

GOE

Guide for Occupational Exploration

Interest Inventory

Second Edition

Administrator's Guide

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Order from your authorized dealer or call the publisher toll free at 800-648-JIST or 317-613-4200. Or visit our Web site at www.jist.com to order, see our other products, or get free career information. **Credits:** Much thought and research by the staff of the U.S. Employment Service and many others were involved in developing the original GOE structure. More extensive credits, as well as information on the technical development of the GOE interest factors, are included in the *Guide for Occupational Exploration*, Third Edition (2001, JIST Works).

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A Brief Description of the *GOE Interest Inventory* and Why It Exists

The *GOE Interest Inventory* was developed to help people identify their interests, then use this information to explore career, learning, and lifestyle alternatives. The inventory consists of one large sheet of paper that is unfolded to reveal 12 panels of information and activities. It is designed to be self-scored, self-contained, and self-interpreted.

Although you might argue that the world already has enough career-assessment instruments, I believe that a device such as the *GOE Interest Inventory* was needed. Here are the reasons:

1. The *GOE* Is Based on Substantial Research

The *GOE* system of interest areas and work groups is the result of extensive research conducted by the U.S. Department of Labor (DOL). Back in the 1960s, the DOL put together a group of vocational researchers and experts to develop a system of organizing jobs that would be useful for career exploration. Such a system had to be simple and intuitive to use, yet capable of handling the complexity of organizing the more than 12,000 jobs tracked by the DOL at that time.

It was a difficult task, but that research resulted in a book called the *Guide for Occupational Exploration* (*GOE*) that was first published by the U.S. Department of Labor in 1979. The *GOE* used a logical system that organized all jobs into 12 interest areas and then into increasingly specific subgroups of related jobs.

Following its release, career counselors and others widely accepted the *GOE*'s system and it became a "standard" career information system. Revisions of the *GOE* were published by several sources over the years. A variety of occupational information reference systems use or cross-reference the *GOE* system.

There is a substantial amount of research to document and validate the approach the DOL researchers used in the *GOE*. More information on the research supporting the *GOE* system is included later in this booklet.

2. The *GOE* Inventory Is Direct Rather Than Indirect

Most career-interest inventories begin by asking the reader to rate (for example: like, dislike, or not sure) a number of activities, such as "Give a talk or speech

to a group" and "Repair a computer." Responses are then scored into numerical ratings that indicate the test-taker's level of interest in a variety of career areas.

This is an indirect and time-consuming approach. There may be as many as 180 items to rate and score before the reader gets "results" that show the career groupings they rated highly. Some interest inventories make it even more complex by giving scores in career groupings that are not intuitive to understand, such as "Realistic" or "Conventional" and that have to be explained. Some instruments are self-scored and easy to understand how the conclusions were derived, whereas others seem almost magical in how they arrive at their conclusions. There is little research to support that this indirect approach is more valid than a more direct one that essentially asks "Which of these occupational groupings interest you more than the others?"

The *GOE Interest Inventory* takes a direct approach. It begins by asking the test-taker to rate their level of interest in the 14 *GOE* interest areas. The 14 areas are clear and easy to understand. This approach allows test-takers to use what they already know about themselves to narrow down their choices. It also educates them about how they can use their interests as a basis for career exploration.

The direct approach the *GOE Interest Inventory* uses is much faster than scoring numerous responses. This means that someone using the *GOE Interest Inventory* can be exploring specific job titles while someone using another inventory would still be slogging through rating its 180 or so items. That lost time might be worthwhile if it were proven to result in a more useful or valid outcome, but it hasn't.

3. It Is Easy to Understand and Use

The *GOE*, and the *GOE Interest Inventory*, organizes all jobs within major areas of interest, then into more specific subgroupings of related jobs. This approach provides an easily understood and "intuitive" structure for someone to explore career alternatives. The system works well in making a complex topic more easily understood and used by groups as diverse as high school students and unemployed engineers.

For example, here is the name and brief description for one major interest area:

Arts, Entertainment, and Media: An interest in creatively expressing feelings or ideas, in communicating news or information, or in performing.

Most people can easily understand what this means and quickly decide whether they are interested in this area. If they aren't sure, additional text in the inventory explains it a bit more and includes some examples of related interests.

If the test-taker is interested, the inventory then lists "work groups" of related jobs that they can quickly review to find ones that interest them most, as well as specific job titles within these groups.

This approach provides a fast and direct way to identify specific job titles that are most likely to interest someone.

For example, following are the work groups in the *Arts, Entertainment, and Media* interest area. As you can see, the group titles are easy to understand and allow readers to quickly locate the jobs that are likely to interest them most.

Managerial Work in Arts, Entertainment, and Media
Writing and Editing
News, Broadcasting, and Public Relations
Visual Arts: Studio Art
Visual Arts: Design
Performing Arts, Drama: Directing, Performing, Narrating, and Announcing
Performing Arts, Music: Directing, Composing and Arranging, and Performing
Performing Arts, Dance: Performing and Choreography
Craft Arts
Graphic Arts
Media Technology
Modeling and Personal Appearance
Sports: Coaching, Instructing, Officiating, and Performing

4. The GOE Interest Inventory Encourages Long-Term Career Planning—and Directly Cross-References Other Information Sources

Unlike some career interest inventories, the *GOE Interest Inventory* does more than just get the test-taker to job groupings or recommend specific job titles. The inventory devotes much of its content to providing information about careers. After the test-taker completes all the activities, he has narrowed down his career options as well as learned more about how to approach the process of making a career decision—and how to follow up with more research and action.

Some career-assessment instruments don't directly relate to standard sources of occupational information or don't encourage the test-taker to do additional research. The *GOE Interest Inventory* encourages additional learning about jobs in a variety of ways. For example, it lists job titles used in the Department of Labor's O*NET database, allowing direct access to substantial additional information from a variety of information sources. It also suggests specific sources of additional information and includes activities that actively encourage additional career research and planning.

5. The GOE Inventory Is "Self-Directed"

I believe that people should be empowered to understand how things work so that they can make their own informed decisions. Indirect approaches and computer-scored responses can undermine the understanding and direct involvement needed to make important decisions. A process that results in a list of jobs that "should be considered" is less likely to motivate someone to follow through than is a specific career goal that they have actively chosen to pursue.

So the *GOE Interest Inventory* has been designed to keep the test-taker in control of the decision-making process. It teaches them to understand how to explore careers based on their interests and encourages them to make good decisions based on information and their own preferences. That's why the inventory is self-scored and self-administered. And that's why it includes information on interest areas and specific job titles within job groupings. These things give the test-taker the information and understanding to make better decisions and be self-directed rather than depend on someone else's expertise.

Changes in This Revision

The second edition of the *GOE Interest Inventory* includes major improvements over the previous edition:

- **Format and design:** This addition's appearance is greatly improved, including more color and better design. Although this might not seem important, a more attractive design makes the inventory more pleasant to use.
- **Simplified scoring:** We improved the scoring system so that it is more clear to use and more simple to score. This will reduce the time needed to complete this part of the inventory and increase understanding of the interest areas.
- **New interest areas and job groupings based on the revised GOE:** The release of the *Guide for Occupational Exploration*, Third Edition (2001), introduced major changes in the GOE interest areas and work groups. The new GOE has 14 interest areas compared to the old GOE's 12. The new interest areas have clearer names that separate jobs into more intuitively understood groupings. The new GOE also has reduced the number of work groups, clarified their names, and added new ones to handle new technology-related jobs that did not exist when the old GOE's groups were established.
- **New O*NET job titles:** The U.S. Department of Labor has developed a new system of approximately 1,000 major job titles called the Occupational Information Network, or O*NET. The O*NET is now the standard occupational information system. Including these job titles in the *GOE Interest Inventory* allows direct access to the substantial information on these jobs from a variety of occupational information sources.

There are a variety of other changes and improvements in this revision and we hope you like what was done. One compromise we had to make was that the addition of the many O*NET job titles did not leave room for a listing of related leisure activities that was in the previous edition.

Intended Audience

The *GOE Interest Inventory* is appropriate for high school and college students and adults of any age. Although it was not designed to be a low-reading-level instrument, most high school students with

average reading skills will have no difficulty in handling its concepts and reading. Adults with average reading skills should have no problems with it.

The *GOE Interest Inventory* will be useful in a variety of situations, including the following: a student who is trying to decide on a career or educational direction; an unemployed adult with many years of work experience who needs to identify alternative job objectives; someone who wants to change careers; and many others.

Administration Tips

This section includes information on the time it takes to complete the inventory, individual and group administration, and using the inventory to structure career-exploration sessions.

Completion Time Required

Most people can complete the *GOE Interest Inventory* within 30 to 45 minutes. Additional time researching various occupations is recommended but is not required to complete the inventory itself.

If you want to reduce the time required to complete the inventory, you could advise test-takers to go directly to step 4, the Interests-to-Careers Chart. Doing this will require you to explain the chart and the information it contains. Test-takers can simply read the brief descriptions for the 14 interest areas and identify the ones that interest them most. They can then identify job groups and specific job titles within those interest areas that they want to explore in more detail. This process can be done in approximately 15 minutes.

You can also skip steps later in the inventory or ask that these be completed outside the group, as "homework."

Individual and Group Administration

Because the inventory was designed to be self-administered and self-scored, most people can simply read the instructions and get started. This makes it very easy to use for individual or group administration. Even so, it is often helpful to review the steps involved in taking the inventory and answer any questions. Here are some points to cover:

- Give a brief overview of the purpose of the inventory: that it is a tool to help them explore career options based on their interests.
- Emphasize that this is not a "test" in a traditional sense and that there are no right or wrong answers.

- Mention that there is no specific time limit to complete the inventory, so they should take their time to complete it carefully.
- Explain the scoring profile to make it clear that lower scores are not “bad” and high scores are not “good.” It is simply a way to help them identify interest areas they want to explore in more detail.
- Explain that the inventory has lots of information but that they will be interested in only some of it. (This is to counter the possible intimidation some may have from seeing so much text in the chart and other areas. The GOE system itself was specifically designed to be used by youth through adults to explore career options. Although it is an intuitive system to use, it does present a lot of information that may at first seem intimidating. For example, the chart includes descriptions for each interest area plus job group names and then a list of all major O*NET job titles within these groupings. Although this information is provided for all 14 interest areas, most users will be interested in only one or several of the interest areas and can quickly eliminate others. It may be useful to explain this to the test-takers so that they are not intimidated by what appears to be a lot of information.)
- If you do not want them to complete some of the steps, particularly the last one, which requires additional research, just mention that you will tell them what to do on this after they have completed the other steps.
- Explain that the directions are pretty clear and that they should simply start and then follow the step-by-step instructions. If they have additional questions while completing the inventory, they can simply raise their hand or in some other way get your attention so that you can help them as needed.
- If you have a time limit for when they need to stop, let them know this in advance and tell them what to do if they get done early. For those who do not complete it in the allotted time, tell them that they can complete the rest at a later time.

Using the Inventory to Help Structure One or More Career-Exploration Sessions

The *GOE Interest Inventory* is well suited for group administration and for use in a class or group setting. With some creativity, you could use the inventory to help structure a career-exploration program that lasts several sessions. Because there are so many ways you could organize such a program, here are some general tips you can use in developing your own sessions.

Facilitate Group Discussion

For example, after the group completes step 1 (which reviews the 14 GOE interest areas), you could encourage discussion by asking someone to explain what interest groups they selected and why. Others can then add their own comments. You could keep things going by asking the group to think of specific jobs related to one of these groups and encourage additional questions and comments about what they learned by doing this step.

Small-Group Interaction

Splitting large groups into groups of three to five people allows them to discuss a topic and interact more constructively. For example, following their completion of one or both of steps 2 and 3 (which completes the inventory section and scores their responses), you could divide the group into small discussion groups. Give the groups a specific task, such as for each person in the group to tell the others their highest three scores and whether their scores make sense to them—and why. Say that each person should discuss their scores for about five minutes and that others can ask questions and comment on that person’s scores for another five minutes or so.

You can adjust the length of time allowed based on your experience and objectives. In the example above, each person would consume about 10 minutes, so a group of three people should take about 30 minutes to complete this activity. After the first 10 minutes, tell the group that they should be on the second person about then, so that you keep all the groups on track and moving ahead at a similar pace.

Other steps in the interest inventory can be used as a source of group discussion in similar ways. Most groups find this approach very stimulating as long as any one activity does not last too long.

Homework

One or more of the inventory's steps or activities can be completed as homework. The group can discuss their results or experiences when they meet again. For example, you might ask group members to research one or more job descriptions that interest them and report back to the group what they learned about that job.

Action Activities

I encourage you to include "action" activities as part of the learning experience. This involves having your group make one or more personal contacts as the basis for learning more about an occupation, training option, educational program, or leisure activity that is related to their interests. For example, have them select a particular job that interests them, then have them find someone who works in this or a related job. You can have them ask specific questions—from the worksheet provided in the last step of the inventory or from ones you assign—and then document what they learn.

Or you could have the students independently visit a school that provides training or education related to their interests and get information from the staff there. They can then present this information in small groups or to the entire group—or some combination of the two.

Individual or Cooperative Presentations

You can give individuals or small groups the responsibility to make a presentation to the large group on a topic of either your or their choice. For example, they might present what they learned about a specific career area, community education resources, results of visits to local training programs, available financial aid, reviews of occupational information books or software, or any other related topic.

Group Brainstorming and Feedback

You can often use groups to react to something or to provide additional ideas. For example, you could have each person review his or her action plan in small groups and get feedback, support, and ideas from other group members. Then, in the larger group, you can lead a discussion on what they learned in the small groups and ask about any problems that the larger group might have ideas for resolving.

Field Visits and Guest Presenters

You could arrange to take your group to a public library and have the librarian there explain the career resources, including any computerized career information systems or Internet resources. Or you could have a vocational counselor, employer, or other person come to a session to make an appropriate presentation or to answer questions.

Show and Tell

You can bring some occupational information resource materials to the session and show the group how they work; or you can have individuals or groups do this as an assignment. Several such references are mentioned in the *GOE Interest Inventory* and others are available from most libraries. Videos on various topics are also appropriate to use. For example, a video explaining how to use career reference books (such as *Career Exploration: A Job Seeker's Guide to Major Sources of Career Information*, JIST Works, 1999) might be helpful, as would a video that provides interviews with people who work in various jobs within the interest areas (such as *The 50 Best Jobs for the 21st Century* video series, JIST Works 2001). And, of course, there are endless resources on the Internet that students can review and report on.

There are, of course, many other things that you can do. So be creative and find out what works best to keep your group engaged. I hope some of these suggestions help.

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Free copies available for research: If you are interested in doing research on the *GOE Interest Inventory*, JIST is interested in hearing your proposal. If your proposal is approved, we will provide copies of this assessment for your project in return for your results and conclusions. We'd also like to hear about your experiences using the *GOE Interest Inventory* and any suggestions you have. E-mail us at info@jist.com or write to Editorial Department, JIST Publishing, 8902 Otis Avenue, Indianapolis, IN 46216-1033.

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Technical Information on the Development of the GOE

The GOE system of organizing jobs within interest areas was developed as the result of research done by the U.S. Department of Labor. That research is the basis for the validity of the GOE structure as used for career exploration—and for the validity of the *GOE Interest Inventory*.

Much of the material in this section comes, with few changes, from the original edition of the *Guide for Occupational Exploration*, published by the U.S. Department of Labor in 1979. As you will soon see,

there is substantial research to support the conceptual framework of the original GOE.

Although much of the work behind the early GOE occurred many years ago, the research provides a basis for the GOE's legitimacy as a career-exploration system. Other career-interest inventories, such as the Self-Directed Search, are also based on concepts and research that was done many years ago. The GOE system has stood the test of time. The third edition of the *Guide for Occupational Exploration* (JIST, 2001), and future evolutionary improvements, will keep it contemporary and relevant for years to come.

A History of the Development of the GOE's Structure

Note: The text that follows comes, with few changes, from text provided in the first edition of the *Guide for Occupational Exploration*. It is provided here to give background information on the GOE's careful development, conceptual framework, and substantial research used to support it. Many changes have occurred since this was written, including the abandonment of the *Dictionary of Occupational Titles* as the primary system used by the U.S. Department of Labor (its final edition was in 1991); the introduction of a replacement occupational information database called the O*NET; and a major updating of the original GOE's structure as presented in the *Guide for Occupational Exploration*, Third Edition, released in 2001.

Beginning in 1939, the *Dictionary of Occupational Titles* (DOT) was one of the basic sources of information about jobs in this country. The first edition (U.S. Department of Labor, 1939) reflected the job market situation of the time: a surplus of qualified workers and a shortage of jobs. Consequently, the DOT's content emphasized the work performed, or tasks, with little attention to the requirements made of the worker.

With the advent of World War II, the economy, including the job market, radically changed: The surplus of qualified workers from the Depression years was replaced by a scarcity of workers and many jobs to be filled. Highly selective recruitment on the basis of training and/or experience was a thing of the past; acceptance of inexperienced or untrained workers with potential for the jobs became a common practice.

To use every available source of workers during this time, it became increasingly important for recruitment and placement personnel to know what characteristics or traits a person should possess in order to learn to perform the job. Therefore, a system of evaluating jobs in terms of worker potential was developed, and this data was published for use in counseling and placement. The system first appeared in the second edition of the *Dictionary of Occupational Titles*, entitled "Entry

Occupational Classification" (U.S. Department of Labor, 1949). Groups of jobs were described in terms of the personal traits required of the worker; for example, the ability to relate abstract ideas, the ability to plan, memory for details, facility with language, dexterity and muscular control, persuasiveness, and a liking for people.

This system soon became a basic tool for assisting the person not qualified for a job through experience or training. It became widely used in state employment service offices and other programs. It was also used to help in career exploration and choice, sometimes before the counselee entered college or training programs.

In 1949, the U.S. Employment Service initiated the Functional Occupational Classification project to develop a new classification system for jobs—one that would reflect not only what tasks were performed, but also what worker traits were required. Some of the resulting data was released in the 1956 publication *Estimates of Worker Traits Requirements for 4,000 Jobs Defined in the Dictionary of Occupational Titles* (U.S. Department of Labor, 1956). This new methodology provided the basis for research and development of the "Worker Traits Arrangement" in Volume II of the third edition of the *Dictionary of Occupational Titles* (U.S. Department of Labor, 1965).

The “Worker Traits Arrangement” was intended for counselors, employment interviewers, curriculum planners, and others engaged in assisting people in career exploration. The arrangement contained 22 areas of work; within each area were 114 groups of jobs based on common worker traits requirements. The requirements, in profile form, appeared under the following headings: General Educational Development, Specific Vocational Preparation, Aptitudes, Temperaments, Interests, and Physical Capacities.

Despite the wealth of information contained in this arrangement, it was not used to any great extent by employment service personnel and others involved in counseling and related activities, for three reasons. First, no technique existed for obtaining information from the counselee in the same language as that used in describing the jobs and for relating person data to job data in the “Worker Traits Arrangement.” Second, the technical descriptive language could not be used to help people understand themselves and their actual potential to meet job requirements in the world of work. Last, the “Worker Traits Arrangement,” because it was located between the “Occupational Group Arrangement” and the “Arrangement of Titles by Industry,” was difficult to use. The areas and groups were not identified by codes, and some of the titles were misleading. Researchers, however, found the “Worker Trait Arrangement” serviceable and have used the data in many different projects and studies.

The occupational interests of the trait qualifications profile were identified by Dr. William Cottle in research he conducted in the 1940s and 1950s. Dr. Cottle administered major interest and personality inventories then in use to 400 adult males, scored the inventories with scales that had been developed for these instruments, and factor-analyzed the intercorrelations of the scores. The five bipolar interest factors identified were adopted by the U.S. Employment Service for estimating interest requirements of occupations.

The Cottle-based interests, however, were of limited use in employment service operations, because counselors had no way of measuring the interests of individuals in the same terms in which interest requirements of occupations were shown in the DOT.

Some years ago, the Employment Service Division of Testing attempted, unsuccessfully, to develop an interest inventory with scales corresponding to the Cottle factors. However, an extension of this research led to identification of measurable interest factors (Droege and Hawk, 1976); further exploration indicated that these factors could also be used to form broad occupational interest areas for use in occupational exploration (Strohmeinger and Padgett, 1979; Droege and Padgett, 1979). These interest areas eventually became the basis for the first edition of the *Guide for Occupational Exploration* (U.S. Department of Labor, 1979).

Identification of the Occupational Interest Factors Used in the GOE

Test-development analysts in six state employment services—Mississippi, New York, North Carolina, Ohio, Pennsylvania,

and Utah—constructed 300 occupational activity items. All Worker Trait Groups and Occupational Groups in the third edition of the DOT were represented. As a result of item-analysis studies, 192 of the 300 items were retained. A review of these items by test research and occupational analysis personnel for coverage of the Cottle factors revealed uneven distribution requiring additional item construction. The inventory that followed consisted of 307 items, providing apparently good coverage of the Cottle factors.

Occupational analysts from the Michigan, Florida, and Missouri Occupational Analysis Field Centers were asked to allocate the 307 activity items in the Interest Inventory to the Cottle factors used as the interest component in the third edition of the DOT. The national Employment Service office reviewed these allocations and chose the most relevant activity items to form the initial scales measuring the 10 Cottle factors.

The 307-item inventory was administered to 525 males and 590 females in nine states: Arizona, California, Georgia, Massachusetts, Minnesota, New York, Ohio, Oklahoma, and Wisconsin. About half of those tested were high school seniors and college students; the other half were local employment service office applicants, trainees, and employed workers.

Analyses of the data were made

1. To determine the extent to which the keys developed by the occupational analysts provided adequate measures of the ten (five bipolar) Cottle factors, and
2. To identify the most important interest factors underlying the 307 inventory items, without regard to the factors Cottle had found.

Results and Conclusions

The major finding with respect to the Cottle factor scales was that only half of the Cottle interest factors could be measured with any confidence. Another finding was that the marked bipolarity Cottle found in his research was not confirmed by the results of the later study, which showed positive intercorrelations among all of the factor scales. Thus, the attempt to develop interest inventory scales statistically and conceptually parallel to the Cottle factors was unsuccessful. To identify the interest factors that best represented responses to 307 items of the inventory, the items were factor-analyzed. Principal-components factor analyses with varimax rotation (Kaiser, 1958) were performed separately on the total, male, and female intercorrelation matrices. Results of the factor analyses led to these conclusions:

1. Responses to the 307 activity items can be explained in terms of 11 basic occupational interest factors.
2. These factors are readily interpretable.
3. The factors are quite similar in meaning for males and females.

Development of Interest Areas and the Selection of an Organizing Principle

The last step in the development of the “Worker Traits Arrangement” in the third edition of the DOT was the formation of Areas of Work. Occupational analysts allocated the 114 Worker Trait Groups in 22 Areas of Work, based on the similarity of work performed. These 22 Areas of Work were formed to meet the counselor’s need to relate an individual’s traits to a framework of occupational requirements broader than that provided by the 114 Worker Trait Groups.

The usefulness of the areas was limited, however, because they were not developed systematically according to well-defined principles and could not be described in trait-related terms. More sharply focused areas were needed that would be meaningful to counselors and interviewers, clients, applicants, and students as a beginning point in occupational exploration. This objective could be achieved only if areas were formed first rather than last in the process of developing a structure for organizing the world of work. A meaningful, well-defined, and measurable variable important for occupational success and satisfaction was used in relating occupations to areas.

The search for organizing principles coincided with the successful identification of measurable occupational interest factors referred to earlier. Further exploration of the possibilities for using the interest factors in the development of the new structure led to two decisions:

1. Cottle interest factors for identifying interest requirements were to be eliminated and replaced with the 11 new interest factors, and
2. The 11 interest factors were to be used as the basis for forming areas in the original (1979) *Guide for Occupational Exploration*.

These decisions, made in the summer of 1975, were critically important to the initial planning of the original *Guide for Occupational Exploration*. A specific, well-defined, and measurable variable (occupational interest) of importance in vocational counseling and in career exploration would be the prime organizing principle in the new structure to replace the “Worker Traits Arrangement” in the third edition of the DOT. The new interest areas would provide a much more meaningful and accessible entry into the structure than that provided in the DOT third edition Areas of Work.

Procedure and Results

The critical first step in developing interest areas was to devise a suitable procedure that could be applied by occupational analysts. The following procedure was used:

1. Occupational analysts were given lists of Interest Inventory items with high factor loadings and asked to develop concepts of the underlying nature of the factors.
2. The occupational analysts were then asked to apply these concepts to job descriptions for a standard sample of occupations by allocating the occupations to areas corresponding to the 11 factors. Differences among the analysts in allocations of occupations to the areas were discussed to achieve more uniform concepts of the interest factors.
3. After these training sessions, each analyst was assigned a set of occupations to allocate to interest areas by reviewing job summaries and making judgments of the most prominent interest factors involved.
4. These allocations were reviewed by national office personnel.

During the allocation process, it became evident that one small group of occupations could not be allocated to any of the 11 areas. To accommodate these occupations, it was necessary to establish an additional interest area, Physical Performing.

GOE Interest Areas Are Cross-Referenced Readily to Holland Occupational Categories

Many professionals use interest inventories or other techniques that relate an individual’s interests or personality to Dr. John Holland’s occupational categories (Holland, 1973). In recognition of the extensive research on the Holland model and its widespread use in vocational counseling today, the GOE interest areas were arranged according to the Holland categories. This was done without much difficulty because the two systems are closely related. The primary difference between the two is that the GOE system provides additional differentiation within the broader Holland Realistic and Social categories.

The relationship of the Holland Occupational Categories to the Employment Service interest areas of work is shown in the following table.

Relationship Between Holland's Occupational Categories and GOE Interest Areas

Holland Occupational Category	GOE Occupational Interest Areas
Artistic	01 Artistic
Investigative	02 Scientific
Realistic	03 Plants and Animals 04 Protective 05 Mechanical 06 Industrial
Conventional	07 Business Detail
Enterprising	08 Selling
Social	09 Accommodating* 10 Humanitarian 11 Leading-Influencing** 12 Physical Performing

*Includes a few occupations covered by Holland's Enterprising and Realistic categories in addition to those covered by the Social category.

**A broad area including, in addition to occupations covered by the Holland Social category, business management and law/politics occupations covered by the Enterprising category, and social science occupations covered by the Investigative category.

Development of the GOE's Groups and Subgroups

After the jobs were allocated to the 12 interest areas, the analysts in Occupational Analysis Field Centers were asked to group the jobs in each area. The criteria were the capabilities and adaptabilities required of the worker, capabilities being such factors as general educational development, physical capacities, important aptitudes, and job knowledge; and adaptabilities being tolerances to job-worker situations including environment, routine, dealing with people, and working within precise limits and standards.

As a result, 66 discrete groups were developed to further categorize the jobs in the 12 interest areas. The number of groups per area range from 2 to 12. Because some of the groups contained an unwieldy number of jobs, it was necessary to divide the jobs into meaningful subgroups. Criteria for subgrouping varied from one group to another. For example, subgroups in 05.01, Engineering, are based on the kind of engineering; whereas subgroups in 06.04, Elemental Work, Industrial, are based on whether the activities involve hand work or machines, and what materials and products are involved. The number of subgroups per group range from one in Work Group 01.08 to 40 in Work Group 06.04.

After the 66 work groups were formed, an empirical test was made of their homogeneity with respect to aptitudes required for successful performance of occupations within the groups (Droege and Boese, 1984). This test was made by analyzing the results of the accumulated store of more than 450 occupational validation studies done on the *General Aptitude Test Battery* (GATB). The results showed that differences in job duties from one occupation to another within work groups are not associated with substantial differences in aptitude

requirements for performing the job duties, providing empirical support to the hypothesis that trained occupational analysts can group occupations into aptitude-homogeneous groupings.

The GOE System Is Easy to Understand and Use

A unifying characteristic of the *Guide's* occupational-oriented interest areas of work and aptitude-oriented work groups is the homogeneous nature of the job duties involved. From a practical standpoint, lay people can understand the clear descriptions of work performed in the interest areas and work groups. In addition, the homogeneous structure of the interest areas and work groups make it possible to use the GOE system in occupational exploration by youth and others who have limited or no access to counseling help. This fact is apparent from a review of work group titles and descriptions, for example:

- **Work Group 01.01, Literary Arts.** Workers in this group write, edit, or direct the publication of prose or poetry.
- **Work Group 03.03, Animal Training and Service.** Workers in this group care for animals of many kinds and train them for a variety of purposes.
- **Work Group 05.04, Air and Water Vehicle Operation.** Workers in this group pilot airplanes or ships, or supervise others who do.
- **Work Group 05.10, Crafts.** These workers use hands and hand tools skillfully to fabricate, process, install, and repair materials, products, and structural parts.

The development of an occupational structure that can be described as both “human-attribute related” and “nature-of-work related” is of some theoretical as well as practical importance. Systems based on the GOE’s structure provide at least an approximation to the goal of devising a unified taxonomy of work performance.

As explained previously, career-exploration systems using the GOE structure contain a psychologically meaningful occupational structure in that the interest areas are homogeneous with respect to broad occupational interests, and the work groups within interest areas are homogeneous in occupational aptitude requirements. This means that appropriate interest and aptitude measures can be used with counselees and others to aid in occupational exploration focused on those interest areas and work groups where occupational aptitude and interest are strongest.

It is important to recognize that assessment is only a preliminary step to occupational exploration by the counselee.

Thus, the counselor should make a conscious attempt to help broaden the counselee’s options for consideration and to encourage a maximum of occupational exploration in areas where application of the assessment techniques indicates potential. Specifically, counselees should be encouraged to think carefully about suitable occupational areas they may not have considered before because of lack of knowledge about the occupations, or because of a misconception that the occupations were not open to members of the counselee’s sex or ethnic group.

A related point is that all occupational options, not just those traditionally associated with one sex, should be considered within the broad areas covered by the assessment indicators. Thus, the counselee should be encouraged to consider the entire range of GOE work groups encompassed by an interest area being considered rather than to narrow the area prematurely to those work groups traditionally associated with members of the counselee’s sex.

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