflected differences in judgment, not unequal information or misunderstanding.

6. Final vote.

- 6.1 Repeat step 4.
- 6.2 Closure to the meeting.

Benefits:

Accurate aggregation of group judgments and error reduction.

EXAMPLE

The steps of the Nominal Group Technique have been presented in a straightforward procedure which reflects a structured group process. The following example highlights some of the key points in this process and illustrates typical intermediate products generated by the technique.*

The Ministry of Health for the government of Temasek wanted to analyze the state of the health delivery service. The evaluation staff elected to use the Nominal Group Technique and brought together a diverse group of physicians, rural health technicians, public health personnel, field personnel, and a cross-section of clients (from different income and social classes).

Silent Generation of Ideas in Writing

The assembled participants were broken into groups of nine by randomly selecting participants representing relevant occupations.

After the opening welcome and a brief explanation of the Nominal Group Technique and the objectives for the afternoon, each participant was given a single sheet headed with the following question:

WHAT ARE THE BARRIERS TO RECEIVING ADEQUATE HEALTH CARE IN OUR COUNTRY?

The participants were allowed 15 minutes to list responses from their own viewpoints.

Recording of Ideas on a Flip Pad

The leader for each group (a member of the evaluation staff trained in NGT) acted as the recorder to serially list the ideas. Some of the ideas generated by one group included:

- 1) No money to pay for services
- 2) Lack of adequate facilities
- 3) Too many doctors in the cities
- 4) Not enough trained personnel
- 5) Over reliance on traditional remedies
- 6) Not enough doctors

Note that this list contains some contradictions. The leader deferred discussion until the next step. However, when item 6 was voiced, someone asked whether this was the same as item 4 since doctors are included in trained personnel. The leader asked the participant if he thought item 6 should be dropped. The reply was negative, and the round-robin recording continued. All of the groups generated 15 or more items.

*This example is adapted from an exercise conducted by one of the authors at a workshop to enable county health agencies to plan for the treatment of alcoholics.

Serial Discussion for Clarification

During the discussion of each item, the participants clarified their responses, e.g., since trained personnel can replace many functions of the physician, items 4 and 6 deserved separate consideration. Item 5 included going to a traditional village healer instead of the nearest clinic.

Preliminary Vote on Item Importance

Each participant was asked to rank (from the list) the five most significant barriers to receiving adequate health care. The tally of the vote was recorded on the flip chart, using the numbers from the items. A vote of five meant that the participant viewed that item as the most significant barrier. The votes for the first six items were:

Item Number	Votes	Total
1)	4, 1	5
2)	5, 4	9
3)	2, 2, 4	8
4)	3, 5, 3	11
5)	1	1
6)	3, 5	8

Discussion and Final Vote

During the discussion following the first vote, the participant who had presented item 5 expressed his amazement that the other members had not found the interference of superstitions and traditional healers to be a barrier. Other participants were not swayed by his arguments, and the final vote on the item was unchanged. Totaling the individual rankings for each of the above items gave item 4 the most weight (11) followed by item 2 (9) and item 6 (8). Note that this example is incomplete since the rest of the list has not been presented, but the essential idea remains the same. A group with rather large status differences was able to use the Nominal Group Technique to identify and rank problems in receiving health care.

THEORY

The Nominal Group Technique is the result of analysis and experimentation with group processes for effective planning and decision making, and is credited to Van de Ven and Delbecq (Delbecq, et al., 1975). The creativity of a group is an important determinant of its success. Types of group processes and leadership techniques for allowing creativity have been discussed widely (Maier, 1970; Osborn, 1957; Collins and Guetzkow, 1964).

The Nominal Group Technique utilizes the mathematical aggregation of group judgments to come to a group decision. The theory is discussed by Huber and Delbecq (1972). The advantages over conventional means for coming to a group decision (e.g., consensus or majority rule) are described by Delbecq, et al. (1975).

BIBLIOGRAPHY

- Collins, B. E., and Guetzkow, H. *A Social Psychology of Group Processes for Decision-Making*. New York: John Wiley & Sons, 1964.
- Delbecq, André; Van de Ven, Andrew; and Gustafson, David. *Group Techniques for Program Planning: A Guide to Nominal Group and Delphi*. Chicago: Scott Foresman, 1975.
- Huber, George, and Delbecq, André. "Guidelines for Combining the Judgment of Individual Members in Decision Conferences." *Academy of Management Journal* 15 (June 1972): 161-74.
- Maier, Norman R. F. *Problem Solving and Creativity in Individuals and Groups*. Belmont, Calif.: Brooks/Cole, 1970.
- Osborn, A. F. *Applied Imagination*. New York: Charles Scribner's Sons, 1957.