

HOW TO PRODUCE A NATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS AND A NATIONAL DICTIONARY OF OCCUPATIONS

SUMMARY OF THE MAIN TASKS

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Summary of the main tasks

What is a classification of occupations?

1. A classification of occupations is a tool which should be able to capture and present information about the current occupational structure of a country or region.
2. A classification of occupations usually consists of the following two components:
 - (a) the classification system itself, which determines how jobs are to be classified into the most detailed groups of occupations and how these are to be further aggregated; and
 - (b) a dictionary of occupations which contains descriptions of the tasks and duties of the occupations which belong to each of the defined detailed occupational groups of the classification, as well as an index of occupational titles with corresponding codes.
3. Before we speak about the steps to be undertaken I would like to mention that the work connected with a classification of occupations should be seen as an ongoing work, in the sense that both components of the classification - its system and its dictionary - need constant maintenance. This is unfortunately not the prevailing practice. Usually a classification of occupations is created and is expected to serve for a number of decades. And yet everybody knows that the occupational scene in a

country keeps changing, especially nowadays with maybe too accelerated technological innovations. We shall come back to this point, for in a way it is also valid for the process of setting up a classification of occupations.

How to proceed

4. If we do not talk about the need to set up a project unit with suitable staff and a steering committee - and I do not think that we should talk about it now - the first step is to contact all probable users of occupational classifications (for there may exist more than one) and obtain information concerning their needs and wishes.

5. Then, decision should be taken concerning the order in which the two components of the classification should be produced. It can be argued that one should start with the Dictionary of Occupations first, and then construct the classification system. However, in practice the reverse procedure seems to be much more preferable. Creating a dictionary of occupations necessitates identification of jobs, collection of job information, undertaking job analysis, writing systematic job descriptions, etc. It also demands training a good number of interviewers and job analysts, finding competent members for a steering committee, etc. In short, it is a costly and time-consuming undertaking. It is the sort of undertaking that often begins with great enthusiasm and then, somewhere along the road, for lack of funds or some other reason is stopped, and the country is left without any of the two components of the classification. That is why it is preferable to start with the classification system first.

6. When establishing a classification system it is strongly recommended to take another classification to serve as a model both for the conceptual and for the structural side of the system. As the model should be a recently developed and well maintained occupational classification, the International Standard Classification of Occupations (ISCO-88) should be a good candidate at this moment. Besides, when a country needs to produce internationally comparable statistics or to make comparative studies between its own occupational data and that of other countries, taking ISCO-88 as a model should prove to be a financial advantage. In other words, a national classification of occupations which is strongly aligned with ISCO-88 will make the mapping of the national classification into ISCO-88 an easier and less costly operation.

7. On the basis of the model chosen, a Tentative National Occupational Classification (TOC) or a classification system which, as we have already said, determines how jobs are to be classified into the most detailed groups of occupations and how these are to be further aggregated, should be established. In terms of ISCO-88 this would mean a system which classifies jobs and which uses skill level and skill specialisation as the main criteria for grouping jobs and for creating different levels of aggregation. ISCO-88 consists of the following four levels of aggregation: 10 major groups, 28 sub-major groups, 116 minor groups, and 390 unit groups. Definitions applied in ISCO-88 to outline the meaning given to jobs, occupations and occupational groups are those that are commonly used. They are as follows:

A "job" is a set of tasks performed or designed to be performed by one individual.

An "occupation" is a set of jobs with common sets of tasks.

An "occupational group" -with exception of those that consist of one occupation only - is a set of occupations with similar sets of tasks.

8. It is very important to bear in mind the tentative side of TOC, and to be fully aware of the fact that at this stage we have not as yet used any information which could tell us about the jobs/occupations which exist in the country but do not exist in the chosen model, and the other way around. =

9. The next step is to collect information on the jobs in the country from available sources, such as:

(a) lists of job titles and descriptions in use in enterprises and establishments;

(b) records of personnel departments of enterprises and establishments;

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(c) population census records;

(d) Ministry of Labour's records (used for wage settlements);

(e) Employers organisations' records (used for wage settlements);

(f) Trade unions' records (used for wage settlements);

(g) employment service (job placement) records;

(h) advertisements for job vacancies in national newspapers and technical journals;

(i) occupational classifications of neighbouring countries/regions which might have some resemblance with the national occupational and industrial development structures.

(j) information obtained through sector specialists.

10. It is now necessary to open a file for each of the unit groups of TOC in order to modify the existing job content of each of the groups on the basis of the information collected on national jobs. This process will lead to:

(a) identifying jobs which exist nationally but do not exist in the TOC, and allocating them to the TOC unit groups whose descriptions of the main tasks and duties correspond

to those of the jobs in question;

(b) finding out which of the jobs classified by TOC unit groups do not exist nationally. In some cases this may mean that a given unit group is left without content and, therefore should be abolished;

(c) identifying jobs that exist nationally but could not be classified under any of the existing TOC unit groups, and indicating which new unit groups should be created and how they should be aggregated;

(d) identifying jobs that exist both in the TOC unit groups and nationally.

11. Steps described under 10 above mean that the content of the TOC unit groups has been modified according to the national occupational composition in the sense of coverage, i.e. TOC unit groups should now be able to capture most of the existing occupations. In addition to the decisions already taken about adding and abolishing some of the TOC unit groups, further decisions should be taken about the possible need to split or combine some of the TOC groups at any of the four levels of ' aggregation. For instance if a TOC minor group contains occupations which are known to be very numerous in the country, then the principle of "statistical balance" would demand that the minor group be split. Of course the same is true in the reverse sense, i.e. combining two or more occupational groups which contain occupations that are rarely found in the country.

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12. At this stage it is necessary to circulate the content of the TOC, as well as the suggestions for modifications described in paragraph 11, to all probable users and, on the basis of their comments, introduce changes that are deemed appropriate.

13. Procedure described in paragraphs 8 to 12 should succeed in turning TOC into a reasonably suitable tool for capturing and presenting occupational information of the country. =

14. Final part of the work of producing a National Standard Classification of occupations (NSCO) would consist of:

(a) writing an introduction about the main conceptual and structural characteristics of the classification in question;

(b) providing codes and descriptions of the content of each occupational group of the classification;

(c) providing an alphabetical and a numerical index of occupational titles with codes relating to the basic level of the classification, so that users of the NSCO can find without difficulty the exact place in the classification for any of the jobs that they may be interested in.

15. For the purposes of writing occupational group descriptions one should use as a starting point

descriptions which exist in the model that was originally chosen. Of course, a good number of modifications must be introduced, notably in connection with the groups that were split, combined, or created. In addition, if there happens to be available information which shows that in the case of some groups a part of the descriptions are irrelevant, or that they should be enlarged, then = suitable modifications should be introduced. In short, effort should be made to ensure that the descriptions are "tailor made" to national circumstances, to the extent that it is possible.

16. Procedure that is described in paragraph 15 above assumes that the field work of collecting job information and writing job descriptions, as well as those of the individual occupations, has not started or is in an early stage. Should the situation be to the contrary, then, of course, group descriptions, especially at the basic level of the classification - where descriptions include listings of the main tasks - should be adapted in accordance with occupational descriptions prepared for the Dictionary of occupations.

17. It may be argued that one should wait for the occupational descriptions prepared for the Dictionary of occupations to be completed before finalising the work of group descriptions, and in particular of those at the lowest level of aggregation. The answer in part depends on the time factor, of course. In addition, as a rule, when job descriptions are prepared for the Dictionary they do not demand that extensive changes be introduced in the occupational groups' descriptions. It should be also remembered that, as already mentioned, a classification of occupations should be permanently maintained. As part of the ongoing maintenance system, supplements could be published with titles, codes, new job descriptions and new jobs, as well as with modifications that may have been introduced in the descriptions of the occupational groups belonging to the NSCO.

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HOW TO PRODUCE A NATIONAL DICTIONARY OF OCCUPATIONS

What is a national dictionary of occupations?

18. A national dictionary of occupations (NDO) represents one of the two main components of a National Standard Classification of occupations, the other one being the classification system according to which jobs are classified into detailed occupational groups and further aggregated. An NDO should consist of:

(a) a set of descriptions of tasks and duties of the occupations which = exist in the country and for which information is available, with codes showing where each of these occupations are to be classified in the National Standard Classification of occupations.

(b) an alphabetical and a numerical index of the occupational titles with corresponding codes;

How to proceed

19. There are three main phases concerning the production of a NDO:

- (a) arriving at organisational and training decisions;
- (b) undertaking and carrying out job analysis (including systematic descriptions);
- (c) writing and finalising occupational descriptions.

Organisational and training decisions

20. Producing an NDO is a long and costly operation and therefore care should be taken that it is well organised from the start. Some of the decisions that must be taken can be summarised as follows:

- (a) setting up an advisory committee;
- (b) location of the project;
- (c) recruitment of professional - including Project Manager - and secretarial staff;
- (d) training of professional staff;
- (e) development of record-keeping and office management;

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(f) agreement, after a critical review by the Advisory Committee, on the existing Tentative National occupational Classification (TOC), or National Standard Classification of occupations (NSC0) - see paragraphs 9 to 12 - as a framework for job analysis;

(g) agreement on the method to be applied in job analysis.

21. A part of the training of the professional staff should consist of practicing job analysis and job descriptions in the establishment where the project is located, and undertaking a pilot study in the selected enterprises.

Job analysis =

22. Job analysis is a process of collecting, interpreting and presenting, in a systematic manner, information on essential characteristics of jobs. The formula usually used is to obtain answers to the

following questions:

- (a) what the workers actually do - what are the tasks and duties of the job?
- (b) how are these tasks performed and under what conditions - what materials, tools, machines, equipment, procedures, principles, guide-lines, etc. are used in the execution of the jobs?
- (c) why the workers do it - the purpose of each task, or of the set of tasks that constitutes the job in question? (see paragraph 7);
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- (d) what skills (can be broken down into the skill level and skill specialisation) are necessary to fulfill the requirements of a given job, i.e. degree and kind of knowledge of different subjects, materials, tools, machines, final products etc. It should be stressed, however, that the concern here is about job requirements related to skills, and not about personal skills of the worker.

23. There are two main stages in the job analysis process:

- (a) job information collection;
- (b) interpretation and presentation of the collected information in a systematic form.

Job information collection
and presentation =
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24. Job information can be obtained by using one or a combination of the following procedures:

- (a) undertaking field work, i.e. collecting information directly from enterprises and establishments;
- (b) studying various reference materials and having in-depth consultations with relevant experts and practitioners (office work).

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25. It is widely accepted that the first procedure should be used, mainly for the two following reasons: (a) information collected should concern the existing jobs - jobs as they are at the time when the work of job analysis is being undertaken; (b) possible differences between the title of a job and its content - a job with the same content may be known by different titles in different, enterprises, industries or regions, and the other way around - should be discovered by the analyst.

26. Certain decisions have to be made before the actual work on information collection begins. First, as all jobs cannot be analysed simultaneously, priorities have to be fixed, in the sense of which groups of

jobs or which industries should be first designated for job information collection. Rs experience shows that industry-oriented job = information collection is the speediest method, in most cases the decision concerns industries. Often these priorities are determined by national plan demands, vocational training programmes, etc. If that is not the case the usual approach is to start with industries which, according to the existing information, employ important segments of the labour force. =

27. Second, it should be decided which enterprises are to be selected for gathering job information. The guiding principles should be:

(a) to select different sized enterprises, for instance small, medium, and large (more precise meaning of these terms will depend on the country in question);

(b) to select enterprises in various regions, allowing for the possibility of regional/geographical variations in job titles and contents; =

(c) to select enterprises in view of obtaining a good coverage of the range of the existing forms of work organisation and technologies i.e. different technological levels.

28. It is worth noting that the success of the operation will, among other things, depend on the good will and co-operation of the employers and employees of the selected establishments/enterprises. It is, therefore, important that contacts are from the very beginning made in a friendly and considerate manner, and that the purpose of the exercise is clearly explained.

Information collection methods

29. Analysts usually apply one or a combination of the following three methods:

(a) a questionnaire to be filled in by the worker and his immediate superior;

(b) an interview with the worker and his superior;

(c) direct observation at the workplace.

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30. Each of these methods has its advantages and disadvantages. A well structured questionnaire can get essential information quickly, and the fact that it was structured in advance facilitates the processing of the responses. However a questionnaire suited to all jobs is not easily drawn up and may be unduly long. Interviews conducted in an effective way obtain precise and complete information, but they are time

consuming. Direct observation is most suitable for repetitive work, but is almost useless where the job calls for considerable personal judgment, intellectual ability, or for fast decision/intervention in the unforeseen but often dangerous situations, as in managerial, administrative, or machine operating and driving jobs.

31. In practice a combination of all three methods is very often used; basic information obtained by questionnaire is checked and supplemented by interview and/or observation. The important thing is to adapt the methods to the characteristics of the jobs and the enterprise.

Systematic job descriptions

32. The next step is to do the work of analysing, verifying and processing the collected job information and presenting it in a clear and systematic manner. Some of it could be done simultaneously with the field work. In any case, it should be done as soon as possible after the completion of the field work.

Occupational descriptions

33. If successfully carried out, the job analysis process provides factual information on the main individual jobs of the economy. In a dictionary of occupations an occupation usually represents the smallest segment of work to which a separate code and title are allotted. This means that the obtained descriptions of jobs should be further verified and analysed in order to combine the major duties of all those jobs which belong to a unique and distinct occupation, and to summarise them into one occupational description. These descriptions should have the following parts:

(a) Occupational identification - occupational title, (including alternate titles and specialisations, if any) and code number;

(b) Definition summary of the essential elements of the occupation;

(c) Description - in a logical sequential or functional order, of the tasks that constitute the occupation, i.e. a detailed description of "what", "how", "why", under what conditions, etc.

(d) Listing - of the tasks which are not inherent to the job, but may be performed at irregular intervals, voluntarily, on an emergency basis, etc. The listing of these "may" tasks, after the descriptions, can also be used to cover possible variations of the ways in which the work is organised in different establishments.

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34. Some occupational dictionaries may include coded descriptions which describe "occupational profiles" or, in other words, skills required by the occupation for successful performance of its tasks, including knowledge, experience, adaptability to working conditions, mental and physical ability, work and social aptitudes, and other similar characteristics.