



COUNSELOR'S MANUAL

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SKILLS ASSESSMENT

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SECTION 1

INTRODUCTION TO THE SKILLS ASSESSMENT PROGRAM

The Idaho Career Information System (CIS) is part of a national network of state-based career information delivery systems. The states in the network share resources and program developments. The California Career Information System, called EUREKA, completed the original work on the EUREKA Skills Inventory. It was released nationally in January of 1983.

Idaho CIS licenses SKILLS software developed by Georgia CIS. This manual is the work of the Oregon Career Information System (2003). Portions were adapted from the EUREKA *Skills Inventory: Counselor's Manual* (1983) and the Georgia CIS *Micro-SKILLS Counselor's Manual* (1991).

What is SKILLS?

The SKILLS Assessment, or SKILLS, is a computerized career development tool that combines a self-assessment inventory with an occupational database. SKILLS uses a simple concept to produce valuable insights. Users identify skills they enjoy using; then a computer program identifies occupations that use these skills. The users learn which occupations best match their skills and which skills their favorite occupations use most. Since the inventory's creation in the fall of 1980, these two types of information have dramatically enhanced the career and self-awareness of thousands of career planners.

Unlike most career assessment inventories, SKILLS requires users to complete a preparatory step. This skills analysis process is extremely valuable to users when assisted; it is described further in Section 2.

An individual begins using the SKILLS program in one of two ways—by sorting cards or completing a worksheet. Both the worksheet and the card sort take you through a process of selecting skills from the list of seventy-two skills. Using the worksheet, you review past achievements to decide which skills are most satisfying. Then you select the five most satisfying skills (designated “Very Satisfying”), the next ten most satisfying skills (designated “Moderately Satisfying”), and up to twenty other skills (designated “Somewhat Satisfying”) that you are willing to offer to an employer.

Using the card sort, you sort the seventy-two SKILLS cards into four piles: five “Very Satisfying,” ten “Moderately Satisfying,” and up to twenty “Somewhat Satisfying.” The remaining cards are placed in the “Not Satisfying” pile.

Once you have selected your satisfying skills, you then enter these skills into the computer program. The computer calculates a Rating for each of the occupations coded in the SKILLS

database. This rating measures the goodness-of-fit between the skills you selected and the skills needed by each occupation. The computer rates how these skills relate to the six Holland Personality Types, scores your skills against the skills required by the occupations within each of the Career Information System's (CIS) occupational clusters, lists the 30 highest-rated occupations, and organizes this list around Career Paths (previously Oregon's CAM Endorsement Areas).

After receiving these ratings, you are encouraged to query the computer about occupations of special interest. This component is called View. View displays the rating for the occupation of interest and lists all of the skills required for the occupation along with the your preferred skills. A graphic presentation of the matches and differences clarifies possible sources of conflict between occupational requirements and user preferences. View can also be used to illustrate why some occupations of interest do not appear on the lists. View displays relevant, concrete information on the skills needed for an occupation in a format that is easy to understand and that inspires discussion with a counselor.

What is a Skill?

The SKILLS program uses the following definition:

A skill is a goal-directed behavior that has been or can be strengthened through practice.

This definition of skill includes all types of skills, as defined in *The Three Boxes of Life* (Bolles, 1978). The most basic skills that fit into this definition have been called self-management skills. These skills may seem to be innate and are often considered personality traits. However, when they can be strengthened through practice and are goal directed, they are considered skills. An example of this type of skill is "efficiency," which is goal-directed, can be strengthened through practice, and is clearly of value to employers.



Functional skills are another type of skill. These are skills most of us recognize as transferable, such as reading, calculating, and analyzing. Although we are taught these skills in school and we all know we have them, during the skills analysis process, a student or client is assisted in recognizing the multitude of ways these skills have been used and sharpened by life experiences. Outside of formal education, these skills are no longer labeled for us, and acknowledging our competence in them is a necessary step in preparing for a job search.

Specific content, or job-related, skills are a third type of skill. Typically people find these skills fairly easy to list since the skills are clearly labeled and rewarded in most settings.

SKILLS uses a taxonomy of skills that defines seventy-two key transferable skills. The skills include self-management and functional skills. Specific content skills are excluded because they are not useful in the computer sorting process and these skills do not necessarily transfer from

one job to another. However, these skills are important and should be recognized during the skills analysis process.

Why Use the SKILLS Assessment?

Counselors of adults have been using skills analysis since the late 1970's. They found it to be a very powerful intervention since it helps clarify feelings about life experiences. The skills analysis process is now widely used in career counseling adults and youth. Thus, an inventory that builds on this process fits smoothly into the career guidance process and helps individuals tie self-analysis to relevant occupational options.

Skills develop from abilities and interests that are satisfying. Most people have a good deal of information about their areas of success and failure, satisfaction, and dissatisfaction. Incorporating this information into occupational selection produces more accurate results than relying on interests, which may be based on childhood fantasies or outdated self-concept. Skills that are carefully selected are more predictive of occupational satisfaction than interests. But remember, the skills analysis process suggests that people “re-experience” specific events in order to best decide which skills they enjoy using.

One of the strengths of the SKILLS Assessment as a career development inventory results from its use of seventy-two skills in selecting occupations. Many career assessment inventories combine items into a small number of factors or personality traits. Instead, as SKILLS is scored, each skill is used to identify occupations. In statistical terminology, there are 71 degrees of freedom in this scoring process. (This means that each factor can be combined with each of the other seventy-one in determining a match.) Thus occupations can be pinpointed with greater accuracy using SKILLS than with many other tools.

With this broad overview in mind, you can get a more in depth look at skills and the skills analysis process in **Section 2** of this manual. You can learn more about using SKILLS with clients or students in **Section 3**. **Section 4** provides important additional information that will improve your understanding and use of the SKILLS program.

SECTION 2

SKILLS AND THE SELF-ASSESSMENT OF SKILLS

As noted in Section 1, SKILLS is based on a self-assessment process of skills identification. **The process of skills analysis is as important to an individual's career development as the printed results of the SKILLS computer program.** Section 2 looks more closely at the skills self-assessment process from both theoretical and practitioners' perspectives.

The skills analysis process, and the related definition of skill, were important factors in determining which skills to include in the SKILLS program. There are many definitions and uses of the word *skill*. Some are so different from the one used here that the concept of self-assessing skills can seem to be a contradiction.

The first half of this section traces some of the early attempts to define skills and to use them in career planning. It is upon this important research that the skills assessment process has been built. The second half gives specific instructions for using a skills self-assessment process in a counseling setting.

What Is Meant by a Skill?

As noted earlier, the word *skill* is used in many different ways. In common usage, it has at least four different meanings. From an educator's point of view, it has even more meanings. A large research project conducted by the National Center for Research in Vocational Education in 1977 to 1979 struggled with the issue of defining the word *skill*. (A detailed discussion of various meanings of the word as it is used in education is offered by Frank C. Pratzner in "Examples of Transferable Skills and Characteristics," *Occupational Adaptability and Transferable Skills*, Information Series No. 129. Columbus, Ohio: The National Center for Research in Vocational Education, 1978.)

As noted in Section 1, the definition used in the SKILLS program is:

A skill is a goal-directed behavior that has been or can be strengthened through practice.

This definition is intended to include more than it excludes. It excludes non-directed behavior as well as innate abilities, if these could ever be isolated. It includes any behavior that can be learned.

An example is useful in illustrating how this definition is significant to the skills selected for the SKILLS program. "Efficiency" is often considered a personality trait, but using the above definition, it can also be considered a skill. If "efficiency" is defined as "effectively using resources," then it is a goal-directed behavior. Certainly people who intend to be efficient get better with practice so it does fit within the definition of skill used here. Of course, "efficiency" is also an attitude. People who are looking for ways to be more efficient will be more efficient. It is the transferable aspect of "efficiency" that makes it useful in career planning.

Often the word *skill* is used to imply a level of proficiency. To have a skill meant the owner was proficient in performing a task. The SKILLS program does not use this meaning, and no attempt is made to assess the level of proficiency. Rather, the word is used in the SKILLS program to indicate the user wishes to practice the behavior.

Skills have a positive value. Having a skill means the owner can perform a useful task. In economic terms, skills can be translated into income in an employment setting.

The second task of the research project conducted by the National Center for Research in Vocational Education was to determine which skills are transferable. Using a definition similar to the one used here, this work concluded that all skills are transferable:

To say that a person has acquired a skill is to say that the person has acquired something of value. The value of a skill is determined by its utility and its utility is determined by the extent to which the skill is used. In this sense, every skill is transferable in that utility determines transferability.

Thus, the more important task is to define the elements that make it possible for an individual to transfer a skill. The solution to this problem is to assist individuals in acknowledging their skills and recognizing other situations in which their skills can be used, as recognized by Sydney Fine, Bernard Haldane, Richard Bolles, and others.

One program with this objective was located at Columbia University and was called Deeper Investigation for Growth (DIG). The National Center for Research in Vocational Education studied DIG, finding encouraging results for the DIG participants:

The DIG experience modifies their self-perceptions and often redirects their career aspirations based on new perceptions of their skill attributes and the importance of these for their self-fulfillment. The data obtained in this study strongly indicate that those who have elected to use the DIG program have subsequently experienced employment which has allowed them to use their skill attributes more fully than before. It has also provided increased intrinsic and extrinsic rewards at the same salary levels as their peers. (A.A. Wiant, *Transferable Skills: The Employer' Viewpoint*, Information Series No. 126. Columbus, Ohio: The National Center for Research in Vocational Education, 1979.)

Thus the self-assessment process has value for people even without the use of tests or other measurement instruments.

Since any skill can be transferable, the task of listing transferable skills would appear to be endless. But if skills are to be used to assist people select an occupation, then the real problem is to determine which skills are most useful for this purpose.

Previous Skills Taxonomies

The history of skills taxonomies is relatively sparse and reveals taxonomies that are not universally accepted nor widely utilized. The taxonomies that have predominantly been used for career planning list interest clusters, personality types, or abilities rather than skills.

Why has there been no widely accepted taxonomy of skills? A careful analysis of occupational descriptions, such as those in the *Dictionary of Occupational Titles* (DOT), reveals that the tasks (or worker functions) listed for each occupation are skills for the worker. So the problem of identifying skills is not to list them, but to find some meaningful criteria for determining which skills are especially relevant to people who are planning a career or in career transition. For this reason, attempts at creating taxonomies have focused on smaller segments of behavior, such as abilities or personality traits, instead of skills. Conversely, taxonomies of abilities or personality traits can be considered to be a subset a skills taxonomy since each of these characteristics could be rephrased as a skill.

When we broaden the search to include all career-related taxonomies that have furthered the understanding of skills, four types of taxonomies can be distinguished. First there are those that developed labor market analysts for describing occupations. The *Handbook for Analyzing Jobs* (US Department Labor, 1972) explained in great detail the categories used by the Department of Labor for analyzing occupations and constructing the DOT. Although this taxonomy included major headings such as Temperaments, Aptitudes, and Worker Functions, most of the items used in these sections can be reworded as skills, and the massive bank of data they have collected then provides a valuable resource for occupational coding. The recent development of the DOT's replacement, O*NET, has actually refocused data collection toward skills concepts (see below).

Psychologists provide us with other sets of taxonomies. They have developed interest inventories, aptitude tests, and personality types. These taxonomies tend to be theoretically based and often divide occupations or people into a relatively small number of categories. For example, John Holland describes six personality types, and ACT'S UNIACT divides the World of Work into 12 discrete regions. These categories can be combined by a client to allow for about 100 to 200 different combinations. These taxonomies tend to be insightful, internally consistent, and easy to remember. However, when applied to the labor market and used to select appropriate occupations, they lack complexity and can be a liability. Whenever complex human beings and the complexities of the labor market are reduced to a small number of factors, the result is likely to be over-simplification.

In the 1970's a third type of taxonomy was developed by labor market analysts and vocational educators working together to synthesize previous efforts. The Occupational Analysis Inventory was developed at the North Carolina State University Center for Occupational Education (Cunningham, Tuttle, Floyd, and Bates, 1971). The Position Analysis Questionnaire was developed at Purdue University (McCormick, Jeaneret, and Mecham, 1972). A list of Generic Skills, plus a chart relating them to a wide variety of occupations, was developed by the Canadian Employment and Immigration Commission (Smith, 1977). These attempts to relate transferable skills to occupations assisted in clarifying and supporting the role of vocational training in job placement and career transition.

A fourth type of taxonomy has evolved, largely as the result of the work of Bolles, Crystal, Haldane, and others. In the mid-1970s these career-counseling professionals began to teach clients to analyze their own skills. After considerable experience in helping clients with this lengthy but rewarding process, several counselors began writing down the phrases they heard

most often. These impromptu lists made the process easier for clients by suggesting topics for them to consider. These lists of skills do not aspire to be comprehensive and clients are usually invited to add their own skills to the list. The most notable aspect of these lists is the new language used to describe skills. These lists were constructed to approximate the results of the skills self-assessment process, so their language tends to be short on technical or specific-content skills.

Drawing on these developments, analysts at liberal arts colleges have developed a number of lists (Breen, 1981) and conducted studies (Hicks and Tellet-Royce, 1983) demonstrating the relevance of liberal arts training to professional occupations. These lists include complex skills and often follow academic program lines in classifying skills, but they contain the new language that attests to their origin in the self-assessment process.

Several recent developments are now affecting the skills discussion in Oregon and nationally. In Oregon, a skills taxonomy is emerging from efforts by the Oregon Employment Department to develop a job match system based upon skills rather than DOT worker traits. Most of the skills being identified and verified in this project focus on job-specific skills and, therefore, may have less application in career assessment. The Oregon work has been studied and modified by the Department of Labor and will be released as a new labor exchange skills component of O*NET.

Also nationally, the Skills Standards Boards, jointly sponsored by the Departments of Labor and Education, have identified skills for training and certification purposes in a variety of occupational areas. These skills tend to be industry focused and do not provide a new, universal language either for analyzing jobs or career counseling.

Most importantly, in O*NET, skills rather than temperaments, aptitudes, and worker functions are now the key attribute for job analysis. Since 1999, Georgia Career Information System at Georgia State University has been working on applying the O*NET skills taxonomy to the SKILLS program. In the Fall 2001 release, SKILLS began using a new taxonomy and coding methodology that have resulted from these efforts.

The SKILLS Assessment Taxonomy

The SKILLS program has built on the previous taxonomies discussed above. In order to assist individuals in recognizing their transferable skills, SKILLS is based on a self-assessment process and contains items that are likely to result from this process. The resulting SKILLS List is a concise taxonomy of building-block skills.

The SKILLS List of skills is designed to balance a career planner's need for relevant skills categories with the necessity of collecting reliable data on each skill category. The skills categories considered for this list must combined three viewpoints:

1. Categories commonly listed during a skills analysis process.
2. Categories on which the US Department of Labor collects and reports data that can be used to code occupations.
3. Descriptive verbs commonly found in occupational literature.

Often the difference between these points of view is one of wording. For example, users might describe themselves as willing to “accept responsibility” while an analyst would need to know what they are willing to be responsible for. Since responsibility is part of most occupations, it must be broken into smaller components in order to be useful in distinguishing among occupations. So, the SKILLS List contains skills such as “dependability,” “impact of responsibility,” and “decision making,” all which involve accepting responsibility in different ways. Using the SKILLS List in the skills analysis process is intrinsically valuable because it helps clarify and objectify basic skills. It forces individual career planners to break their skills into meaningful components and to describe themselves in terms that employers find relevant.

On the other hand, some skills that are equally useful to many occupations are not found on this list. For example “loyalty” is highly desired by many employers, but it appears to be useful in almost all occupations and so is not included on the SKILLS List. Students and clients need other exercises that elicit skills like these so that they can list them on their resumes and use them during job interviews.

Appendix A provides Expanded SKILLS Definitions to further clarify the definition of the skills used in the SKILLS program.

Self-Evaluation vs. Testing

The goal of any skills self-assessment process is to identify a wide range of skills, not to measure a person’s level of competency. There are tests that assess the level of mastery of specific skills. However, many skills that are valuable to employers are difficult to assess in a test environment. Because most adults possess many skills, testing for each possible competency area is impractical. Skills testing is usually reserved for specific, job-related skills; the skills self-assessment process is used to identify various other skills that a person needs to be aware of in order to describe them to potential employers.

The skills self-assessment process must be tied to reality in order to benefit the individual. Many people in our society belittle their strengths and exaggerate their faults. To conduct a successful job search, job seekers must realistically describe their strengths to a future employer. To do this, they must believe in themselves. For this reason, the skills self-assessment process is based on their accomplishments. Those people who have the most difficulty with the word accomplishments have the most difficulty with the process, and benefit the most from it if they can overcome their sense of modesty.

The Skills Analysis Process

The skills analysis process involves the identification of transferable skills. Research shows that any skill can be transferable when a person acknowledges ownership of the skill and recognizes that it could be used in other settings. Thus, the process of skills identification is important for people who wish to begin or change careers. It is the process of identifying and acknowledging the skills they have developed that enables people to make the transference and to conduct a career search with more self-confidence and enhanced self-esteem.

The skills analysis process includes four steps:

1. Reviewing accomplishments.
2. Identifying skills used in these accomplishments.
3. Clustering skills identified.
4. Ranking skills identified.

For a thorough discussion of these steps, read *Where Do I Go From Here with My Life?* (Crystal and Bolles, 1974). The rest of this Section provides one method of skills analysis in a group setting.

1. Reviewing accomplishments

A complete autobiography is an ideal tool for reviewing experiences. When necessary, people can do abbreviated autobiographies. First, ask participants to draw a lifeline and place their accomplishments on it. Encourage them to list even the smallest achievements that have given them pleasure, in school, work, or leisure. As they share their lifeline with the group, watch for changes in the focus of their activities and changes in the level of activity since people are often unaware of the changes they have made.

Next, have them select approximately seven accomplishments to describe in detail. These accomplishments should illustrate the various aspects of their personalities. Then have them describe the steps used to reach each accomplishment in great detail, explaining the steps as they would to a five year-old child.

2. Identifying skills

The next step involves identifying the skills used in accomplishments. This can be done:

- By dividing groups into triads;
- By a counselor working with one person; or
- Alone by the client or student.

Using the first option, the counselor begins by teaching the group or class how to identify skills. Large quantities of small pieces of paper (1" x 4") can be distributed for recording skills. (Small pieces of paper facilitate sorting of the skills when the exercise is completed.) Using a carefully selected example of a detailed description of an accomplishment, the counselor asks the entire group to record the skills they hear during the story. The counselor encourages the group to ask questions and draw out further details of the accomplishment. Participants then read the skills they heard used, learning to identify skills they may have missed by hearing the skills others listed. The owner of the accomplishment collects the pieces of paper.

When all participants are able to identify skills, they are divided into triads. In each triad, group members take turns telling their stories and recording skills for their peers. The counselor should encourage drawing the storyteller out and impromptu elaboration. After each story, the recorded skills are read aloud and given to the storyteller. The counselor can circulate and attempt to listen at least once to each person since counselors often notice less obvious skills.

This option for identifying skills is the most valuable since people know their peers are giving them honest feedback, and they learn to appreciate their strengths through the intrinsic comparison with their peers. When group work is not feasible or when people must identify their own skills, the SKILLS Worksheet or SKILLS Cards can be substituted to provide structured assistance in identifying skills.

3. Clustering and ranking skills

When the entire autobiography or all seven accomplishments have been analyzed, each person will have dozens of small pieces of paper. These can be sorted into piles of related skills, and then each pile can be sorted. The result is usually about ten (seven to twelve) major skill categories with up to twenty less important categories. People should be encouraged to use their own categories. There is no right way to cluster skills. Occasionally people will need help with this step and the counselor should be prepared to assist with the sorting.

Finally, these skill clusters can be ranked and recorded in a more permanent form. The highest priority should be given to those skills the person wants to use most in a job. One skill can be selected as the title of each cluster and related skills can be listed under it. To prepare for writing a resume and interviewing, it is useful to list accomplishments which provide examples of how the skill has been used under each cluster. This also ties the clusters firmly to reality and prevents people from feeling that the skills are exaggerated.

4. Using the SKILLS Assessment

Once the above process is completed, people have a much clearer concept of their skills. In order to relate skills to occupational categories, the person needs to select skills from the SKILLS List. The SKILLS Cards are most useful at this point since they can be sorted quickly without duplicating previous steps.

While working in a group and constructing a personal skills list has a much greater emotional impact than working alone and using a standardized skills list, the resulting occupational lists produced by the SKILLS program by either method are equally valid. The computerized rating of the relationship between the individual's skills and the skills required by various occupations allows each person to use the self-knowledge gained in the skills analysis process to identify relevant occupations.

However, it would be a big mistake to assume that the goal of the skills analysis process is to produce a list of occupations. The goal of this lengthy and powerful process is to enhance self-esteem and self-awareness. Rushing through the process produces a similar computer list but misses the other important outcomes. When speed is desired, ask your students or clients to sort the cards or select skills on the computer. When personal growth is desired, take them through a more complete skills analysis process.

SECTION 3

ADMINISTRATION OF THE SKILLS ASSESSMENT

SKILLS is a self-evaluation tool, not a test. It is intended to compile the results of a personal skills analysis process and feed these results back to the user in an objective format. Although the instructions provided on the SKILLS materials and within the SKILLS computer programs are intended to be self-explanatory, the process of administering and interpreting SKILLS is complex and should be undertaken only by trained professionals. As with any career assessment tool, users need to receive guidance in understanding the objectives and the instructions when they use this instrument.

The purpose of SKILLS is to relate a person's life experiences and preferences to future choices. A few people have an accurate and current perception of their own skills, while many have out-dated self-concepts that are biased by formal evaluation and the praise of respected others. Although both types of people could respond to a list of skills by selecting their preferences, this process would be similar to that of an interest test and the results would be equally loosely grounded in reality. The difference between SKILLS and other inventories is derived from the preparatory work that must occur before sitting down at a computer.

The skills analysis process can take from one to five hours, depending on the individual and the process and format chosen.

There are two formats for skills selection provided as part of the SKILLS program. The SKILLS Worksheet was designed for ease of administration in a setting where the user has relatively little contact with a counselor. However, it does require more initial assistance than a traditional interest inventory, and counselors should allot time to get the person started.

When a counselor has worked closely with a person and is confident that the person has an accurate self-concept, or when time restrictions permit only a quick snap-shop, the SKILLS Cards may be the most appropriate skills selection format. The cards are also useful when the person has completed another skills analysis process like the one described in Section 2 and needs only to relate self-evaluation information to the skill words used in SKILLS.

People who complete the worksheet need one to two hours. People who complete an unstructured analysis of life experiences in a group or workshop setting as described in Section 2 need an hour or two to select and describe their accomplishments, at least two hours working in triads to identify their skills, and one hour to cluster skills. They then need twenty minutes to one-half hour to sort the SKILLS Cards. (The cards are also available in Spanish.)

What are the Steps in Using SKILLS?

There are three major steps in using the SKILLS program:

1. Identifying preferred skills using the worksheet or cards.
2. Compiling the results using the SKILLS computer program.
3. Interpreting the results and integrating them into a career plan.

The first step involves skills identification. Users may choose either the SKILLS Worksheet or the SKILLS Cards for this step.

1. Identifying skills

The SKILLS Worksheet begins by asking you to identify three to seven accomplishments. You list these accomplishments at the top of the second page. You then read each skill definition in the SKILLS list and decide which of your accomplishments used each skill. Next, you decide which skills you enjoy using, placing a check in the far right column for these skills. Finally, you select the five skills you enjoy most and list the skill numbers under “Very Satisfying” on the last page. Similarly, you select the next ten most enjoyed skills for the “Moderately Satisfying” category, and up to twenty other skills for the “Somewhat Satisfying” category.

The SKILLS Cards consist of 72 cards, each containing one skill with its definition, plus four header cards listing the levels of satisfaction (“Very Satisfying,” “Moderately Satisfying,” “Somewhat Satisfying,” and “Not Satisfying”). You sort the skills cards into piles under these header cards. Then, if necessary, you sort the piles a second time to reduce the number of cards (skills) in each pile to the limits previously described. Many people ask why the numbers of skills selected at each level of preference is limited. There are two reasons for this:

1. *To encourage people to focus their skills.*

Some people want every detail of their future occupation to be perfect. Few of us find perfect jobs unless we tailor a job to fit us. The process of ranking the skills is important in a realistic job search, and beginning the ranking process at this point shifts the user’s focus from looking for an occupation that fits perfectly to looking for the best fit. Counselors who encourage clients and students to be flexible and to rank their skills find that people learn a great deal from this process. However, students and clients often need a bit of encouragement and assistance in adopting this approach.

2. *To avoid defining the meaning of high, medium and low skill-usage levels for each of the 72 skills (a process that would require lengthy explanations for users and additional training for counselors).*

Some people assume that the levels have an absolute meaning, but the possibilities for differences of interpretation are great. When the meanings are defined relative to an individual’s other skills, a level of objectivity is achieved without unique definitions.

You arrive at the same end point using either the SKILLS Cards or the SKILLS Worksheet. The worksheet provides more structure and takes you through a more extensive self-exploration process. The worksheet is designed for settings where you work independently for periods of time or you do a homework assignment. In this form, the inventory requires only initial assistance in interpreting the instructions; working alone, you can do most of the skills selection process.

The SKILLS Cards are designed for producing a quick skills sort. The cards may be used in a counseling setting where other exercises have been conducted for skills analysis. They may also be used to quickly sort and prioritize individual or group skills. SKILLS Cards allow people to

translate self-awareness of satisfying skills into a convenient format for input into the computer. People who know themselves well and do not need further exercises for clarification may also use the cards.

2. Using the computer

The second step in the SKILLS process requires a computer to process the results. SKILLS is used interactively at the computer. You simply follow the instructions as they appear on the screen. However, students and clients will need guidance to use all parts program and to maximize its relevance to them.

As a first step, you must enter your selected skills into the computer. Once your skills are entered, you command the computer to rate your skills by pressing the Ratings button. The computer will display a Skills Summary of your selected skills so you can confirm that you entered your skills correctly. You can also print this summary for future reference. The summary does not list skills you rated as “Not Satisfying.”

The computer also calculates four ratings: scores for Holland Personality type as indicated by the skills selected; scores for CIS’ 28 occupational clusters; the occupational ratings or the Top 30 List; and the Top 30 List organized by Career Path (previously CAM Endorsement Area). (The latter rating is not available on CIS for Internet.)

In the Top 30 List, the occupations with the highest ratings are often more appropriate for the user than the occupations with lower ratings. However, the ratings have no absolute meaning and should be used with caution. Because the list includes the 30 occupations with the highest ratings, it probably includes a wide variety of occupations representing many clusters and types of work. Any occupation in the list is a “good match” with the user’s selected skills.

Ratings can range from +100 to -44, but most ratings fall between 62 and -20. Ratings on Top 30 List usually fall between 62 and 21. This means that most people are not perfect for any single occupation, nor do they enjoy working so much that their satisfying skills exactly match the skills that are important in a work setting.

After Rating, you can select the component called View to look more closely at specific occupations. Your rating for that occupation is displayed and the skills the occupation requires are listed along with the skills you selected as satisfying. Your “Very,” “Moderately,” and “Somewhat” satisfying skills are graphically compared to all of the skills needed for the occupation. You can evaluate the mismatches to the matches and form your own sense of the occupation and its appropriateness for you. View any occupation that interests you by selecting occupations to compare from either the Top 30 List or the All Occs displays. (Note: Since you often think of new occupations to View after leaving the computer, you now can Save and Restore your individual user data.)

After reviewing the Holland Codes information, Occupational Cluster Ratings, and the Top 30 List of occupations, you may want to reconsider the skills you originally selected. At any time, you can return to the Select Skills screen and change your skills. Remember, this is a self-

assessment instrument, and much of its value is derived from reevaluating your preferences and learning a new skills vocabulary.

Users who find the self-evaluation process difficult may wish to begin with the skills of occupations they have held before selecting their skills. To do this rather than entering skills, use the Occ Select button on the first screen. You can select the skills coding for any occupation in the database to begin your evaluation process.

Pre-Interpretation Comments

When interpreting the results of SKILLS, it is important not to compare the ratings of different users. All of the coding is ipsative (comparing the user to him/herself and comparing the occupation to itself) so comparisons between users or between occupations are not intended nor are they meaningful. People tend to compare their scores in group testing situations and should be discouraged from doing this.

Usually SKILLS is one of the culminating steps in a skills analysis process, so it fits clearly into a larger career selection process. When administered alone, students and clients should be aware of the larger process and the importance of other aspects of career choice. SKILLS is not intended to predict success in an occupation, but only to focus the person's attention on appropriate fields.

There are many factors that determine career choice that are not addressed by SKILLS. Therefore, the instrument may not list some of the occupations the client or student is considering, and it usually lists occupations the person considers inappropriate. People need help with this concept. Some individuals expect a computer to produce the ultimate answer. Everyone must be encouraged to see the relationship between the information they give the computer and the results it produces. Pointing out some factors that are not addressed by SKILLS, such as income, goals, and educational level, may help people to understand the limitations of the SKILLS results.

There are several reasons the ratings may be different than expected. People may focus on skills learned through formal education or valued highly by our society. For example, Holland's Realistic types sometimes have difficulty with SKILLS because they tend to belittle their hand-working skills and emphasize their interpersonal or leadership skills. For laborers and skilled craftspeople, this obviously produces spurious results, frustrating and confusing the user.

Furthermore, the occupations in SKILLS are coded for the typical occurrence. Some people focus on unusual occurrences of an occupation that they are familiar with (for example, thinking about a physical education teacher under secondary teachers). Others distort the importance of some aspects of an occupation (for example, believing that counselors need only to listen and respond warmly, ignoring the multitude of other skills that are needed).

The process of reviewing a SKILLS printout should be a learning experience where most of these hidden biases emerge and are dealt with. View especially encourages dialogue. Counselors may want to focus the user's attention on View until the user understands how SKILLS works, and then return to the Ratings and look more closely at the list.

3. Analyzing the occupational ratings

The occupational ratings may contain 30 occupations or slightly more. However, it is convenient to call it the Top 30 List because this emphasizes its inclusion of the six percent (6%) of the occupations that best match the person's preferred skills. The list is long enough to include a variety of occupations and a wide range of ratings is usually observed. Yet it is highly selective, eliminating ninety-four percent (94%) of the occupations for which the user's skills are of less value. Students and clients may need to be reminded that this is a highly selective list and all occupations on it are well matched to the skills they chose.

Begin the interpretation by circling the five highest rated occupations. If the fifth one is a tie, circle all occupations with the same rating. Then review each cluster, giving a little extra attention to clusters with circled occupations because these clusters probably have the most importance for the user. No further emphasis should be placed on the magnitude of the score, since these often do not have any special significance and they may be slightly misleading.

Students and clients need to be reminded that SKILLS is not telling them to enter any occupation. If they were to change the arrangement of their skills slightly, a different occupation might receive the highest rating. People who focus on the highest rating should explore the reasons why they scored highest in that occupation (look at View for that occupation). Then they should be encouraged to turn their attention to the five or more other high scoring occupations. This group will be relatively stable over time, and most of these occupations would appear high on their results if they used SKILLS again a month or a year later.

As you look at the clusters that contain several circled occupations, list a few other occupations in that cluster that might be implied though not listed. Although SKILLS contains more than 500 occupational titles, there are occupations that are not included. By encouraging students and clients to explore between the lines, they are freed to discuss hundreds of new fields that may suit them better than any of the major occupations listed in SKILLS.

It is possible to draw conclusions about the user by observing the range of ratings on the Top 30 List. The mean is commonly used as a descriptive statistic, but it is not an appropriate measure for the Top 30 List. Ratings on the Top 30 List are always very skewed since this list contains only the upper portion of a normal distribution. Therefore, the mean does not reflect the center of this list. However, lists for which the mean score falls between 43 and 30 can be considered normal.

Two other measures that are more useful and more easily calculated are the highest rating and range of ratings on the Top 30 List. For most people, highest ratings tend to fall between 54 and 40. A highest rating of 55 to 62 can be considered quite high and a highest rating of 63 or above is exceptional. When the highest rating falls between 39 and 32, this is quite low and highest ratings of 31 or below are exceptional. People on the high side of this measure are either very enthusiastic and dedicated to their work or they are concerned with making a good impression and answered according to their sense of what is socially acceptable. People on the low side of this measure either did not select the full number of skills that were allowed or have diverse skills that do not fit well into any one occupation. Not selecting the full number of skills may

indicate a low sense of self-worth or an apathetic attitude toward work in general. Many people who have low scores overall are not sure they want to work and have not tried to develop good work habits or skills that employers value.

A range of 10 to 18 points is normal. Ranges of 19 to 23 points are quite high and ranges of 24 or more points are exceptional. Ranges of 6 to 9 points are low and ranges of 5 or fewer points are exceptionally low. A broad range usually indicates a focused person (well suited to a small number of occupations) and a narrow range indicates either an unfocused person or a person who has skills in areas of the labor market where there is little differentiation among occupations. Many unskilled or semi-skilled trades, for example, require similar skills and people who are high in these areas have narrow ranges with many similar occupations to choose from. Low ranges are also observed when users have failed to differentiate themselves. For example, a large number of social service occupations with similar ratings may indicate a socially concerned person with no specific area of interest.

Students or clients with low ratings and a narrow range of ratings are of greatest concern. SKILLS has failed to identify their areas of preference, and they should be encouraged to use other instruments or to work with a counselor on building self-awareness. This pattern may indicate depression or the desire to avoid working.

It is interesting to note that ratings above 62 are rare although ratings can theoretically be as high as 100. One reason that ratings rarely approach 100 is that you are asked to choose satisfying skills, and occupations are coded for important (or frequently used) skills. There are some skills users rarely select as “Very Satisfying” although occupations may find them “Very Important” (such as “tolerating discomfort” and “emotional control”). Few people live for their work. Most people work because they need to make a living and hope to find some enjoyment in their work. Clients and students should be encouraged to view scores in the mid-ranges as healthy and indicative of the complexity of their personalities.

Analyzing a View Printout

The View command causes the user’s skills to be compared to those required by an occupation in a graphic display. Any occupation may be requested using View, whether or not it was on the user’s Top 30 List. The rating for the occupation is printed immediately following the occupational title. Section 4 explains how the rating is calculated. For occupations where the user questions the rating, thorough analysis of the View display may be valuable to understand why this rating occurred.

In a thorough analysis of a View printout, the counselor and student or client begins by looking closely at each skill in which there is a significant mismatch between the skill level preferred by the user and the skill level required by an occupation. When skills will be used either more or less often than the user would like, a person could be uncomfortable in the occupation. The counselor and user should pinpoint each of these mismatches and discuss the ones that are important.

While it may take five to ten minutes to examine carefully the first occupation, the process is much faster once you become accustomed to the symbols. This is time well spent, since marking these differences clearly illustrates the compromises one needs to make when entering an occupation. These items lead to fruitful discussions between counselors and students or clients.

Searching for Additional Information

Research into any occupation of interest should be encouraged. SKILLS makes this exploration and research step easy by integrating SKILLS directly into eCIS.

Users simply click on the occupation title after they highlight an occupation of interest on the SKILLS Top 30 or All Occupations rating. They will be taken to eCIS occupational information. They can return to their SKILLS ratings by clicking on Return to SKILLS.

SECTION 4

ADDITIONAL INFORMATION ABOUT SKILLS ASSESSMENT

A great deal of research and development went into creating the SKILLS program. In using the instrument, some additional information may be helpful.

How Are the Occupations Coded for SKILLS?

In the past, CIS Information Analysts used several data sources to determine the skills needed by each occupation: the CIS occupational information, the Dictionary of Occupational Titles (DOT), the Occupational Outlook Handbook (OOH), the Guide for Occupational Exploration (GOE), the DOT data display tape, and literature from professional associations or other private sources. With the advent of O*NET as a replacement of the DOT, analysts now have a new and more comprehensive resource for coding data.

After selecting the skills used by an occupation, the analysts code the five most frequently used skills for the highest level of importance, then the next ten for the middle level, and up to twenty for the lowest level. Many occupations use more than 35 skills, but only the 35 most frequently used skills are included. Thus the coding is ipsative, meaning the coded level is relative to the occupation but has no meaning between occupations. The level of importance of a skill does not relate to the competency in that skill required by the occupation. The same level of competency could be coded at different levels of importance in different occupations.

Conversely, a skill which is coded at a high level in two different occupations could imply very different levels of competency. The highest level implies only that it is among the five most frequently used skills in that occupation.

Although great care has been taken to code the occupations accurately, there is always room for disagreement. In deciding which five skills are most important to an occupation, it is always possible that analysts' bias, incomplete data, or systematic error influence the selection. The same is true between the medium and low skills. Thus users should regard this data as an informed opinion.

How Are the Ratings Calculated?

To determine how well each occupation fits the user, an algorithm was developed to measure the degree of matching. This algorithm is similar to the square of the coefficient of correlation, multiplied by 100 to remove the decimal point. (The coefficient of correlation is a statistic typically used to determine how closely two sets of data, in this case, a user's skills and an occupation's skills, are related.) If the formula for the coefficient of correlation was strictly applied, the ratings would fall between +100 and -100. However, the algorithm used in this program produces ratings that fall between +100 and -44.

This algorithm was designed to reduce the penalty when users wish to use more of a skill than is needed by an occupation. Positive weighting was selected after experimentation because it produced more satisfying lists and appeared to approximate the decision-making process clients and students normally use.

Table 4.1 below illustrates the algorithm used in this program. The following principles are incorporated:

1. The occupational skill level is the highest possible score for each skill.
2. A perfect match is awarded the highest possible score.
3. When the user wishes to use less of the skill than the occupation requires, points are deducted. For example, if the occupation requires a level 3 and the user chooses a level 1, 2 points are deducted.
4. Users can lose points by wanting to use too much of the skill, but the penalty is not as severe. When the user chooses one higher level than the occupation requires, there is no penalty. For example, if the occupation requires a level 2 and the user chooses level 3, no points are deducted. However, if the occupation requires a level 1 and the user chooses level 3, one point is deducted.
5. The rating for each occupation is a ratio of the total score to the highest possible score for that occupation multiplied by 100. Thus, 100 indicates that the user is perfectly matched to the occupation.

SKILL LEVEL		
Occupation	User	Match Code
3	3	3
3	2	2
3	1	1
3	0	0
2	3	2
2	2	2
2	1	1
2	0	0
1	3	0
1	2	1
1	1	1
1	0	0
0	3	-2
0	2	-1
0	1	0
0	0	0

$$\text{Rating} = \frac{\sum_{n=1}^{100} M_n}{\sum_{n=1}^{100} Q_n} \times 100$$

where M_n is the match code for each skill and Q_n is the occupational code for each skill.

Table 4.1
Algorithm for Computing Ratings

How Are the Occupational Ratings Constructed?

In order to provide a varied list of occupations that includes most of the occupations appropriate for users and excludes most of the occupations that do not fit well, the 30 highest-rated occupations are selected. When there is a tie for 30th place, all occupations with the tied ratings are included on the list. When less than 30 occupations receive positive ratings, only those with positive scores will appear on the list. Thus some lists will be shorter or longer than 30.

Arranging the list of the top 30 occupations by occupational clusters assists in generalizing the results. Although the extensive array of occupations used in the SKILLS program represents the major categories available in the labor market, there are many other related occupations. The occupations are clustered according to the type of work performed to encourage users to look for relationships within their list and to consider similar occupations that are not included in SKILLS.

Arranging the occupations by clusters is also intended to discourage a simplistic interpretation of the meaning of the ratings. Because other factors must be incorporated into the selection of an occupation, a user's highest-rated occupation may not be the most appropriate choice. Many users seek out their highest occupation as soon as they see the list and assume the computer is telling them they should enter this occupation. The arrangement of the list is designed to de-emphasize slight differences in ratings and to emphasize the relationships among the ratings within clusters.

Ratings can range from 100, indicating a perfect match, to -44, indicating a complete mismatch. Very high ratings and very low ratings are rarely seen, with most ratings falling between 62 and -20. Ratings between 60 and 40 indicate a good match with a high probability of job satisfaction. Ratings between 40 and 20 indicate a satisfactory match that could lead to job satisfaction when other positive factors are present. Ratings between 20 and 0 indicate a weak match and these ratings should not be used to indicate either satisfaction or dissatisfaction with a job. Negative ratings indicate a mismatch and should serve as a mild warning that the occupation may not be appropriate for the user.

Because the statistical process used in this program is not designed to compare users to objective standards, users should be encouraged to think of the occupations on their list as good matches, with all other occupations matching the skills selected slightly less well. Comparisons between users should be discouraged.