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To: Ministers responsible for UNESCO
Ministers in charge of Education including
Higher Education
Ministers in charge of Science
Ministers in charge of Culture
Ministers in charge of Labour
Directors of National Statistical Offices

4 February 2013

REF: UIS-13/DIR/EIDA/ISCED_FOE/011

Subject: Global Consultation for the revised ISCED Fields of Education and Training

Sir/Madam,

At the 37th UNESCO General Conference in the fall of 2013, the UNESCO Institute for Statistics (UIS) will present for adoption the revised International Standard Classification of Education (ISCED) Fields of Education and Training, originally developed in 1976 and revised in 1997.

ISCED is the international classification used to ensure cross-national comparability of data about education systems on the basis of uniform and internationally agreed definitions. Following a resolution at the 34th General Conference, and in light of major changes in education since 1997 the ISCED levels of education were revised and a new classification (ISCED 2011) was adopted by the 36th General Conference, with the understanding that a separate review would subsequently be taken of the fields of education and training.

In early 2012, the UIS established a Technical Advisory Panel for the ISCED Fields of Education and Training, which is comprised of international and regional experts specializing in comparative education statistics and classification systems including representatives from its data collection partners Eurostat and OECD and from the ILO. The current proposal has been drafted in close cooperation with these partners and under the guidance of the Technical Advisory Panel.

At this stage, we would like to invite you to participate in the global consultation on the revised ISCED Fields of Education and Training classification (ISCED-F), in order to better reflect the perspective of Member States in the final proposal. We would appreciate if you could provide your feedback on the attached draft ISCED-F text.
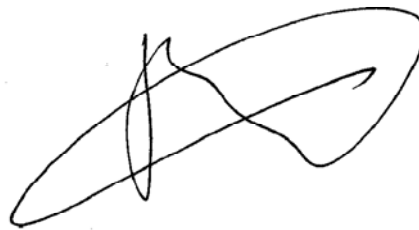
The revisions to the ISCED Fields of Education and Training will have important implications for how cross-national data and statistics on fields of education and training will be collected, processed and interpreted in the future. Please note that the current ISCED 1997 Fields of Education remains as the framework for UIS data collection and statistics on these fields until the proposed revisions have been approved (ISCED 1997 can be consulted at the following link: www.uis.unesco.org/Library/Documents/isced97-en.pdf). Member States will be informed of any changes in questionnaires and provided with new guidelines and training for implementation of the new ISCED Fields of Education and Training after their adoption by the UNESCO General Conference.

Your response **prior to 31 March 2013** will allow sufficient time for the consideration of comments and feedback for the final version of the revised ISCED to be submitted for adoption by the 37th UNESCO General Conference in 2013.

Please send your responses by email to isced@unesco.org. The revised ISCED Fields of Education and Training classification is available in English, French and Spanish at the following webpage: www.uis.unesco.org/isced.

Thank you in advance for your participation in the ISCED Fields of Education and Training global consultation. We count on your continued support for the work of the Institute, and look forward to receiving your feedback.

Yours faithfully,

Hendrik van der Pol
Director

cc: Permanent Delegations to UNESCO
National Commissions for UNESCO
Permanent Observer Missions to UNESCO
UNESCO Regional, National and Cluster Offices

International Standard Classification of Education: Fields of Education and Training 2013

Consultation Draft

February 2013

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1. Introduction

1. The International Standard Classification of Education (ISCED) is a framework for assembling, compiling, and analysing cross-nationally comparable statistics on education. ISCED is a member of the United Nations International Family of Economic and Social Classifications and is the reference classification for organizing education programmes and related qualifications by levels and fields of education. First developed in the mid-1970s by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the ISCED has been revised twice – most recently in 2011. The ISCED is a product of international agreement and is adopted formally by the General Conference of UNESCO Member States.

2. The latest revision, ISCED 2011, concentrated primarily on changes to the levels of education of programmes and introduced, for the first time, a classification of levels of educational attainment based on qualifications.

3. During the review process which led to the 2011 revision, it was decided that the fields of education should be examined in a separate process with the view to establishing an independent but related classification which could be updated according to a different frequency, if appropriate, from any future revision to the levels of education and educational attainment. The classifications of levels and fields will remain part of the same family of classifications. Accordingly, this new classification will be referred to as the ISCED Fields of Education and Training[1].

2. Aim of this manual

4. The availability of a common international classification is only the first step towards the collection of comparable data. The second step is to ensure a consistent application of the classification across countries. Thus, the aim of this manual is to offer clear guidelines on how to apply the ISCED Fields of Education and Training. This is done by both specifying a number of criteria to be observed and by providing lists of inclusions and exclusions from each field of education and training. The detailed ISCED Fields of Education and Training classification is described in Appendices 1 and 2.

3. Units of classification

5. The basic units of classification in ISCED are *education programmes* and their related *qualifications*. These are the same units of classification in the ISCED Fields of Education and Training.

   a. An *education programme* is '*a coherent set or sequence of educational activities designed and organized to achieve pre-determined learning objectives or accomplish a specific set of educational tasks over a sustained period of time'*. *Educational activities* are '*deliberate activities involving some form of communication intended to bring about learning'*.

   b. A *qualification* is the '*official confirmation, usually in the form of a document certifying the successful completion of an education programme or stage of a programme'*.

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[1] ISCED 2011 includes two parallel classifications of the levels of education programmes, ISCED-P, and of the levels of educational attainment, ISCED-A. In line with this, the classification of fields will be ISCED-F.

6. The ISCED Fields of Education and Training classifies education programmes and related qualifications by fields of study:

    a. A *field* is the *'broad domain, branch or area of content covered by an education programme or qualification'*.

7. Fields of education and training and levels of education or educational attainment are cross-classification variables within ISCED and are therefore independent of each other. In particular, unlike the original ISCED (ISCED 1976), fields are not defined within levels of education. This is because at some levels of education, while programmes and qualifications are only available in some fields of education and training, this can vary between countries or over time.

4. Scope and structure of the classification

8. This classification has been designed principally to describe and categorize fields of education and training at the secondary, post-secondary and tertiary levels of formal education as defined in ISCED 2011 though it may be used for classifying programmes and qualifications offered at other levels. The classification may also be used in other contexts for example to classify the subject matter content of non-formal education, initial and continuing vocational training or informal learning.

9. The current revision builds on earlier versions of the classification in order to ensure as far as possible that there is comparability over time. It has been designed as a three-level hierarchy between broad fields (the highest level), narrow fields (the second level) and detailed fields (the third level), and uses a four-digit coding scheme. There are 11 broad fields, 29 narrow fields and about 110 detailed fields.

Level	Categories of fields	Number of fields
1st level	Broad field	11
2nd level	Narrow field	29
3rd level	Detailed field	$\cong$110

10. The detailed fields (the third level of the classification) are intended mainly for use at the tertiary level of education and, for vocational education and training programmes and qualifications at secondary and post-secondary non-tertiary levels. Programmes and qualifications of general education at secondary and post-secondary levels are usually not associated with any particular field as they typically cover a broad range of subjects with little or no specialisation in a particular field or fields. They will typically be classified within the broad field 00 'Generic programmes and qualifications'.

11. Whilst the classification has been developed mainly for the purpose of compiling cross-nationally comparable statistics on education it can also be used in national contexts especially in countries which have not yet developed their own standard national classifications of fields of education. It is likely that countries wishing to adopt this classification for national use will need to adapt or adjust certain groupings of fields to better reflect the incidence and/or range of fields available to study in the country and to meet national needs for reporting education data of this type.

5. Rationale of the Classification

12. The classification of fields of education and training follows a subject content approach. This is the same approach as used in previous versions of the ISCED (1976, 1997 and 2011). Where content is closely related, subjects are grouped together to form the broad, narrow and detailed fields of the classification, based on the similarity of the subject matter. The aim is to classify education programmes and their related qualifications by fields of education and training on the basis of the content of the programme and not the characteristics of the intended participants.

13. It is the **main subject content** which determines the field of education and training into which a programme or qualification should be classified. Subject matter is the factual, practical and theoretical knowledge imparted during the programme and which is recognised by the related qualification. This knowledge is applied to particular types of problems or for specific purposes which may be abstract (e.g. philosophy), practical (e.g. engineering) or both (e.g. architecture). For practical purposes, the main subject of a programme or qualification is determined by the detailed field in which the majority (i.e. more than 50%) of students' intended learning time (or credits) is spent. Learning time includes that spent in lectures and seminars, as well as in laboratories or on special projects. Private study time is excluded (as it is difficult to measure). Programmes and qualifications are classified in the detailed field containing their main subject.

14. Two programmes or qualifications belong to the same field if the main subjects studied are the same or are sufficiently similar. In developing the structure of the classification, the following criteria were used in **priority order** when determining the degree of similarity of the subject matter content in order to classify the fields of education and training into broad, narrow and detailed fields:

   a. Theoretical knowledge content (i.e. the ideas and concepts involved and their use in explaining facts and predicting outcomes).

   b. Purpose of learning (i.e. the intended use of the knowledge, skills and competencies gained).

   c. Objects of interest (i.e. the phenomena, problems or entities being studied).

   d. Methods and techniques (i.e. procedures for learning and applying the skills and knowledge gained).

   e. Tools and equipment (i.e. the instruments and implements which an individual learns to use or operate).

15. Ideally, the classification would be broadly 'balanced' across broad fields at least at the international level meaning that across the world as a whole no single broad field should dominate. For example, when counting the number of enrolments in or graduates from education programmes, disproportionate numbers of enrolments/graduates concentrated in one broad field rather than another are not expected. However, given the wide variations between countries and also between levels of education it is not possible to develop a single classification which is balanced for all countries or for all levels of education.

6. Inter-disciplinary or broad programmes and qualifications

16. Inter-disciplinary or broad programmes and qualifications are those which combine **two or more** detailed fields of education and training where no single detailed field represents more than 50% of the intended learning time. In this classification, the 'major subject rule' is used to determine into which narrow field they should be classified. That is, the leading subject determines the (narrow) field. The criterion for determining the

dominant subject is the intended learning time or credits spent in lectures and seminars, as well as in laboratories or on special projects. Private study time is excluded (as it is difficult to measure). These inter-disciplinary programmes should be classified by using '8' at the detailed field level. Thus all inter-disciplinary study will be separately identified and, at least, the most dominant narrow field of the programme or qualification will also be known.

Example 1: A programme consisting of equal parts of sociology (0314), political science (0312) and economics (0311) should be classified as 0318 ('Inter-disciplinary programmes and qualifications involving social and behavioural sciences').

Example 2: A programme that mainly includes subjects within the area of information and communication technologies but where no single detailed field dominates should be allocated to detailed field 0618 ('Inter-disciplinary programmes and qualifications involving information and communication technologies') even if a certain amount of computer engineering (detailed field 0714 'Electronics and automation') is included.

Example 3: A broad programme in business and administration, consisting of management, financing, sales and marketing where no single detailed field dominates should be classified as 0418 'Inter-disciplinary programmes and qualifications involving business and administration'.

17. Even where the share of time devoted to two different narrow fields is roughly equal, the field in which most time is spent should be chosen even if the relative shares are 51% to 49%. Where the relative shares are exactly 50:50 one narrow field still needs to be chosen. In such cases, it is recommended to select the field listed first in the title of the programme or qualification. The "major subject rule" is the only feasible solution for classifying inter-disciplinary programmes and qualifications as long as only one code can be assigned as is recommended in this manual. However, users who are able to assign two or more codes[2], may be able to classify inter-disciplinary programmes or qualifications to combinations of fields.

18. Programmes or qualifications covering two or more detailed fields where one detailed field represents more than 50% of the intended learning time should be classified in that detailed field.

Example 4: A programme majoring in mathematics with a minor in French should be classified as 0541 'Mathematics'.

19. Programmes and qualifications aimed at one specific vocational field consisting also of supporting subjects from other fields are *not* considered as inter-disciplinary programmes or qualifications and should be classified according to the specific vocational field.

Example 5: In a programme in electrical installation, more time may be devoted to other supporting subjects (language, mathematics, natural science etc.) than the intended vocational subject. However, this programme should be classified as 0713 'Electricity and energy' and not as an inter-disciplinary programme.

7. Coding of other difficult cases

Not further defined and not elsewhere classified

20. Two common situations need to be catered for within the classification structure:

   a. Cases where there is no further information about a given programme or qualification than that known at a higher level of the classification. These are

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[2] For example, where data are stored in registers and do not need to be collected by means of household or other surveys.

known as cases which are 'not further defined' and are designated by the use of '0' at the narrow or detailed fields levels of the classification (as appropriate).

Example 6: *A programme in engineering where no more information is available should be classified as 0710 'Engineering and engineering trades not further defined'. Such cases should not be considered as inter-disciplinary or broad programmes.*

Example 7: *A programme in services where no more information is available should be classified as 1000 'Services not further defined'.*

b. Cases where the particular detailed field is known but is not catered for in the classification. These are known as cases which are 'not elsewhere classified' and are designated by the use of '9' at the detailed field level of the classification (i.e. as the last digit).

Example 8: *A programme in artificial intelligence should be classified as 0619 'Information and Communications Technology not elsewhere classified'.*

21. Where the field of study is completely unknown, a code of '9999' can be assigned or, in surveys which are limited to the narrow field level only, '999'.

8. *Application of classification criteria*

Subject matter similarity across levels of education

22. All education programmes and qualifications are associated with a blend of theoretical understanding, factual knowledge and practical skills. Two programmes or qualifications at different levels of education will belong to the same field of education and training if they cover similar types of theoretical, factual and practical knowledge or skills even if the relative emphasis given to each may be different. For example, a tool-making programme includes some of the mathematics, factual knowledge and engineering theory used in mechanical engineering. Thus tool-making and mechanical engineering should have the same field of education and training (0715 'Mechanics and metal trades') despite being associated with different levels of education or educational attainment.

Subject matter similarity within levels of education

23. By contrast, 'Nursing and midwifery' is classified as 0913 and 'Medicine' as 0912. Whilst they are closely related there are differences in subject content especially the purpose of learning (doctors and nurses are expected to acquire and apply different knowledge, skills and competencies), methods and techniques and even tools and equipment. There is also a strong interest amongst users of data generated using this classification to be able to differentiate between nurses and doctors. In some countries, doctors and nurses study and qualify at the same levels of education. In these cases, differentiation between them is more easily made through fields than levels of education.

Borderline cases

24. Borderline cases occur where a programme or qualification is closely related to two different fields. For example, veterinary studies has similarities both with medicine (theoretical knowledge especially but also purpose of learning) and animal husbandry (the objects of interest, methods and techniques, and tools and equipment). The latter has been chosen in order to maintain correspondence between previous versions of ISCED, with key related classifications (FoS, ISIC) and to preserve a broad field devoted to (Human) Health and Welfare which is key for national policy analysis.

25. Another example is care. Medical care has been classified in narrow field 091 'Health' and non-medical care in narrow field 092 'Welfare' on the grounds that the theoretical knowledge required for the two fields is very different.

Generic programmes

26. Generic programmes which cover a range of subjects such as languages and literature, social and natural sciences, mathematics, arts and/or physical education should be classified in 0011 'Basic programmes and qualifications'. This should be the case even if there is **some** concentration on a certain category of subject matter such as humanities, social science, natural science etc which can occur especially at secondary level. They should not be treated as inter-disciplinary or broad programmes.

Vocational programmes and qualifications including supporting subjects

27. In vocational programmes, for example some long programmes in upper secondary education, more time in total may be devoted to several other supporting subjects than the specific subject matter content of the 'intended occupation or class of occupations'. Nevertheless, such programmes and their resulting qualifications should be classified in the vocational field associated with the intended occupation or class of occupations. This is a potential exception to the main rule on the classification of inter-disciplinary programmes and qualifications as it is important to be able to identify separately target occupation(s) of vocational programmes and qualifications. In practice, it is likely that the field of the target occupation(s) is the one to which the greatest intended learning time is devoted.

    Example 9: A health care programme should be classified in detailed field 0913 'Nursing and midwifery', even if more intended learning time in total is devoted to other subjects than 'nursing'.

Teacher training programmes and qualifications with a subject matter speciality

28. Teacher training programmes and qualifications focusing primarily on teaching a subject matter speciality should be classified as teacher training, even if the main content is a subject matter speciality. The same principle should be applied to programmes and qualifications which combine education or teacher training and a specialised subject. Note this is an exception to the main rule on the classification of inter-disciplinary programmes and qualifications as it is important to be able to identify separately teacher training from other detailed fields especially in analyses of education systems.

Education programmes and qualifications for engineers

29. Education programmes and qualifications for engineers should be included in the detailed fields under 071 'Engineering[3] and engineering trades' or, if for civil or construction engineers, in 0732 'Building and civil engineering'. Even if the studies are oriented towards computing, media techniques, textiles, food etc., they should be classified under 071 or 0732 if the **emphasis** is on designing and constructing machinery, engines, electrical devices, electronics, computers etc. (071) or buildings, roads and bridges (0732).

Manufacturing programmes

30. Manufacturing programmes should be classified in the detailed fields under 071 'Engineering and engineering trades' if the emphasis is towards the engineering industry, i.e. on metals, mechanics, machinery, engines, electrical devices etc.

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[3] Note that Engineering is a much broader concept than an Engineer, who works as a professional in Engineering, but many other categories also work in this field and there is no difference intended between detailed fields 071 and 072 in terms of level of education.

31. Other manufacturing programmes and qualifications should be classified under 072 'Manufacturing and processing'. This is the case where the emphasis is on manufacturing specific products such as food, textiles, shoes, paper, furniture, glass, plastic etc., However, manufacturing of metal products is excluded from narrow field 072 and included in detailed field 0715 'Mechanics and metal trades'.

Languages

32. Languages should be classified as either detailed field 0232 'Literature and linguistics' or detailed field 0231 'Language acquisition' based on the characteristics of the intended participants (as, in this particular case, this is a proxy for the subject matter content of the studies). There is a clear difference between the teaching style, theoretical content and purpose of learning of programmes and qualifications designed for existing native or fluent speakers of a language and those designed for speakers of other languages who are trying to acquire a given language. In the former case, the emphasis will be on the literature and linguistics of the language rather than the grammar and vocabulary (at least at secondary and tertiary levels of education). In the latter case, the focus will be on grammar and vocabulary and perhaps culture and rather less on literature and linguistics.

9. Aggregations for analysis and publication

33. This classification can be used at any degree of detail both in data collection and publication depending on the information needs. It is intended to be sufficiently flexible to cater for most purposes of analysis and presentation.

34. There is often a need for a broad aggregation for publication purposes. The UNESCO Institute for Statistics (UIS) publishes data at the broad field level as in, for example, its annual *Global Education Digest*.

35. Due consideration should be paid to the purpose of the analysis. However, in aggregating for publication purposes, a balanced grouping may be an advantage as this might give a better picture of the field structure. Other groupings than the one currently used by the UIS can be developed.

10. Relation to ISCED 2011 and other classifications

Relation to ISCED 2011

Orientation and fields

36. **Orientation** (general or vocational education) and **fields** of education and training are two **different** dimensions in ISCED and must not be confused.

37. Programmes and qualifications which are classified as general education under orientation should be classified by fields according to their main subject content.

   Example 10: An education programme or qualification in mathematics may be general education for orientation, but the detailed field should be 0541 'Mathematics'.

Qualifications obtained through validation processes

38. Qualifications can be obtained through: (i) successful completion of a full education programme; (ii) successful completion of a stage of an education programme (intermediate qualifications); or (iii) validation of acquired knowledge, skills and competencies, independent of participation in an education programme (ISCED 2011 para 20). The basis for statistics on educational attainment is the classification of

qualifications officially recognized by the relevant national authorities. Where qualifications are the outcome of a validation or recognition process as described in point (iii) above, national and regional qualification frameworks, where they exist, can provide guidance in allocating a field of education and training.

Correspondence between ISCED-F and ISCED 1997 (and 2011) Fields of Education

39. There has been some reassignment of narrow or detailed fields between broad fields in the ISCED Fields of Education and Training 2013 (ISCED-F) in line with the principles of classification described in Section 5 Rationale of the Classification and, in particular in paragraph 15. These are shown in the following correspondence table (Table 1).

40. The main changes are:

   a. The splitting of Field 22 'Humanities' in ISCED 1997 into two narrow fields: 022 'Humanities (except languages)' and 023 'Languages'.

   b. The splitting of Broad Group 3 'Social sciences, business and law' in ISCED 1997 into two broad fields: 03 'Social sciences, journalism and information' and 04 'Business, administration and law'.

   c. The creation of a new narrow field 052 'Environment' within the broad field 05 Natural sciences, mathematics and statistics by splitting Field 42 'Life sciences' in ISCED 1997 and combining with some of Field 62 'Agriculture, forestry and fishery'.

   d. The splitting of Broad Group 4 'Science' in ISCED 1997 into two broad fields: 05 'Natural sciences, mathematics and statistics' and 06 'Information and Communication Technologies'.

   e. The creation of a new narrow field 0712 'Environmental protection technology' by transferring most of Field 85 'Environmental protection' from the Broad Group 8 'Services' to the new broad field 07 Engineering, manufacturing and construction'.

   f. The renaming of Broad Group 6 'Agriculture' in ISCED 1997, to create a new broad field 08 'Agriculture, forestry, fisheries and veterinary' and the transfer of some of Field 62 'Agriculture, forestry and fishery' to the new narrow field 052 'Environment'.

   g. The creation of a new narrow field 102 'Safety services' from the remains of Field 85 'Environmental protection' in ISCED 1997.

Table 1: Correspondence between ISCED Fields of Education and Training 2013 (ISCED-F) and ISCED 1997 Fields of Education

ISCED Fields of Education and Training 2013	ISCED 1997 (and 2011) Fields of Education
00 Generic programmes and qualifications	0 General programmes
001 Basic programmes & qualifications	01 Basic programmes
002 Literacy and numeracy	08 Literacy and numeracy
003 Personal skills	09 Personal development
01 Education	1 Education
011 Education	14 Teacher training and education science
02 Arts and humanities	2 Humanities and Arts
021 Arts	21 Arts
022 Humanities (except languages)	22 Humanities
023 Languages	
03 Social sciences, journalism and information	3 Social sciences, business and law (minus business and law)
031 Social and behavioural sciences	31Social and behavioural science
032 Journalism and information	32 Journalism and information
04 Business, administration and law	3 Social sciences, business and law (minus social sciences)
041 Business and administration	34 Business and administration
042 Law	38 Law
05 Natural sciences, mathematics and statistics	4 Science (minus computing) plus natural parks and wildlife from 62 Agriculture, forestry and fishery
051 Biological and related sciences	42 Life sciences minus other allied sciences
052 Environment	Part of 42 Life sciences (other allied sciences), part of 62 Agriculture, forestry and fishery (natural parks, wildlife)
053 Physical sciences	44 Physical science
054 Mathematics and statistics	46 Mathematics and statistics
06 Information and Communication Technologies	4 Science (Computing only)
061 Information & Communication Technologies	48 Computing
07 Engineering, manufacturing and construction	5 Engineering, manufacturing and construction (plus most of 85 Environmental protection)
071 Engineering and engineering trades	52 Engineering and engineering trades (plus most of 85 Environmental protection)
072 Manufacturing and processing	54 Manufacturing and processing
073 Architecture and construction	58 Architecture and building
08 Agriculture, forestry, fisheries and veterinary	6 Agriculture (minus natural parks and wildlife)
081 Agriculture	62 Agriculture, forestry and fishery (minus natural parks and wildlife)
082 Forestry	
083 Fisheries	
084 Veterinary	64 Veterinary
09 Health and welfare	7 Health and welfare
091 Health	72 Health
092 Welfare	76 Social services
10 Services	8 Services (minus most of 85 Environmental protection)
101 Personal services	81 Personal services
102 Safety services	Part of 85 Environmental protection (community sanitation and labour protection and security)
103 Security services	86 Security services
104 Transport services	84 Transport services

Relation to Eurostat's Fields of Education and Training (FoET 1999)

41. Eurostat's Fields of Education and Training 1999 (FoET 1999) classification was developed from the ISCED 1997 classification of fields of education and is consistent with it, apart from minor changes in wording, at the first and second levels (and digits). It is a three-level (and 3-digit) hierarchical classification and was the initial starting point for the current revision of ISCED-F.

42. FoET 1999 is used internationally in different data collections, for example:

    - Administrative data on enrolments and graduates

    - Certain household surveys

    - Student assessment surveys

43. The 1993 Australian Bureau of Statistics Classification of Qualifications (ABSCQ 1993) was used extensively in the development of the FoET 1999. Although ABSCQ was superseded in 2006 by the Australian Standard Classification of Education (ASCED), some concepts and text from ABSCQ 1993 are used in in the ISCED-F classification as FoET 1999 was a starting point for the revision of the ISCED fields.

Relation to the International Standard Classification of Occupations (ISCO-08)

44. The International Standard Classification of Occupations (ISCO-08) is a system for classifying and aggregating occupational information obtained by means of population censuses and other statistical surveys, as well as from administrative records. Its main purposes are to provide a basis for the international reporting and comparison of information about jobs and occupations and to provide a model for the development of national and regional classifications. According to ISCO-08:

    a. A *job* is defined as *a set of tasks and duties performed or meant to be performed by one person, including for an employer or in self-employment.[4]*
    b. An *occupation* is *a set of jobs whose main tasks and duties are characterised by a high degree of similarity*. A person may be associated with an occupation through their relationship to a past, present or future job.

45. ISCO-08 uses two basic criteria to arrange occupations into the major, sub-major, minor and unit groups of the ISCO classification structure: skill level and skill specialization.

    a. *Skill* is defined as *the ability to carry out the tasks and duties of a given job.*

    b. *Skill level* is a *function of the complexity and range of the tasks and duties to be performed.*

    c. *Skill specialization* is considered in terms of the *field of knowledge required, the tools and machinery used, the materials worked on or with and the kinds of goods and services produced*.

46. The four broad skill levels of ISCO-08 are defined with reference to levels of education of ISCED 1997 and can be mapped to the levels of education of ISCED 2011. This does not, of course, imply that the skills necessary to perform the tasks and duties of a given job can only be acquired through formal education. The concept of skill specialization within ISCO-08 has some similarity with the fields of education and training within ISCED. However, ISCO-08 and ISCED classify different statistical units using different criteria. ISCED Fields of Education and Training classifies education programmes and

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[4] The most up-to-date definition of the concept of "job", a fundamental unit of analysis in labour statistics, may be found in the 'Resolution concerning statistics of work and the labour force' expected to be adopted by the 19th International Conference of Labour Statisticians in October 2013.

qualifications based on their subject content whilst ISCO-08 classifies jobs based on the skill level and specialization required to perform them. There is therefore not always a direct correspondence between the occupational and field groups of the two classifications though links clearly exist.

Relation to the Fields of Science and Technology (FoS 2007) classification

47. The Fields of Science and Technology 2007 classify R&D (Research and experimental development) and is part of the OECD Frascati Manual. The Fields of Science and Technology (FoS) was last revised in 2007. The 2007 FoS revision is available as an electronic annex. FoS is a two-level hierarchical classification. It has six major fields:

    1. Natural sciences
    2. Engineering and technology
    3. Medical and health sciences
    4. Agricultural sciences
    5. Social sciences
    6. Humanities

48. These six major fields are divided into approximately 40 second level fields.

49. The 2007 revision of the FoS was needed mainly due to emerging new fields like information and communications technology, biotechnology, nanotechnology and also the emergence of interdisciplinary sciences.

50. Both ISCO-08 and FoS 2007 have been used to identify new emerging fields to be considered for inclusion in ISCED-F.

51. The relevant parts of ISCED-F have also been compared with FoS in order to avoid unnecessary differences. However, it is recognised the FoS and ISCED-F have different purposes and it is not feasible to ensure a direct correspondence between the two classifications.

Appendix 1: ISCED Fields of Education and Training

Broad field	Narrow field	Detailed field
00 Generic programmes and qualifications	001 Basic programmes and qualifications 002 Literacy and numeracy 003 Personal skills	0011 Basic programmes and qualifications 00211 Literacy and numeracy 00311 Personal skills
01 Education	011 Education	0111 Education science 0112 Training for pre-school teachers 0113 Training for teachers without subject specialization 0114 Training for teachers with subject specialization 0118 Inter-disciplinary programmes and qualifications involving education
02 Arts and humanities	021 Arts	0211 Audio-visual techniques and media production 0212 Fashion, interior and industrial design 0213 Fine arts 0214 Handicrafts 0215 Music and performing arts 0218 Inter-disciplinary programmes and qualifications involving arts
	022 Humanities (except languages)	0221 Religion 0222 History and archaeology 0223 Philosophy and ethics 0228 Inter-disciplinary programmes and qualifications involving humanities
	023 Languages	0231 Language acquisition 0232 Literature and linguistics 0238 Inter-disciplinary programmes and qualifications involving languages
03 Social sciences, journalism and information	031 Social and behavioural sciences	0311 Economics 0312 Political sciences and civics 0313 Psychology 0314 Sociology and cultural studies 0318 Inter-disciplinary programmes and qualifications involving social and behavioural sciences
	032 Journalism and information	0321 Journalism and reporting 0322 Library, information and archival studies 0328 Inter-disciplinary programmes and qualifications involving journalism and information
04 Business, administration and law	041 Business and administration	0411 Accounting and taxation 0412 Finance, banking and insurance 0413 Management and administration 0414 Marketing and advertising 0415 Secretarial and office work 0416 Wholesale and retail sales 0417 Working place skills 0418 Inter-disciplinary programmes and qualifications involving business and administration
	042 Law	0421 Law 0428 Inter-disciplinary programmes and qualifications involving law

Broad field	Narrow field	Detailed field
05 Natural sciences, mathematics and statistics	051 Biological and related sciences	0511 Biology 0512 Biochemistry 0518 Inter-disciplinary programmes and qualifications involving biological and related sciences
	052 Environment	0521Environmental sciences 0522 Natural environments and wildlife 0528 Inter-disciplinary programmes and qualifications involving environment
	053 Physical sciences	0531 Chemistry 0532 Earth sciences 0533 Physics 0538 Inter-disciplinary programmes and qualifications involving physical sciences
	054 Mathematics and statistics	0541 Mathematics 0542 Statistics 0548 Inter-disciplinary programmes and qualifications involving mathematics and statistics
06 Information and Communication Technologies (ICTs)	061 Information and Communication Technologies (ICTs)	0611 Computer use 0612 Database and network design and administration 0613 Software and applications development and analysis 0618 Inter-disciplinary programmes and qualifications involving information and communications technologies 0619 Information and communication technologies not elsewhere classified
07 Engineering, manufacturing and construction	071 Engineering and engineering trades	0711 Chemical engineering and processes 0712 Environmental protection technology 0713 Electricity and energy 0714 Electronics and automation 0715 Mechanics and metal trades 0716 Motor vehicles, ships and aircraft 0718 Inter-disciplinary programmes & qualifications involving engineering and engineering trades 0719 Engineering and engineering trades not elsewhere classified
	072 Manufacturing and processing	0721 Food processing 0722 Materials (glass, paper, plastic and wood) 0723 Textiles (clothes, footwear and leather) 0724 Mining and extraction 0728 Inter-disciplinary programmes & qualifications involving manufacturing and processing
	073 Architecture and construction	0731 Architecture and town planning 0732 Building and civil engineering 0738 Inter-disciplinary programmes and qualifications involving architecture and construction

Broad field	Narrow field	Detailed field
08 Agriculture, forestry, fisheries and veterinary	081 Agriculture	0811 Crop and livestock production 0812 Horticulture 0818 Inter-disciplinary programmes and qualifications involving agriculture
	082 Forestry	0821 Forestry 0828 Inter-disciplinary programmes and qualifications involving forestry
	083 Fisheries	0831 Fisheries 0838 Inter-disciplinary programmes and qualifications involving fisheries
	084 Veterinary	0841 Veterinary 0848 Inter-disciplinary programmes and qualifications involving veterinary
09 Health and welfare	091 Health	0911 Dental studies 0912 Medicine 0913 Nursing and midwifery 0914 Medical diagnostic and treatment technology 0915 Therapy and rehabilitation 0916 Pharmacy 0917 Traditional and complementary medicine and therapy 0918 Inter-disciplinary programmes and qualifications involving health 0919 Health not elsewhere classified
	092 Welfare	0921 Care of the elderly and disabled adults 0922 Child care and youth services 0923 Social work and counselling 0928 Inter-disciplinary programmes and qualifications involving welfare
10 Services	101 Personal services	1011 Domestic services 1012 Hair and beauty 1013 Hotel, restaurants and catering 1014 Sports 1015 Travel, tourism and leisure 1018 Inter-disciplinary programmes and qualifications involving personal services
	102 Safety services	1021 Community sanitation 1022 Occupational health and safety 1028 Inter-disciplinary programmes and qualifications involving safety services
	103 Security services	1031 Military and defence 1032 Protection of persons and property 1038 Inter-disciplinary programmes and qualifications involving security services
	104 Transport services	1041 Transport 1048 Inter-disciplinary programmes and qualifications involving transport services

'8' is used at the detailed field level when classifying inter-disciplinary or broad programmes and qualifications to the narrow field in which the greater part of the intended learning time is spent. (See also the guidelines on 'Inter-disciplinary or broad programmes' in Section 6).

'0' is used when no further information is available about the field than the field description at the next higher level of the classification hierarchy (i.e. at the broad field or at the narrow field level).

'9' is used at the detailed field level when classifying programmes and qualifications which do not fit within any of the listed detailed fields.

'9999' or '999'' can be used in data collections if the field is not known or is unspecified