



# Why Statistical Standards Make A Difference



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# What is a Statistical Standard?

- Rules we apply in the development, collection, processing and dissemination of statistics.
- A set of components which, when used together, ensure the production of consistent and high quality statistical output across collections and over time.



## For example

The statistical standard for Indigenous Status includes the following standard components

- Name:
  - *Indigenous Status*
- Definition of the concept to be measured:
  - *Indigenous Status indicates whether a person identifies as being of Aboriginal or Torres Strait Islander origin*
- Question:
  - *Are you of Aboriginal or Torres Strait Islander origin?*  
*(For persons of both Aboriginal and Torres Strait Islander origin, mark both 'Yes' boxes.)*
  - No
  - Yes, Aboriginal
  - Yes, Torres Strait Islander



# Other components of the Indigenous Status standard

- Classification
  - a set of categories for data storage and output
- Derivation rules
  - to map the answers to the question to the standard classification.

# What is the purpose of standards?

three good reasons....

➤ To Ensure Data **Quality**

- well developed concepts and definitions
- statistical feasibility.

➤ To Ensure Data **Comparability** and facilitate sharing of information

- nationally and internationally, across agencies, time and collection, within agencies.

➤ To Ensure Effective use of **Resources**

- cost and efficiency gains



# Who are the main organisations involved in developing statistical standards?

## Internationally some are:

- United Nations Statistics Division (UNSD)
- United Nations Educational Scientific and Cultural Organisation (UNESCO)
- International Labour Organisation (ILO)
- International Monetary Fund (IMF)
- World Customs Organisation (WCO)
- International Organisation for Standardisation (ISO)



# Who are the main organisations involved in developing standards? (cont)

## Within Australia some are:

- Australian Bureau of Statistics
- Department of Employment and Workplace Relations
- Department of Education, Science and Technology
- Australian Institute of Health and Welfare
- National Council for Vocational Education Research



## How are standards developed?

- Generally standards development is led by a co-ordinating agency such as ABS, AIHW or NCVER.
- Consultation is required with data users and producers to ensure that:
  - analytical needs of users are satisfied
  - the standard can be used in the range of data collection settings where it is likely to be required eg.
    - self enumeration
    - personal interview
    - administrative/service provision settings.
- Consistency with related national and international standards is achieved where appropriate.





# How are standards approved?

- Governance arrangements are established to endorse standards following consultation and development. For example:
  - The National Health Information Agreement gives responsibility to:
    - the Health Data Standards Committee to develop and maintain the content of National Health Data Dictionary
    - the National Health Information Management Group to endorse national information standards in health
  - ASCED Steering Committee
  - ANZSCO Project Board
  - For ABS standards, a senior management committee.



# How do standards make a difference?

## - Australian Standard Classification of Education (ASCED) (a case study).

In the eighties and nineties there was a serious problem with comparability of data on educational attainment and activities

- Differing classifications of level and field of education were used in different sectors and by the ABS.
- The problem was made more acute by increasing overlap in provision of education services across sectors:
  - Schools
  - Vocational Education and Training
  - Higher Ed



# Development of ASCED

- In response to an identified demand for comparable, consistent and high quality data
  - across sectors and ABS collections
  - on enrolments, service provision and attainments
  - classified by level and field of education
- Work was led and funded by ABS
  - support enlisted from key agencies who would use the classification as producers and consumers of data
  - extensive consultation with all stakeholders, wide circulation of drafts for comment
  - testing of drafts in ABS and other collections
  - development of standard questions and tools for assigning descriptions of courses and qualifications to categories in ASCED



# ASCED - Governance arrangements

- A Steering Committee was established to oversight development and coordinate implementation
  - All key national agencies involved in production of data on education
  - Key national policy development and coordination agencies (Eg MCEETYA Secretariat, AVCC)
  - Major academic users
- An ABS Project team reported through ABS line management and to the Steering Committee
- Final endorsement by ABS Classifications and Standards Committee



# ASCED - issues and problems

- Issues and problems that arose included:
  - Overlap in level of education associated with VET Certificates and Senior Secondary Certificate of Education (and disagreement about this).
  - Difficulty in distinguishing between VET Cert I, II, III and IV in Census and Surveys
  - Disagreement about classification of various fields of education eg:
    - Psychology (Natural science or Society and culture)
    - Economics (Management and commerce or Society and culture)



# ASCED - problem solving

- Issues were resolved by:
  - Agreement early in the development on a set of organising principles
  - Consultation with stakeholders with divergent views
  - Field testing
  - Reference to the Steering Committee
    - working groups were established to deal with specific groups of issues



## So how did ASCED make a difference?

ASCED is now used by all agencies which produce data on level and field of education, and has achieved the following outcomes

- reduced reporting burden
- consistent and comparable data from all sources
- coherent advice to policy makers
- improved data quality
- centralised maintenance
- international comparability through links with International Standard Classification of Education (ISCED).



# Australian Standard Research Classification (ASRC)

- The collective name given to three related classifications for use with regard to research and experimental development (R&D) activity in Australia.
- Provides a considerable degree of flexibility to meet the needs of a wide variety of users while still maintaining rigour in terms of concepts and definitions relating to R&D activity.
- Developed in co-operation with both major research organisations and users of R&D information. As a result the ASRC is widely accepted and used in a number of organisations within Australia to compile R&D statistics and in the study of Australian research generally.





# Australian Standard Research Classification *cont.*

- Caters for a three way dissection of Research and Development activity by:
  - Type of activity;
  - Research fields, courses and disciplines; and
  - Socio-economic objective.
  
- Applies equally to both public and private sectors, therefore enabling comparisons of R&D activity between the sectors of the Australian economy.



# Australian Standard Research Classification *cont.*

- Enhances international comparability of R&D statistics through strong links to the Frascati Manual - the OECD's standard for surveys of research and development.
- Strong alignment between the Socio-economic objective (SEO) classification and the Australian and New Zealand Industrial Classification (ANZSIC).
- enables the correlation of trends in industry with levels of R&D directed towards particular industries by using both SEO and ANZSIC data.



# Australian Standard Research Classification *cont.*

## ➤ Its use:

- minimises the need for separate one-off surveys of R&D to study activity from a number of different perspectives.
- maximises the degree that statistics produced for the analysis of R&D activity relate to the same conceptual basis (i.e. the definitions and scope of R&D activity are consistent).
- preserves comparability with most of the ABS R&D series compiled prior to the introduction of the ASRC.