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DEVELOPMENT OF A COMPUTER-ASSISTED INSTRUCTIONAL SYSTEM ON THE USE OF THE DICTIONARY OF OCCUPATIONAL TITLES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>11</td>
</tr>
<tr>
<td>VITA</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>v</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. REVIEW OF RELATED LITERATURE</td>
<td>10</td>
</tr>
<tr>
<td>Computer-Assisted Instruction</td>
<td></td>
</tr>
<tr>
<td>Computer Application in Guidance and Counseling</td>
<td></td>
</tr>
<tr>
<td>III. DEVELOPMENT OF THE CAI PROGRAM</td>
<td>35</td>
</tr>
<tr>
<td>Requirements Phase</td>
<td></td>
</tr>
<tr>
<td>Design Phase</td>
<td></td>
</tr>
<tr>
<td>Production Phase</td>
<td></td>
</tr>
<tr>
<td>Evaluation Phase</td>
<td></td>
</tr>
<tr>
<td>Developmental Process of the Lesson</td>
<td></td>
</tr>
<tr>
<td>IV. EVALUATION, UTILIZATION, AND SUMMARY OF THE STUDY</td>
<td></td>
</tr>
<tr>
<td>Evaluation of the Program</td>
<td>68</td>
</tr>
<tr>
<td>Utilization of the Present Program</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>127</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>135</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Major Breakdown of the Program</td>
</tr>
<tr>
<td>2.</td>
<td>Flow Chart: Unit I</td>
</tr>
<tr>
<td>3.</td>
<td>Flow Chart: Unit II - Section 1</td>
</tr>
<tr>
<td>4.</td>
<td>Flow Chart: Unit II - Section 2</td>
</tr>
<tr>
<td>5.</td>
<td>Flow Chart: Unit II - Section 3</td>
</tr>
<tr>
<td>6.</td>
<td>Flow Chart: Unit III</td>
</tr>
<tr>
<td>7.</td>
<td>Flow Chart: Unit IV</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

As the modern society becomes more intricate and rapidly mechanized, information science is being developed accordingly. The human society consists of various individuals who have different potentials, needs, and ways of communication. In order for the society to function properly it is necessary that all the members of the society should communicate their ideas effectively with other members of the society. As a consequence, a variety of communication systems such as politics, economics, journalism and education have been developed to meet these personal and societal demands.

Education is one of the most essential and most basic communication systems of the human society. It involves formal schooling through which we educate our youngsters to adjust to and to function adequately in a complicated modern society. Education is a fundamental communication system through which we convey acquired knowledge, skills, thoughts, customs, and ways of living to our future generations.
A Merging Role of Computer in Education

As well as other communication systems, the educational system has been innovated a great deal in the last two decades. A change from the traditional, unitary classroom teaching to a flexible, individualized and plural modern methodology of instruction is a remarkable improvement in education. The need for individualized instruction has been growing day after day. This need has brought the computer technology into the field of education since the last decade or so.

Due to the introduction of educational technology into education, there has been an increasing possibility that education may have to experience a revolution. Bruner observed this in 1964 and stated:

More than ever before, we are concerned with the nature of the educational process, with the goals of education, with the impact of change and . . . with the techniques and devices that can be used in improving the educational enterprise. . . . Indeed, to the outside observer, it must seem as if we were preparing to embark upon a permanent revolution in education.¹

This was supported by Bundy in 1968 when he wrote, “We are writing the early chapter of the 'permanent revolution' in education.”² According to Bundy, the educa-


²Robert F. Bundy, "Computer-Assisted Instruction - Where Are We?" Phi Delta Kappan, XLIX (April, 1968), 424.
tional technology will play a major role in this "permanent revolution" even though he was not able to define adequately its nature and scope at that time.\(^3\)

This revolution seems to be on its way at a rapid pace. Only three years after Bundy's prediction, it is almost impossible to get along without the assistance of computer technology in education, just as we cannot avoid it in other areas of our daily life. The application of computers and related information processing systems influenced all areas of our society from the computerized payroll system and the scrutiny of tax return to the extensive analysis of experimental data and computerized instruction.

The development of computer assisted instructional systems was perceived by some educators as a danger. Hutchins warned that the changes brought by technology "may go so far as to dissolve the institutions we have known, or make them largely unrecognizable."\(^4\) He further warned that the technology of education may come to determine the methods and aims of education itself.\(^5\) However, we cannot just avert the current of rapid change for the

\(^3\)Ibid.


\(^5\)Ibid.
fear of such a danger. We must face the reality and must change our own attitude accordingly.

As long as the society keeps moving ahead as it is now individualized and flexible instruction will be a necessity rather than a luxury. Computer assisted instructional systems seem to be the great promises which will meet these changing societal needs.

According to Hickey, at least three requirements make computer assisted instruction inevitable: "the trend to individualized instruction, the growth in information to be acquired, and the shortage of qualified teachers." Furthermore, this computer assisted instruction "will bring about dramatic and far-reaching changes at every level of education." Counselor education program is one of the more important areas of modern education. Counselors help individuals keep abreast of changes occurring in their environment so that they can function adequately in their daily living. In order for the counselors to perform this function, the counselor themselves also should be well informed about all changes in the modern technocratic society.


7 Bundy, op. cit.
Further, they must respond with sensitivity to these endless changes.

There are two important subject areas to which every counselor trainee needs to be exposed: Computer assisted instructional system and Use of the Dictionary of Occupational Titles. Computer assisted instructional system is a newly developing educational system and the Dictionary of Occupational Titles is an excellent source of information concerning a large number of occupations in the present economy where many of the counselees would enter.

Need for Training Counselor Candidates to Use DOT

Knowledge of vocational guidance is one of the essential requisites of a guidance counselor. It is indispensable to earn a living for a person to survive in this complex and competitive human society. Thus every individual must work in a certain occupation or must develop a career. The modern society is complicated, consisting of thousands of different occupations. Every different job requires different skills and different personality characteristics of workers. Every individual has his unique aptitude, personality and interest. For a person to be a successful and a satisfying worker, he must find a job to which he will gladly devote himself. From this job the person must get a sufficient reward emotionally as well as materially.
In order for a person to find a suitable occupation, he must be fully aware of his own needs, aptitude, personality characteristics and interests as well as of the necessary information concerning various occupations. This is not an easy task for an individual to perform and a counselor should be readily available for helping such a person to see himself and to get the information that he needs.

To help the individual student to see himself in terms of his personality characteristics and interests, there are many kinds of aptitude tests and personality inventories available. Through utilization of these materials the counselor can easily help students to appraise themselves objectively so that they can make better career decisions. However, it is almost impossible for a counselor to give his client instant information concerning specific occupations a particular counselee may request in a single counseling setting. There are too many different jobs and any one counselor cannot possibly remember all the necessary information on thousands of different occupations. Therefore, the counselor needs a dependable source from which he can get fast and accurate information about a certain particular occupation that his client is looking for.

The Dictionary of Occupational Titles (DOT) is one of the best sources a counselor can depend on. The DOT has been published by the United States Department of Labor.
in order to bring jobs and workers together in this rapidly changing world of work. The two volumes of DOT have been revised twice since they were released in 1939. The DOT contains definitions of 21,741 separate jobs in the present economy. They establish a certain classification system which arranges into groups jobs having certain features in common. The DOT is used constantly in the operating programs of the United States Employment Service and its affiliated State agencies in their daily contacts with workers and employers. In addition to its use in the State organizations, it is also frequently used in school counseling, industrial placement, manpower training and development, personnel work and occupational research. The DOT has a great potential in vocational guidance, career planning and decision making, and vocational development of students. Thus, the DOT is one of the essential references for counselors who are engaged in any form of vocational guidance with youngsters who are about to enter the world of work.

In spite of its usefulness in guidance program, the DOT is not used as effectively as it should be in the present school counseling situations. One of the probable reasons for counselors not using the DOT is its complexity. The Dictionary of Occupational Titles is arranged in a unique classification system and it is quite complicated for a person who is not familiar with the use of the DOT. In
most institutions of counselor education the use of DOT is
taught as a unit in the vocational guidance course. How­­ever, the training is not intensive and in most cases the
instructor gives only a brief demonstration of how to use
the Dictionary of Occupational Titles. Consequently, not
many counselors remember how to use the DOT effectively
even after completion of their counselor education program.

Rationale for Developing CAI on the Use of DOT

Since the introduction of computer technology into
the field of education in the last decade, there has been
an increasing hope that computers could fill the unmet
need of counselor education program. Computers are designed
not to replace human resources, but to supplement human
ability. Therefore, it is the educator's or counselor's
responsibility to utilize every possible media which will
facilitate the learning or counseling process.

The Computer Assisted Instruction (CAI) has been
recognized for its effectiveness in individualized instruc­­tion. It assists the human instructor to be able to achieve
full potential. Teaching counselor candidates how to use
the Dictionary of Occupational Titles as a unit in a vo­cational guidance course could be well accomplished with
Computer-Assisted Instructional Lesson. This assumption
is based on the evidence that CAI gives the learners more
individualized instruction with more flexible schedule than a traditional classroom teaching can give. Moreover, individualized instruction is very important to learn how to use Dictionary of Occupational Titles effectively for it requires a relatively large amount of individualized training and practice to use.

Purpose of the Study

The purpose of the study was to develop a Computer Assisted Instructional System for training counselor candidates how to use the Dictionary of Occupational Titles. It was intended that the counselor candidates by taking this computer assisted instructional lesson be familiarized with the DOT effectively and that they feel confident to use the DOT in their later school counseling settings. The present study attempted to incorporate the two important subject areas, the CAI and the DOT, into one and provide counselor trainees an opportunity to have experience with computer while learning how to use DOT at the same time. It was also hoped that the instruction in vocational guidance be made more flexibly and effectively utilizing the computer assisted instruction to teach selected aspects of the course.
CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, the literature in the areas of Computer-Assisted Instruction and Computer Application in Guidance and Counseling will be reviewed.

Computer-Assisted Instruction

Gleason has pointed out that CAI is based on some of the same theoretical foundations as programmed instruction. According to him, the shortcomings of conventional programmed instruction has stimulated interest in developing CAI. The programmed textbook virtually precluded the use of audio and visual presentation and response modes. Most of the programmed textbooks depend mainly upon the printed word. Moreover, branching sequences in linear programs were largely ineffective due to the limitations of the presentation devices. As early as 1960, some of the writers began to look at the computer as an aid to overcome these shortcomings. At the present time, computers make it possible to utilize a variety of presentation modes such as printed, audio, visual, graphic, and pictorial.
modes. Also a variety of response modes are available such as written, typed, response selection, audio, and light pen. Gleason anticipated that techniques enabling the computers to respond to spoken commands will almost certainly be available in the next several years.  

Suppes described three possible levels of interaction between the student and the computer. The first level is individualized drill-and-practice systems, through which students can review and practice what they have learned in the classroom. These systems are meant to supplement the regular curriculum taught by the teacher. In these systems, the introduction of concepts and new ideas are handled in conventional fashion by the teacher. The role of the computer is to provide regular review and practice on basic concepts and skills. The second level is tutorial systems. These systems can take over the main responsibilities both for presenting a concept and for developing a skill in its use from the teacher. The intention of these systems is to approximate the interaction a patient tutor would have with an individual student. The third level, dialogue systems, is highly sophisticated. These systems intend to permit the student to conduct a genuine dialogue with the

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computer. These dialogue systems at the present time exist primarily at the conceptual level rather than the operational.9

The most important aspect and powerful potentiality of CAI, according to Zinn, is that individualized instruction is well within the range of possibility since individualized instruction is one of the ultimate goals of an effective education. The computer can handle a large number of students at the same time, enabling the students to proceed at a pace appropriate to their own interest and ability with a variety of presentation and response modes. Direct communication between an individual student at one terminal and a student or teacher at another terminal can be initiated in either direction via the computer in the PLATO system.10

According to Suppes' estimation, a computer can handle approximately 200 or more students simultaneously and each of the 200 students can be at a different point in the curriculum.11

Another potentiality of CAI is research possibility


11 Suppes, op. cit., p. 420.
in instructional process. The computer can record and manipulate a wide variety of learning data about the student during the instruction. For example, the sequence of learning steps, the response time, the number of errors and cumulative performances. Of course, the computer is already a necessity for data analysis of educational research. For the first time in the history of education, it is possible to get hard data which could be used as a basis for a more serious scientific investigation and evaluation of any given instructional program.

Dramatic development is to be found in a number of educational settings where activity in CAI is under way. Oettinger and Marks report that in the Computer-Assisted Instruction Laboratory at the Brentwood School in East Palo Alto, California, reading and mathematics material at the primary school level are being developed. With its preliminary data, according to Oettinger, this project has demonstrated that young children can readily adapt to a highly mechanized instructional approach.  

At the University of Illinois, the Programmed Logic for Automatic Teaching Operation (PLATO) System has been developed. The most significant contribution of PLATO, according to Trippon, is a plasma display device which will

be more economically feasible than the cathode-ray tubes on most other available systems.¹³

Meanwhile, New York City Schools reported their results for the first full year of operation. Through an examination of three criteria - acceptance of CAI by the schools and pupils, per pupil cost, and student achievement - they concluded that it was a very definite success in the use of technology.¹⁴

Harvard Computing Center has developed a Computer-Based Instructional System, called the System for Organizing Content to Review and Teach Educational Subjects (SOCRATES), which was designed to meet the requirements of an idiographic contingency model of the instructional process. According to Stolurow, the center conducted an extensive research in order to build a theory using a Computer-Based Instructional System and reported that the technological capabilities for accomplishing a high degree of individualization in the instruction existed.¹⁵

In the face of encouraging developmental activities,

¹³Marianne Trippon, "PLATO at Work," Phi Delta Kappan, XLIX (April, 1968), 439-441.


a number of problems required continuing attention. Seemingly impossible cost of CAI causes many educators to despair of any widespread implementation. Oettinger and Marks, Butler, and Becker estimated that the cost for student use of a computer terminal ranges from \$1.40 to \$7.00 per hour, which is far greater than conventional instructional costs.\(^{16}\) Education, however, is rapidly being forced to a more precise cost-benefit analysis. Perhaps the cost of CAI should be weighed against the true costs in terms of efficiency and effectiveness of the instructional system. It is also noteworthy that some of our most successful business enterprises have said in effect, "We believe that CAI is an economically feasible product."\(^{17}\)

Mitzel illustrated three reasons why CAI lacks credibility as a feasible tool in the minds of overwhelming numbers of educators: First, the cost of instruction, second, the shortage of good CAI course content, and third, the lack of a detailed plan for using CAI in a continuing instructional program. In order to narrow the CAI credibility gap, Mitzel suggested, first, to move computer equip-

\(^{16}\)Oettinger and Marks, \textit{op. cit.}

Butler, \textit{op. cit.}


\(^{17}\)Gleason, \textit{op. cit.}
ment from the category of current operating expense to capital outlay, second, to organize CAI user groups, and third, to try CAI on a limited basis.\(^{18}\)

Another problem centers around the claim that the extensive use of computer technology will result in a rigid, impersonalized kind of teaching. Many thoughtful educators are concerned with students' over-all growth related to learning environment. This may be a real problem if all the educational systems are completely mechanized. This necessitates continued attempts to examine, to demonstrate and to evaluate new devices and methods which may help to achieve more effective and efficient educational program. It is necessary, then, to learn how to use computer technology well and not to lose values on humanity.

Further, there exists the issue of centralized control of education. Suppes believes that the wide-spread use of computer technology will lead to excessive standardization of education. The issue, however, is a matter of responsibility and decision-making. Both diversity and standardization can be achieved by concerned educators.\(^{19}\)

Next, it is essential to consider the question,


\(^{19}\)Suppes, *op. cit.*, p. 422.
"Can the computer replace the teacher?" and "Can a teacher perceive his role appropriately in a CAI classroom?"

Becker, and Hill and Furst warned that the technology will be a threat rather than a help as long as the teacher retains the primary role as an information giver. Somehow, the teacher should be prepared to accept a new role as an observer, a manager or a facilitator in the CAI classroom. There is a need for more refinement in our conception on the role of the CAI teacher and hopefully, many studies will be conducted in an effort to test experimentally our theories about the most effective teacher role behavior as he works with the new technology in the modern society. This is mainly because the teacher is the most influential agent in educational revolution. It is vital for the teachers to perceive CAI as a technology which helps them to supplement their teaching effectiveness rather than as a threat that the computer may replace them.

Kopstein believes in general systems theory as the basis for a theory of instruction. He views instruction, or the modification of an organism's behavioral capabilities through environmental influences exerted over time, as a process. A deliberate realization of any specific process

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20 Becker, op. cit.

requires that an abstract, symbolic representation exists to differentiate it from the rest of the universe. Thus, there exists an a priori need for the design of an abstract representation or mode. He also states that the recent developments, such as computer assisted instruction, have intuitively adopted much of the methodology of systems and their further development would seem to require explicit recognition of systems character.\textsuperscript{21}

Suppes reviewed the implications of research in learning theory for the elementary school curriculum and the application of computer technology to realize these implications. An important factor was individual differences in rate of learning. For example, in an intensive accelerated program in mathematics for a group of gifted first graders, the fastest child accomplished 50 percent more than the slowest, and the rate was not strongly correlated with I.Q. In the kindergarten experiment, the fastest child required 196 trials while the slowest child required 2506 trials. From these data, Suppes concluded that the greatest experiment in learning will result from an almost single-minded concentration on individual differences. In this research, Suppes cited experimental studies showing the importance of both immediate reinforcement and overt correction in

children's learning and stated that a central problem for further work in mathematical concept formation is the identification of the structure of subconcepts determining the nature of transfer. He also reviewed experiments on optimal block size in learning a list of simple items such as vocabulary, and on response latency as a criterion of learning, and concluded that in reading, mathematics, and foreign language, response latencies are more sensitive measures than response errors.  

Rapaport studied sequential decision-making in a computer-controlled task. In this study, 24 undergraduate students participated individually as subjects in a computer-controlled task, intended as an investigation of decision making under uncertainty in a nonstationary environment. Each subject was required on every trial to predict the value of an unknown \( p, 0 < p < 1.00 \), and then to estimate its value after having received partial information about it from a computer. Each \( p \) value, for 120 trials, was generated by one of three beta distributions. A model derived from Bayesian theory is presented, tested, and partially confirmed. A learning model was constructed and tried in a computer simulation of the subjects. Implications concerning information seeking and use of computers

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in experiments were discussed briefly.23

Griesen at the Ohio State University, College of Medicine reported the five-year comparison of students who were electing independent study through computer-assisted instruction and the students who preferred the traditional lecture. The scores of the Opinion, Attitude and Interest Survey (OAIS) showed that the traditional group had a significantly higher biological science interest score. According to the results of 16 Personality Factor Inventory (16 PF), the traditional group was also more reserved, more stable, more conscientious, more group-tied, more anxiety prone, and tough minded. For the independent study group, Griesen reported, the creative personality, intellectual qualities, humanities interest, social sciences interest, and physical science interest scales on the OAIS yielded significantly higher scores than those earned by the traditional group. The independent study students were more venturesome, more imaginative and less anxious, as determined by the 16 PF Test results.

Griesen also indicated that the independent study group showed a higher ability to think reflectively, to reason abstractly, more theoretical orientation, more aestheticism, more autonomy, more religious liberalism and a

higher tendency toward impulse expression, as measured by the Omnibus Personality Inventory (OPI). According to Griesen, these were not just chance differences but the differences on most of these variables showed up in class after class for over five years. Griesen drew a conclusion from this five-year comparative study and stated that,

"We are firmly convinced that the student who prefers independent study is indeed a different type of student than those who prefer traditional study methods. However, I might point out that the students of the two groups, no matter what percentage elect independent study, have always appeared equal on the traditional predictors of success in medical school (i.e., the Medical College Admission Test and Undergraduate point-hour ratio)."

Although there is a gap between the ultimate promise and the immediate possibility, on the basis of the review of research findings and discussions in this part of the chapter, it is obvious that the educators now have the capacity of using technology to achieve the goal of effective education. Within the limitations, individualization of instruction is possible for the learner, and that is the most significant potentiality of CAI at the present time. The individualized instruction can be maximized and can be achieved at a much faster rate, if teachers accept the revolutionary aspects of the new role, if the gap between promise and possibility is narrowed, and if interrelated

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institutions and business enterprises are willing to share the cost of new technology.

As Bundy warns, we cannot evaluate CAI without a clear distinction between pedagogical and technological issue, because the computer itself tells us nothing about learning. The computer is a powerful tool for gathering and manipulating data, through which we can learn about learning process and perhaps ultimately, we might be able to build a theory of new instruction.

Computer Application in Guidance and Counseling

Computers can be utilized in various ways in the field of guidance and counseling. These include computer based vocational guidance, computer based school guidance program, computer based measurement program, computer assisted simulation of client encounter, and vocational guidance by the computer system.

According to Bohn and Super, there are three different roles of computers in counseling. First role of the computer is to provide the counselor with various information about the students, educational resources, occupational information or other such data so that the counselor

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can share these information with the student and help him to make his own decision during the counseling session. Second role of the computer in counseling is dealing directly with the student. In this mode, the student himself can request the information from the machine and can consider himself how to apply or use the information without having the counselor to transmit or interpret the data for him. Third role of the computer in counseling is more ambitious design for the incorporation of computers into counseling and this program provides opportunity for client and computer interaction. These systems include all the information that the other systems have. In these systems, the student is assisted as he moves toward his own decision making. He is given all the information the machine can provide and all the assistance counselors and programmers can put into an interaction system for the purpose of making the decision as knowledgeable and helpful as possible.  

The primary purpose of utilizing computers in the guidance and counseling seems to be the effort to provide individualized education and individualized guidance and counseling services.

McLuhan and Leonard recognized the role of the com-

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puters in the individualized education and stated that

Central school computers can now help keep track of students as they move freely from one activity to another whenever moment by moment or year by year records of student progress are needed. This will wipe out even the administrative justification for schedules and regular periods, with all their antieducational effects, and will free teachers to get on with the real business of education.27

Cooley also recognized the fact that individualization is an important trend of a completely new type of school and the role of the computer in this new school is a great importance. Cooley, however, believed that the role of keep tracking of student records is not the only importance of the computers. He pointed out one factor which was missing in the earlier effort of individualization of education:

... a new kind of measurement system integrated with the computer system is also needed for the necessary feedback information. That is, we need to do more than keep track of what the student has done or has been exposed to; we also need to keep track of what he has learned from those experiences. This kind of a computer measurement system has been a major missing factor in those previous efforts of individualization which have ended in failure.28

Cooley further indicated that the guidance services are placed at the center of the educational process but


most schools have given only token responsibility to these services. He strongly believes that the technology to implement the proper guidance programs of individualized planning has not been developed even though these programs have often been assigned the responsibility for helping each student develop a plan for his educational and vocational career.

According to Cooley, two kinds of measurement are needed for the Computer Measurement System (CMS): Longitudinal-normative and Content-standard. The normative data are based upon the more traditional measures of individual differences from the domains of abilities and motives. This longitudinal efforts can establish the major relationships existing between such a measurement base and the kinds of long-range goals students are likely to develop. On the other hand, content-standard can serve as a diagnostic tool for instructional prescriptions and as the basis for the periodic evaluation of student growth. This will also tell the student what he is to do to achieve the indicated objectives. Cooley made a prediction that the school of tomorrow need not be the sole locus of students' education. Rather it will be the place at which their education is brought into focus:

(1) by a computer measurement system which provides the information environment necessary for such a system of individually planned education; (2) for the student and counselor as they assess the student's current status, immediate plans, and long-range goals; (3) for
the administrators who are charged with the responsibility of administering the educational process; and (4) for the parents who are concerned about their offspring’s present and future welfare.\(^{29}\)

Cooley finally concluded that the computer measurement system can be employed without contradicting permissiveness and nonprescription principles so important in the counseling relationship.\(^{30}\)

The computer measurement system which was introduced by Cooley is a very important and effective computer technology utilized in the field of guidance and counseling. However, this system functions as an information giver and it does not function as flexible as the human counselor. In order to provide the client with more chances of interaction with the computer, a relatively higher level of computer system has been developed. This is called computer modeling and simulation technique.

The computer modeling and simulation techniques have been developed during the past decade in the field of war game activities, military systems analysis, military operations research. In the recent years, this computer modeling and simulation techniques have been successfully employed in the fields of economics, business, industry, medicine and behavioral sciences.

\(^{29}\)Ibid., p. 68

\(^{30}\)Ibid., pp. 61-71.
It is considered relatively not difficult to apply the computer modeling and simulation techniques to any discipline in which phenomena can be quantified and represented by a set of mathematical exemplars. However, the application of such techniques in the behavioral sciences is complex inasmuch as human behavior is neither easily quantified nor easily predictable.

Roberts warned that one must first confront the problem of defining optional counselor role and function in student decision-making before the person attempts to apply computer modeling and simulation techniques to guidance and counseling.

Roberts discussed a few possible difficulties in developing a computer simulation system in guidance and counseling. One of the major difficulties is that the counselor's functions are not constant; sometimes the counselor evaluates the client and some other times he helps the client to evaluate. He also pointed out that individual difference among counselors in their function in student decision-making makes the simulation difficult. Every counselor functions differently with the same problem under the same circumstances and this difference does not fit the specifications of the computer simulation model.

As one other major difficulty, Roberts pointed out the variety of human thinking process. He believes that simulation involves considerable guesswork and many risks.
in terms of time, cost, and ultimate operational payoff. The simulation involves problems associated with fantasy, wishful thinking, free associative exploration, and many other types of innovative games, which will have to be determined.

Roberts identified three basic types of simulated systems: Fully automatic, Semi-automatic, and Integrated. The first type is primarily quantitative and not amenable to application in situations where human roles significantly affect the system's internal process. The second type is applicable to processes where a need exists for critical human decisions and this provides a human interrupt capability in the process. The last type of simulated system is applicable where there is a definite need for controlled inputs, particularly in training programs and laboratory work.

Roberts emphasized that two important questions should be asked before serious attempts are made to utilize techniques in computerizing human functions. First, one needs to ask whether the synthetic reproduction of a multidimensionally complex human function would be of value in developing the new support systems. Second, one needs to ask whether it is theoretically possible to build a simulator which could respond to any situation with sole conclusion based on feeling, emotion, perception, biases, and intuition, which are unique in every individual human
being. In any event, Roberts concluded, the problems associated with building a computer simulation system with the capabilities of functioning like man seem to thwart the logic of such a notion.  

Whatever the problems are and whatever the difficulties encountered, the reality is an increasing need to develop automated or computerized systems in the behavioral sciences, especially in guidance and counseling. There are several computerized systems which have been developed and have been developing during the past decade in the field of guidance and counseling. Only a few such systems will be reviewed in this chapter.

Under the direction of Tiedeman and O'Hara, Harvard University Graduate School of Education, New England Education Data Systems (NEEDS), and the Newton, Massachusetts Public Schools have jointly developed the Information System for Vocational Decisions (ISVD). The ISVD is the most complex computerized guidance system presently existing. In scope, the system attempts to encompass a complete and ideal decision-making environment. The specifications for this environment were derived from vocational decision-making theory and include every access to decision-making

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resources and instruction and supervised practice in their use.

The ISVD is designed to provide three guidance services to students: (1) accurate, complete and relevant data for use in decision-making, (2) training in decision-making, and (3) supervised practice in decision-making. The first service is provided through a computer data bank, the second service is done by computer-assisted instruction units, and the last service is available under computer-monitored conditions. The student, in using this system, interacts directly with the computer through what resembles a natural language conversation between the student and the machine rather than in a multiple choice format.32

The second system to be reviewed in this chapter is the Computer-Based Vocational Guidance System which has been developed by the Systems Development Corporation (SDC) under the direction of Silberman, Cogswell and Estavan. The objective of this system is to facilitate student vocational maturity. In this system, three guidance functions are incorporated: (1) the provision of educational information, (2) the provision of vocational information, and (3) the provision of student program-planning info-

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nation and individual and group counseling. This system is also programmed to conduct three on-line student interviews: a high school program planning, a post high school educational planning, and a vocational planning interview.

The purpose of developing this relatively high level of computerized vocational counseling system can be summarized in two ways: One is to utilize computer technology to provide vocational, educational, and program planning information to the students; the other is to support counselors in individual and group counseling by providing them with information on student characteristics and achievement.

The GUIDPAK System is one other vocational guidance system which is presently in operation. This system is an entry-job vocational guidance system which has been developed at the University of Oregon under the direction of Loughary and Tondow. The GUIDPAK System is designed to help counselors provide entry-job information to students who have taken neither college preparatory nor specific vocational work in high school. This is primarily not a computer based or computer managed vocational guidance system. The system includes optional computer programs for

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storing and retrieving occupational information which the system generates.

This system attempts to develop in the student an ability to evaluate entry-level jobs in terms of his attributes, the potential job benefits, and the time required on the job to actualize these benefits. On the functional level, this system provides two main guidance services to students: (1) information about entry level job opportunities and (2) procedures and tools for use in evaluating these jobs.34

The GUIDPAK System is closely related to the use of Dictionary of Occupational Titles and interpretation of test scores. This system can be effectively utilized by incorporating General Aptitude Test Battery, Ohio Vocational Interest Survey, Kuder Preference Record, and other personality inventories.

Besides the three systems reviewed above, there are many others either in their developmental phase or in their early stages of implementation. These include the followings: The IBM Experimental Educational and Career Exploration System by the International Business Machine Corporation under the direction of Minor; The American

Institutes for Research Comprehensive Vocational Guidance System developed by the American Institutes for Research in the Behavioral Sciences under the direction of Flanagan; The Rochester Career Guidance Project developed by the City School District of Rochester and the New York Employment Service with technical assistance from the Eastman Kodak Company; The Pennsylvania State University Computer-Assisted Career Exploration System which was developed at the Pennsylvania State University under the direction of Impelliteri; The Willowbrook Computerized Vocational Information System which was developed for the Willowbrook High School outside of Chicago; The Palo Alto Computer-Based Course Selection and Counseling System developed at the Palo Alto Unified School District under the direction of Tondow and Betts; and The Bartlesville Total Guidance Information Support System which was developed at the Oklahoma State University under the direction of Roberts and Forsberg.

As it is noticed, the computer-assisted, computer-based, computer-managed, or computer-used vocational guidance and counseling system is a newly and rapidly developing area of educational research. As the modern society becomes more mechanized, educational technology becomes a necessity to provide an individualized education. As a part of educational system, the guidance and counseling program should also be individualized and this individual-
ization of the program can be furthered by utilizing the computer technology.

In this chapter, related literature to the present study has been reviewed. The literature review was done in two major areas: Computer-Assisted Instruction and Computer Application in Guidance and Counseling. Some of the problems and difficulties as well as the potentialities of the computer technology was also discussed.

The Chapter III will present the development of the present Computer-Assisted Instructional Lesson on the use of the Dictionary of Occupational Titles.
CHAPTER III

DEVELOPMENT OF THE CAI PROGRAM

In this chapter, the actual program of the computer assisted instruction which has been developed in this study will be presented. The term, "development" should be interpreted as a total process of creating the instructional program rather than its traditional meaning.

The total program which the program involves four major phases: Requirements, Production, and Evaluation. Each of these four phases will be described below.

Requirements Phase

In this phase, scope of the program, instructional objectives, the target audiences of the program, and the equipment and programming language used will be presented.

Scope of the program -- This program will involve a unit, called Use of the Dictionary of Occupational Titles, of a graduate education course, Education 879 - Educational and Vocational Guidance, at The Ohio State University.
CHAPTER III

DEVELOPMENT OF THE CAI PROGRAM

In this chapter, the actual program of the computer assisted instruction which has been developed in this study will be presented. The term, "development" should be interpreted as a total process of creating the instructional program rather than its traditional meaning.

The total process of creating the program involves four major phases: Requirements, Design, Production, and Evaluation. Each of these four developmental phases will be described below.

Requirements Phase

In this phase, scope of the program, instructional objectives, the target audiences of the program, and the equipment and programming language used will be presented.

Scope of the program -- This program will involve a unit, called Use of the Dictionary of Occupational Titles, of a graduate education course, Education 879 - Educational and Vocational Guidance, at The Ohio State University.
This course is one of the several required courses for all graduate students working toward a Master's degree in guidance and counseling or toward a certification for school counselor. The unit on the use of the Dictionary of Occupational Titles is one content area to be covered in this course.

The Dictionary of Occupational Titles (DOT) consists of Volume I, Volume II, Part IV, and a Supplement. Since their first edition in 1939, Volume I and Volume II have been revised twice: first in 1949 (2nd edition) and second in 1965 (3rd edition). Part IV was published in 1941 and was revised once in 1944. There have been several supplements during the last 30 years in order to update the two volumes. In the present study, only Volume I and Volume II will be included and they will be referred to as DOT.

In Volume I, 21,741 separate occupations are listed and defined. Some of these occupations are known by 13,809 additional titles in the different parts of the country and this makes a total of 35,550 different job titles listed in the DOT. These 35,550 different titles are listed in alphabetic order with proper definitions and code numbers in Volume I.

In Volume II, these 35,550 different titles are classified by three different classification systems: Occupational Group Arrangement (OGA), Worker Traits Arrange-
ment (WTA), and Industry Arrangement of Titles. All of the job titles have been assigned to a different 6-digit code number according to the classification systems.

In this program, the four different classification systems will be dealt with in terms of how these different systems classify jobs and how to utilize those classification systems in the field of vocational guidance and counseling.

**Instructional objectives** — The instructional objectives of the present Computer-Assisted Instructional Lesson on teaching people how to use the DOT are such that, if they are achieved, the graduate students who would have taken this course would be able to perform the following tasks using the DOT:

1. To find job titles and definitions from Volume I.
2. To identify the titles of Category, Division, and Group from the 6-digit code numbers.
3. To assign a 6-digit code number to a certain job title using the DOT.
4. To identify the level of complexity of a certain job in dealing with Data, People, Things.
5. To find different job titles within a certain Industry.

**Target audiences** — The major target audiences for this instruction are the graduate students who are enrolled in the course, Education 879 - Educational and Vocational Guidance at The Ohio State University. It is
intended that this course will also be available, in the future, to the secondary school counselors around the City of Columbus so that these counselors can use the DOT more effectively in their guidance activity. This is because the present Computer-Assisted Instructional Lesson provides an individualized instruction on the use of DOT as an excellent source of occupational information in the present world of work.

**Equipment and language** -- IBM 360/50 is the computer presently in operation at The Ohio State University and this computer will be used for the present program of instruction. IBM 2741 teletypewriters are the terminals to be utilized for the course.

**Two volumes of Dictionary of Occupational Titles (3rd edition)** - Volume I and Volume II are the necessary material required for the students to have at the terminal for the frequent reference during the computer assisted instructional process.

Communication between the computer and the terminals will be accomplished by means of special telephone data sets connected to both the computer and terminals. During the instructional process, students will constantly interact with the computer by typing in their responses to the instruction at the terminal.

As the programming language, IBM Coursewriter III -
Version 2 will be used. The content material will be developed by the writer on the basis of the information contained in the DOT and it will be put into the computer by the writer.

A tutorial mode will be employed as the program strategy and a simple level of simulation mode will accompany the program.

Design Phase

The entire course will be divided into four major units in accordance with the four different classification systems of the DOT. These four units are (1) Alphabetic Arrangement, (2) Occupational Group Arrangement, (3) Worker Traits Arrangement, and (4) Industry Arrangement. The second unit, Occupational Group Arrangement (OGA) is divided into three different sections for the convenience of presentation. They are Section 1, Identifying code number; Section 2, Identifying various entries in the OGA listing; and Section 3, Assigning code number and title to a certain job description.

The outline of the development of Computer-Assisted Instructional System on the use of the Dictionary of Occupational Titles is shown in Figure 1, major breakdown of the program, on the following page.

Before each unit or each section begins, students
will have two to five items of preliminary self appraisal questionnaire to which they will respond how much they think they know about the content to be covered in that unit or section. In this questionnaire, students are asked to type in a letter "c" when they think they have comprehensive knowledge, a letter "s" when they think they have some knowledge, and "n" when they have no knowledge at all on the given item. This questionnaire has been developed for two purposes: first, the computer can lead students to the appropriate level of instruction according to their degree of present knowledge, and second, students could have an opportunity to review briefly the titles of the content they will learn in that unit or section. If either a "c" or "s" was put in, the students will start with a diagnostic question on the item rather than an introductory explanation on the concept. When they pass this, they will go directly to the next question, while failures will receive either a tutoring lesson or a hint before they can try the next question. On the other hand, if a student puts in a letter "n", he will receive an introductory explanation on the new concept followed by a practice question. This screening process is built in every block of the instructional flow with a proper feedback to the student's responses. In this way, every student will receive an individualized instruction in accordance to his learning pace rather than a uniform instruction which the traditional
Figure 1. Major Breakdown of the Program
programmed textbook instruction used to provide.

At the completion of the entire course, every student will be asked to respond to an opinionnaire which consists of eleven items - six items with a general opinion about the present CAI and five items with the instructional objectives. This will give each student an opportunity to evaluate his own learning as well as the program.

Production Phase

The product of the study appears in Appendix A and B. The total program which has been developed in the present study is included in these Appendices.

Each unit or each section of the instruction consists of a series of blocks. Each of these blocks contains a question, a comment on the student's response to a given question, and a supplementary tutoring lesson on the content if necessary. When the learner makes a mistake such as a typing error and other kinds of error in responding to the question in the "c" blocks, he will be given a second chance to correct his response before being branched to a "n" block for a supplementary tutoring lesson.

Evaluation Phase

The present CAI program has been field tested with a selected group of people. These people were divided into
three different subgroups on the basis of the purposes served to the evaluation: Debugging group, content evaluation group, and evaluation panel. An opinionnaire, observation and discussion were used for the evaluation.

The procedure and result of the evaluation will be presented in Chapter IV.

**Developmental Process of the Lesson**

The developmental process of each of the four units of the instructional system will be described in detail.

**Unit I - Alphabetic Arrangement of Titles:** The first unit deals with Volume I of the DOT, which lists all the job titles and their definitions in alphabetic sequence of the titles.

In this unit, five major items are included: (1) Finding titles in Volume I, (2) Finding inverted titles, (3) Identifying industry designation within the entry, (4) Identifying alternate titles within the entry, and (5) Finding the equivalent title for dash entry. These five items also consists of the first preliminary self-appraisal questionnaire which every student will have to respond before receiving the lesson.

There are total of eleven instructional blocks established for this unit of the instruction. Figure 2 shows a total picture of the instructional flow which the students
Figure 2. Flow Chart: UNIT I
in different levels of knowledge on the use of DOT would follow.

Since all the job titles in Volume I are listed and defined in alphabetic sequence of the titles, a student who knows this fact will not have any difficulty in finding the title, "Counselor" at the first try in block 1c1. However, if he did not have any idea how the job titles are arranged in Volume I, he may need some introductory lesson on the classification system of the DOT in block 1n1. Therefore, all beginners who responded as "n" to the first item of the questionnaire will start with an introduction to the Alphabetic arrangement of titles in the block 1n1 followed by a practice exercise in block 1n2. This block 1n2 is designed to confirm their learning in the previous block. On the other hand, students who are more familiar with the use of DOT and responded as "c" or "s" to the first question will start directly with a problem in block 1c1. If a student failed to find the title in question, even though he started with block 1c1, he will be sent to the beginners' block, 1n1 for a supplementary tutoring instead of being moved on to the next problem block, 1c2. Thus, no student can advance to another level of the instruction until he has mastered the knowledge given in more basic levels.

The next item covered in this unit is the task of finding inverted titles in Volume I. Titles of certain
closely related jobs having the same generic word are frequently inverted so that they will appear in the same area in the alphabetic listing. A title called "Net Fisherman", for example, is not listed under alphabet N, but is listed under F as "Fisherman, Net" together with other kinds of Fisherman such as Fisherman, Line; Fisherman, Lobster; Fisherman, Mussel; etc. Every student starts with a problem to find an inverted title, without any introduction to the inverted title, in the block 1c2 even though he is not familiar with this concept. When the student is successful in finding the inverted title, Fisherman, Net, he will be sent directly to the next block, 1c3 while others who failed will go to block 1n3 for some explanation and another trial in block 1n4.

The third item covered is finding the industry designation within a designated title entry. Some of the titles are found in several different industries but their definition of the jobs, i.e. work performed, skills required, and equipment used, might be different according to what industry that job belongs to. Therefore, it is necessary to identify industry designation in order to find the right occupation that the applicant is looking for. This problem will be treated in the block 1c3, or 1c3 and 1n5 depending upon the students' performance on the problem given in the block 1c3. In the block 1c3, the students are asked to answer the question without receiving any infor-
Identifying alternate title(s) is the fourth item covered in this unit. Some of the titles are known by different names in other parts of the country and they are also listed as alternate titles to the base title. Alternate title(s) is placed right after the 6-digit code number in boldface, all lower-case letters. Students should be able to identify them in the entry, for some of the alternate titles might be more familiar to them. The block lc4 and ln6 are designed to teach the counselor candidates to identify this particular titles within the entry.

The last item covered in this unit is a dash entry. Identical job titles for different jobs frequently appear in the alphabetical arrangement of titles in Volume I. Instead of printing the same title twice or more, a dash is used to serve as a ditto mark. This item is contained in the block lc5. When the student can find the identical title for a given problem, he will be moved on directly to the next unit, Volume II. If students failed in answering this question, however, they will receive a supplementary tutoring followed by a second trial within the same block, before moving into the next unit.

In this first unit of instruction, a rather reverse order of branching method has been employed. The purpose of using reverse order approach is to provide a stimulant learning environment which might be helpful to promote
motivation for students' learning. This is somewhat similar to the deductive approach to learning.

Unit II - Occupational Group Arrangement of Titles: Volume I is not too difficult to use as long as the user is aware of all the different kinds of items contained in each entry of titles and knows that titles are arranged in alphabetical order. However, Volume II is quite complicated and it contains an extensive amount of information on different occupations in the present economy. Therefore, the emphasis of the instruction is placed upon Volume II.

Volume II contains the rest of the three units of the present instructional program. Occupational Group Arrangement (OGA) is designated as the topic of the Unit II.

The Unit II, Occupational Group Arrangement of titles is again divided into three sections for the convenience of presentation of the instruction. The three sections are: (1) Arrangement of Occupational Category, Division, and Group with Code Number, (2) Component of the OGA listing, and (3) Assigning a code number and a title to a job description.

(1) Section 1, Arrangement of Occupational Category, Division, and Group with Code Number. Before this section begins in the computer assisted instruction, each student will be asked to respond to three items of preliminary
self-appraisal questionnaire which consists of the content covered in this section of the instruction. The students may put down either a letter c, s, or n depending upon their degree of present knowledge on the given items. The three items are: Identifying Category, Division, and Group from the 6-digit Code Numbers; Finding the appropriate Titles of Category, Division, and Group for the 6-digit Code Numbers; and Finding the appropriate Code Numbers for the Titles of Category, Division, and Group.

A total of 12 instructional blocks were established to cover this section of the instruction and Figure 3 shows the entire flow of these 12 blocks of the instructional process.

In this section, a different branching method from that used in the Unit I is used. Instead of dealing with all three items together and leading the instructional flow in a reverse order, the students' responses to each of the three items of questionnaire was reflected item by item in the stream of flow and the instruction was presented accordingly.

As it is noticed in Figure 3, every item has its own starting point and this starting point is also different depending upon the individual student's response to the self-appraisal questionnaire. In other words, if a student responded to the first item as either "c" or "s" he will start with block a1c1 in which the student is asked to
Figure 3. Flow Chart: UNIT II - SECTION 1
identify Category number from a 6-digit code. When he is successful in identifying the category number from the 6-digit code number, he will move on to the next block, alc2, while others who failed answering in alc1 are sent to alnl for a supplementary tutoring on the problem. This block, alnl, is also designed as a starting point for the students who are not familiar with this code number. Once he is sent to the block, alnl, the student will learn how 6-digit code numbers were assigned to each Category, Division, and Group and will have another opportunity, in the next block, aln2 to prove what he learned in the previous block.

Item 2 has its own starting point regardless of the student's performance in the previous item. In other words, if a student had put a letter "c" or "s" in the second item of the questionnaire, he will start with block, alc4, while others who had put a letter "n" will start from the block, aln3. As soon as the student has reached the last block of the instruction for this second item, which is the block, alc6, the student will be branched to the next decision box of the flow where his response to the third item of the questionnaire is analyzed. He will then be sent to the appropriate block on the basis of his knowledge level.

This independent branching procedure provides every student an individualized instruction according to his level of knowledge on a certain item so that he does not have to repeat the instruction which he already knows about.
In the Dictionary of Occupational Titles every job title is given a special 6-digit code number which verifies what category, division and group this specific job belongs to and how this job is related in dealing with data, people, things. In a 6-digit code number, 682.351, for example, the first number "6" represents category 6 which includes all the job titles in the area of machines trade occupations. The first two digits, "68" indicate that this job belongs to the 8th division within the 6th category, which is designated as textile occupations. All three digits preceding the period specify that this job belongs to group 2 of division 8 in category 6, which represents spinning occupations. The rest of the three digits following the period indicate the level of complexity of this job in dealing with data, people, things respectively. This subject, the relationship with data, people, things will be excluded in this section, instead it will be discussed in the next section.

At the end of the instruction on section 1, every student should be able to identify the category, division and group numbers from a given 6-digit code as well as to find the meaning of each number. In this section, the alphabetic list of all the occupational divisions and groups in Volume II will also be introduced to the learner. This list appears on the pages between 25 and 32 in Volume II and is very useful to identify the code number when the exact
(2) Section 2, Component of Occupational Group Arrangement Listing. This section deals with the body of the occupational group arrangement of titles and codes, which is listed between pages 33 and 213 of Volume II. All of the 21,741 titles together with alternate titles are listed according to their code numbers under each group and all of the groups are listed under each division of the appropriate category.

This list contains various important information on the occupations. Among the information listed in this section of the DOT are included definition of every category, definition of every division, definition of every group, base titles with industry designations, alternate titles, defined related titles with industry designations, and undefined related titles with industry designations.

This list is frequently used to find the title of a certain job and title and definition of a certain group, division or category, especially when only the code number is known. Since the Chronicle Guidance Reprint Service and Occupational Outlook Quarterly as well as other vocational guidance publications are using the DOT code number for filing system and these publications are some of the important materials in school counseling program, every counselor candidate should be well acquainted with this part of the
instruction. In this section, items of alternate titles and industry designation are excluded, for they were already presented in Unit I.

Figure 4 shows the entire picture of the instructional flow of this section.

As it is noticed in figure 4, there are 15 learning blocks with individual decision box for each of the four items of preliminary questionnaire excluding the last item. On the basis of their indicated level of knowledge on the five items covered in this section, students will receive an appropriate and individualized instruction.

The characteristic of the flow in this section of the instruction is that a relatively extensive introductory instruction has been provided at the beginning of the section. This is because the OGA listing is the most important information contained in the DOT as well as is the most complicated item to be familiar with.

As it is already known, the definition of every job title is listed in Volume I. However, definition of every category, division, and group is listed in this listing, Occupational Group Arrangement of Titles and Codes. This is a very good source of information where we can check against the chosen job title for its validity and accuracy. In other words, when we want to find out whether we have chosen the right title for a counselee's career, this listing will give us the information that we are looking for.
Figure 4. Flow Chart: UNIT II - SECTION 2
One of the important entries of this listing is the 6-digit code number. The text already discussed the first three digits in the previous section and only the last three digits of the 6-digit code number will be considered in this section.

The last three digits of code number indicate the level of complexity of the given job in dealing with data, people, things. Every job involves working with either one of these three or combination of two or all. However, the degree of its complexity is different in each job. This code number indicates the relationship of the job to data, people, things hierarchy. Appendix A of Volume II lists the meaning of the each number. There are nine different levels of complexity in dealing with data, people, things and the complexity levels are indicated by the numerical numbers from 0 to 8 -- 0 being the highest and 8 being the lowest level. In this CAI lesson, the students' attention have been drawn to the availability of such information in the DOT so that they can consult with this listing as frequently as they need in the future guidance activity.

Another basic entry in this listing is base title. Base title is the principal title listed under a certain code number. Base titles are printed in all capital letters following the 6-digit code number and are printed flush with the margin. The proper industry designation is always appearing in parenthesis following the base title(s). In
Volume I, base titles are printed in boldface caps followed by industry designation and code number.

The next items covered in this section are called "Defined related titles" and "Undefined related titles". The words, "defined related" mean that the title is defined in Volume I and is closely related to the base title immediately preceding it. This kind of title is printed in all capital letters and is indented approximately three spaces from the base titles. The next words, "undefined related" mean that the title is closely related to the base title, but is not defined separately in Volume I. This title is printed in only an initial capital letter and is indented approximately six spaces from the base title. These two kinds of titles are treated together in this section under one item.

Another item included in this listing is alternate titles which are printed in all lower-case letters and indented approximately nine spaces from the base title. This item is not covered in this section of the instruction, for it was already treated in the Unit I.

The last item covered in this section is the abbreviation, n.e.c. These three letters stand for the words, "not elsewhere classified". The title with this abbreviation includes miscellaneous jobs with that specific title, but different from the other job titles classified under that same group. Since this abbreviation appears so fre-
quent in the DOT, students need to be aware of its meaning.

(3) Section 3, Assigning Code Number and Title to a Job Description. In this section, two major items are covered: Assigning code number to a title and Assigning a title to a certain job description.

When a counselor works with high school students or others on vocational guidance, it is sometimes necessary for him to have a code number to find more specific information on the job or simply to file that job according to its code number. In this case the counselor should know how to assign a code number to a certain job title. There are two different ways of doing this: One is to look up the title in Volume I and find the 6-digit code number, and the other method is to use Volume II. Volume II enables a counselor to find the appropriate code number to a job title. In order to do this, the counselor should consider what the major activity of the job is and where the job is performed. Once he obtains these two kinds of information, it is very easy for him to assign a code number to that job. All he has to do now is to go through the list on the pages between 1 and 24 in Volume II and find the appropriate group code and title. After he found the group code and title for the job in question, the exact 6-digit code number can be easily found under that same group.

The second item covered in this section is a little
more difficult than the first one. In the second item, the counselor is asked to assign a title to a certain job description. First of all, he will have to find category for the job description and then try to find the appropriate division and group. Once he has temporarily selected one or several possible job titles for the job description, he should look up the definition of the group. This will allow him to see whether he has chosen the right title or which one of the several possible titles is the most appropriate one. The 6-digit code number, then, is automatically available as soon as he found the right job title.

Figure 5 shows the overall flow which the students would follow in this section of the instruction. In this Figure 5, it is noted that the students who responded as either "c" or "s" to the first item of the preliminary questionnaire would receive only two blocks of instruction unless they fail to answer either one of the two questions. On the other hand, students who responded as "n" to the first item will receive a complete instruction concerning how to assign a code number and how to assign a title to a job description.

It is also noted that the two items have their own independent starting points. Therefore, it is possible that even if a student started with the block a3c1 and passed that item, he may still have to take a long instruc-
tion starting from the block, a3n6 and finish with a3n10 for the second item. On the contrary, it is also possible that a student went through the complete instruction from the blocks a3n1 thru a3n5 for the first item and finishes with the block a3c2 for the second item. These are all dependent upon individual student’s level of knowledge and performance.

Unit III - Worker Traits Arrangement of Titles:
The third major classification system of the DOT is Worker Traits Arrangement of Titles (WTA). In this arrangement, all the job titles are grouped so that jobs requiring similar traits will appear together. In this grouping system, aptitudes, interests, temperaments, physical demands, and training time required of the worker are included. This WTA is a very useful information in a high school guidance program, for high school students are about to enter the world of work and this information provides all the necessary traits required of the workers so that prospective workers can appraise themselves before they actually enter the job market. This beginning worker is called "entry worker".

There are five items to be covered in this unit:
Utilization of the list of Area of Work, Narrative description of WTG, Worker traits arrangement title, Difference of coding system between the entry worker and the regular
On page 214 in Volume II, there are 22 areas of work listed in alphabetic sequence. Once an area of work in which a student or entry worker is interested is chosen, the counselor should look up the narrative description of that area of work for more specific information, such as work performed, worker requirement, clues for relating applicants and requirements, training and methods of entry, aptitude, interest, temperament and physical demands for that specific area of work. Once these conditions coincide with the applicant's interest, the counselor can go further to find more specific job titles within that particular area of work. Titles used for this worker traits arrangement are contracted ones rather than the full titles shown in other kinds of arrangement. For example, "Occupations in Art" is contracted to "Art work" in this WTA.

The code number used for the entry worker is also different from that of the regular worker. A period (.) between the first three digits of the 6-digit code number is replaced by an "x" for the entry workers, i.e., 463x376. In addition to this, only 5 or 4 digits of code numbers are generally assigned to the entry workers instead of the full 6 digits of code. In other words, many of the entry workers do not have adequate experience in a specific job, instead they have just a vague interest in a certain kind of occupations and thus they can not be classified so specifically
with a full 6 digit code.

For example, an entry applicant who has no formal training or experience in a designated job but simply indicates his interest in that job can be assigned with only 4 digits of code number. This decision is based on the assumption that this particular applicant might benefit from more broad exposure to the work rather than from working with a specified job.

A five digit code number is given to the student who had had just an orientation to a certain kind of work but had not had any experience in that field of work. Finally, the entry applicant who meets the minimum requirements for a certain job but is not fully qualified or experienced can be classified with a six digit code. In this case, however, an "x" is replacing the period between the first three digits and the last three digits of code number. The typical examples are: 4x356, 42x356, 426x356.

Figure 6 shows how the content of this unit of the instruction flows for the two different groups of learners—those trainees who already have some knowledge on these items and those who are not familiar with the subject at all. For the first group, just questions will be asked unless they fail to answer these question correctly. Failure in answering correctly to any of these items will result in a supplementary tutoring on the specific item(s) that the learner failed. However, the other learners who
indicated that they were not familiar with any one item or all of the items will receive a relatively thorough instruction on that specific item.

**Unit IV - Industry Arrangement of Titles:** The last unit of the instruction is on the industry arrangement of titles. Every title entered in the DOT has an industry designation printed in parenthesis which appears immediately following the title. Between pages 531 and 648 in Volume II, there is a list of all the industries assigned to the titles contained in the DOT appearing. On this list, the industry titles are arranged in alphabetical order.

The industry designation shown in the entry of the DOT is shown only in abbreviation. In this list, however, the full industry name is also listed and is printed in all capital letters preceded by the abbreviation. Following the full industry title is the definition of the industry and these two contents are separated by a colon.

Under the definition of the industry, a list of job titles which are found in that specific industry is shown in alphabetic sequence of the industry titles. This list is very convenient to use when a certain title within a specific industry needs to be found.

In this unit of the instruction, four major items are covered: finding industry titles, finding full industry titles, finding job titles within an industry and finding
Figure 7. Flow Chart: UNIT IV
alternate titles within an industry.

Figure 7 shows the instructional flow which the learners would follow through in this unit. In this flow, the approach used in Unit I has been adopted again in order to better motivate the learner with an appropriate stimulus at the last stage of the instruction. There are eight learning blocks established for this unit and each of these eight blocks has its own built-in screening process. This built-in screening process enables the learners to receive an individualized instruction according to their learning effectiveness and previous knowledge.

In this chapter, the specific procedures involved in developing the present CAI lesson on the use of the DOT has been presented. The present CAI program contains four major units and three sections: Unit I - Alphabetic arrangement of titles, Unit II - Occupational Group arrangement, Unit III - Worker Traits Group arrangement, and Unit IV - Industry arrangement of titles. The three sections are included in Unit II.

In chapter IV, Evaluation, Utilization and Summary of the study will be presented.
CHAPTER IV

EVALUATION, UTILIZATION AND SUMMARY OF THE STUDY

In this chapter, the present computer assisted instructional system on the use of the Dictionary of Occupational Titles will be evaluated, some of the possible ways of utilizing this program in the practical situation will be discussed and a summary of the present study will be presented.

Evaluation of the Program

The present Computer-Assisted Instructional Program has been developed by the writer and has been field tested with a selected group of people and evaluated. As the present study is a developmental rather than an experimental, the emphasis of the evaluation was placed on the operation of the program. Therefore, the result of the program evaluation has already affected the development of the program, in some degree. The evaluation of the present study is an on-going one and the future evaluation will affect the further development of the program.

In its early stage, the program was evaluated in
three different levels: (1) Evaluation for the debugging purposes, (2) Evaluation of the content in terms of achievement of the instructional objectives, and (3) Overall program evaluation. The result of these three different levels of evaluation will be presented and discussed below.

**Evaluation for the debugging purposes** — There were three developmental steps followed in this level. First of all, the author went through the CAI program by simulating a student's role. During this process, there were attempts to correct and modify the program flow and other malfunctions of the program whenever they were found. The second step was to have one of the CAI monitors to take the program and to feedback any difficulties that she encountered. Since the CAI monitor is the person who is employed by the Computer Assisted Instruction at The Ohio State University and has an extensive experience with the CAI, she was able to provide a trained opinion concerning the program operation. The additional difficulties found in this level were fed back to the author and the author corrected and modified them promptly. The third step of debugging process was to release the program to a limited number of students for their use. At this stage, five graduate students, who were enrolled in a Guidance course during the first term of the Summer Quarter, 1971, volunteered to take this program. None of these five graduate students were acquainted with the Dictionary of Occupa-
tional Titles or were exposed to Computer-Assisted Instruction before taking this lesson.

The author was with the students during their interaction with the computer and observed their instructional process. On the basis of these students' reaction to the program and problems arisen, additional revision was made.

In addition to his interest in operation of the program, the author was also interested in observing the attitude that the graduate students in the field of guidance and counseling have toward the new instructional technology. Four of the students showed their great interest in the CAI and viewed that CAI could be an effective way of teaching counselor candidates to use DOT provided that a classroom discussion is followed. They also expressed their interest in a further development of the present Computer-Assisted Instructional System. These four students had some degree of skill in typing.

On the basis of observation during the CAI demonstration, it was hypothesized that the present CAI program is an effective way of teaching counselor candidates to use the Dictionary of Occupational Titles provided that the learners possess a minimum degree of typing skill and a classroom discussion is accompanied the CAI. This hypothesis, of course, is a provisional one pending a further study on an experimental mode, which is beyond the scope of the present study.
Evaluation of the content -- At this level, the content of the program was evaluated in terms of the five instructional objectives of the present lesson. The primary purposes of the evaluation were to determine whether the present CAI program has achieved the five proposed instructional objectives and to determine in what degree those objectives have been achieved. As the method of evaluation, an opinionnaire was used.

The evaluation group at this level was divided by two subgroups: General group and Expert group. The General group consisted of six graduate students who were drawn from a relatively wide range of field of study. These areas included guidance-counseling, educational research and development, elementary education, educational administration, and electrical engineering. Three of these people were working on doctoral level and three others were working on masters level. Only one person was exposed to a CAI previously, but none of them were familiar with the DOT.

At the end of the instruction, all of them were asked to respond to the opinionnaire which was also programmed in the computer. All of the students responded that their understanding of the DOT as a result of taking this course was either Above Average or Average. They all agreed that they would encourage people to take this CAI lesson and they rated the instructional value of the CAI
program as either excellent or good. The response on the five instructional objectives were generally favorable. Since the number of cases is extremely small, only tentative conclusions can be drawn from these data. However, none of the persons checked any of the five instructional objectives on either 4 or 5. This indicates that the instructional objectives in a developmental stage have been achieved favorably.

Expert group consisted of two persons who were majoring guidance and counseling on a doctoral level and somewhat familiar with the use of DOT. They both indicated that the instructional value of the present CAI was Good and they would encourage people to take this program. Both persons checked on 1 on the first four instructional objectives, which indicates that they could perform those four tasks with a minimum difficulty in the future. For the 5th objective, however, one person checked on 1 while the other person checked on 2. These responses indicate that all five instructional objectives were achieved highly on these two graduate students.

On the basis of the result shown above, the author came up with a second hypothesis: This instructional program can be used more effectively to the people who are somewhat familiar with the DOT than to any other group of people. This hypothesis, of course, is also provisional pending a further study. Additional debugging of the pro-
gram was done on the basis of these two evaluation groups' use of the program.

**Overall program evaluation** -- This is the last stage of evaluation that took place in the present study. At this level an Evaluation Panel was established informally and the author received an extensive feedback from the members of the panel. This panel consisted of two highly qualified experts: One on the DOT and the other on the CAI. The first evaluator is deeply involved in training counselors to use DOT at the State of Ohio. He went through the present CAI program and evaluated the content. He believed that the instructional value of the program was an excellent and all five instructional objectives were very well achieved.

The other member of this evaluation panel is a CAI expert who has been developing several Computer-Assisted Instructional lessons at The Ohio State University. He examined the program and pointed out several problems that had not been found in the previous stages.

On the basis of the feedback from this evaluation panel, the author corrected and modified the problems that had been pointed out. As the present CAI program is a developmental study, the author believes that the evaluation of the program should also be an on-going and developmental one. It is, therefore, attempted to correct and to modify continuously whenever need arises.
Utilization of the Present Program

As the instructional value of the present study has been recognized by the various evaluation groups, the present study can be utilized quite extensively in the field of guidance and counseling. Specifically, this study can be utilized in training counselor candidates and counselors to use the Dictionary of Occupational Titles. As a result of knowledge acquired through this instruction, the counselors will be able to interpret the scores of Ohio Vocational Interest Survey (OVIS), General Aptitude Test Battery (GATB), Kuder Preference Record, and Interest Check List meaningfully in relationship with the information contained in the Dictionary of Occupational Titles. The above mentioned tests are closely related to the information contained in the DOT, especially the Worker Traits Group Arrangement of Titles and Codes.

The Division of Guidance and Testing at the State Department of Education in Ohio has been conducting an extensive research in relating the scores on OVIS, GATB, and Interest Check List to the Worker Traits Group of the DOT.

The Division of Guidance and Testing has developed the techniques to interpret scores of these tests in reference to the Worker Traits Group of the Dictionary of Occupational Titles so that students can plan their career
more realistically in terms of interest and aptitudes. According to the Guidance Information System developed by the above organization, the Interest Check List is administered to the 7th graders and is interpreted in relationship with the Worker Traits Group of the Dictionary of Occupational Titles so that students can be familiar with the WTG before they actually start exploring their career. When these children become 8th graders, OVIS is given and is interpreted so that students can explore occupational information of WTG in terms of their interest. The next step in this Guidance Information System is the administration of GATB to the 9th graders. This GATB is also interpreted in relationship with the WTG and students can explore more specifically the WTG in terms of their interest and aptitudes.

The method of reporting the test scores has also been developed. The most recent report of test score which has been developed by the Division of Guidance and Testing is a Combined Report of OVIS and GATB. The purpose of this combined report is to help 10th graders to develop self understanding and to enable them to relate these self understanding to their culture.

The present CAI lesson opens the door to another vocational guidance information system. As it was reviewed in Chapter II, the GUIDPAK System is a newly developed vocational guidance system. This system combines the infor-
mation contained in the DOT and several test scores with career planning. This GUIDPAK System cannot be utilized effectively if the counselor does not know how to use the Dictionary of Occupational Titles.

Therefore, the present CAI lesson on the use of the DOT is a first step toward the development of counselors' technique in vocational guidance and counseling. The possible developmental flow of the computer utilization in vocational guidance would be: (1) The present CAI on the use of DOT; (2) Drill-and-Practice session on the use of the DOT via CAI; (3) Interpretation of OVIS, GATB, Kuder Preference Record, and Interest Check List in relationship with the WTG of the DOT via CAI; (4) Utilization of GUIDPAK System; (5) Simulated vocational Guidance with students' test data and other information; and (6) Actual vocational counseling via computer.

For the future development of the study, it is recommended: To develop a drill-and-practice session via computer assisted instruction on the use of the DOT; To evaluate the effectiveness of the present program by a longitudinal study comparing the CAI and the Traditional Classroom Instruction on the use of the DOT; and To develop an extensive vocational guidance system incorporating the counselor education program via CAI.
Summary

In this study, a two hour course of Computer-Assisted Instructional System on the use of the Dictionary of Occupational Titles was developed and field tested with a selected group of people.

This study is a developmental and the developmental phases of the study are summarized as follows:

Phase 1: Awareness and Preparation

a. Identification of the problem
b. Establish instructional objectives
c. Review of related literature

Phase 2: Commitment

a. Authoring the content of the course
b. Developing the instructional flow
c. Coding by the use of coursewriter language
d. Entering the course content to the system

Phase 3: Evaluation

a. Author debugging
b. Evaluation by a third person
c. Limited number of student use the course
d. Evaluate course content by an expert
e. Overall evaluation of the program

Phase 4: Course Completion

a. Operation of the program
b. On-going evaluation and modification
c. Development of a drill-and-practice session (proposed)

In Chapter I, importance of the computer technology in the field of counselor education program was discussed and the purpose of the study was presented. In Chapter II, review of related literature was done in two major areas:
Computer-Assisted Instruction and computer application in guidance and counseling. In this chapter, the potentialities, problems, theories, and currently existing programs were discussed and reviewed. In Chapter III, the developmental process of the Computer-Assisted Instructional System on the use of the Dictionary of Occupational Titles was described. In Chapter IV, Evaluation of the program was done and possible ways of utilizing the program was discussed. Some of the recommendation for the further development of the computer assisted vocational guidance and computer assisted counselor education program were also made in this final chapter.
APPENDIX A

Computer-Assisted Instructional Program
On the Use of the DOT
COURSE LISTING FOR DOT -00

DATE  8/24/71         AUTHOR  CHANG-YIL AHN

1050 CHARACTER TYPED  360 CHARACTER PRINTED
PLUS-MINUS SIGN        
CENTS SIGN             *
LCZENGE                *
EXCLAMATION POINT      *
HORIZONTAL TAB         *
BACKSPACE              A BLANK
BYPASS, IDLE, OR RESTORE
CARRIAGE RETURN       <
LINE FEED              >
END OF BLOCK
TO BEGIN, IT IS NECESSARY FOR YOU TO BE ABLE TO COMMUNICATE WITH THE COMPUTER.

LOCATE THE KEY MARKED RETURN. PRESS IT AND NOTICE WHAT HAPPENS.

YOU HAVE INDIcATED TO THE COMPUTER THAT YOU ARE READY TO CONTINUE. THIS

'RETURN' KEY MUST BE Pressed AFTER YOU Finish EACH RESPONSE. YOU WILL KNOW

WHEN THE COMPUTER IS READY FOR YOUR ENTRY BECAUSE IT WILL nod THE

TYPING BALL.

NAME

PLEASE TYPE YOUR NAME.

REMEMBER TO PRESS THE 'RETURN' KEY.

LD 0/P0*
LD 0/P1*
EP *
CA(L) &*
FN FSTNAM*
BR NEXT /S31,1*
LD B5,30,20/B1*
BR PRI /S31,0*

NEXT

WHAT DOES STAND FOR??/B2*
LD B5,30,1/B2,10,1*
TY B2*

CALL(L) &*
BEGIN

PR

LD 1/PC*

LD 1/P1*

TY IF AT ANY TIME YOU WISH TO CANCEL YOUR ANSWER BEFORE PRESSING THE "RETURN" KEY, TYPE ***. THEN PRESS THE "RETURN" KEY.

***********

LESSON

DICTIONARY OF OCCUPATIONAL TITLES

WELCOME TO THE COMPUTER-ASSISTED INSTRUCTION ON THE USE OF THE DICTIONARY

OF OCCUPATIONAL TITLES (DOT)

THOUGH THIS INSTRUCTION, YOU WILL LEARN ABOUT HOW TO UTILIZE DOT IN VOCATIONAL GUIDANCE. DURING THIS INSTRUCTION, YOU WILL BE ACTUALLY LOOKING UP SOME TITLES IN THE DOT. THEREFORE, IT IS NECESSARY FOR YOU TO HAVE A SET OF THE DOT, 3RD EDITION - VOLUME I AND VOLUME II, WITH YOU.

******

DO YOU HAVE THEM WITH YOU NOW?

PLEASE TYPE YES OR NO, AND PRESS RETURN KEY.

******

WA NO*


PLEASE TYPE SIGN OFF AND GO GET THE DOT.

IF YOU ARE NOT IN ARPS HALL, PLEASE ASK A LIBRARIAN WHERE YOU CAN LOCATE A COPY OF THE DOT.

PLEASE TYPE SIGN OFF NOW AND COME BACK WITH DOT.

CA(*) YES SURE RIGHT*

TY VERY GOOD, *

TY a1*

TY ********

******
This instruction will be divided into four major units based on the four different classification systems used in the DOT, I.E. ALPHABETIC arrangement, OCCUPATIONAL GROUP ARRANGEMENT, WORKER TRAITS ARRANGEMENT, and INDUSTRY ARRANGEMENT. The second unit, OCCUPATIONAL GROUP arrangement, will be divided by three different sections. Before each unit or each section begins, you will be given a few questions on the content to be covered. Please answer them frankly so that I can take you to the appropriate section of the instruction.

Please type either YES or NO.

UNIT I: ALPHABETIC ARRANGEMENT OF TITLES

The first unit is on the alphabetic arrangement of titles. Please indicate the degree of your present knowledge on each of the following items in the space provided.

- TYPE C > IF YOU THINK YOU HAVE A COMPREHENSIVE KNOWLEDGE
- TYPE S > IF YOU THINK YOU HAVE SOME KNOWLEDGE, AND
- TYPE N > IF YOU THINK YOU HAVE NO KNOWLEDGE AT ALL

Here are the 5 items for Volume I.

1. Finding titles in Volume I.
2. Finding inverted titles in Volume I.

Please use only C, S, or N.
QU 3. IDENTIFYING INDUSTRY DESIGNATION WITHIN THE ENTRY. >>>*

QU 4. IDENTIFYING ALTERNATE TITLES WITHIN THE ENTRY. >>>*

QU 5. FINDING THE EQUIVALENT TITLE FOR DASH ENTRY. >>>*

QU SINCE YOU INDICATED THAT YOU ARE FAMILIAR WITH LOOKING UP THE TITLES******
IN VOLUME I, LET ME ASK YOU SOME QUESTIONS SO THAT YOU CAN SUMMARIZE******
YOUR KNOWLEDGE BEFORE YOU LEARN ABOUT OTHER ASPECTS OF DOT.******
USING VOLUME I ONLY, FIND THE TITLE, COUNSELOR AND TYPE THE PAGE********
NUMBER WHERE IT APPEARS.********

CA 173*
TY VERY GOOD********

CA L73*
TY CORRECT* PLEASE USE TOP ROW OF KEYS FOR ALL NUMBERS.********

UN PLEASE CHECK YOUR NUMBER AGAIN, AND CORRECT IT.********

UN I BELIEVE YOU GCCFED* YOU DON'T SEEM TO REALLY KNOW HOW TO ********
LOCATE TITLE IN VOLUME I EVEN THOUGH YOU THOUGHT YOU KNEW.********

PLEASE ALLOW ME TO EXPLAIN IT TO YOU.********

BR 1N1 *

IC2 *
QU LET'S TRY THIS ONE NOW.********
A MAN WHO IS FISHING WITH NET IS CALLED NET FISHERMAN. ********
WHAT PAGE IS THIS TITLE LISTED ON********

CA 283*
TY EXACTLY********
WA(w) 490 491 49L*
TY NO, THAT'S NOT TRUE* PLEASE TRY AGAIN,********

UN PLEASE TRY AGAIN, OR TYPE NO IF YOU DON'T KNOW THE ANSWER.********

UN DON'T FEEL TOO BAD* I DIDN'T REALLY EXPECT YOU TO FIND IT.********

BR 1N3 *

IC3 *
QU TURN TO PAGE 371 AND FIND THE TITLE, IKE.********
PA 5*
TY WHAT IS THE INDUSTRY DESIGNATION OF THIS TITLE********

CA(w) WHOLE*
TY CORRECT* THE WHOLE TR. IS ABBREVIATION OF WHOLESALE TRADE.********

UN PLEASE TRY AGAIN, OR ENTER NO IF YOU DON'T KNOW THE ANSWER.********

UN *

BR 1N5 *

IC4 *
QU FOLLOWING THE INDUSTRY DESIGNATION IS THE 6-DIGIT CODE NUMBER FOR ********
THAT TITLE. RIGHT AFTER THAT CODE NUMBER, YOU CAN ALSO SEE THE BOLD TYPED WORDS,********
WHAT KIND OF TITLE IS THIS******

CALL) &ALTER*
TY EXACTLY* RIGHT AFTER THE ALTERNATE TITLE IS THE DEFINITION OF THE TITLE.******
UN PLEASE TRY AGAIN, FOR YOU MIGHT HAVE MISTYPED.******

UN *

BR 166 *

IC5 *

QU NOTE THAT THE NEXT ENTRY BEGINS WITH >>>>(ELEC. EQUIP.).******

WHAT DOES THIS DASH REPRESENT*******

PLEASE ENTER THE TITLE WHICH IS REPRESENTED BY THE DASH.******

CALL) &SEALER*
TY VERY GCOU* YOU SHOULD NOW KNOW HOW TO USE VOLUME I.******

LET'S NOW MOVE ON TO VOLUME II.******

CALL) &SEALER*
TY VERY GCOU* YOU SHOULD NOW KNOW HOW TO USE VOLUME I.******

LET'S NOW MOVE ON TO VOLUME II.******

ONE A DASH REPRESENTS THE TITLE WHICH IS IMMEDIATELY PRECEDING IT IN*******

THE ALPHABETICAL LISTING. NOW, TRY AGAIN.******

UN WHAT IS THE TITLE OF THIS ENTRY*******

ENTER IT, SINCE THAT IS WHAT THE DASH REPRESENTS.******

UN THE DASH IS REPRESENTATIVE OF THE WORD, SEALER.******

PLEASE TYPE SEALER NOW.******

QU YOU MAY EITHER CONTINUE WORKING TOWARD VOLUME II NOW OR*******
TAKE A SHORT BREAK BEFORE YOU START IT.******

IF YOU WANT TO PROCEED, TYPE PROCEED, OTHERWISE TYPE SIGN OFF.******
I WILL REMEMBER THE PLACE WHERE YOU STOPPED, IF YOU SIGN OFF AT THIS TIME.******

AA(L) &PROCEED*
TY VERY GCOU* LET'S GO ON.******

BR V2 *

IN1 *

QU THE MAJOR CLASSIFICATION SYSTEM USED IN VOLUME I IS ALPHABETIC ARRANGEMENT.******

OVER 21,740 DIFFERENT JOBS IN THE PRESENT ECONOMY ARE LISTED AND DEFINED******

IN ALPHABETICAL ORDER OF THE TITLES. THUS, IT IS VERY EASY TO FIND A JOB******
DEFINITION IN VOLUME 1 WHEN YOU KNOW THE EXACT TITLE OF THE JOB.******

NOW, TRY TO FIND THE JOB TITLE, MATHEMATICIAN IN VOLUME 1 AND******

TYPE THE PAGE NUMBER WHERE IT IS LOCATED.******

CA 458*

TY VERY GOOD* LET'S TRY ANOTHER ONE.******

UN IT IS JUST LIKE LOOKING UP A WORD IN A DICTIONARY. *****

SO YOU HAVE TO LOOK UNDER +M+ TO FIND THE TITLE; MATHEMATICIAN.******

PLEASE TRY AGAIN.******

UN IF YOU CAN NOT LOCATE MATHEMATICIAN USING ALPHABETICAL ORDER,******

YOU ARE NOT QUALIFIED AT ALL FOR THIS PROGRAM. PLEASE TRY AGAIN TO ENTER******

THE PAGE NUMBER IN VOLUME 1 WHERE THE TITLE MATHEMATICIAN APPEARS.******

IN2

QU ON WHAT PAGE CAN YOU FIND THE DEFINITION OF THE JOB TITLE, ******

NEWSPAPER CARRIER******

CA(w) 491 49L*

TY EXACTLY******

BR 1G2  *

WA(w) 1G2 3G2*

TY IN THIS QUESTION YOU SHOULD LOCATE THE FIRST WORD NOT THE SECOND.******

ENTER THE PAGE NUMBER FOR NEWSPAPER CARRIER******

UN THE TITLE, NEWSPAPER CARRIER STARTS WITH A LETTER +N+. SO PLEASE LOOK******

UNDER +N+ IN VOLUME 1 AND ENTER THE PAGE NUMBER. PAGE NUMBERS ARE *****

LOCATED ON THE TOP CENTER OF EACH PAGE.******

UN USE ALPHABETICAL ORDER TO LOCATE THE PAGE NUMBER. TRY AGAIN AND ENTER IT.******

IN3

QU UPSETTING, ISN'T IT* IF YOU LOOK UNDER +N+, YOU WILL NOT FIND THE TITLE;******

NET FISHERMAN. THAT IS BECAUSE THE TITLE IS INVERTED.******

IN SUCH CASES, YOU NEED TO LOOK FOR THE TITLE, FISHERMAN, AND******

YOU WILL FIND IT LISTED ON THE SAME PAGE AS FISHERMAN, NET.******

UN WHAT PAGE IS THIS TITLE LISTED******

CA 203*

TY RIGHT* TITLES OF CERTAIN CLOSELY RELATED JOBS HAVING THE SAME GENERIC******

WORD ARE FREQUENTLY INVERTED SO THAT THEY WILL APPEAR IN THE SAME AREA******

IN THE ALPHABETICAL LISTING. LET'S TRY ANOTHER ONE LIKE THIS.**********

UN PLEASE CHECK THE NUMBER YOU JUST ENTERED AND CORRECT IT.******
UN IT IS LISTED ON PAGE 283. PLEASE CHECK IT AND ENTER THAT PAGE NUMBER*****
IF YOU CAN FIND IT THERE*****

1N4

* QU ON WHAT PAGE WOULD YOU FIND THE JOB TITLE, BOOK EDITOR******
CA 284*
TY EXACTLY******
BR 1C3 *
UN DID YOU FORGET TO INVERT THE TWO WORDS* INVERT THEM AND TRY AGAIN.******
CN WHAT PAGE IS IT LISTED******
UN FIND THE TITLE EDITOR FIRST, THEN LOOK UP THE WORD BOOK SINCE THERE ARE******
MANY KINDS OF EDITORS - BOOK EDITOR BEING ONLY ONE OF THEM. ******
Enter the page number where you found it.*****

1N5

* QU INDUSTRY DESIGNATION IS THE KIND OF INDUSTRY WHERE A CERTAIN JOB BELONGS.******
THE NAME OF THE INDUSTRY IS INDICATED IN THE PARENTHESIS WHICH FOLLOWS******
THE JOB TITLE.******
NOW, LOOK AT THE TITLE, ICER, AGAIN AND TELL ME WHAT IS THE INDUSTRY DESIGNATION.******
CALL) EWHLE&
TY VERY GOOD* THE ABBREVIATION, WOLE. TR. IS FOR *WHOLESALE TRADE*.*******
BR IC4 *
WALL) &BAKE&
TY YOU NEED TO LOOK AT THE TITLE ABOVE THE ONE YOU ARE LOOKING AT NOW.********
PLEASE TRY AGAIN TO ENTER THE RIGHT ANSWER.*****
UN FINE* PLEASE TYPE WHAT APPEARS IN THE PARENTHESIS.******
UN WHAT ARE THE WORDS PRINTED INSIDE THE PARENTHESIS FOLLOWING THE TITLE, ICER*******
UN LOOK ON PAGE 371. ENTER WHAT APPEARS INSIDE THE PARENTHESIS FOLLOWING*******
The TITLE, ICER.******

1N6

* QU THIS IS CALLED AN ALTERNATE TITLE. IT HAS THE SAME MEANING AS THE******
ORIGINAL TITLE, BUT MAY BE KNOWN BY DIFFERENT NAME IN OTHER PARTS OF******
THE COUNTRY.******
TURN TO PAGE 233 AND FIND THE TITLE, EDGE GLUER.******
HOW MANY ALTERNATE TITLES DOES THIS TITLE HAVE*******
CA(w) 6 SIX*
As you already know, Volume II contains the rest of the three units of this instruction. They are: Unit II - Occupational Group Arrangement, Unit III - Worker Traits Arrangement, and Unit IV - Industry Arrangement. We will start Unit II now.

Please press the return key to go on.

UNIT II: OCCUPATIONAL GROUP ARRANGEMENT

SECTION 1

THE FIRST SECTION OF UNIT II IS ON THE ARRANGEMENT OF OCCUPATIONAL CATEGORY, DIVISION, AND GROUP WITH CODE NUMBERS.

Here are 3 items to be covered in this section.

Please indicate the degree of your present knowledge on each of the following items in the space provided.

TYPE C > IF YOU THINK YOU HAVE A COMPREHENSIVE KNOWLEDGE,
TYPE S > IF YOU THINK YOU HAVE SOME KNOWLEDGE, AND
TYPE N > IF YOU HAVE NO KNOWLEDGE AT ALL ABOUT THE GIVEN ITEM.
UN PLEASE TYPE A LETTER C, S, OR N ONLY.

2A1. FInding the appropriate titles of category, division, and group for the 6-digit code numbers.

C A M I C S

LD I/S8

AD I/C3

CA M I C S

LD I/S8

AD I/C3

CA M I C S

LD I/S8

AD I/C3
Since you indicated that you are familiar with the occupational category, division, and group, I believe you don't need any explanation on these subjects. Instead, I will ask you some questions so that you can refresh your memory.

Here is a typical 6-digit code number of a certain job:

682.351

What is the category number of this code?

CA(W) 6 SIX

Ty Correct

UN PLEASE TRY AGAIN BEFORE I START GIVING YOU A SERMON

UN WELL... YOU MUST HAVE FORGOTTEN HOW TO INTERPRET 6-DIGIT CODE.

LET ME GIVE YOU SOME EXPLANATION ON THIS.

BR AIN1 *

AIC2 *

QU IDENTIFY THE DIVISION NUMBER FROM THE CODE 563.972 AND ENTER IT.

CA 56*

TY RIGHT

WA 6*

TY YOU PROBABLY KNEW THAT THE SECOND DIGIT OF THE SIX-DIGIT CODE REPRESENTS THE DIVISION NUMBER. HOWEVER, THE SECOND DIGIT ALONE DOES NOT MAKE ANY SENSE UNLESS ITS CATEGORY NUMBER ACCOMPANIES. PLEASE TRY AGAIN.

UN THE FIRST TWO DIGITS REPRESENT DIVISION. PLEASE TRY AGAIN.

UN FINE* WHAT ARE THE FIRST TWO NUMBERS IN THE ABOVE 6-DIGIT CODE?

PLEASE ENTER THOSE TWO NUMBERS IF YOU WANT TO PROCEED.

AIC3 *

QU NOW, TELL ME THE GROUP NUMBER FROM THE SAME CODE, 563.972

CA 563*

TY EXACTLY

BR 2A2 *

WA 5*

TY THE THIRD DIGIT ALONE CAN NOT TELL WHICH GROUP THIS JOB BELONGS TO.

PLEASE BE SPECIFIC

UN THE FIRST THREE DIGITS ARE GROUP CODE. WHAT ARE THE FIRST THREE DIGITS?

UN ALL RIGHT* THAT'S ENOUGH FOR PLAYING AROUND. TYPE THE FIRST THREE NUMBERS FROM THE ABOVE CODE TO GO ON.
THE MAJOR CLASSIFICATION SYSTEM OF OCCUPATIONAL GROUP ARRANGEMENT USED IS NUMERICAL ORDER OF 6-DIGIT CODE NUMBER. EACH OF THE SIX DIGITS OF THE CODE REPRESENTS A DIFFERENT CLASSIFICATION SYSTEM.


THE FIRST DIGIT, 7, REPRESENTS OCCUPATIONAL CATEGORY.

THE FIRST TWO DIGITS, 72, REPRESENT OCCUPATIONAL DIVISION.

ALL THREE DIGITS, 721, PRECEDING THE PERIOD, REPRESENT OCCUPATIONAL GROUP.

THE LAST THREE DIGITS OF THE NUMBER AFTER THE PERIOD INDICATE THE LEVEL OF COMPLEXITY OF THE JOB DEALING WITH DATA, PEOPLE, THINGS.

LET'S TAKE A LOOK AT THE MEANING OF THE FIRST THREE DIGITS.

CONSIDER THIS CODE NUMBER: 823.457.

CAN YOU TELL ME WHAT IS THE CATEGORY NUMBER OF THIS JOB?

CAN YOU TELL ME WHAT OCCUPATIONS THE CATEGORY 6 REPRESENTS?

WHAT OCCUPATIONS DOES THE DIVISION 68 REPRESENT?
UN DIVISION 68 IS LISTED ON PAGE 2. PLEASE LOOK IT UP AND ENTER THE TITLE.******
UN IT STARTS WITH A LETTER *T*. TRY AGAIN.******

AIC6

QU LOCK UP THE GROUP 682 IN VOLUME II AND TYPE THE TITLE OF IT.******

CAL(I) & SPINE*
TY VERY GOOD* YOU HAVE JUST PROVED THAT YOU CAN UTILIZE VOLUME II QUITE WELL******
AS FAR AS FINDING THE OCCUPATIONS WHICH ARE REPRESENTED BY CODE NUMBERS.******
BR 2A3 *

UN GROUP 682 IS LISTED ON PAGE 18. PLEASE TRY AGAIN.******
UN THE TITLE STARTS WITH +S+. TRY AGAIN.******

AIN3

QU PLEASE TURN TO PAGE 1 IN VOLUME II.********
P A 5*

TY THERE YOU WILL FIND A CAPITALIZED TITLE, OCCUPATIONAL CATEGORIES, DIVISIONS, AND******
GROUPS. UNDER THIS TITLE, ALL OF THE CATEGORIES, DIVISIONS AND GROUPS******
CLASSIFIED IN THIS DICTIONARY ARE LISTED IN NUMERICAL SEQUENCE BY CODE NUMBERS.********
IF YOU WANT TO FIND OUT WHAT CATEGORY THE NUMBER, 6 REPRESENTS, YOU SIMPLY******
LOCK UP THAT NUMBER ON PAGE 1 IN VOLUME II AND READ THE TITLE FOLLOWING.******
WHAT DOES IT REPRESENT******

CALL) & SPINE*
TY GOOD* YOU CAN ALSO FIND TITLES FOR DIVISIONS AND GROUPS IN THE SAME WAY.******
BR AIC5 *

UN THERE ARE 9 CATEGORIES LISTED ON PAGE 1 IN VOLUME II. WHAT DOES IT SAY******
FOLLOWING THE CATEGORY 6********
UN IT STARTS WITH +M+. PLEASE TRY AGAIN.******

AIC7

QU SUPPOSE YOU KNOW THAT A CERTAIN OCCUPATION BELONGS IN THE DIVISION CALLED,******
HUNTING, TRAPPING AND RELATED OCCUPATIONS* AND YOU WANT TO FIND OUT THE CODE
NUMBER FOR THIS DIVISION, WHERE IS THE EASIEST PLACE TO GO IN VOLUME II********
TYPE THE PAGE NUMBER WHERE YOU CAN FIND THE CODE NUMBER FOR THIS DIVISION.******

CA 28*
TY EXACTLY* YOU SURE KNOW A LOT ABOUT HOW TO USE DOT. THAT'S GOOD******

WA 2*
TY WELL. YOU COULD, BUT, I WILL SHOW YOU EASIER PLACE WHERE YOU CAN FIND IT.********

BR A1N4 *
UN YOU PUT EITHER SC OR ON THE 3RD QUESTION AT THE BEGINNING OF THIS******
SECTION. BUT, I GUESS YOU MISJUDGED YOURSELF. I WILL SHOW YOU WHERE TO GO.******

BR A1N4 *

AIC8 *
QU USING THE SAME LIST, FIND THE GROUP NUMBER FOR STENOGRAFHERS.******
WHAT IS IT******

CA 202*
TY CORRECT* THIS ALPHABETICAL ARRANGEMENT OF DIVISIONS AND GROUPS IS SOMETIMES*******
VERY CONVENIENT TO USE WHEN YOU KNOW THE EXACT TITLES.*********
THIS IS THE END OF SECTION ONE. NOW, LET'S MOVE INTO THE SECTION TWO.********

BR A2 *
UN STENOGRAFHERS IS LISTED UNDER *S*. PLEASE TRY AGAIN.******

BR A1N4 *

AIC4 *
QU TURN TO PAGE 25 IN VOLUME II.********

PA 7*
TY THERE YOU WILL FIND ANOTHER LIST OF OCCUPATIONAL DIVISIONS AND GROUPS LISTED*******
IN ALPHABETICAL ORDER. THIS LIST IS VERY CONVENIENT TO USE WHEN YOU KNOW THE*******
EXACT TITLES OF GROUPS OR DIVISIONS.*******

USING THIS LIST ONLY, FIND THE DIVISION CODE NUMBER FOR THE ******
FORESTRY OCCUPATIONS AND ENTER THE NUMBER.*******

CA 44*
TY EXACTLY* YCL ARE GOING A FINE JOB*******

BR AIC8 *
WA 449*
TY DIVISION NUMBERS ARE ONLY TWO DIGITS. TRY AGAIN.******
UN LUCK UNDER *F* AND ENTER THE NUMBER PRECEDING THE WORDS, FORRESTRY OCCUPATIONS.******

PLEASE ENTER THAT NUMBER.******

A2 *

UNIT II — SECTION 2******

TY PLEASE TURN TO PAGE 33 IN VOLUME II, *

TY 81*

TY **********

PA 8*

TY THERE YOU WILL FIND OCCUPATIONAL GROUP ARRANGEMENT (OGA) OF TITLES AND******

CODES. FROM THIS PAGE THROUGH PAGE 213, ALL THE OCCUPATIONS ARE ARRANGED******

INTO GROUPS AND LISTED BY EACH DIVISION UNDER EACH CATEGORY.******

WE WILL LEARN MORE ABOUT THIS IN THIS SECTION.********

AS YOU HAVE DONE TWICE BEFORE, PLEASE INJICATE THE DEGREE OF YOUR PRESENT******

KNOWLEDGE ON EACH OF THE FOLLOWING 5 ITEMS LISTED BELOW.********

TYPE C > IF YOU THINK YOU HAVE CCMPREHENSIVE KNOWLEDGE,******

TYPE S > IF YOU THINK YOU HAVE SOME KNOWLEDGE, AND******

TYPE N > IF YOU HAVE NO KNOWLEDGE AT ALL ABOUT THE GIVEN ITEM.********

PR *

LD 0/S9*

LD 0/S10*

LD 0/S11*

LD 0/S12*

LD 0/S13*

LD 0/C4*

QU 1. FINDING DEFINITIONS OF CATEGORY, DIVISION, AND GROUP FROM THE******

OGA LISTING. >>> *

CA(m) C S*

LD 1/S9*

AU 1/C4*

A N*

BR PR *

UN PLEASE USE THE LETTER C, S, CH N ONLY.******

QU 2. INDICATION OF DATA, PEOPLE, THINGS RELATIONSHIPS WITH JOB. >>> *

CA(m) C S*
QU 3. IDENTIFYING BASE TITLE, ALTERNATE TITLE, AND INDUSTRY DESIGNATION*****
FROM THE ENTRIES. >>> *

QU 4. IDENTIFYING DEFINED RELATED AND UNDEFINED RELATED TITLES FROM*****
THE ENTRIES. >>> *

QU 5. THE ABBREVIATION, N.E.C. >>> *

*
QU SINCE YOU INDICATED THAT YOU KNOW HOW TO FIND DEFINITION OF CATEGORY, DIVISION, AND GROUP FROM THE OGA LISTING, I AM SURE YOU CAN ANSWER THE FOLLOWING QUESTION.

WHAT PAGE WOULD YOU GO TO FIND THE DEFINITION OF THE CATEGORY 3. SERVICE OCCUPATIONS?

TY EXACTLY. I BELIEVE YOU CAN ALSO FIND THE GROUP DEFINITION. TRY THIS ONE.

TY NO, YOU CAN'T FIND IT THERE. PLEASE TRY AGAIN.

UN PLEASE CHECK YOUR ANSWER AND TRY AGAIN.

UN PERHAPS YOU HAVE FORGOTTEN HOW TO FIND IT EVEN THOUGH YOU THOUGHT YOU WOULD REMEMBER. LET ME HELP YOU TO RECALL.

QU SINCE YOU INDICATED THAT YOU ARE FAMILIAR WITH DATA, PEOPLE, THINGS RELATIONSHIPS WITH A JOB, I BELIEVE YOU KNOW WHERE TO LOOK TO FIND THE EXPLANATION OF THOSE RELATIONSHIPS.

PLEASE LOOK UP THE PAGE WHERE YOU CAN FIND THIS INFORMATION AND TELL ME WHAT DOES THE 4TH DIGIT, 8+ MEAN AMONG THE CODE NUMBER.
UN LOCK UP THE APPENDIX A IN VOLUME II AND THEN TRY AGAIN.******
UN WELL... YOU THOUGHT YOU KNEW. DIDN'T YOU********
I WILL SHOW YOU WHERE TO LOCK UP.**********

UN LOCK UP THE CODE NUMBER 557.885 ON PAGE 105.******
UN PLEASE TRY AGAIN, OR TYPE NO IF YOU DON'T KNOW THE ANSWER.******
UN LET ME SHOW YOU HOW TO IDENTIFY THESE KINDS OF TITLE.********

UN THERE ARE FOUR UNDEFINED RELATED TITLES LISTED UNDER THAT ENTRY CODE.********
UN WHAT IS THE 3RD ONE LISTED********
UN GREAT* YOU DON'T NEED ANY EXPLANATION ON THIS SUBJECT.******
UN LET'S MOVE ON TO THE NEXT ITEM.**********
WAIL) ENQZC*
TY NO, THAT IS THE 3RD BASE TITLE. WHAT IS THE 3RD UNDEFINED RELATED TITLE* PLEASE TRY AGAIN.******

WAIL) ESRIN&PAGE* 
TY NO, THAT'S NOT TRUE, EITHER. WHAT YOU HAVE NOW IS THE 3RD UNDEFINED RELATED TITLE. PLEASE CHECK YOUR TYPING AND TRY AGAIN.******
UN YOU GOOFED* LET ME SHOW YOU HOW TO IDENTIFY UNDEFINED RELATED TITLES.********

A2C6 *
QU THERE IS ANOTHER COMPONENT TO BE NOTICED IN SOME OF THE ENTRIES INCLUDED IN THE UGA LISTING AS WELL AS OTHER PLACES OF THE DOT.******
THAT IS THE ABBREVIATION, N.E.C. CR N.E.C********
TURN TO PAGE 125 AND FIND GROUP 612.********

PA 10* , 
TY THE TITLE OF THIS GROUP IS +FCKING OCCUPATIONS, N.E.C+******
CAN YUL GIVE ME YOUR EDUCATED OR WILD GUESS ON WHAT THIS ABBREVIATION STANDS FOR******
CALL) ENDELSECLASS* 
TY EXACTLY* YOU SURE KNOW A GREAT DEAL ABOUT THE DOT******
I AM VERY PROUD OF YU,* 
TY B1* 
TY ********
LET'S NOW MOVE ON TO THE NEXT SECTION.********
BR A3 * 
WA NO* 
TY PLEASE TRY TO MAKE ANY WORDS USING THE THREE LETTERS******
UN THAT'S A VERY INTERESTING GUESS, * 
TY B1* 
TY ********
HOWEVER, THIS ABBREVIATION STANDS FOR THE MEANING, +NOT ELSEWHERE CLASSIFIED+.******
FOLLOWING THE DIVISION TITLE, THE N.E.C. ARE PRINTED IN CAPITAL LETTERS.******
PLEASE READ THE DEFINITION OF THE ENTRY 612. TO SEE WHAT IT REALLY MEANS. I WILL GIVE YOU 10 SECONDS TO READ IT.********
PA 10* 
TY LET'S NOW MOVE ON********

100
A2N1

BY NOW, YOU SHOULD KNOW WHERE TO LOOK TO FIND THE MEANING OF EACH OF THE 6 DIGITS OF CODE NUMBER. HOWEVER, YOU MAY SOMETIMES NOT BE QUITE SURE WHAT SPECIFIC JOBS ARE INCLUDED IN THAT PARTICULAR CATEGORY, DIVISION, AND/OR GROUP. THIS INFORMATION CAN ALSO BE FOUND IN VOLUME II. IN THIS SECTION, YOU WILL LEARN HOW TO FIND SUCH INFORMATION.

PLEASE LOOK AT THE PAGE 33 IN VOLUME II, AGAIN.

A2N2

REMEMBER, DEFINITIONS OF ALL CATEGORIES, DIVISIONS, AND GROUPS ARE LISTED IN NUMERICAL SEQUENCE OF THE CODE NUMBERS. PLEASE READ THE DEFINITION OF THE CATEGORY 0,1 PROFESSIONAL, TECHNICAL, AND MANAGERIAL OCCUPATIONS. WHEN YOU FINISH READING, PLEASE PRESS RETURN KEY TO PROCEED.

ON THE BASIS OF THE INFORMATION THAT YOU JUST READ, DO YOU THINK THIS OCCUPATIONAL CATEGORY REQUIRES UNIVERSITY OR COLLEGE EDUCATION?

CA YES

TY VERY GOOD!

LOOK UP THE DEFINITION LISTED UNDER THIS SECTION OF THE DCT.

WA NO

ON THE BASIS OF THE INFORMATION THAT YOU JUST READ, DO YOU THINK THIS OCCUPATIONAL CATEGORY REQUIRES UNIVERSITY OR COLLEGE EDUCATION?

CA NO

TY GOOD!

ON WHAT PAGE WOULD YOU FIND DEFINITION OF THE CATEGORY 5, PROCESSING OCCUPATIONS?

CA 84

TY GOOD!

TY IT'S SOMEWHERE BETWEEN PAGES 33 AND 213.

UN IT'S BETWEEN PAGES 33 AND 213. SEARCH FOR THE CATEGORY NUMBER AND TITLE TO ENTER THE PAGE NUMBER.

UN WHAT DOES IT SAY ON THE TOP OF THE PAGE 84?

YOU CAN FIND THE DEFINITION OF THE CATEGORY 5 THERE.
QU YOU CAN ALSO FIND DIVISION AND GROUP DEFINITION FROM THIS OGA LISTING.**********

FIND THE DEFINITION OF DIVISION 14. OCCUPATIONS IN ART AND ENTER********

THE PAGE NUMBER WHERE IT APPEARS.*

CA 44*

TY EXACTLY**********

UN ALL YOU HAVE TO DO IS TO FIND DIVISION NUMBER 14 UNDER THE FIRST CATEGORY********

OF THE OGA TO FIND THE DEFINITION OF THAT DIVISION.********

PLEASE TRY AGAIN AND ENTER THE PAGE NUMBER.********

UN TRY PAGE 44 AND ENTER THAT PAGE NUMBER IF YOU SEE THE DEFINITION THERE.********

UN LOOK AT THE LEFT COLUMN OF PAGE 44 AND YOU WILL FIND THE NUMBER 14.********

PLEASE READ THE DEFINITION AND ENTER NUMBER 44 TO PROCEED.*********

A2N4 *

QU SUPPOSE YOU WANT TO KNOW WHAT SPECIFIC OCCUPATIONS ARE INCLUDED IN********

GROUP 643. CORRUGATING OCCUPATIONS. ON WHAT PAGE WOULD YOU FIND IT********

CA(W) 133 L33*

TY DEFINITELY* YOu JUST PROVED THAT YOU CAN UTILIZE THE OGA LISTING FOR ONE********

PURPOSE. IN ADDITION TO THE DEFINITION, THIS LISTING HAS SOME OTHER IMPORTANT********

INFORMATION CONCERNING VARIOUS OCCUPATIONS. LET'S LOOK AT THE OTHER ASPECTS********

OF THE OGA LISTING.**********

BR 2A10 *

UN DID YOU LOOK UP THE GROUP NUMBER, 643 UNDER THE CATEGORY 6********

I DON'T THINK YOU DID. PLEASE TRY THAT AND ENTER THE PAGE NUMBER WHERE********

YOU CAN FIND THE INFORMATION.********

UN ALL THE OCCUPATIONS BELONGING TO THE CATEGORY 6 ARE LISTED BETWEEN********

PAGE 121 AND PAGE 149. PLEASE TRY AGAIN.********

UN DID YOU TRY PAGE 133*? TRY THAT AND TYPE 133 TO PROCEED.********

A2N5 *

QU THE JOB CORE EXTRUDER HAS A 6-DIGIT CODE NUMBER 557.885********

SINCE YOU HAVE ALREADY LEARNED ABOUT THE FIRST THREE DIGITS OF THE 6-DIGIT********

CODE NUMBER, WE CAN NOW CONSIDER ONLY THE LAST THREE DIGITS OF THE CODE.********

AS YOU CAN SEE, THIS JOB HAS 885 CODE FOR THE LAST THREE DIGITS.********

THESE THREE DIGITS INDICATE THE LEVEL OF COMPLEXITY WHICH IS REQUIRED FOR********

THE SPECIFIC JOB IN DEALING WITH DATA, PEOPLE, THINGS RESPECTIVELY.********

PLEASE TURN TO APPENDIX A ON PAGE 649 IN VOLUME II.********
You will find explanation of relationships with data, people, and things hierarchies. Please locate the three-column table in the middle of the page 649.

What does the 4th digit, 8, say? Ca11) 6NJSSIGCRELl* _______________________________________________________

This means that the JCB, core extruder, has nothing to do with any kind of data. Njw, look at the 5th digit. It also says "no significant relationships" which means this job has nothing to do with any skill in dealing with either data or people, but requires "tending" skill in dealing with things from the workers.

Next, you may have to find the meaning of the word, "tending," and this information can be easily found on page 650.

Please find it and examine the information contained on that page until the computer starts working again.

Go now, look at the 6th digit and tell me what the code number 5 says.

Please try again.

In this instruction, we are not going to discuss it further. However, it is suggested that you remember the availability of Appendix A and refer to it whenever it is necessary.

Please find the number which appears on the left column. Ca11) ENDSSECFF* 8 Says

What does the 4th digit, 8, say? Things hierarchies. Please locate the three-column table in the middle of that page.

You there you will find explanation of relationships within data, people, and things hierarchies.
ALL THE BASE TITLES ARE PRINTED IN ALL CAPS AND ARE FLUSH WITH THE MARGIN. THEY ARE ALSO FOLLOWED BY INDUSTRY DESIGNATION PRINTED IN PARENTHESES. THERE USUALLY ARE SEVERAL BASE TITLES LISTED UNDER ONE 6-CIGIT CODE NUMBER.

PLEASE FIND THE CODE NUMBER 727.687 ON PAGE 159.

HOW MANY BASE TITLES ARE LISTED UNDER THIS CODE NUMBER?

CA 7*
TY GOOD
BR 2A12 *
UN WHAT ARE THE CHARACTERISTICS OF BASE TITLE THAT I JUST TOLD YOU?

PLEASE READ IT AGAIN AND COUNT ALL THE BASE TITLES LISTED UNDER THIS CODE NUMBER.

HOW MANY CO YOU SEE NOW?

UN YOU ARE STILL WRONG. CHECK THE CODE NUMBER TO MAKE SURE THAT YOU ARE LOOKING AT THE RIGHT CODE NUMBER. YOU SHOULD BE LOOKING AT THE CODE 727.687.

PLEASE TRY AGAIN.

UN THE FIRST ONE STARTS WITH A LETTER A AND THE LAST ONE STARTS WITH S.

PLEASE TRY AGAIN.

A2N8 *
UN DEFINED RELATED TITLE IS ANOTHER COMPONENT THAT MANY ENTRIES INCLUDE.

THE WORDS, DEFINED RELATED, MEAN THAT THE TITLE IS CLOSELY RELATED TO THE BASE TITLE WHICH IS IMMEDIATELY PRECEDING IT AND IS DEFINED IN VOLUME I.

PLEASE LOOK AT THE CODE NUMBER 504.782 ON PAGE 85 IN VOLUME II.

TY THERE ARE FIVE BASE TITLES LISTED UNDER THIS CODE NUMBER.

1. THE THIRD BASE TITLE, HEAT TREATMENT (HEAT TREAT.) II HAS ONE DEFINED RELATED TITLE, ANNEALER (HEAT TREAT.).

AS YOU MIGHT HAVE ALREADY NOTICED, THE DEFINED RELATED TITLE IS ALSO PRINTED IN ALL CAPITAL LETTERS AND IS FOLLOWED BY INDUSTRY DESIGNATION.

HOWEVER, THE DEFINED RELATED TITLE IS INDEED APPROXIMATELY 3 SPACES FROM THE BASE TITLE.

UN PLEASE LOOK AT THE CODE NUMBER 504.782 AGAIN.

HOW MANY DEFINED RELATED TITLES ARE LISTED UNDER THIS CODE NUMBER?

CA 4*
TY EXACTLY.
TY 81*
TY **********
UN TRY TO REMEMBER HOW MANY SPACES DEFINED RELATED TITLES ARE INDENTED AND******
COUNT THOSE TITLES ONLY. ENTER THE NUMBER.******
UN ONLY THE THIRD BASE TITLE AND THE FOURTH BASE TITLE HAVE DEFINED RELATED TITLES******
IN THIS CASE. PLEASE TRY AGAIN.******
UN THE THIRD BASE TITLE HAS ONE DEFINED RELATED TITLE AND THE FOURTH BASE TITLE******
HAS THREE. HOW MANY ARE THEY********

A2N9 *
QU THE NEXT ITEM IS UNDEFINED RELATED TITLE.******
THIS MEANS THAT THE TITLE IS CLOSELY RELATED TO THE BASE TITLE WHICH IS *******
IMMEDIATELY PRECEDING IT, BUT IT IS NOT DEFINED AS A SEPARATE TITLE IN VOLUME I*******
BECAUSE THE DEFINITION IS QUITE SIMILAR TO THAT OF THE BASE TITLE.*******
THE UNDEFINED RELATED TITLES ARE ALSO FOLLOWED BY INDUSTRY DESIGNATION BUT*******
ONLY THE INITIALS ARE CAPITALIZED. ALL UNDEFINED RELATED TITLES ARE INDENTED*******
APPROXIMATELY 6 SPACES FROM THE BASE TITLE.********
FIND THE CODE NUMBER 194.782 ON PAGE 53 IN VOLUME II AND TELL ME******
HOW MANY UNDEFINED RELATED TITLES ARE LISTED UNDER THIS CODE NUMBER.*******
CA 4*
TY CORRECT************
BR A2C6 *
WA 1*
TY YOU PROBABLY ARE CONFUSED WITH DEFINED RELATED TITLES. PLEASE TRY TO FIND******
UNDEFINED RELATED TITLES. HOW MANY ARE THERE********
UN PLEASE TRY TO RECALL WHAT THE CHARACTERISTICS ARE. THEY ARE INDENTED 6 SPACES******
AND PRINTED IN CAPITIALIZED INITIAL LETTERS. NOW TRY AGAIN.*******
UN THE FIRST ONE STARTS WITH A LETTER *U* AND THE LAST ONE STARTS WITH *W*, *******
NOW TELL ME HOW MANY YOU FOUND.******

A3 *
UNIT II -- SECTION 3********
THE NEXT SECTION IS TO LEARN HOW TO ASSIGN A 6-DIGIT CODE NUMBER*******
TO A JOB TITLE AND HOW TO ASSIGN A JOB TITLE TO A CERTAIN JOB DESCRIPTION.********
HERE ARE THE TWO ITEMS WHICH WILL BE COVERED IN THIS SECTION.********
TYPE C > IF YOU THINK YOU HAVE COMPREHENSIVE KNOWLEDGE,*******
TYPE S > IF YOU THINK YOU HAVE SOME KNOWLEDGE, AND*******
TYPE N > IF YOU HAVE NO KNOWLEDGE AT ALL ABOUT THE ITEM IN QUESTION.********
PLEASE PRESS RETURN KEY NOW FOR THE TWO ITEMS OF PRELIMINARY SELF-APPRAISAL*******
QUESTIONNAIRE ON THIS SECTION.**********

QU 1. ASSIGNING CODE NUMBER TO A JOB TITLE. >>> *

CA(w) C S*
LD 1/S14*
AD 1/C5*
WA N*
PR*  

UN PLEASE USE THE LETTER C, S, OR N ONLY.******

QU 2. ASSIGNING A TITLE TO A CERTAIN JOB DESCRIPTION. >>> *

CA(w) C S*
LD 1/S15*
AD 1/C5*
WA N*
PR*

UN PLEASE USE THE LETTER C, S, OR N ONLY.******

******

2A14

PR *

BR A3C1 /S14,1*
BR A3N1 *

2A15

PR *

BR A3C2 /S15,1*
BR A3N7 *

A3C1 *

QU USING EITHER VOLUME OF THE DCT, ASSIGN A 6-DIGIT CODE NUMBER******
TO THE JOB TITLE, ELEMENTARY SCHOOL TEACHER.******
CA(w) 092.228.092.228*

TY EXCELLENT* I HAVE NOTHING TO SAY******
UN PLEASE TRY AGAIN AFTER CHECKING THE NUMBERS THAT YOU JUST ENTERED.******
UN I KNOW, IT'S A VERY DIFFICULT PROBLEM. I WILL SHOW YOU HOW TO******
ASSIGN A CODE NUMBER TO A CERTAIN JOB TITLE.******
BR A3N1 *

A3C2 *
QU USING THE VOLUME II, ASSIGN A TITLE TO THE FOLLOWING JOB DESCRIPTION******
+CLASSIFYING, SORTING, AND FILING CORRESPONDENCE, RECORDS,**
AND OTHER DATA.**********

A3C3 *
QU NOW, ASSIGN A 6-DIGIT CODE NUMBER TO THIS TITLE, FILE CLERK.******
YOU MAY USE EITHER VOLUME OF THE UCT FOR THIS.******
CA(W) 206.388 266.388*
TY YOU DID IT. YOU HAVE DONE A GREAT JOB IN THIS SECTION.******
LET'S NOW MOVE INTO THE NEXT UNIT.******

A3N1 *
QU BY NOW, YOU SHOULD BE AN EXPERT IN LOOKING UP THE TITLES AND ****
OTHER INFORMATION IN THE CAT. THE NEXT STEP IS TO LEARN HOW TO *****
ASSIGN A 6-DIGIT CODE NUMBER TO A CERTAIN JOB TITLE.**********
THERE ARE TWO DIFFERENT WAYS OF ASSIGNING A CODE NUMBER TO A JOB TITLE.*********
THE EASIEST WAY IS TO LOOK UP THE GIVEN TITLE IN VOLUME I AND******
FIND THE 6-DIGIT CODE NUMBER WHICH IS PRINTED RIGHT AFTER THE***** INDUSTRY DESIGNATION.**********
USING THIS METHOD, FIND THE 6-DIGIT CODE NUMBER FOR THE JOB TITLE,***** ANTHROPOLOGIST AND ENTER IT.*****

CA(w) 055.088 C55.C88*
TY EXACTLY********
wa(w) 055088 055088*
TY YOU ARE MISSING SOMETHING. PLEASE ENTER THE COMPLETE FORM OF THE CODE NUMBER.********
UN THE TITLES IN VOLUME I ARE ARRANGED IN ALPHABETICAL ORDER.*****
PLEASE TRY AGAIN.*****
UN THIS TITLE IS LISTED ON PAGE 16 IN VOLUME I. PLEASE FIND THE*****
CODE NUMBER AND ENTER IT.*****

A3N2 *
QU ANOTHER WAY TO ASSIGN A CODE NUMBER TO A CERTAIN JOB TITLE IS TO USE*****
VOLUME II.**********
SINCE VOLUME I IS READILY AVAILABLE, THIS SECOND METHOD IS NOT**********
VERY IMPORTANT TO KNOW. HOWEVER, IF YOU WOULD LIKE TO LEARN ABOUT*****
THE SECOND METHOD, I WILL BE GLAD TO SHOW YOU HOW.*****
PLEASE TYPE YES IF YOU WANT TO LEARN THE OTHER METHOD,*****
OTHERWISE TYPE NO TO GO ON TO THE NEXT ITEM.*****

CA YES*
TY O.K* HERE IT GOES**********
WA NO*
TY O.K* IT'S NOT NECESSARY ANYWAY************
BR 2A15 *

A3N3 *
QU WHEN YOU ASSIGN A CODE NUMBER TO A CERTAIN JOB TITLE, YOU SHOULD CONSIDER*****
WHAT IS THE MAJOR ACTIVITY OF THE JOB AND WHERE THE JOB IS PERFORMED.*****
AND THEN YOU MUST GO THROUGH ALL THE LISTS BETWEEN PAGE 1 AND PAGE 24*****
IN VOLUME II TO FIND THE APPROPRIATE GROUP CODE AND TITLE.**********
FIRST OF ALL, YOU HAVE TO LOOK AT THE LIST ON PAGE 1 AND FIND********
THE MOST APPROPRIATE CATEGORY NUMBER FOR THAT TITLE.*********
WHAT CATEGORY WOULD THE JOB TITLE ELEMENTARY SCHOOL TEACHER BELONG TO********
PLEASE ENTER THE CATEGORY NUMBER.*********

CA(1) 0,1 C 1 CCCR&1 C*
TY GOOD********

UN DOESN'T IT SOUND LIKE A PROFESSIONAL OCCUPATION* TRY AGAIN.******
UN WHAT IS THE NUMBER WHICH REPRESENTS THE PROFESSIONAL OCCUPATIONS*******
UN ENTER THE FIRST CATEGORY NUMBER FOR THIS QUESTION.******

A3N4
QU LET'S NOW LOOK UNDER THE FIRST CATEGORY, CATEGORY 0,1, ON PAGE 1 TO SEE IF ********
THERE IS ANY OCCUPATION INVOLVING EDUCATION.*********
WHAT DIVISION Sounds LIKE THE most APPROPRIATE ONE FOR THIS JOB To YOU********

CA(1) C9 C9*
TY ALL RIGHT******
UN YOU SHOULD LOOK UP THE DIVISION NUMBER FOR THE OCCUPATIONS CONCERNING********
EDUCATION UNDER THE FIRST CATEGORY ON PAGE 1. TRY AGAIN.*******
UN PLEASE TRY TO LOOK UP THE OCCUPATIONS RELATED TO EDUCATION AMONG********
THE VARIOUS JOB TITLES LISTED UNDER THE CATEGORY 0,1.********
UN HOW ABOUT THE DIVISION C9* PLEASE EXAMINE IT AND ENTER THAT NUMBER******
IF YOU AGREE WITH ME.******
UN TYPE O9 WHETHER YOU AGREE OR NOT. THAT IS IT********

A3N5
QU NOW, YOU HAVE TO FIND THE THIRD DIGIT BY LOOKING UP THE GROUP LIST*******
UNDER THE DIVISION O9 ON PAGE 4 IN VOLUME II.******
********
PLEASE TYPE THE GROUP NUMBER THAT YOU FOUND.*******

CA(1) 092, 092 C92*
TY VERY GOOD********

SO FAR, WE HAVE THE FIRST THREE DIGITS AMONG THE 6 DIGITS OF THE CODE******
NUMBER. IN ORDER TO FIND THE REST OF THE CODE NUMBER, WE MUST LOOK UP*******
THE TITLE, ELEMENTARY SCHOOL TEACHER WITHIN THE GROUP C92 UNDER THE******
CATEGORY 1 IN THE CGA.*******

UN PLEASE TRY AGAIN. I KNOW YOU CAN FIND IT********
UN ARE YOU LOOKING UP PAGE 4 IN VOLUME II* IF NOT, YOU SHOULD.******

PLEASE TRY AGAIN.******

UN THE THIRD DIGIT IS 2. WHAT ARE THE FIRST TWO DIGITS******

A3N6

QU NOW, TURN TO PAGE 41 AND FIND THE CODE NUMBER FOR THE TITLE.******

PA 5*

TY WHAT IS THE FULL 6-DIGIT CODE NUMBER FOR THE TITLE.******

ELEMENTARY SCHOOL TEACHER******

CA(W) 092.228 092.228*

TY EXCELLENT******

WE'VE COME A LONG WAY, HAVEN'T WE? LET'S NOW MOVE ON TO THE NEXT ITEM********

BR 2A15 *

WA(W) 092228 C92228*

TY YOU DID NOT ENTER A COMPLETE FORM OF THE CODE NUMBER. PLEASE TRY AGAIN.******

UN DID YOU TRY TO INVERT THE TITLE* TRY THAT********

UN YOU SHOULD LOCK UP THE TITLE, TEACHER, ELEMENTARY SCHOOL.******

PLEASE TRY THAT AND ENTER THE 6-DIGIT CODE NUMBER.******

A3N7

QU WHEN YOU ASSIGN A TITLE TO A CERTAIN JOB DESCRIPTION, YOU SHOULD******

CONSIDER WHAT ACTIVITY IS PERFORMED AND WHERE IT IS PERFORMED.******

LOOK AT THE FOLLOWING JOB DESCRIPTION.********

CLASSIFYING, SORTING, AND FILING CORRESPONDENCE, RECORDS,******

AND OTHER DATA.********

NOW TURN TO PAGE 1 IN VOLUME II AND FIND THE MOST APPROPRIATE CATEGORY******

FOR THIS JOB.********

PA 5*

TY WHAT CATEGORY DID YOU PICK******

CA 2*

TY GOOD. *

TY 81*

TY GOOD********

UN DON'T THEY CLERKS DO SUCH ACTIVITIES* TRY AGAIN.******

UN WHAT IS THE CATEGORY NUMBER OF THE CLERICAL OCCUPATIONS*******

UN WHAT IS THE NUMBER WHICH REPRESENTS CLERICAL AND SALES OCCUPATIONS*******

A3N8

*
Let's now look under that category to find an occupational division which involves those activities mentioned above.

What division did you pick? Enter the division number.

Very good. The key word, filing, is found in division 20. So let's settle on this division for a while.

Try to find the key word given in the above job description.

Can you see any? Please type the division number.

The key word for this job is filing.

Search for this word under the category 2, clerical and sales occupations.

On page 1 and enter the number.

It is listed first under the category 2. What number is it?

A3N9

Please turn to page 6 in volume II and search for an occupation which involves filing work under the division 20.

What did you find?

Great! We are getting closer now.

If you look real carefully under the division 20 on page 6, you should be able to find a word, filing, enter the number which represents that group.

It is the 6th group under that division. Try again.

A3N10

When you have the first three digits and the group title, you must check with the definition of that group to make sure that you have the right one.

Please go ahead to check it now while I wait.

What page did you find the definition of the group 206?

Very good. When you read the definition of this group, you will have the confidence that you found the right title.
**DID YOU FORGET WHERE TO LOOK TO FIND DEFINITION OF THE GROUP?**
**IT'S SOMEWHERE AROUND BETWEEN PAGES 50 AND 60. PLEASE TRY AGAIN.**

**DID YOU LOOK UP THE PAGE 55?**
PLEASE TRY THAT AND ENTER THIS NUMBER IF YOU CAN FIND THE DEFINITION OF THE GROUP 206 THERE.

**A3N11**

**ALL YOU HAVE TO DO, NOW, IS TO LOOK THROUGH THE LIST UNDER THAT GROUP AND PICK UP THE MOST APPROPRIATE JOB TITLE AND CODE NUMBER.**
PLEASE SEE WHICH TITLE YOU WOULD LIKE TO ASSIGN TO THE JOB WHICH WAS DESCRIBED AT THE BEGINNING OF THIS ITEM.
ENTER THE JOB TITLE THAT YOU THINK IS MOST APPROPRIATE.

**CALL # FILE# CL**

**YOU ALREADY HAVE 6-DIGIT CODE NUMBER.**
WE JUST FINISHED THE UNIT II OF THIS LESSON.

**BR**

**YOU CAN USE THE GROUP TITLE SAME AS THE JOB TITLE IN THIS CASE.**

**UN**

**IT IS THE LAST JOB TITLE LISTED IN THE CENTER COLUMN OF PAGE 55.**

**PLEASE TRY AGAIN.**

**PLEASE TRY AGAIN.**

**PLEASE TRY AGAIN.**

**2b**

**YOU HAVE JUST COMPLETED THE FIRST TWO UNITS OF THE INSTRUCTION.**
**THERE ARE TWO MORE UNITS TO GO IN ORDER TO COMPLETE THE ENTIRE COURSE ON THE OUT. THE LAST TWO UNITS ARE SHORTER THAN THE FIRST.**
**TWO AND IT WILL PROBABLY TAKE YOU APPROXIMATELY 20 MORE MINUTES TO COMPLETE.**
**THIS IS A GOOD PLACE FOR YOU TO STOP IF YOU WOULD LIKE TO HAVE A SHORT BREAK BEFORE GOING INTO THE NEXT UNIT, SO YOU HAVE A CHOICE.**
**PLEASE TYPE PROCEED IF YOU WANT TO GO ON, OR**
**TYPE SIGN OFF IF YOU NEED A RECESS.**
**DON'T FORGET TO PRESS RETURN KEY IN EITHER CASE.**

**CALL # FILE# CL**

**YOU WANT TO GET IT OVER WITH NOW, RIGHT? LET'S GO, THEN.**
UNIT III

WORKER TRAITS ARRANGEMENT

THE THIRD CLASSIFICATION SYSTEM OF THE OCT IS

WORKER TRAITS ARRANGEMENT (WTA).

THIS ARRANGEMENT IS SHOWN BETWEEN PAGES 214 AND 529 IN VOLUME II.

IN THIS UNIT OF THE INSTRUCTION, FIVE MAJOR ITEMS WILL BE COVERED.

AS YOU HAVE DONE SEVERAL TIMES BEFORE, PLEASE INDICATE THE PRESENT LEVEL

OF YOUR KNOWLEDGE ON WTA BY TYPING EITHER C > IF YOU THINK

YOU HAVE COMPREHENSIVE KNOWLEDGE, S > IF YOU THINK YOU HAVE

JUST SOME KNOWLEDGE, CK N > WHEN YOU HAVE NO KNOWLEDGE AT ALL ABOUT

THE GIVEN ITEM.

HERE ARE THE FIVE ITEMS OF PRELIMINARY SELF-APPRAISAL QUESTIONNAIRE.

PR

LD 0/S16*
LD 0/S17*
LD 0/S18*
LD C/S19*
LD 0/S20*
LD 0/C6*

QU 1. TO UTILIZE THE LIST, AREA OF WORK.

CA(w) C S*
LD 1/S16*
AD 1/C6*
WA N*

PR

UN PLEASE USE THE LETTER C, S, OR N ONLY.

QU 2. NARRATIVE DESCRIPTION OF WORKER TRAITS GROUP.

CA(w) C S*
LD 1/S16*
AD 1/C6*
WA N*

PR

UN PLEASE USE THE LETTER C, S, OR N ONLY.

QU 3. WORKER TRAITS ARRANGEMENT TITLE.

CA(w) C S*
LD 1/S18*
AD 1/C6*
WA N*
Since you have indicated that you are familiar with this kind of classification system, let me ask you some questions for the purpose of a brief review. Suppose you have a student who wants to work with setting up machines and operating engines, but doesn't know what kind of occupation he exactly wants to choose, where would you go first to get some information? Please type the first page of the section where you can find such information.

CA 214* THAT IS THE GOOD PLACE TO START
BR 2817 *

UN PLEASE LOCK UP THE VOLUME II AND TRY AGAIN.
UN FIRST OF ALL YOU HAVE TO FIND OUT THE AREA OF WORK IN WHICH THE STUDENT IS INTERESTED. ON WHAT PAGE CAN YOU FIND THIS INFORMATION?
UN WELL... YOU FORGOT ALL ABOUT IT EVER SINCE YOU USED IT LAST TIME, OR YOU JUST PUT IT WITHOUT REALLY KNOWING ABOUT IT. ANYWAY, LET ME SHOW YOU WHERE TO GO IN THIS CASE.

CA 471, 47L* EXACTLY. YOU REALLY KNOW HOW TO UTILIZE THE INFORMATION LISTED UNDER UGA. SO, LET'S MOVE ON TO THE NEXT.
BR 2818 *

UN PLEASE CHECK THE NUMBER AND TRY AGAIN.
UN ISN'T THAT CONFUSING? THERE ARE SO MANY PAGES WITH SO MANY INFORMATION. THAT'S WHY YOU ARE TAKING THIS INSTRUCTION. AT THE TIME YOU FINISH TAKING THIS COURSE, YOU WILL BE ALL CLEAR, I HOPE.

UN FIRST OF ALL YOU HAVE TO FIND OUT THE AREA OF WORK IN WHICH THE STUDENT IS INTERESTED. ON WHAT PAGE CAN YOU FIND THIS INFORMATION?
UN WELL... YOU FORGOT ALL ABOUT IT SINCE YOU USED IT LAST TIME, OR YOU JUST PUT IT WITHOUT REALLY KNOWING ABOUT IT. ANYWAY, LET ME SHOW YOU WHERE TO GO IN THIS CASE.

CA 214* THAT IS THE GOOD PLACE TO START
BR 2817 *

UN PLEASE LOCK UP THE VOLUME II AND TRY AGAIN.
UN FIRST OF ALL YOU HAVE TO FIND OUT THE AREA OF WORK IN WHICH THE STUDENT IS INTERESTED. ON WHAT PAGE CAN YOU FIND THIS INFORMATION?
UN WELL... YOU FORGOT ALL ABOUT IT SINCE YOU USED IT LAST TIME, OR YOU JUST PUT IT WITHOUT REALLY KNOWING ABOUT IT. ANYWAY, LET ME SHOW YOU WHERE TO GO IN THIS CASE.

CA 471, 47L* EXACTLY. YOU REALLY KNOW HOW TO UTILIZE THE INFORMATION LISTED UNDER UGA. SO, LET'S MOVE ON TO THE NEXT.
BR 2818 *

UN PLEASE CHECK THE NUMBER AND TRY AGAIN.
UN ISN'T THAT CONFUSING? THERE ARE SO MANY PAGES WITH SO MANY INFORMATION. THAT'S WHY YOU ARE TAKING THIS INSTRUCTION. AT THE TIME YOU FINISH TAKING THIS COURSE, YOU WILL BE ALL CLEAR, I HOPE.
QU WHAT IS THE NTA TITLE OF THE OGA 3-DIGIT GROUP, 001. ARCHITECTURAL
OCCUPATION
CALL & ARCHITEC
TY EXACTLY
BR 2819
UN PLEASE LOOK UP PAGE 3 IN VOLUME II AND TRY AGAIN.
UN WELL .. IT DIDN'T HELP, I GUESS. I WILL EXPLAIN IT TO YOU, THEN.
BR BN7

BR 2C4
QU WHAT KIND OF SIGN DO THEY USE IN THE 6-DIGIT CODE TO DISTINGUISH
BETWEEN ENTRY APPLICANTS AND FULLY QUALIFIED EXPERIENCED WORKERS
IN THE EMPLOYMENT SERVICE
CA X
TY CORRECT* YOU MUST KNOW A LOT ABOUT THIS KIND OF ARRANGEMENT
RIGHT,
TY B1*
TY ***********
BR 2820
UN FOR THE ENTRY WORKER, THE PERIOD (.) BETWEEN FIRST THREE DIGITS AND
LAST THREE DIGITS OF CODE NUMBERS IS NOT USUALLY USED. CAN YOU
ANSWER MY QUESTION NOW* TRY AGAIN.
UN IT DIDN'T HELP YOU OUT, DID IT
BR BN8

BR 2C5
QU WHEN AN APPLICANT HAD TAKEN JUST HIGH SCHOOL TYPING COURSES, AND
HAD EARNED SOME MONEY BY TYPING FOR HER RELATIVES AND FRIENDS,
HOW MANY DIGITS OF ENTRY CODE WOULD YOU ASSIGN TO THIS APPLICANT
CA 5*
TY VERY GOOD,
TY B1*
TY ***********
SINCE YOU KNOW HOW TO ASSIGN A CODE NUMBER FOR AN ENTRY APPLICANT,
YOU DON'T NEED TO SPEND ANY MORE TIME ON THIS SUBJECT.
LET'S MOVE ON DIRECTLY TO THE NEXT UNIT.
BR 2C
TY NO, YOU CAN NOT GIVE FULL 6-DIGIT CODE NUMBER TO THIS APPLICANT.******
PLEASE TRY AGAIN.******

TY NO, YOU CAN BE MORE SPECIFIC THAN THAT. PLEASE TRY AGAIN.******
UN PLEASE TRY AGAIN OR ENTER NO IF YOU DON'T KNOW THE ANSWER.******
UN I GUESS YOU CAN'T KNOW WHAT I MEAN. HERE IS THE EXPLANATION.*********

RD THE WORKER TRAITS ARRANGEMENT (WTA) GROUPS JOB TITLES SO THAT******
JOBS REQUIRING SIMILAR TRAITS WILL APPEAR TOGETHER.*********
THESE TRAITS INCLUDE APTITUDES, INTERESTS, TEMPERAMENTS, PHYSICAL******
DEMANDS AND TRAINING TIME REQUIRED OF A WORKER.*********
WHEN YOU ARE DEALING WITH UNEXPERIENCED WORKERS SUCH AS HIGH SCHOOL******
STUDENTS WHO ARE ABOUT TO ENTER THE NEW OCCUPATION, THIS WTA LISTING******
IS VERY HELPFUL TO CLASSIFY THOSE ENTRY APPLICANTS.*********
WE WILL LEARN ABOUT THIS CLASSIFICATION SYSTEM IN THIS UNIT.*********
PLEASE PRESS RETURN KEY TO PROCEED.*********

QU TURN TO PAGE 214 IN VOLUME II.*********
PA ?*
TY THERE YOU WILL FIND 22 AREAS OF WORK WHICH ARE ARRANGED IN ALPHABETICAL******
SEQUENCE.******
SUPPOSE YOU HAVE A GIRL WHO SAYS SHE IS INTERESTED IN HELPING PEOPLE******
IN A HOSPITAL SETTING, WHAT AREA OF WORK WOULD YOU FIRST LOOK TO FIND******
THE MOST APPROPRIATE JOB TITLE FOR THIS GIRL******
PLEASE PICK ONE AREA OF WORK FROM THE LIST ON PAGE 214 AND ENTER IT.******
CALL) EMERGENCY*
TY O.K* THAT SOUNDS GOOD********
UN TRY TO THINK WHY PEOPLE GO TO HOSPITAL AND FIND THE AREA OF WORK******
UN ISN'T THERE ANY RELATIONSHIP BETWEEN HOSPITAL AND MEDICINE******
NOW TRY AGAIN.******

QU NOW, IF YOU WOULD FOLLOW THE DOTTED LINE ALL THE WAY THROUGH THE ******
RIGHT END OF THE PAGE, THERE IS A 3-DIGIT NUMBER. THAT NUMBER IS THE******
PAGE NUMBER WHERE YOU CAN FIND MORE INFORMATION ON THAT AREA OF WORK.******
PLEASE ENTER THAT NUMBER******
CALL 470 470+
THANK YOU,*
81*
*****
NOW, TURN TO THAT PAGE IN VOLUME II.******
PA 5*
BR 479*
UN PLEASE FOLLOW THE DOTTED LINE WHICH IS STARTED FROM THE ENTRY,******
MEDICINE AND HEALTH AND ENTER THE NUMBER WHICH APPEARS ON THE RIGHT END.******
UN THE NUMBER THAT I AM LOOKING FOR APPEARS ON THE 7TH LINE FROM THE BOTTOM******
of THE PAGE 214. PLEASE TRY AGAIN.******

479*
RIGHT,*
81*
*** YOU ARE ABSOLUTELY RIGHT**********
BR 2017 *
UN PAGE NUMBER IS INDICATED ON THE RIGHT END OF THAT PAGE.******
PLEASE FIND IT AND ENTER IT.******
UN IF YOU WOULD FOLLOW THE DOTTED LINE FOR THE CHILD AND ADULT CARE******
THROUGH THE RIGHT END OF THE PAGE, THEN YOU WOULD BE ABLE TO SEE THE******
PAGE NUMBER. PLEASE TRY AGAIN.******

479*
CU PLEASE TURN TO PAGE 479 NOW.**********
PA **
TY THERE YOU WILL FIND A LIST OF INFORMATION CONCERNING THE CHILD AND******
ADULT CARE OCCUPATIONS.********
THIS LIST IS CALLED A NARRATIVE DESCRIPTION OF WORKER TRAITS GROUP.********
PLEASE EXAMINE IT UNTIL I ASK YOU A QUESTION.********

PA 7*
TY WHAT IS THE SECOND ITEM OF INFORMATION INCLUDED IN THIS DESCRIPTION********
CAIL) &CRKGREQ*
TY VERY GLD********
UN EACH ITEM OF INFORMATION IS IDENTIFIED WITH A SHORT TITLE OF THE ITEM********
WHICH IS PRINTED IN BOLD TYPED LETTERS. PLEASE TRY AGAIN.********
UN THE FIRST ITEM OF INFORMATION INCLUDED IN THIS LIST IS WORK PERFORMED.********
WHAT IS THE SECOND ONE********
UN WHAT DOES IT SAY ON THE FIFTH LINE FROM THE TOP OF THE PAGE.479********
UN THE FIRST WORD IS +WORKER+. FIND THE SECOND WORD AND ENTER BOTH WORDS.********

BN6*
QU ON THE FOLLOWING PAGE, P. 480, SEVERAL JCB TITLES WHICH ARE FOUND********
IN THE AREA OF CHILD AND ADULT CARE ARE LISTED. THE TITLES ARE LISTED******
ACCORDING TO THEIR CODE NUMBERS.*****
PLEASE EXAMINE THE LIST AND ENTER THE LAST TITLE LISTED ON THAT PAGE.*****
CAI(L) &TE&NURSCHE*
TY EXACTLY**********
BR 2B18*
AIL) &CHILCAREATT*
TY THAT IS THE FIRST BASE TITLE WHICH IS LISTED UNDER THE CODE NUMBER.******
359.878. PLEASE FIND THE LAST ONE LISTED UNDER THE SAME CODE NUMBER******
AND ENTER IT.******
Wb TEACHER*
TY PLEASE ENTER THE FULL TITLE.******
UN PLEASE LOCK UP THE PAGE 480 AND TRY AGAIN.******
UN JUST PICK UP THE LAST TITLE LISTED ON PAGE 480 AND ENTER IT.******

BN7*
QU PLEASE TURN TO PAGE 3 IN VOLUME II.******
PA 5*
TY THERE YOU WILL NOTICE THAT EACH CJA TITLE IS FOLLOWED BY A SHORTENED******
VERSION OF THE TITLE WHICH IS PRINTED IN PARENTHESIS.******
THIS SHORTENED VERSION OF TITLE IS USED AS WORKER TRAITS GROUP TITLE.********
WHAT IS THE WTG TITLE OF THE CGA 3-DIGIT GROUP 024********

CALL & GCCL

TY CORRECT********

WHEN YOU ASSIGN A TITLE TO AN ENTRY APPLICANT, THIS SHORTENED VERSION,********

WTG TITLE SHOULD BE USED.********

BR 2819 *

UN THE GROUP, 024 IN CGA IS OCCUPATIONS IN GEOLOGY.******

WHAT IS THE SHORTENED VERSION OF THIS TITLE******

UN PLEASE LOOK AT THE TITLE IN PARENTHESES WHICH IS SHOWN RIGHT UNDER THE******

TITLE, OCCUPATIONS IN GEOLOGY AND ENTER IT.******

BN8

UN IN THE EMPLOYMENT SERVICES, THE ENTRY APPLICANTS ARE CLASSIFIED*******

DIFFERENTLY FROM THE FULLY QUALIFIED AND EXPERIENCED WORKERS.******

IN ORDER TO IDENTIFY ENTRY WORKERS EASILY FROM THE REGULAR WORKERS,******

AN X IS SUBSTITUTED FOR THE PERIOD (.) IN THE 6-DIGIT CODE.********

CAN YOU TELL ME HOW THE CODE, 275.346 WOULD APPEAR ON THE******

ENTRY WORKER'S APPLICATION FCHM*******

CA(w) 275X346 275X346*

TY EXACTLY,*

TY 81*

TY *******

THIS WAY, WE CAN EASILY TELL WHO IS AN ENTRY WORKER AND WHO IS A REGULAR******

WORKER WITHOUT GOING THROUGH THE ENTIRE RECORD FOLDER OF THE WORKERS.********

UN JUST REPLACE THE PERIOD (.) BY *X* IN THE 6-DIGIT CODE NUMBER.********

HOW WOULD IT LOOK*******

BN9

UN LOOK AT THE FOLLOWING TWO CODE NUMBERS*******

609.432*******

609X432*******

WHICH ONE OF THE ABOVE TWO CODES IS USED FOR ENTRY WORKER******

CA 609X432*

TY RIGHT* THAT WAS A VERY EASY QUESTION, WASN'T IT********

BR 2620 *

WA 609.432*

TY NO, THAT IS FOR REGULAR WORKER. PICK THE OTHER ONE.******
There are three different levels of entry workers and these different levels are identified by the number of digits of code assigned. In other words, some of the entry applicants can be classified more specifically than the others because of better preparation and training.

Look at the following codes:

A. 71X652
B. 7X652
C. 716X652

Which one of the above three codes indicates the most specific classification of the entry applicant?

CA (m) 716X652 71X652 C

Try exactly

The 6-digit code with X is given to the entry applicant who meets the minimum requirements for a specific job but could not compete with fully qualified workers because of, for example, local labor condition.

WA (m) 7X652 7X652 B

Try no, that is the most broad classification. Try again.

WA (m) 71X652 71X652 A

Try no, that is not so specific, but not so broad classification. Try again.

UN please choose one of the three code numbers given and enter it.

When an entry worker has had an orientation of some nature to a certain occupation, he may be classified with 5-digit code with X replacing the period. Please try this problem.

When an applicant has taken some sewing courses in high school and has made some dresses for her family and friends, how many digits of code number would you assign to this applicant?

CA 5

Try exactly

WA 6

Try this person has just an orientation to the work, sewing. Try again.
YOU CAN ASSIGN EITHER 6, 5, OR 4 DIGITS OF CODE TO THIS APPLICANT.******
PLEASE TRY AGAIN.******

* SOMETIMES YOU MAY HAVE TO CLASSIFY AN APPLICANT WHO HAS NO SPECIALIZED******
TRAINING OR EDUCATION BUT SIMPLY INDICATES THAT HE IS INTERESTED******
IN A CERTAIN JOB. IN THIS CASE, WE CAN ASSUME THAT THIS PERSON******
MIGHT BENEFIT FROM A BROAD EXPOSURE TO EMPLOYMENT OPPORTUNITIES******
IN THAT AREA OF WORK.********
HOW MANY DIGITS OF CODE NUMBER COULD YOU ASSIGN TO THIS APPLICANT******

CA 4*
TY RIGHT! THAT'S AS FAR AS YOU CAN GO FOR HIM.******
WA 5*
WB 6*
TY WELL... THAT SEEMS TO BE TOO MANY. PLEASE RECONSIDER.******
UN SIMPLY ENTER EITHER 6, 5, OR 4 TO ANSWER THIS QUESTION.******

* TURN TO APPENDIX B ON PAGE 651 IN VOLUME II.*****
PA 8*
TY THERE YOU WILL FIND THE EXPLANATION OF WORKER TRAIT COMPONENTS.*****
WHenever YOU ARE NOT CLEAR WHAT THE SPECIFIC COMPONENT MEANS,*****
YOU MAY SIMPLY REFER TO THIS APPENDIX.********
TY TO FIND THE EXPLANATION OF THE COMPONENT, ABILITIES AND ENTER*****
THE PAGE NUMBER WHERE IT APPEARS.********
CA 053*
TY EXACTLY********
SO FAR, WE HAVE COVERED ALMOST EVERY ITEM INCLUDED IN THE WORKER*****
TRAITS ARRANGEMENT.********
BR 2C *
UN YOU CAN FIND IT SOMEWHERE BETWEEN PAGES 651 AND 656. TRY AGAIN.*****
UN ON THE PAGE 651, YOU CAN FIND THE EXPLANATION ON THE FIRST COMPONENT,*****
TRAINING TIME. LOOK FOR THE WORK ABILITIES AND ENTER THE PAGE NUMBER*****
WHERE IT APPEARS.*****
UN TRY PAGE 653 AND ENTER THAT NUMBER IF YOU CAN FIND IT THERE.*****

2C *
UNIT IV* INDUSTRY ARRANGEMENT OF TITLES**********

THIS IS THE LAST UNIT OF THE PRESENT INSTRUCTION.**********

THERE ARE THREE ITEMS TO BE COVERED IN THIS UNIT. IN ORDER FOR YOU TO********

RECEIVE AN ADEQUATE INSTRUCTION ON THIS UNIT, PLEASE INDICATE THE LEVEL OF YOUR *****

PRESENT KNOWLEDGE ON EACH OF THE THREE ITEMS.**********

PLEASE ENTER C > WHEN YOU THINK YOU HAVE A COMPREHENSIVE KNOWLEDGE******

ENTER S > WHEN YOU THINK YOU HAVE JUST SOME KNOWLEDGE, AND ENTER N > IF YOU*****

HAVE NO KNOWLEDGE AT ALL ABOUT THE GIVEN ITEM.**********

PLEASE PRESS RETURN KEY NOW FOR THE FIRST ITEM.**********

PK
LD 0/S21*
LD 0/S22*
LD 0/S23*
LD 0/C7*

QU 1. FINDING INDUSTRY TITLE FROM THE DOT. >>> *
CA(*) C S*
LD 1/S21*
AD 1/C7*
WA N*
BR PR *

UN PLEASE USE THE LETTER C, S, OR N ONLY.**********

QU 2. FINDING FULL INDUSTRY TITLE FROM THE ABBREVIATED TITLE. >>> *
CA(*) C S*
LD 1/S22*
AD 1/C7*
WA N*
BR PR *

UN PLEASE USE THE LETTER C, S, OR N ONLY.**********

QU 3. IDENTIFYING JOB TITLES UNDER THE SAME INDUSTRY. >>> *
CA(*) C S*
LD 1/S23*
AD 1/C7*
WA N*
BR PR *

UN PLEASE USE THE LETTER C, S, OR N ONLY.**********
QU ON WHAT PAGE CAN YOU FIND ALL THE TITLES BELONGING TO THE HARDWARE INDUSTRY

CA(w) 580 58C
TY VERY GOOD

UN PLEASE TRY AGAIN BEFORE I GIVE YOU A LONG LECTURE

UN WELL... I ASSUME THAT YOU NEED SOME GUIDE ON THIS

UN PLEASE TRY AGAIN SINCE IT'S TOO LONG

UN WELL... I ASSUME THAT YOU DON'T KNOW WHERE TO FIND IT

I WILL SHOW YOU
CAN YOU TELL ME WHAT IS THE FIRST JOB TITLE LISTED UNDER THE INDUSTRY, **BONE, CARBON, & LAMPBLACK**?

TY EXACTLY** YCL HAVE DONE A GREAT JOB IN THIS UNIT.**

THIS CONCLUDES THE COMPUTER-ASSISTED INSTRUCTION ON THE USE CF THE**

DICTIONARY OF OCCUPATIONAL TITLES. HOWEVER, PLEASE TAKE A FEW MORE**

MINUTES TO EVALUATE THIS COURSE.**

BR EVAL *

UN THE FIRST TITLE UNDER THIS INDUSTRY TITLE IS SHOWN RIGHT AFTER**

THE DEFINITION OF THE INDUSTRY AND IT STARTS WITH A LETTER **B**.**

PLEASE TRY AGAIN.**

UN THE INDUSTRY IS LISTED ON PAGE 547. PLEASE LOOK IT UP AND ENTER THE**

FIRST JOB TITLE LISTED UNDER THE INDUSTRY, **BONE, CARBON, & LAMPBLACK**.**

UN I GUESS IT TIWN'T HELP. LET ME GIVE YOU MORE SPECIFIC INSTRUCTION ON THIS.**

BR CN4 *

CN1 *

QU THE LAST CLASSIFICATION SYSTEM USED IN THE DOT IS THE INDUSTRY ARRANGEMENT**

OF TITLES. THIS ARRANGEMENT ARRANGES JOB TITLES ACCORDING TO THEIR**

ASSIGNED INDUSTRY DESIGNATION.**

PLEASE TURN TO PAGE 531 IN VOLUME II,**

TY #1**

TY **

PA 7**

TY STARTING ON THIS PAGE, DOT ARRANGES JOBS INTO OVER 200 DIFFERENT**

INDUSTRIES AND THEY ARE LISTED IN ALPHABETICAL ORDER OF THE INDUSTRY NAMES.**

WHAT INDUSTRY DOES THIS LIST START WITH**

CALL( EAB&PCPC&PC**

TY EXACTLY**

UN WHAT IS THE FIRST ENTRY LISTED ON PAGE 531**

UN PLEASE ENTER THE FIRST WORD LISTED ON PAGE 531 SINCE IT IS THE FIRST**

INDUSTRY TITLE LISTED IN DOT.**

CN2 *

QU UN WHAT PAGE CAN YOU FIND THE INDUSTRY TITLE, **CLOTHING**?

CA 574**

TY VERY GOOD**
TY NO, THAT IS ONLY A CONTINUATION OF THE SAME INDUSTRY. PLEASE FIND*****
THE STARTING PAGE OF THAT INDUSTRY AND ENTER THAT NUMBER.******
UN IF YOU LOCKED UP THE UPPER CORNER OF EACH PAGE, YOU MAY FIND IT*****
A LITTLE EASY. PLEASE TRY AGAIN.******

CN3  *
QU THE INDUSTRY TITLE, *INST. & APP.*, IS LISTED ON PAGE 583.******
PLEASE OPEN THAT PAGE NOW.******
PA 5*
TY AS YOU ALREADY NOTICED, EVERY INDUSTRY DESIGNATION IS SHOWN IN ABBREVIATION.******
FOLLOWING THE BOLD-TYPED ABBREVIATED INDUSTRY TITLE IS THE FULL INDUSTRY******
TITLE. PLEASE ENTER THE FULL INDUSTRY TITLE OF THE ABOVE INDUSTRY.******
CALL (1) *INST. & APP.* INC.*
TY VERY GOOD* YOU ARE A GOOD TYPIST, TOO**********
DR 2C22 *
UN THE FULL INDUSTRY TITLE IS PRINTED IN ALL CAPITAL LETTERS WHICH IS******
PRECEDED BY THE ABBREVIATION. PLEASE TRY AGAIN.******
UN PLEASE CHECK YOUR SPELLING AND ENTER THE RIGHT TITLE.******

CN4  *
QU FOLLOWING THE FULL INDUSTRY TITLE IS THE DEFINITION OF THAT INDUSTRY.******
RIGHT AFTER THE DEFINITION, YOU CAN FIND A LIST OF JCB TITLES******
WHICH ARE USUALLY FOUND IN THAT INDUSTRY. BASE TITLES ARE PRINTED******
IN ALL CAPITAL LETTERS AND ALTERNATE TITLES ARE SHOWN IN ALL LOWER-CASE******
LETTERS.**********
Pleaders THE INDUSTRY, *GRAIN & FEED MILL.* AND ENTER THE******
FIRST BASE TITLE LISTED UNDER THAT INDUSTRY.******
CA BAKER*
TY RIGHT,*
TY 81*
TY **********
SO FAR YOU HAVE REVIEWED SOME OF THE INFORMATION CONTAINED IN THE******
INDUSTRY ARRANGEMENT OF TITLES WHICH IS ONE OF THE FOUR MAJOR******
CLASSIFICATION SYSTEMS OF THE DOT.**********
THIS CONCLUDES THE COMPUTER-ASSISTED INSTRUCTION******
APPENDIX B

Opinionnaire
ON THE USE OF THE DICTIONARY OF OCCUPATIONAL TITLES. HOWEVER,********
PLEASE TAKE A FEW MORE MINUTES TO EVALUATE THIS COURSE.********

EVAL *
UN THIS INDUSTRY IS LISTED ON PAGE 579. PLEASE TRY AGAIN.********
UN ALL THE TITLES WHICH BELONG TO THIS INDUSTRY ARE LISTED RIGHT AFTER********
THE INDUSTRY DEFINITION. PLEASE TRY AGAIN.********
UN BASE TITLES ARE PRINTED IN ALL CAPITAL LETTERS. TRY AGAIN.********
UN THE FIRST BASE TITLE STARTS WITH A LETTER 0. PLEASE TRY AGAIN.********

EVAL *
QU CFINICNNAIRE********
TY THROUGH THIS COMPUTER-ASSISTED INSTRUCTION, YOU HAVE BEEN********
ASSISTED IN LEARNING HOW TO USE THE DICTIONARY OF OCCUPATIONAL********
TITLES. I HOPE YOU ENJOYED THIS ADVENTURE , *
TY BY********
TY .*******

BEFORE YOU LEAVE, I WOULD LIKE FOR YOU TO TAKE A FEW MORE MINUTES********
TO HELP ME EVALUATE THIS COURSE.********

EV1 *
QU 1. HOW MANY TIMES HAVE YOU USED CAI BEFORE TAKING THIS COURSE********
A. NEVER BEFORE********
B. CAI BEFORE********
C. 2 TO 5 TIMES BEFORE********
D. 6 TO 9 TIMES BEFORE********
E. MORE THAN 10 TIMES BEFORE********
Answer: >>>> *

CAI(W) A B C D E *
UN PLEASE ENTER A, B, C, D, OR E ONLY.********

EV2 *
QU 2. HOW FAMILIAR WERE YOU WITH THE DOT BEFORE TAKING THIS COURSE******
A. COMPLETELY******
B. ADEQUATELY******
C. SOMEWHAT******
D. NOT AT ALL******

ANSWER* >>> *

CA(w) A B C D*
UN PLEASE ENTER A, B, C, OR C ONLY**********

EV3*

QU 3. AS A RESULT OF TAKING THIS COURSE, HOW WOULD YOU RATE******
YOUR UNDERSTANDING OF THE DOT******
A. EXCELLENT******
B. ABOVE AVERAGE******
C. AVERAGE******
D. BELOW AVERAGE******
E. LIMITED******

ANSWER* >>> *

CA(w) A B C D E*
UN PLEASE TYPE A, B, C, D, OR E ONLY**********

EV4*

QU 4. DID YOU HAVE ANY DIFFICULTY IN FOLLOWING THE INSTRUCTION IN THIS COURSE******
A. YES******
B. NO******
C. SOME******

ANSWER* >>> *

CA B*
OR EV5 *
WA(w) A C*

UN PLEASE ENTER A LETTER A, B, OR C ONLY**********

EV4A*

QU WHAT WAS THE DIFFICULTY******
(ENTER K* AFTER ENTERING YOUR COMMENT, IF YOU ARE FINISHED, OR******
You must press the return key when you entered either sign.********

CA(l) &K**
WA(l) &**

TY PLEASE CONTINUE ENTERING YOUR COMMENT********
UN PLEASE ENTER K* IF YOU ARE FINISHED, OTHERWISE HIT THE * KEY ONLY********
TO ENTER MORE OF YOUR COMMENT.********

EV5

QU 5. WOULD YOU ENCOURAGE PEOPLE TO TAKE THIS CAI COURSE********
A. YES*****
B. NO*****

ANSWER* >>> *

CA(w) A B* UN PLEASE TYPE A OR B ONLY.********

EV6

QU 6. IN GENERAL, HOW WOULD YOU GRADE THE INSTRUCTIONAL VALUE OF THIS********
CAI PROGRAM********
A. EXCELLENT*****
B. GOOD*****
C. AVERAGE*****
D. MINIMUM*****
E. NO VALUE*****

ANSWER* >>> *

CA(w) A B C D E* UN TYPE A, B, C, D, E ONLY, PLEASE********

EV081

QU THE NEXT FIVE ITEMS IN THIS OPINIONNAIRE DEAL WITH THE INSTRUCTIONAL********
OBJECTIVES OF THIS COURSE. AS A RESULT OF TAKING THIS COURSE,******
HOW MUCH DIFFICULTY WOULD YOU ANTICIPATE IN PERFORMING EACH TASK, IF******
YOU WERE REQUIRED TO DO SO AGAIN********
PLEASE ASSIGN A NUMBER, EITHER 1, 2, 3, 4, OR 5 TO INDICATE YOUR*******
ANTICIPATED AMOUNT OF DIFFICULTY. ENTER 1 IF YOU EXPECT A MINIMUM ********
AMOUNT OF DIFFICULTY AND ENTER 5 IF YOU EXPECT A MAXIMUM ******** DIFFICULTY.*******
THE THREE OTHER NUMBERS INCIDATE INCREMENTS IN BETWEEN********
7. TO FIND THE JOB TITLES AND DEFINITIONS FROM THE VOLUME I.********

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<thead>
<tr>
<th>MINIMUM</th>
<th>MAXIMUM</th>
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<td>3</td>
<td>4</td>
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</table>

DIFFICULTY

ANSWER* >>> *

CA(h) 1 2 3 4 5*
UN PLEASE ENTER EITHER 1, 2, 3, 4, OR 5 ONLY********

EVB02

** QU 8. TO IDENTIFY THE TITLES OF CATEGORY, DIVISION, AND GROUP FROM THE 6-DIGIT********

<table>
<thead>
<tr>
<th>MINIMUM</th>
<th>MAXIMUM</th>
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<td>1</td>
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DIFFICULTY

ANSWER* >>> *

CA(h) 1 2 3 4 5*
UN PLEASE ENTER EITHER 1, 2, 3, 4, OR 5 ONLY********

EVB03

** QU 9. TO ASSIGN A 6-DIGIT CODE TO A CERTAIN JOB TITLE, USING THE DCT.********

<table>
<thead>
<tr>
<th>MINIMUM</th>
<th>MAXIMUM</th>
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</table>

DIFFICULTY

ANSWER* >>> *

CA(h) 1 2 3 4 5*
UN PLEASE ENTER A NUMBER 1, 2, 3, 4, OR 5 ONLY********

EVB04

** QU 10. TO IDENTIFY THE LEVEL OF COMPLEXITY OF A CERTAIN JOB IN DEALING WITH*******

<table>
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<tr>
<th>MINIMUM</th>
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<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

DIFFICULTY

ANSWER* >>> *
DIFFICULTY

ANSWER: >>> *

CA(W) 1 2 3 4 5*

UN PLEASE ENTER A NUMBER 1, 2, 3, 4, OR 5 ONLY***********

EVOBS

QU 11. TO FIND DIFFERENT JOB TITLES WITHIN A CERTAIN INDUSTRY.**********

, >>>>>> , >>>>>> , >>>>>> , >>>>>> , >>>>>> , >>>>>> , ****

MINIMUM MAXIMUM

DIFFICULTY DIFFICULTY

ANSWER: >>> *

CA(W) 1 2 3 4 5*

UN PLEASE ENTER EITHER A NUMBER 1, 2, 3, 4, OR 5 ONLY***********

EVI2

QU THANK YOU VERY MUCH, *

TY B1*

TY **********

I REALLY ENJOYED WORKING WITH YOU AND ALSO APPRECIATE YOUR EFFORT******

IN EVALUATING THIS PROGRAM. GOOD LUCK TO YOU**********

THIS IS THE END OF THE COURSE. PLEASE TURN OFF THE TERMINAL.*****

FN SIGOFF*

END

* MACROS

HELPC

MA HELPO /**

QU WHEN IT IS LIKELY THAT THE STUDENT HAS NO IDEA AND HENCE WOULD ONLY BE**
GUESSING FOR A CORRECT ANSWER, THE COMPUTER LANGUAGE OFFERS A STRONG ASSIST.*

IN SUCH A SITUATION THE STUDENT WOULD TYPE THE WORD* HELP* THE COMPUTER**
WOULD THEN PROVIDE THE CORRECT ANSWER. THE STUDENT WOULD THEN BE REQUIRED**
TO ENTER THAT ANSWER IN ORDER TO PROCEED. AS IN OTHER INSTANCES, THE STUDENT**
WOULD NEED TO PRESS THE *RETURN* KEY AFTER THE WORD HELP AND AFTER ENTERING**
THE ANSWER PROVIDED BY THE COMPUTER.**
LET'S DETERMINE IF YOU UNDERSTAND THE HELP PROCEDURE. CONSIDER THIS **
QUESTION* HOW MANY M&M'S ARE CONTAINED IN A FIVE POUND BAG** YOU MAY OBTAIN**
THE CORRECT ANSWER BY FOLLOWING THE HELP PROCEDURE.**
**
WAIT **
**
TY PLEASE ENTER THE WORD* HELP WITHOUT ANY MARKS AROUND IT.**
**
CA 684 *
**
TY YOU SHOULD BE ADVISED THAT SEVERAL HUNGRY YOUNG CHILDREN DID THE COUNTING. THE **
TOTAL THEREFORE MAY NOT BE EXTREMELY ACCURATE. (IF YOU HAVE OCCASION TO COUNT**
THEM, PLEASE ACTIFY THE AUTHOR.)**
**
WA 7893 *
**
TY OBVIOUSLY YOU HAVE TAKEN THIS COURSE PREVIOUSLY AND HAVE A VERY KEEN MEMORY FOR VITAL**
STATISTICS. PLEASE FOLLOW THE HELP PROCEDURE.**
**
UN PLEASE FOLLOW THESE STEPS CLOSELY. 1. TYPE THE WORD* HELP**
2. PRESS THE *RETURN* KEY. YOU WILL THEN RECEIVE A NUMBER FROM THE COMPUTER.**
3. TYPE THAT NUMBER. 4. PRESS THE RETURN KEY.**
**
UN PLEASE TYPE THE NUMBER 684 IN ORDER TO PROCEED.**
**
EM *
****
****
MA ***0 /$*
TY(M) IF AT ANY TIME YOU WISH TO CANCEL YOUR ANSWER BEFORE PRESSING THE**
*RETURN* KEY, TYPE ***. THEN PRESS THE *RETURN* KEY.**
EM *=

ECBRET *
MA ECBRET/$*
RO TO BEGIN, IT IS NECESSARY FOR YOU TO BE ABLE TO COMMUNICATE WITH THE COMPUTER.**
LOCATE THE KEY MARKED RETURN. PRESS IT AND NOTICE WHAT HAPPENS.**
**
QU FINE** YOU HAVE INDICATED TO THE COMPUTER THAT YOU ARE READY TO CONTINUE. THIS**
*RETURN* KEY MUST BE PRESSED AFTER YOU FINISH EACH RESPONSE. YOU WILL KNOW**
WHEN THE COMPUTER IS READY FOR YOUR ENTRY BECAUSE IT WILL NOD THE**
TYPING BALL.***

EM *

MACEND *
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Loughary, John W. "Can Teachers Survive the Educational Revolution?" Phi Delta Kappan, XLVIII (1967), 204-207.


