

ABSCQ

PART 1

THE CONCEPTUAL BASIS OF ABSCQ

INTRODUCTION

The ABS Classification of Qualifications (ABSCQ) is a statistical classification developed for use in the production and analysis of data on recognised formal post-school educational qualifications. The classification provides for the production of data on educational qualifications held by the population of Australia at the present time. It was initially developed for use in the 1991 Census of Population and Housing and has now been adopted as an ABS standard for use in other ABS surveys.

The classification has been designed for use in the collection and presentation of data on qualifications currently awarded in Australia. Qualifications no longer awarded in Australia and qualifications awarded overseas can also be classified using this system. In such cases, the qualifications are classified to the nearest equivalent contemporary Australian qualification.

The major objective in developing the classification was to foster the production of useful statistics on qualifications. One aim was to provide policy makers with data that would assist in planning for a better educated and more highly skilled population. Thus the classification has been designed:

- (a) to provide a framework for the coding of qualifications data from the 1991 Census,
- (b) to provide quality data on qualifications for analysis by users; and
- (c) to provide a framework to standardise the collection and production of statistics on qualifications.

Although designed primarily as a classification of qualifications already obtained, the ABS Classification of Qualifications may also be used in the production of statistics on educational courses which lead to these qualifications. The ABSCQ is suitable for use in other non-ABS collections, and use of the classification by other agencies is encouraged.

SCOPE OF THE CLASSIFICATION

In a general sense, the term 'qualification' may indicate that an individual has certain qualities such as knowledge and skills, or is 'qualified', in a particular field. This knowledge and these skills may be the result of experience, formal learning or informal learning. For the purpose of this classification, a 'qualification' is defined as an award for attainment as a result of formal learning from an accredited post-school institution.

Accreditation is a guarantee that the standards of a course, and the method of delivering that course, are appropriate to the level of the course. Accreditation powers are granted by Federal, State and Territory governments to two types of authorities:

- (a) higher education institutions which, by various acts of their establishment, are empowered to accredit their own courses; and
- (b) the various governmental statutory bodies which accredit tertiary award courses offered through:
 - institutes of TAFE;
 - those higher education institutions that are not self-accrediting; and
 - private education and training providers.

All State and Territory accreditation authorities currently observe the Register of Australian Tertiary Education (RATE) guidelines on course classification and nomenclature. In the ABSCQ, accredited post-school institutions include the above educational institutions and governmental statutory bodies. In addition, professional bodies which license people to work in particular occupations are included; for example, the various medical colleges which provide accreditation in post-basic medical specialisations.

All awards offered by the educational institutions and bodies outlined above are within the scope of the classification.

The following qualifications are not within the scope of the classification:

- (a) all education up to and including completion of secondary schooling, including Year 12 or equivalent;
- (b) awards for hobby or personal enrichment courses;
- (c) solely employer-based training or on-the-job training (this form of training is usually job/task specific);
- (d) awards from tertiary institutions which are not accredited by the government, and awards from accredited colleges which are not at an accredited tertiary standard; and
- (e) honorary degrees, as these may not be the result of formal learning, but rather an honour for distinguished service to the public.

OVERSEAS QUALIFICATIONS

It was decided for the purpose of this classification, that the most common qualifications from other countries, such as Bachelor of Science etc, can be classified to the Australian equivalent. Other less common overseas qualifications can be classified as far as possible through a query resolution process. The formal recognition of overseas qualifications is not undertaken by the ABS but by the National Office of Overseas Skills Recognition (NOOSR).

STRUCTURE OF THE CLASSIFICATION

Users of statistics on qualifications indicated a need for information on the levels of attainment as well as the fields of study of qualifications. The ABSCQ has therefore been designed to classify a qualification according to two elements – Level of Attainment and Field of Study. As a result, statistics on qualifications can be provided by level of attainment alone, field of study alone (in varying degrees of detail), or by level of attainment and field of study together.

If the classification is regarded as a matrix for level of attainment by field of study it is evident that not all fields of study relate to all levels of attainment, nor do all levels of attainment relate to all fields of study.

Level of Attainment is a function of the quality and quantity of learning involved in the course of study leading to the award of a particular qualification. Field of Study is a function of the main subjects studied in the course of study leading to the award of that qualification. Criteria for the disaggregation of each of these variables were developed, enabling the construction of a theoretical framework for the development of the classification.

LEVEL OF ATTAINMENT

Level of Attainment is a function of the quality and quantity of learning involved in the course of study leading to the award of a particular qualification. The award of a qualification is therefore an indication that the individual possesses knowledge and practical ability of a certain quality and quantity.

The **quality** of learning can be considered in terms of three elements – theoretical learning, factual learning and practical learning. Theoretical learning can be described as the understanding of principles, theories, ideas and the relationships between objects. Factual learning can be described as the understanding of sets of facts or information. Practical learning can be described as the ability to perform sets of tasks.

The **quantity** of learning can be considered in terms of total learning time generally necessary to obtain a particular qualification. This comprises two elements – previous educational attainment required for enrolment in the course of study leading to the qualification; and the amount of learning time necessary to complete the course of study.

Criteria for Level of Attainment

It can be seen from the above that the quality and quantity of learning, that is, the level of attainment, can be measured operationally in terms of certain criteria. In the ABSCQ these criteria are:

- (a) the minimum entry requirements for the course (i.e. the minimum amount of prior education needed to undertake the course of study at that level);
- (b) the duration of the course; and
- (c) the theoretical orientation of the course.

The **minimum entry requirements** refers to the minimum level of knowledge, understanding and skill required to successfully undertake a course of study at that level. However, age and/or experience are sometimes accepted as an indication that an applicant possesses sufficient knowledge to undertake a particular course of study successfully. Courses requiring higher levels of knowledge for entry are considered to be at higher levels of attainment.

The **duration of the course** is the minimum length of time necessary to successfully acquire the requisite knowledge and skills. Courses requiring greater time for completion are usually considered to be at higher levels of attainment. In the case of part-time courses, the equivalent full-time duration is considered.

The **theoretical orientation** of the course is measured in terms of the balance between theoretical, factual and practical learning. Courses at all levels involve each of these three types of learning and the relative significance of each varies according to the level of attainment. For example, in higher level qualifications theoretical learning is generally of primary significance while practical learning is of primary significance in qualifications at lower levels of attainment.

Application of the Criteria

The learning associated with a qualification can be analysed in terms of three variables: theoretical learning, factual learning and practical learning. While each of these are present in qualifications at all levels, each level of attainment is characterised by a typical blend of the three variables. That is, higher level qualifications are typically characterised by proportionally larger amounts of theoretical learning, whereas qualifications at the lower levels devote larger proportions of the course to practical learning experiences.

By combining the qualitative and quantitative aspects it is possible to construct criteria which can be applied to all qualifications. In practice the minimum entry requirements and the duration of a course taken together are usually sufficient to distinguish between different levels of attainment. When these two variables are identical, the theoretical orientation of each course is then considered.

Structure of the Level of Attainment Classification

The Level of Attainment classification has 7 categories:

- 1 Higher Degree
- 2 Postgraduate Diploma
- 3 Bachelor Degree
- 4 Undergraduate Diploma
- 5 Associate Diploma
- 6 Skilled Vocational Qualifications
- 7 Basic Vocational Qualifications

FIELD OF STUDY

Field of Study is defined as the subject matter taught in a course of study leading to the award of a particular qualification. The **Field of Study** of a qualification then, refers to a set of discrete pieces of factual and practical learning (subject matter). These discrete elements of subject matter are combined and related to each other by a body of theory which enables the subject matter to be applied to a particular type of problem or for a specific purpose. This purpose may be practical (e.g. engineering), abstract (e.g. philosophy) or both (e.g. architecture).

Therefore, field of study, at the broad classification level, is a function of the ways in which subject matter is manipulated or applied through a body of theory for the resolution of problems and the types of problems which are resolved. At finer levels of the classification, field of study is a function of the subject matter content. Therefore, two qualifications have the same field of study if the main subjects studied are the same. In practice, qualifications are classified in the same detailed field of study category if the main subjects studied are sufficiently similar for the purposes of the classification.

Fields of study are related to each other through the number of subjects they have in common, through the broad purposes for which the study is undertaken, and through the theoretical knowledge which underpins the subject matter. For example, biology is related to chemistry and physics because:

- in order to understand biology it is necessary to know some physics and chemistry;
- the study is undertaken for the same broad purpose of understanding natural phenomena; and,
- the same theoretical knowledge is applied, e.g. the scientific method and the nature of the universe.

Criteria for Field of Study

In the ABSCQ fields of study are classified into groups according to the following criteria:

- Theoretical content
- Purpose of learning
- Objects of interest
- Methods and techniques
- Tools and equipment

Theoretical content refers to the ideas and concepts included in a course of study. It can be defined as that part of the subject matter which links facts together to explain other facts and predict outcomes.

Purpose of learning refers to the ultimate aim of the skills and knowledge gained from a course of study. Courses of study generally focus on certain types of problems or sets of tasks. The purpose of studying these courses is, therefore, to learn to deal with those problems or to perform a set of tasks.

Objects of interest are the phenomena, problems or entities studied. They are the ‘things’ to which the student learns to apply the knowledge and skills of the course. They may, for example, be mathematical problems, vehicles requiring repair, people with a particular illness, or ideas and theories on the nature of truth. This element relates primarily to factual learning.

Methods and techniques are the specific procedures for applying the skills and knowledge gained in a course of study. They may, for example, be steps for solving mathematical problems, techniques for repairing vehicles, or procedures for treating particular ailments.

Tools and equipment are the instruments and implements which an individual learns to use and operate in the course of study. This element relates primarily to practical learning and is the application of the methods and techniques learned.

Application of the Criteria

At broad levels of aggregation, field of study can be differentiated according to the body of theory defined in terms of the purpose for which it relates and applies the subject matter components. In other words, two qualifications have the same broad field of study if:

- (a) the body of theory manipulates subject matter for the same broad purposes; and
- (b) the subject matter from which the theory is drawn is broadly the same.

All qualifications are associated with a blend of theoretical understanding, factual knowledge and practical skill. In trade qualifications, for example, the emphasis is primarily on practical skill, but a certain amount of theoretical understanding and factual knowledge is also necessary to enable the practical skill to be acquired and applied. If it can be determined that the factual knowledge and the theoretical understanding associated with such a qualification form part of the same body of knowledge as certain higher level qualifications, then it can be asserted that these qualifications have related fields of study.

For example, if a toolmaking qualification considers some of the mathematics, factual knowledge and engineering theory used in mechanical engineering, then it can be said that toolmaking and mechanical engineering are related fields of study at different levels of attainment.

The classification criteria have thus been used to determine the relationship between qualifications. For example, whether or not electrical trades qualifications are related to higher level qualifications in electrical engineering; and whether or not veterinary studies should be associated with medicine or animal husbandry. Any such criteria should be designed to enable the major requirements of users to be met and also to provide a reasonably accurate reflection of reality.

It follows from the above that theoretical understanding and factual knowledge are more important in determining broad field of study than practical skills, and that theoretical understanding is more important than factual knowledge. In order to reflect this, the criteria were applied in the order listed above to construct a three-tiered hierarchical classification.

This means that at the broadest level of the classification, the categories are distinguished from each other primarily on the basis of the theoretical content and purpose of learning. At the intermediate level, the categories are distinguished primarily according to purpose of learning and objects of interest (which refers to factual knowledge). At the most detailed level the categories are distinguished primarily according to methods and techniques, and tools and equipment. Of course in some fields of study theoretical content, purpose of learning and objects of interest are also important in distinguishing between categories at the most detailed level, and have been applied in successively finer degrees of detail when appropriate.

Structure of the Field of Study Classification

The field of study classification has a three-tiered hierarchical structure. The levels of this hierarchy are termed **broad fields**, **narrow fields** and **detailed fields**.

The **broad fields** of study are the broadest level of the classification and are denoted by 1-digit codes. The **narrow fields** are subdivisions of the broad fields and denoted by 2-digit codes, the first digit representing the relevant broad field and the additional digit representing the narrow field within the broad field. The **detailed fields** of study are the finest level of the classification and are subdivisions of the narrow fields. They are represented by 3-digit codes, the first digit representing the relevant broad field, the first and second digits representing the relevant narrow field and the first, second and third digits representing the detailed field within the narrow field.

The following demonstrates these conventions:

<i>Field of Study</i>	<i>Code</i>	<i>Title</i>
Broad Field	6	Engineering
Narrow Field	67	Automotive Engineering
Detailed Field	672	Vehicle Mechanics

There are 9 broad fields, 45 narrow fields and 187 detailed fields of study.

CODE CONVENTIONS

The ABSCQ uses a 4-digit code which is structured so that:

- the first digit indicates the level of attainment;
- the second digit indicates the broad field of study;
- the second and third digits indicate the narrow field of study; and
- the second, third and fourth digits indicate the narrow field of study.

For example, the code for a Certificate in Panelbeating is 7673.

The first digit indicates the level of attainment, i.e. Level 7, Basic Vocational Certificate.

The second digit indicates the broad field of study, i.e. Broad Field 6, Engineering.

The second and third digits indicate the narrow field of study, i.e. Narrow Field 67, Automotive Engineering.

The second, third and fourth digits indicate the detailed field of study, i.e. Detailed Field 673, Panel Beating.

Codes ending in '9' are allocated to known fields of study which may belong to a particular broad or narrow field of study but which are not common enough to form a distinct narrow or detailed field of study. These are the 'other' or 'not elsewhere classified'(nec) categories. These categories should not be used to code responses which are inadequately described or ambiguous.

Codes ending in '0' are assigned to known fields which cannot be coded to the most detailed field of study, but which can be coded to the narrow field of study. Codes ending in '00' are assigned to responses which can only be coded to a broad field of study. Both are described as 'not further defined' (nfd) codes. Codes ending in '000' are assigned to responses which contain only level of attainment information, i.e. there is no information about the field of study of the qualification.

Codes commencing in '0' are assigned to responses which contain no information about the level of attainment of the qualification. Such responses may contain information about the field of study of the qualification.

The codes '8' (for level of attainment) or '888' (for field of study) are assigned to responses which contain information about the level of attainment or field of study but which may be insufficient to code properly. The term used for these types of responses is 'uncodable'.

For the purpose of this classification, a qualification is defined as an award of attainment from an accredited post-school institution as the result of formal learning. If the qualification stated in a response does not meet this requirement then it is 'out of scope' and the code '9989' is assigned to that response. For example, qualifications such as Higher School Certificate, Senior Certificate, hobby and personal enrichment courses are 'out of scope'.

Further details regarding the coding methodology can be found in the publication *ABS Classification of Qualifications – Manual Coding System* (1265.0). This publication is intended primarily to enable users to assign ABSCQ codes to information about qualifications and contains coding indexes and a guide to using these indexes. For further information about this publication and related floppy disc products contact the Classifications, Standards and Dissemination Section of the Australian Bureau of Statistics on (06) 252 5589.

DESIGN CONSTRAINTS

The theoretical considerations for developing the classification were tempered by other statistical considerations such as the collection of data about qualifications and the statistical balance of the classification.

User Requirements

The attributes of qualifications which were of primary interest to users of ABS statistics were level of attainment and field of study. Therefore the ABSCQ was designed to classify an educational qualification to those two elements and the classification criteria were selected so as to enable the major requirements of users to be satisfied. However, where there was a known demand for separate information about a specific population, the classification criteria were applied in such a way as to enable this demand to be met. For example, 'Veterinary Science' and 'Veterinary Assisting' are classified together in a separate narrow field, 'Veterinary Studies' rather than classifying 'Veterinary Science' with 'Medicine' and 'Veterinary Assisting' with 'Nursing'.

Collectability

The degree of detail possible when using the Classification is dependent on the type of questions asked to collect the information and the type of answers which these questions elicit.

Various question formats and sequences were evaluated in Census tests and the final question wording was tested in the Census Dress Rehearsal conducted in 1990. The questions asked for each respondent's 'highest qualification' and the main 'field of study' for that qualification. A respondent's understanding of what these terms mean affect the type and detail of information provided.

A substantial programme of feasibility testing was undertaken to ensure that the distinctions made in the classification could be made on the basis of data typically provided in response to the Census questions. In a few cases changes were made to the classification structure where distinctions between categories were clearly not viable.

Statistical Balance

As a general principle a classification should be statistically balanced. Similar numbers of 'real-world' entities should be classified to each category at a particular level, however, categories which have been defined to reflect the real world will not always be statistically balanced. For example, many more people have "certificate" qualifications (including trade certificates), than "diplomas". To force categories to conform to size limitations would mean that the categories would not always be meaningful or useful. On the other hand the number of entities in each category should be sufficiently large to ensure that confidentiality of the data is not breached. The most detailed categories should contain a significant number of qualifications, so that small area data can be reported without identifying individuals. Where fields of study have very small numbers they have generally been assigned to a 'not elsewhere classified' category.

The ABSCQ was designed initially for use in the Census, and it is now being implemented in sample surveys which collect information about post-school qualifications. However, because data from sample surveys at the detailed field of study may be subject to high sampling errors, output data will generally need to be classified to the narrow or broad field of study only. The field of study classification has been designed so that most narrow fields are sufficiently large to allow output at the narrow field level in sample surveys.

Relatability to the Australian Standard Classification of Occupations (ASCO) – First Edition

Analysis of education in the context of the labour market typically involves the use of statistics on qualifications in conjunction with statistics on occupations. Efforts have been made to ensure that, where appropriate, data coded to the ABSCQ can be related broadly to data on occupations coded to ASCO First Edition.

The classification seeks to reflect an accurate and realistic application of the criteria to qualifications not occupations. To do otherwise would risk introducing a bias into the relationship between data coded to the two classifications, and this could result in a classification of qualifications which is not based on the intrinsic similarities of qualifications. In brief, whereas ASCO is a classification of the skills required to undertake jobs, the ABSCQ is a classification of the skills and knowledge possessed by the population in terms of formal qualifications.

Compatibility with Other Statistical Classifications

In developing the Level of Attainment and the Field of Study variables, a number of other statistical classifications were considered. Wherever practical, an attempt was made to apply the ABSCQ classification criteria in such a way as to facilitate meaningful comparability with data classified to these classifications. However, due to the differing conceptual bases and conflicting design constraints, such compatibility is limited.

These other statistical classifications include the 1986 Census Classification of Qualifications, the International Standard Classification of Education (ISCED) published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Field of Study Classification of Tertiary Education Courses (FOSCTEC) developed by the Department of Employment Education and Training (DEET).

1986 Census Classification of Qualifications

The 1986 Census classification used level of attainment as the basic category in the classification with fields of study allocated to different levels of attainment. That is, the fields of study may be different according to the level at which they were studied. The ABSCQ has maintained some degree of comparability with the 1986 Census classification. However, differences in the classification structure and coding process used in the 1986 Census may pose practical difficulties when attempting detailed comparison. Details of links between levels of attainment and fields of study in the two classifications are contained in Appendix 5.

International Standard Classification of Education (ISCED)

The International Standard Classification of Education (ISCED) is a classification of educational programmes rather than qualifications. It classifies courses, programmes and fields in terms of their “educational content” and is used for international comparisons of educational programmes. Conceptually, ISCED and the ABS Classification of Qualifications are similar in approach, although the end products are very different. For example, the approach to level of attainment in the ABSCQ is mirrored in ISCED by the concept of years of schooling, but required further development for use in the Australian context.

The scope of ISCED comprises all regular, formal, school and university education, and adult and special education. On the other hand the scope of the ABSCQ comprises only the formal qualifications from accredited post secondary educational institutions. It is possible to compare ISCED and the ABSCQ, but differences in terminology may cause some difficulties. For example, in ISCED, trade qualifications are referred to as field of ‘trade, craft and industrial programmes’ and treated as a field of study rather than as a level of attainment. A concordance of the fields of study in the ABSCQ and ISCED can be found in Appendixes 3 and 4.

Field of Study Classification of Tertiary Education Courses (FOSCTEC)

The Department of Employment Education and Training has developed a Field of Study Classification of Tertiary Education Courses (FOSCTEC). FOSCTEC classifies courses into fields of study on the basis of ‘vocational emphasis’ which is defined as ‘the similarity of potential vocations rather than the similarity of (course) content’. This is different to the ABSCQ which classifies courses with the same subject matter to the same field of study. The level of attainment of a course is not dealt with in FOSCTEC, therefore any comparison between the ABSCQ and FOSCTEC can only be done for field of study. A concordance of the fields of study in the ABSCQ and FOSCTEC can be found in Appendixes 1 and 2.

SUMMARY

In developing the ABSCQ, a number of broad objectives were identified. These objectives, together with the need to produce a classification which could be used effectively in the Census and a range of other collections, have imposed a number of constraints on the design of the classification.

A number of existing classifications were considered as a starting point for developing the new classification, and a detailed analysis of both FOSCTEC and ISCED was made. Although as much use as possible was made of these classifications, each was rejected as the sole conceptual basis for the ABSCQ.

An alternative approach was taken when developing the ABSCQ. The attributes of an educational qualification which were of primary interest to users, namely the level of attainment and the field of study, were used as the two main elements of the classification.

When developing the Level of Attainment variable, three criteria (minimum entry requirements, duration of course and theoretical orientation) were applied to delineate the categories. The first two criteria are usually sufficient to delineate between courses, however, theoretical orientation is used to distinguish between qualifications which have the same entry requirements and course duration.

In the Field of Study variable of the classification, the classification criteria were given different relative weights in delineating categories at different levels of the hierarchical structure. Broad field of study categories were disaggregated primarily according to theoretical content and purpose of learning. The narrow and detailed fields were disaggregated according to objects of interest, methods and techniques learned and tools and equipment studied.

It is acknowledged that major changes are occurring in the development and recognition of qualifications and credentials in Australia. This classification, however, focuses on qualifications which are formally recognised at the present time.

The ABSCQ has attempted to fulfil the need for improved data on the educational qualifications of the population. The classification has retained comparability with other major educational classifications, where possible, and can be implemented across a range of statistical collections.