JOB
ANALYSIS
GUIDELINES

IOWA MERIT EMPLOYMENT DEPARTMENT

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Iowa Merit Employment Department

July, 1974

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CHAPTER 1

WHAT IS JOB ANALYSIS?

Basically, there are two ways by which management can organize staff to provide service in the solution of personnel management problems. In some organizations professionals are assigned to jobs with specific responsibility, e.g., job evaluation, position classification, recruitment, examination development and validation, employee performance planning and appraisal, or training. Other organizations prefer to assign responsibility for all of these technical programs to each of their professionals, and thus has evolved the concept of the personnel generalist. Regardless of which organizational approach management utilizes to achieve its objectives, both the specialist and the generalist must rely on accurate information about jobs so that valid and acceptable personnel management decisions can be made. The researching of a job to obtain this information is commonly referred to as JOB ANALYSIS. Because terminology may be loosely used in practice, the following is offered as the definition of job analysis that will be used at the Iowa Merit Employment Department:

> JOB ANALYSIS is the systematic process which embraces the collection, compilation, verification, study, and application of all pertinent information about the nature of a specific job for purposes of meeting such personnel management needs as job evaluation, position classification, recruitment, examination development and validation, and employee performance planning and appraisal.

In conducting a job analysis you will want to determine:

> WHAT the worker does;
> WHERE the worker does it;
> HOW the worker does it;
> WHEN the worker does it;
> WHY the worker does it;
> DEMANDS imposed on the worker to do it.

The basic importance of job analysis in our organization is the foundation it provides for a better understanding of jobs. This better understanding of the jobs will enable us to make better decisions throughout the personnel management system in functional areas such as:

1. Job evaluation. This process involves the gathering of information about such component parts of a job as its authority, its responsibilities, its work setting, and the demands it imposes upon workers. This information provides (a) an orderly, systematic basis for making

a more objective determination concerning the relative value of a specific job in comparison with other jobs, and (b) standardization of job terminology and content, which is crucial in our investigation of wages and salaries through annual or special surveys.

2. Position classification. If you have determined the WHAT, WHERE, HOW, WHEN, WHY, and demands of the job, you should be able to record this information in a class specification and position standard. These basic personnel instruments define the job, describe major tasks performed, indicate knowledges, abilities, skills, and personal characteristics (KASPC's) associated with the performance of these tasks, and provide criteria which differentiate a specific job from all other jobs. When the tasks and demands of specific positions change, class specifications and position standards provide objective guidelines for recommending allocation of the position to a more appropriate job class.

3. Recruitment. In this function, you are essentially concerned with searching for the person(s) who has the appropriate blend of KASPC's to perform a specific job. Through job analysis you can establish the qualifications which contribute to an employee's success or failure in a specific job and formulate appropriate plans for meeting future manpower needs.

4. Examination development and validation. The bases from which you will develop selection criteria are the KASPC's utilized in the adequate performance of specific job tasks. Each job task will require at least one KASPC. Unless you have conducted a job analysis to establish and document the link between job tasks and KASPC's, you may violate professional standards and legal guidelines relative to the development and use of employee selection devices. Furthermore, job analysis is fundamental in the content validation model, i.e., demonstration of how well the content of a selection procedure samples the KASPC's associated with the performance of the job for which it is testing.

5. Employee performance planning and appraisal. This is a process for appraising the value of an employee to an organization in terms of the employee's performance as it relates to management's objectives. Employee evaluation is often criticized as being a subjective process. A thorough job analysis, however, can reduce this subjectivity by aiding in the development of concrete standards on which to base performance objectives.

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Although there are other purposes for conducting a job analysis, we have emphasized its utility in those functions of our personnel management system which you will most frequently encounter.

In summary, remember this important point: JOB ANALYSIS IS A MEANS TO SEVERAL ENDS; IT IS NOT AN END IN ITSELF. Do not move directly from the results of your job analysis into the development and validation of your selection criteria at the expense of position classification criteria. Conversely, do not simply use your findings to develop classification materials and leave this organization with documented information too broad to support the job relatedness of employee selection criteria. Rather, your goal should be an attempt to collect and verify job information which can be studied and applied to any of the personnel management functions discussed in this chapter.

CHAPTER 2

COLLECTING JOB INFORMATION

Now that you know what job analysis is and why it must be done, there are at least seven basic methods for collecting job information[1]. They are:

A. Background Research
B. Position Questionnaire
C. Worker Log
D. Observation
E. Individual Interview
F. Group Interview
G. Brainstorming

Considerations in selecting the method(s) for collecting the job information may include the following:

A. The type of class to be analyzed;
B. The variance in duties assigned to positions within that class;
C. The number of positions allocated to that class;
D. Other classes being analyzed as a part of the study;
E. The verbal level of the incumbents;
F. Time constraints;
G. The preferences of the analyst and the organization involved.

A. <u>Background Research</u>

Collecting specific information about the work and worker traits should be preceded by reviewing available background information such as:

1. Relevant organizational charts. This may provide an understanding of how the job in question relates to other jobs and where it fits into the overall organization.

2. Talking with other analysts. There may be other analysts in the office who have had prior experience with this class and can provide you with useful information about the history of the class, incumbents in the class, different uses of the class in different agencies, and where to expect cooperation.

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[1] U.S. Civil Service Commission, Bureau of Intergovernmental Personnel Programs, <u>Job Analysis, Developing and Documenting Data: A Guide for State and Local Governments</u>, BIPP 152-35 (Washington, D.C.: U.S. Civil Service Commission, December, 1973), pp. 23-26.

3. Class specifications. These can be useful in building an early picture of the job. As you proceed through the steps in the analysis, you should compare the results with information that exists in the present classification plan. Such a comparison provides a means of updating class specifications and maintaining proper allocation of positions.

4. Existing position descriptions. These may be used not only as part of background information, but subsequently in conducting the analysis if they are current.

5. Training manuals. Knowing what training is being provided is a good start in gaining an understanding of the nature of the work. The job analysis may later be used to update such manuals.

6. Policy and procedure manuals. This will often give an indication of work responsibilities and procedures.

7. Other useful sources for the information collection process of a job analysis study include: job audit reports, occupational brochures and pamphlets, examination content outlines, the Dictionary of Occupational Titles, the U. S. Department of Labor's Occupational Outlook Handbook, the Encyclopedia of Careers and Vocational Guidance, various technical and vocational magazines, and subject matter texts.

The information obtained in this initial process will assist you in determining the number and organizational distribution of positions to be studied as well as suggesting additional methods to be used for collecting information.

B. The Position Questionnaire

The position questionnaire asks the employee and the supervisor to provide written answers to a series of questions about the job. The questionnaire may be open-ended with a few general questions, a checklist, or very structured with many detailed questions. The questionnaire can be used in a mail survey, or completed in a supervised group situation.

The position questionnaire is advantageous in that a large amount of information can be gathered in a short period of time at low cost. On the other hand, the questionnaire should usually be accompanied by another data collection method. The open-ended questionnaire requires writing skill on the part of the person completing

it; there may be an exaggeration of the work done; and responses may be difficult to read and interpret. Construction of a good questionnaire takes considerable time and skill. Using the mail does not provide the face-to-face contact that is often beneficial to such a project, and depending upon the clarity of the instructions, there may be a variety of interpretations employed in their completion.

C.   Worker Log

In this information collection technique, workers are asked to keep daily logs or lists of things they do during the day. As the participant changes from one task to another, she/he records the task along with the time in the log. The advantage of this technique is its comprehensiveness. Virtually every minute of work time is assigned to a task.

If the tasks of the job vary over a period of days, weeks, or months, incumbents may be asked to complete logs only for specified representative periods. If it is not certain when changes in duties occur, but only that they do occur, you may randomly select periods during which logs are to be completed.

In order to fully understand and be able to use the worker logs you should interview one worker or supervisor to clarify the use of terms and to obtain any needed explanations or clarifications concerning the log. A meeting with a group of people familiar with the job may be even more helpful, especially if there are differences in terminology among the logs, as different employees may use different descriptive terms in their logs, making it difficult to compare one position with another.

This technique is advantageous in that it can provide accurate information on what the worker does and the time spent on each activity. It reduces the emphasis placed on memory by some other data collection techniques, and can often be easily done without much preparation. However, the worker may perform differently because of the log. If the job varies over a long period of time, this may not be reflected in a log based on only a few weeks period. Without exposure to the job, the analyst may also have a difficult time interpreting the log. Like the observation technique, this method should only be used as a supplement to other data collection methods.

D.   Observation

For jobs consisting primarily of short cycle, observable activities, direct observation is an appropriate method of collecting data. The observation method may be approached in one of two ways:

   1.   Observe the worker on the job performing a complete work cycle before asking any questions. Take notes on all the job activities observed, especially those not fully understood. After accumulating as much information as possible from observation, talk with the worker to clarify points not understood and to determine what the worker does in addition to what you have already seen.

   2.   Observe and interview simultaneously. As you watch, talk with the worker about what is being done and ask questions about what is observed as well as the conditions under which the job is being performed.

Under either approach it is necessary to discuss your observations with the worker's supervisor. This technique should normally be used in conjunction with other techniques discussed in this chapter.

E.   The Individual Interview

Interviews are a sufficient means of data gathering for desk jobs and other jobs involving little observable physical activity, i.e., for jobs involving the processing of data as opposed to the manipulation of tools. Incumbents may be interviewed at their desks or some other convenient location. It is important that the interviewee fully understands the reason for the interview so that the interview will not be interpreted as an efficiency evaluation or as only a classification audit. Two short interviews, generally limited to one hour, may be better than one long one with any one worker. One reason for this is that few supervisors are willing to take their people off the job for very long. In addition, the time between interviews allows both you and the worker an opportunity to reconsider what has already been discussed.

The individual interview might proceed along the following lines:

   1.   Meet with the supervisor to obtain an overview of the job. The supervisor may give an indication of any special problems with the class

and may also assist in selecting suitable
employees for the interview. The employees
selected should know the job well and range
from at least average to superior in the per-
formance of their duties.

2. Meet with the worker alone. The presence of
others, particularly a supervisor, is likely to
be a distraction. Explain why the study is being
done, and why he/she has been selected as an
interviewee.

3. Use an orderly system to structure the interview.
The following approaches may be useful:

a. Begin the interview by asking the interviewee:
(1) What are the major duties of your position?
What exactly do you do?
(2) What different physical locations do you
work in?
(3) What activities do you participate in?
What exactly do these involve?
(4) What other responsibilities do you have?
(5) Where does your work come from?
(6) Where does your work go?
(7) How often is your work interrupted?
Are interruptions due to:
(a) uncontrollable factors?
(b) shifts in priority?
(8) Do you establish your own work priorities
or are they established for you?

After establishing the job duties through the
above or similar questions, the interview should
by structured by confining discussion to one duty
at a time.

b. An alternate approach to beginning the interview
is to ask:
(1) What is the purpose of the unit you work in?
(2) What is the general nature of your job?
(3) What specific areas (functions, locations,
projects, etc.) do you work in?
(4) How do your responsibilities relate to those
of others in your unit?

c. In nonsedentary jobs it may be desirable to
further divide the job into the tasks performed
at various duty stations, i.e., structure the
interview according to work location.

d. For jobs in which duties vary on a seasonal basis or which are nonrepetitive in nature, it may be desirable to structure the interview in terms of individual seasons, months, or days of the week.

e. Some jobs consist largely of project assignments and may be structured by developing a list of projects and discussing the tasks involved in one project at a time.

f. Many audits may be structured by simply asking for the tasks performed during a typical day or week.

4. Ask the worker to describe the duties in his/her own words. Insist on a thorough description of each activity. Ask questions about terms which you do not understand. Ask to see forms or equipment with which you are unfamiliar.

5. Obtain copies of any forms or other written materials including training manuals and regulatory material.

6. Take complete notes and summarize them verbally to the interviewee from time to time to verify your understanding of the job. If the interviewee is comfortable with it, a tape recorder may prove very useful in place of taking notes by hand.

7. Check your interview notes against any available job information, e.g., duty statements or allocation standards, as these may prompt new questions. Make sure that the indicated duties explain what happens to each form, object, etc., that passes through the employee's hands, i.e., anything received that is acted upon or transmitted by the worker. This may help generate additional tasks.

8. Check whether the indicated duties explain the presence of all materials (e.g., tools, telephone, files, equipment) at the work station. Questions about these items may bring out additional tasks. Confirm that the duties as indicated account for all the people contacted on the job and all information which is provided or dispensed.

9. Finally, try to get a notion of the discretion level on which the worker is operating. Beware-- comments like "I decide" may mean the worker knows the standard operating procedure and acts accordingly, but may not be establishing policy and procedure in any sense. Another caution -- strict accountability or high performance standards do not necessarily minimize discretion.

F. The Group Interview

In some situations, group interviews are a more effective means of gathering job information than are individual job audits or other individualized methods of information collection. The group approach is especially efficient when jobs at several levels in a class series are being subjected to analysis. Each group to be interviewed should be representative of the position variations within the class being studied. So long as the supervisors are not allowed to dominate or inhibit the discussion, such a group can usually be counted on to give you a complete and well-rounded picture of the job.

With this method, as with the individual interview, the analyst should explain to the group's members the purpose of the meeting and the role of the information to be gathered in the job analysis process. For example, if the job analysis is part of an examination validation effort, you should explain the relationship between gathering job information and validating examinations, including the importance of such a validation effort in the selection of the most qualified employees.

The group interview may be conducted by one or two job analysts whose role is to motivate the groups, posing questions when necessary and recording information developed by the group. The other responsibilities of the analysts are to provide direction to the group, to get the group started, and to keep the group moving. Many groups are easy to start and will respond to requests for a volunteer to give a brief description of the job. Hopefully this statement will start some discussion. The following may be useful if it proves difficult to start or maintain the group interview process:

1. Ask what the major duties of the position are; what different functional areas must incumbents work in; are there any other responsibilities?

2. Give a statement of your own understanding of the job. Misconceptions or inaccuracies will probably be commented on by the group.

3. If you already have some understanding of the job, offer the group a statement which you know does not describe the job well. Members of the group may be prompted to offer a corrected version.

4. Select one or two persons to state their concepts of the job. Even if the group fails to comment on the first statement, they are likely to have comments on any differences between the statements of the two individuals.

Additional useful techniques to initiate and maintain discussion include:

1. Pursue lines of questioning until all details are obtained.

2. Periodically summarize what the group has produced up to that point.

3. Ask one or two group members to answer a general question about the job.

4. Challenge a statement which has been made. You will either get renewed discussion in support of your challenge or discussion in defense of the original statement, or both.

While a highly successful group may be able to complete such a project in one all-day session, generally several sessions of about four hours each are required. Even a highly productive group should be encouraged to hold at least two meetings since a period of reflection after the first meeting may result in the development of additional important information, or the modification of information gathered the first day.

Both types of interviews (individual and group) allow first-hand data collection with the opportunity for clarification and expansion of the data, if needed. Unless the ideas generated by the discussion are recorded quickly according to a structured format, however, this method depends too much on recall. The competency of the analyst is a key factor with this method. This method is not particularly effective when workers have low verbal ability.

G. Brainstorming

This technique involves bringing together first-line
supervisors and incumbents of a specific class of work
for "brainstorming". The analyst serves as the leader
of the session, guiding its direction and recording the
results of the session participants' discussion in the
form of task statements.

In the brainstorming session you need to have ready a
list of several task statements to use as examples of
format. For these to be meaningful to the participants
they should relate to the class in question and be
stated in an appropriate vocabulary. In the brain-
storming session you also need to know the major
duties of the class to insure that the participants
have covered all phases of the job.

You should emphasize that the purpose of the brain-
storming session is to suggest as many job tasks as
possible. What is desired is a free flow of sugges-
tions. It is important that the tone of the sessions
be relaxed and yet businesslike. You should strive to
make the group members feel at ease and also impress
upon them the importance of their ideas to the job
analysis process.

A problem which may arise when brainstorming groups are
comprised of both supervisors and incumbents is that
supervisors may tend to monopolize the sessions and
inhibit suggestions from subordinates. If you have
reason to believe that this may occur, it may be wise
to hold sessions where the supervisors are separated
from the incumbents. If this is done, the two resulting
lists of tasks should be combined. Only obvious dupli-
cations should be eliminated.

As with the individual and group interview methods,
brainstorming allows first-hand data collection with
the opportunity for its clarification and expansion.
It is especially effective when the positions in the
class being studied are very homogeneous. Unlike any
other method, however, brainstorming directly involves
the session participants in the creation of the task
statements. Consequently, it relies heavily on the
verbal level of those participants and the communication
skills of the analyst.

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SUMMARY

In conclusion, there is no one best method for information collection. The most useful method at any given time will depend on the factors discussed in this chapter and other unanticipated situations. Our approach, however, will always be to use one or more of these methods to collect information for compilation in the form of task statements.

CHAPTER 3

WRITING TASK STATEMENTS

Once basic information on the what, where, how, when, why and demands of the job has been collected, this information must be compiled in a concise and logical manner to be of use to the job analyst. Several formalized systems of job analysis currently exist which are aimed at making this information readily usable. Such systems include the Job Element approach, the Critical Incident approach and the Task Analysis approach. Each of these systematized approaches to job analysis has certain advantages and disadvantages.[1] We have chosen to emphasize an adaptation of task analysis as a concise and logical way to compile what a worker does in specific terms that can be readily understood and communicated. This method is also relatively simple and easy to explain and use. We feel that this is the system which will best enable us to meet our goals of obtaining accurate job information and applying this information to make valid personnel management decisions in a variety of areas.

Having collected as much information as possible about the job you are studying, you will want to compile it in a usable, standard format. The format used in the task analysis approach is called a TASK STATEMENT (for examples see pp. 18-19). Your notes from the data collection process should contain enough information about duties and responsibilities to enable task statements to be written that will answer the following questions:

1. Who is doing the action?

2. What is the action?

3. To whom/what is the action directed?

4. Why is the action being done?

5. How is the action done?

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[1] For a more detailed discussion of each of these approaches to job analysis see: (a) John C. Flanagan, "The Critical Incident Technique", Psychological Bulletin, LI (July, 1954), pp. 327-358; (b) U.S. Civil Service Commission, Bureau of Policies and Standards, How to Prepare and Conduct Job-Element Examinations, by Ernest S. Primoff, Project No. 6B531A (Washington, D.C.,: U.S. Civil Service Commission, 1973); (c) A Systems Approach to Task Analysis and Job Design: Seminar Workshop Workbook, Sidney A. Fine, Workshop Director (The W.E. Upjohn Institute for Employment Research, 1969).

1. *Who* is doing the action?

    The answer to this question provides the implied
    subject of the task statement. In our organization,
    this subject is understood to be "the worker", i.e.,
    the incumbents in the job being analyzed.

2. *What* is the action?

    The answer to this question provides the verb and
    first word of the task statement. The verb used
    should be descriptive of the action, as precise
    as possible, and written in the present singular.
    A few examples of some commonly used (actually
    misused) verbs that should be avoided because of
    ambiguity are:

helps	counsels
assists	interviews
keeps	participates
assesses	develops
prepares	teaches
audits	processes

    Avoid using the title verbs that categorize the
    various data-people-things worker function levels,[2]
    unless these are used in accordance with rigid defini-
    tions that allow little room for interpretation. If,
    however, a very precise verb is not readily available,
    a less precise verb may be used provided the *How*
    portion of the task statement is expanded to very
    clearly describe the action.

3. *To Whom/What* is the action directed?

    The answer to this question provides the object of
    the task statement and/or reflects the recipient
    of the worker's action.

4. *Why* is the action being done?

    The answer to this question is preceded by the phrase
    "in order to" and provides the reason for the action.
    Care should be taken to insure that the *Why* is not
    mistaken for the *What*. For example:

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[2] For a list of these see: U.S. Department of Labor, Manpower
Administration, Handbook for Analyzing Jobs (Washington, D.C.:
U.S. Government Printing Office, 1972), p. 5.

Incorrect: Keeps the client's health record up-to-date by writing on the ward chart.

Correct: Writes vital sign (temperature, pulse rate, respiration) data on the patient's ward chart in order to maintain an up-to-date health record by....

(Notice that the incorrect example also starts with the ambiguous verb "keeps").

Another caution to the task statement writer is to be sure that the *Why* is compatible with the *What*. For example, one does not "reads a variety of materials in order to make a decision...", one "reads a variety of materials in order to gather information..." and then one "analyzes the information gathered in order to make a decision...."

5.   *How* is the action done?

The answer to this question is worded to indicate what guidelines/instructions, tools/equipment and discretion are used by the worker, as well as the amount of supervision received by the worker in performing the task (see example b, p. 18). Here, too, the task writer must not only avoid ambiguity, but must also guard against becoming verbose in an attempt to cover the minutia that might be included in this section. Finally, in the case where the *How* has been expanded to accommodate a less precise *What*, more than one sentence may be used to write the task statement (see example d, p. 19).

After answering these questions, all you will need to do to write a task statement is to organize the answers into an easily readable, grammatically correct, concise sentence(s) using the standard format discussed in this chapter. This procedure provides for a uniform presentation of the material, which, in turn, aids in the verification and utilization of the list of task statements. Our task statements will be written in the order in which the questions to be answered have been presented in this document. Since tasks vary in complexity, the task writer should expect to have task statements of varying length and complexity. Regardless, <u>all</u> task statements <u>must</u> answer the questions *What, To Whom/What, Why* and *How*.

Following are some examples of vague, improperly written task statements. After each statement is a short critique pointing out its ambiguities and suggesting improvements that could be made.

a. Ensures that residents receive medical attention when needed.

First, the *What* is ambiguous and gives no real information as to the action. Second, the *Why* and *How* questions have not been answered. Finally, this statement leaves some doubt as to the real object of the action.

         What   *To Whom/What*
Suggestion: Administers/minor medical treatments or

medications (taking temperatures, treating minor cuts

and bruises, giving aspirin or cough syrup)/in order to
       Why
correct or treat residents' minor health problems/using
      How
knowledge of symptoms to determine need following established

institutional medical department procedures.

b. Assists with the inspection of construction projects.

First, the *What* is ambiguous and gives no real information as to the action. Second, neither the *Why* nor the *How* questions have been answered.

         What   *To Whom/What*
Suggestion: Inspects/construction operations (erosion

control, portland cement concrete paving, asphaltic

concrete paving, painting, fencing, sign placement)/in order
    Why
to insure compliance with construction specifications/by
        How
comparing visual observations with construction speci-

fications and plans, and verbal instructions; with daily

review by the supervisor.

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c.   Shakes down clients for contraband.

Although in this statement the *What* is fairly clear,
the *Why* is vague, and the *How* question remains unanswered.

<div align="center">

To Whom/

What   *What*   *Why*
</div>

Suggestion: Shakes down/client/in order to identify and

confiscate contraband (drugs, weapons, alcohol, money)/by

How

personal patdown search of client and by visual inspection

of residence, grounds, and client's personal possessions

(clothing, lockers, automobile), all within established

state and federal laws and Bureau of Community Correctional

Services guidelines.

d.   Trains subordinate employees.

Without further explanation, the word "trains" conveys
little useful information. Also, it is impossible to tell in
what they are being trained. Finally, neither the *Why* nor
the *How* questions have been answered.

<div align="center">

What   *To Whom/What*
</div>

Suggestion: Instructs/employees in Department of Social

Services policies and office procedures, applicable state

and federal laws, ethical and professional conduct,

report preparation, and treatment plan development and

Why

implementation/in order to facilitate adequate or improved

job performance./ This is done by providing appropriate

How

reading materials, making work assignments, conducting staff

meetings and orientation sessions, and coordinating or

conducting on-the-job training activities.

Now that the basic job information has been compiled in the form of task statements, the analyst is ready to move on to the development of the worker traits (knowledges, abilities, skills and personal characteristics) associated with the performance of each task. These worker traits serve several purposes. Of most immediate value, they are useful in critiqueing the task statements, since all worker traits developed should be based on the job tasks. If worker traits are suggested which are not supported by the task statements, then the analyst is alerted to the possible need for rechecking the task statements for omissions. After verification and further analysis, the worker traits will also be useful in making valid recruitment, selection, and training decisions. The next chapter will show how these worker traits are developed and how they should be written.

CHAPTER 4

DEVELOPING KNOWLEDGE, ABILITY, SKILL,
AND PERSONAL CHARACTERISTIC STATEMENTS

Knowledges, abilities, skills, and personal character-
istics (KASPC's) are intended to reflect those worker traits
associated with the performance of the tasks that have been
derived for a given job. Accurate KASPC statements are
absolutely essential as a basis for professional decision-
making relative to personnel functions such as the develop-
ment and validation of selection processes, recruitment and
training.

Development of KASPC statements requires that the
worker traits associated with each task be inferred from
each individual task statement. This inferential process is
illustrated in the following example.

Task Statement:

T-1   Gathers information about client from records
      (criminal justice system, military, employment or
      educational) in order to facilitate preparation of
      required reports (pre-sentence, violation, discharge,
      furlough) and/or to facilitate the development and
      implementation of the client's treatment program by
      locating, reading, and summarizing or editing the
      appropriate written materials within the constraints
      of Bureau of Community Correctional Services policy
      and state and federal law.

KASPC Statements:

K-1   Knowledge of types of client information records
      appropriate for use in community correctional
      programs.

K-2   Knowledge of Bureau of Community Correctional
      Services policy concerning the gathering of
      information for use in a community correctional
      program.

K-3   Knowledge of Iowa laws relative to the gathering of
      information for use in a community correctional
      program.

K-4   Knowledge of federal laws relative to the gathering
      of information for use in a community correctional
      program.

K-5   Knowledge of the English language including compo-
      sition, grammar, and sentence structure.

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A-1   Ability to understand Bureau of Community Correctional
      Services policy concerning the gathering of infor-
      mation for use in a community correctional program.

A-2   Ability to understand Iowa law relative to the
      gathering of information for use in a community
      correctional program.

A-3   Ability to understand federal law relative to the
      gathering of information for use in a community
      correctional program.

A-4   Ability to understand information contained in
      records such as military, criminal justice system,
      employment and education.

For the purpose of inferring KASPC statements the *Why*
portion of the task statement is relatively insignificant.
As you will soon realize once the inferential process is
underway, the *How* portion of the task statement provides the
primary basis for inference. The *How* portion begins "by
locating... the appropriate written materials...." From
this, it is fairly obvious that one must have some idea of
the types of informational records, hence, the first KASPC
statement (K-1). The *How* continues "by...reading and sum-
marizing or editing the appropriate written materials...",
which leads to the inference of A-4. The *How* section concludes
by saying that this activity is performed "within the con-
straints of Bureau of Community Correctional Services policy
and state and federal laws." In order to operate within a
set of parameters, it is reasonable to expect one to know
and have some level of understanding of those parameters.
For this reason KASPC statements K-2, K-3, K-4, A-1, A-2,
A-3 were written. Finally, since it is expected that the
records, laws and guidelines involved in this task will be
written in English, K-5 was included.

A question that may arise at this point concerns the appro-
priateness of listing worker traits for a task that are
prerequisite to more advanced worker traits that are also
listed. An example of this is K-5. Since this statement is
an obvious prerequisite to statements K-2, K-3, K-4, A-1, A-2,
A-3, A-4, is there any real need to list it? In this case
probably not, but what about statements K-2, K-3, K-4 which
are prerequisite to statements A-1, A-2, A-3 respectively?
The solution lies with the judgment of the analyst performing
the study. While the two extremes may not be too difficult
to distinguish, it is the "middle ground" where the analyst
must exercise independent judgment, based primarily on past
experience, in determining whether the prerequisite traits
are obvious enough to remain unwritten or whether they
should be listed.

Although the preceding example is fairly elementary, it does serve to illustrate the process (i.e., inference) by which KASPC statements are developed. The analyst must rely primarily on agency "experts" to infer KASPC statements from the tasks identified for the job being studied. In our system, "experts" are usually taken to mean a group of incumbents in and supervisors of the class being studied. If, however, agency personnel are unable or unwilling to help, people working outside of state employment that are employed in very comparable work can also be a valuable resource.

In the actual writing of KASPC statements, conciseness with specificity is the goal. In accordance with this goal, *each KASPC statement must be limited to only one worker trait and its specific components.* As an aid for uniformity, the following definitions, as used in our organization, and some examples are offered.

Knowledge
KNOWLEDGE, as used in writing KASPC statements, is defined as an organized body of information, usually of a factual or procedural nature, which, if applied, makes adequate performance of the job possible. It should be noted, however, that possession of a knowledge does not insure its proper application.

In writing knowledge statements for use in our verification procedure, adjective modifiers (e.g., some, thorough) relative to the level or extent of the knowledge should not be used. Doing so introduces a variable that is not appropriate at this point in the study. Following are some examples of appropriately written knowledge statements:

Knowledge of wildlife management principles including life cycles, characteristics and habitats of mammals, birds and reptiles suited to life in Iowa.

Knowledge of purchasing practices including determination of needs, selection of items, bid letting and stores management.

Knowledge of financial management principles in the areas of budgeting, purchasing and payroll.

Ability
ABILITY, as used in writing KASPC statements, is defined as the power to perform an activity at the present time. Also implied is a lack of discernible barriers, either physical or mental, to performing the activity. Care should be exercised so as not to confuse an ability, which is evidenced by the demonstration or performance of some activity

or work, with an aptitude which is only a potential for performing an activity. It should be noted that demonstration of an ability does imply the possession of any corresponding or prerequisite knowledge(s) and aptitude(s) since abilities emerge when aptitude(s) is combined with knowledge(s). A further caution to the analyst writing ability statements is to avoid confusing the action of the ability with the object or result of that action. For example:

> Ability to establish and maintain a working relationship with....

In this example the object or result of the action has been written so as to appear to be the action. More appropriately this statement should be written as follows:

> Ability to interact with clients to establish and maintain a professional working relationship with them.

Finally, in our organization, neither adjective modifiers of the level or extent of the ability (e.g., some, considerable), nor vague adverbs implying some level of performance (e.g., rapidly, effectively, efficiently) should be used to modify the action of the ability statement. For example:

Incorrect: Considerable ability to effectively maintain clerical accounting records.

Correct: Ability to log accounting transactions in order to maintain accurate and up-to-date accounting records.

> Note: Not only did the incorrect example try to indicate the extent (i.e., considerable) of the ability and some vague performance standard (i.e., effectively), but it also used the result of the action as the action itself.

Following are some examples of appropriately written ability statements:

> Ability to evaluate observed inmate behavior to maintain security in a correctional setting.

> Ability to interact with delinquent, dependent or neglected youths, in a treatment setting to gain their confidence, respect and cooperation.

> Ability to calculate solutions to mathematical problems involving addition, subtraction, multiplication and division.

Skill

SKILL, as used in writing KASPC statements, is defined as the _proficient_ manual, verbal or mental manipulation of data, people or things. _The difference between skill and ability is that skill embodies observable, quantifiable, and measurable performance parameters._ For example, if a certain job involved occasional use of a typewriter without any particular regard to speed or number of corrections made, then it would be appropriate to list the activity of "typing" in the format of an ability statement. If, on the other hand, it had been established that a typing rate of at least "X" words per minute with no more than "Y" corrections per page was necessary for adequate performance of the task requiring this activity, then the activity of "typing" should be written as a skill statement including the performance parameters as part of the statement. These performance parameters should not, however, be merely implied through the use of adjective modifiers of extent (e.g., some, considerable) or vague adverbs (e.g., accurately, effectively). Instead, be certain in writing worker activities as skill statements, that the performance parameters can be observed, quantified, and measured. Finally, the demonstration of a skill implies the possession of prerequisite knowledges and aptitudes used in the performance of the activity.

It is very important not to confuse the word SKILL, as used in writing KASPC statements, with the term "skilled" which is commonly applied to a level of expertise attained by tradesmen, craftsmen, etc., (e.g., unskilled, semi-skilled, skilled).

Following are some examples of appropriately written skill statements:

Skill in typing at the rate of sixty (60) words per minute with less than four (4) errors per hundred words.

Skill in interacting with food stamp applicants such that four (4) applications are processed per hour without error.

Skill in matching available employment opportunities with job applicants such that at least thirty (30) placements per month are achieved.

Personal Characteristic

PERSONAL CHARACTERISTIC, as used in writing KASPC statements, is defined as a special, specific personality factor (attitude), aptitude, physical or mental trait needed to do the work, that appears either in addition to or to a greater extent than what is generally expected of all employees in all jobs. A further aid in distinguishing a personal

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characteristic from an ability is that a personal characteristic usually an reflects a passive state which is adjunct to the activity taking place, i.e., which plays no active part in the actual performance of the task.

Following are some examples of appropriately written personal characteristic statements:

Hearing correctable to a range which will allow normal face-to-face and telephone conversation with applicants.

Color vision sufficient to discriminate the color codes of medicines being dispensed.

Spatial perception sufficient to visualize the arrangement and location of structural components of buildings from blueprints and diagrams.

Since it will be up to the analyst performing the job analysis to decide whether or not a personal characteristic statement should be listed, great caution must be exercised to insure that the personal characeristic is not in fact something that would generally be expected from any employee in any job.

SUMMARY
At this point the analyst now has all the basic information about the job being studied needed to make valid decisions regarding a variety of personnel management functions. The next chapter will outline a method for verifying the information gathered so that an even greater level of confidence in this basic job information can be established.

CHAPTER 5

VERIFYING JOB INFORMATION

After preparing task statements and knowledge, ability, skill, and personal characteristic statements you should have these statements verified by a group of expert raters through the use of the Job Analysis Questionnaire (JAQ). In order to accomplish this goal, you must obtain the cooperation of the agencies using the job being analyzed, and they must be willing to provide the expert raters and the time necessary for them to complete the verification process.

Obtaining Agency Cooperation

There are several points to consider when initial agency contacts are being made that may facilitate gaining their cooperation. These include the following:

1. If several agencies are using the job that you are analyzing, all should be contacted and offered the opportunity to participate. If possible, the acceptance or rejection of this offer should be obtained in a letter containing the agency's reasoning for the decision.

2. A personal visit to the agency to briefly explain the purposes of the study and the procedures to be used is advisable.

3. Initial contacts should be made by letter, but may also be accomplished by telephone if time is a problem. Telephone contacts should be followed by a letter summarizing verbal responses to initial contacts. This initial letter should contain a statement of the purpose of the study and a very brief explanation of the procedure.

4. Your next contact will probably be with the person provided by the agency for liaison purposes. In most instances this will be the personnel representative of the agency, but may be any other interested agency employee who is highly familiar with the agency's internal operations. A good working relationship should be maintained with this contact person.

5. Initial contacts with the agency coordinator should be used to arrange a mutually convenient time and place for the group meeting(s). This time should satisfy deadline requirements for the job analysis and also not disrupt the work schedule of the agency or agencies involved.

6.   Upper level management, affirmative action staff, and program staff should be notified of the impending meeting and its purposes and invited to participate as observers. This invitation may be extended personally by the analyst or through the agency coordinator as conditions warrant.

Selecting Expert Raters

There are two basic criteria that you and the agency must consider when selecting the people to review the information previously developed. These criteria are: 1) the qualifications of the individuals; and 2) the interest of the individuals.

1.   Qualifications: Obtaining qualified individuals is of primary importance. By qualified we mean persons who are thoroughly familiar with the job, i.e., the actual duties performed on the job and what knowledges, abilities, skills and personal characteristics are utilized in the adequate performance of those duties. A person chosen to be in the group may have gained this familiarity through experience, education or otherwise. Do not consider only experience gained through state service, as pertinent background obtained outside of the state system which has contributed to that person's knowledge of the job being studied is also valuable. However, we are looking primarily for people within the state system to do the review. We feel that this is necessary to ensure that the people in the review group are thoroughly familiar with specific duties of the job being reviewed. No minimum amounts of education or experience can realistically be set due to the variability of persons within any given job. In actuality, the agency will be supplying the reviewing group and will have a major impact on who will be selected. The analyst should thoroughly familiarize the agency coordinator with the criteria for selecting group members and should work closely with that person in the actual selection process.

2.   Interest: The second major criterion for a good group member is interest. The group member should be a willing participant, ready to take the time and effort to do a thorough job of reviewing the material that you will provide. Effort should be made to make sure people sent by the agency are those willing to provide constructive criticism. Much of the group's time can be wasted by individuals who are unwilling or disruptive participants.

In addition to considering the qualifications and interest of individual members of the group, be sure that two factors related to the group as a whole are considered as well. These are:

1. Composition: It is of paramount importance that rating groups be representative of the class, containing a proportionate number of incumbents, supervisors, and possibly, administrators from the various settings in which the job exists. If positions in the class vary relative to duties performed you should strive to make certain that the sample group contains an adequate number of raters from each type or variation of position in the class to insure a balanced input.

   Be sure to include available members of protected classes (e.g., minorities, females, etc.) if they meet the previously outlined criteria for individual raters.

2. Size: The ultimate number of raters needed to provide an adequate sample is primarily related to the composition of the class. In other words, a class which is more diverse, i.e., one with a wider range of types of positions found in the class, may require a larger sample size to insure adequate representation than will one that is homogeneous.

   To allow for large, highly populated classes with diverse positions it may be necessary to schedule several meetings in order to be sure that adequate representation is obtained. The necessity for several meetings is related to the fact that about twenty (20) raters at any one session is probably as large a group as one group coordinator can handle. This should not, however, be regarded as an absolute rule, as variations related to group composition may override this consideration.

   At an absolute minimum, three (3) raters will be needed to derive even reasonably meaningful statistical data from the raters' input. However, in a situation in which less than three expert raters are available (which is likely to be the case with a one position class) it may still be helpful to get input from one or two raters. Valuable information can be obtained from simply looking at the raw information and suggestions that they provide.

In summary, when considering the selection of a group of expert raters to review material for job analysis purposes, you should consider the following points: 1) knowledgeable and interested participants are absolute requirements; 2) the group should be as representative of the class as is practically possible.

Things to Consider in Working with the Group of Raters

There are several things to consider in working with the group selected. These considerations can be categorized into three main areas:

1. Preparation

    a. Make sure that adequate facilities have been arranged for by either the department(s) involved or by yourself. Remember that each person participating will probably require as much table space as two persons normally would in taking an examination.

    b. Make sure that the time, date, and place of the meeting is disseminated to all participants well in advance.

    c. Arrive early at the meeting site. Have materials ready to distribute as the group members arrive in order not to waste time. Be sure to bring a supply of sharpened pencils (preferably #3 lead) for use by the rating group.

    d. Obtain a visual aid if at all possible, preferably a blackboard. This aid should be used to graphically demonstrate the exact mechanics of the procedures in the JAQ.

    e. Encourage the agency coordinator to participate in directing the verification session. This may help that person to learn to use the JAQ procedure independently with other groups, as well as to familiarize her/him with the specifics of the class being studied.

2. Introduction

    a. Introduce yourself and any agency representatives present.

b. Make sure that the group understands the purpose of the meeting. This may require a brief explanation of the reasons for the meeting and what is to be done. It never hurts to mention that the group is considered to be experts in their field, and that you desire their help in identifying exactly what the job being studied entails.

c. Pay considerable attention to the type of participants present at the group meeting. Some sessions may contain experts with considerable job knowledge, but little skill in verbal or written participation. In these cases much care should be given to presenting clear and concise explanations as to what is being done and how to do it. It may be helpful to have two analysts present if problems are anticipated.

d. During the initial introduction and during the explanation of section instructions, a special effort should be made to encourage group members to suggest new tasks or KASPC's.

e. Initially, participants may want to discuss other topics as this may be their first real opportunity to talk to a Merit System analyst. This should be tactfully discouraged at the beginning to save time. Discussion should be directed toward the job analysis at hand. If you have the time, make yourself available after the session to answer general questions for the group or on an individual basis.

f. Start on time, if possible. It is probably best to start everyone on the first section at the same time. This may not be entirely practical, however, if participants do not arrive on time. This requires working closely with the agency coordinator to make certain that it is impressed upon people that the meeting will start on time. It is possible to have group members work on the Background Information section of the JAQ if they arrive early.

3. Completing the JAQ

a. Proceed as a group through each of the major sections of the questionnaire. Be sure that you do not rush people as it is our desire for quality rather than speed. However, keep in mind that collectively we are taking a sizable segment of time from the employees and the agency involved. With this in mind, if someone is holding up the progress of the group for an unreasonable period, as everyone else has completed

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that section, it may be in the best interests of the group to tactfully ask that individual to proceed and return to that section later. You will want to watch closely to be sure that such persons do, in fact, return to and finish the incomplete sections. This approach is most usable with the Background Information section, as some other sections are more closely tied to work done on preceding sections.

b. Do not let anyone dominate the group. There is an ever present danger of incumbents being tacitly intimidated by supervisors. Try to detect and counteract this if possible.

c. Circulate in the room to answer questions. Be sure to encourage questions frequently. *Watch for anyone not using the procedure correctly and help them individually.* This is a very important point as many problems can be spotted and handled immediately by circulating in the room. Many people are reluctant to ask questions and may be having problems that are not expressed verbally. Total quality of the work produced can be improved by correcting problems directly at the source.

d. Be sure to go over the directions thoroughly for each section of the questionnaire before letting the group begin writing in that section. Use the blackboard to draw examples of rating and ranking forms for each section. Use these examples to talk the group through the instructions.

e. When someone contacts you with a good suggestion, regarding a task statement or a KASPC statement, write this suggestion on the blackboard, have all group members include this suggestion on the lists from which they are working and rate and rank it appropriately in the JAQ.

f. If this session is to be followed by other sessions on classes in a series with some of the same participants you can exercise the option of photocopying the Background Information portion of the JAQ (except for title and date) for those people to save them work and speed up the next session.

g. Participants should be told that they are free to leave when they have finished.

In summary, the analyst must be well prepared, thoroughly familiar with the job analysis procedure, the tasks and KASPC's being verified, the JAQ, and how the meeting should be structured to obtain the desired information. Also, the analyst must be prepared to answer questions and explain in depth what it is that we want and how to proceed through the JAQ both to the group and especially to individuals who may be having problems. Remember that the application of this procedure will be the foundation for future personnel management decisions.

GLOSSARY

Ability: the power to perform an activity at the
                     present time.

Class: a grouping of individual positions which
                     are sufficiently alike in kinds of duties,
                     levels of responsibility and qualifications
                     necessary to perform the work to warrant
                     like treatment in such personnel functions
                     as fixing pay rates, creating and utilizing
                     selection devices, transfer, promotion, etc.,
                     e.g., Clerk I, Custodial Worker.

Class Series: one or more related classes similar in kind
                     of work, function, occupation or profession,
                     but differing in level of duties and respon-
                     sibilities, and so constructed that a
                     qualified employee may progress from the
                     lowest to the highest through the attainment
                     of additional qualifying experience, e.g.,
                     Clerical Series (Clerk I, II, III, IV)
                     Highway Engineer Series (Highway Engineer I,
                     II, III, IV, V, VI).

Job: for the purposes of these guidelines and for
                     the Iowa Merit Employment Department job
                     analysis system in general the term JOB,
                     which is widely used in other public and
                     private jurisdictions, will be synomymous
                     with the term CLASS.

Job Analysis: the systematic process which embraces the
                     collection, compilation, verification,
                     study, and application of all pertinent
                     information about the nature of a specific
                     job for purposes of meeting such personnel
                     management needs as job evaluation, position
                     classification, recruitment, examination
                     development and validation, and employee
                     performance planning and appraisal.

Knowledge: an organized body of information, usually
                     of a factual or procedural nature, which,
                     if applied, makes adequate performance of
                     the job possible.

Personal
Characteristic: a special, specific personality factor
                   (attitude), aptitude, physical or mental
                   trait needed to do the work, that appears
                   either in addition to or to a greater
                   extent than what is generally expected of
                   all employees in all jobs.

Position: a group of specific duties and responsi-
                   bilities assigned by competent authority to
                   be performed by one person; it may be part-
                   time or full-time, intermittent or permanent,
                   occupied or vacant.

Skill: the proficient manual, verbal or mental
                   manipulation of data, people or things.

Task: a distinct, identifiable work activity which
                   produces an observable end product and/or
                   constitutes one of the logical and necessary
                   activities in the performance of the work of
                   an overall job.

Task Statement: the standard format used for the compilation
                   of job information answering the questions
                   of who, what, to whom/what, why and how.

Worker Trait: any knowledge, ability, skill or personal
                   characteristic associated with the perfor-
                   mance of a task.