



Australian Skills Classification: 3.0 Release Report

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# The Australian Skills Classification: Release 3.0

The Australian Skills Classification (the Classification) helps define the skills that underpin occupations in Australia.

The Classification offers users an additional layer of skills information – improving the way we analyse the skills in our labour market, and how we respond to issues of skills supply and demand. By doing so, it empowers skills-based approaches to workforce and talent strategies, learning and development, and research and policy.

The Classification is accessible to the public on the Jobs and Skills Australia (JSA) website through an interactive interface or can be downloaded as a dataset in an excel file.

The Classification features three categories of skills:

* **core competencies** – also known as employability skills.
* **specialist tasks** – the activities that describe day-to-day work in a job.
* **technology tools** – software and hardware used in occupations.

## Why do skills matter?

The labour market is evolving. Job tasks are changing, new jobs are emerging and some jobs are declining. The Australian labour market continues to shift in response to factors like globalisation, automation, technological innovation and demographic change.

Around the world, employers are shifting to a skills-based hiring, which focuses on whether individuals have the right skills for a role, rather than a particular qualification or have worked in particular occupations. Shifting to a skills-based system can:

* provide efficient mechanisms to identify talent.
* create fairer labour markets.
* support transitions between roles.
* broaden access to learning.
* reduce discrimination.

Skills based hiring can ensure that employers are well equipped with the skills required to meet emerging challenges in the labour market. By understanding skills, their application to jobs and how these are changing we unlock a deeper level of understanding of the labour market and skills supply and demand.

Skills taxonomies such as the Classification are critical to helping ensure that Australians are equipped with the relevant skills, knowledge and experience to continue to thrive at work.

## Summary of Release 3.0

This release features a host of new data and enhanced features to provide the Classification’s users with richer, more detailed skills data. Highlights are:

* around 300 new profiles and improvements to 400 existing occupation profiles.
* the introduction of skills statements for all specialist tasks in the Classification.
* updated and extended Trending and Emerging skills data.
* descriptions for the Classification’s technology tools and a new technology tool hierarchy.

This release extends the Classification’s coverage to over 80% of ANZSCO at the
 unit group and occupation levels.

Significant effort has been directed towards expanding coverage of Higher Education Pathway and Professional occupations in this release. The extended coverage engages with user demand for a more comprehensive data set, particularly with respect to occupations at a higher ANZSCO Skill Level.

## Improvements and Enhancements

Stakeholder feedback is vital source of information to support our ongoing improvement process. The initial release of the Classification in March 2021 was based on a data driven methodology, and stakeholder feedback has continually helped to refine our data and better align it with skills needs in an Australian context.

This release continues to centre stakeholder feedback, which has supported the improvements and enhancements we have introduced to provide users with richer detail and more advanced capabilities.

### Improved Occupation Profiles

Profile improvements are primarily driven by stakeholder feedback or through identification of a theme or common issue impacting multiple (often related) profiles. In this release improvements to profiles include:

* incorporating new specialist tasks.
* adding or removing existing specialist tasks.
* adjusting the phrasing of specialist tasks.
* adjusting the indicative time spent on specialist tasks.
* adjusting core competency anchor values.
* adding or removing technology tools.

#### Profile improvement case study – 252299 Music Therapist

Earlier this year a leading industry representative for Music Therapy approached JSA with advice on improvements to the Classification’s occupation profile for *252299 Music Therapist*. Following analysis of this feedback and additional research, a range of improvements were made to this profile's specialist tasks. JSA will continue to work with industry to make further improvements to this and other profiles. See Figure 1 below for a breakdown of the specialist tasks that were retained, removed and added to this profile.

Figure 1. Changes made to specialist tasks for 252299 Music Therapist

|  |  |  |  |
| --- | --- | --- | --- |
| Adjust tuning or functioning of musical instruments | Analyse data to determine effectiveness of treatments or therapies | Analyse patient data to determine patient needs or treatment goals | Collaborate with health care professionals to plan or provide treatment |
| Collect information about customer, client, or user needs or issues | Collect medical information from patients, family members or other medical professionals | Collect, record, and securely store patient medical histories and information | Communicate health and wellness information to the public |
| Communicate test or assessment results to medical professionals | Conduct research to increase knowledge about medical issues | Confer with clients, family members, or caregivers to discuss client treatment plans or progress | Coordinate rehearsals or performances |
| Create musical compositions, arrangements or scores | Deliver inclusive, accessible, and culturally appropriate programs, policies or services | Develop health assessment methods or programs | Develop non-medical treatment plans for patients or clients  |
| Engage and encourage patients in exercises, therapies, or activities | Establish treatment goals | Evaluate patient functioning, capabilities or health | Evaluate treatment options to guide medical decisions |
| Gather medical information from patient histories | Inform medical professionals regarding patient conditions and care | Interact with patients or clients to build rapport or provide emotional support | Maintain a working understanding of the cultural, diversity and accessibility needs of others, and how this applies to the role |
| Maintain allied health or social service client records | Maintain knowledge of current developments in area of expertise | Maintain medical or professional knowledge | Monitor patient or client outcomes, progress, or response to treatments |
| Play musical instruments for performances or demonstrations | Prepare reports summarising patient diagnostic or care activities | Process health care paperwork | Record patient medical histories |
| Research topics in area of expertise | Study details of musical compositions | Teach or promote the development of living skills, behaviours, or strategies | Teach others to use technology or equipment |
| Treat patients using psychological therapies | Write assessment or evaluation reports |  |  |

Colour key

|  |  |
| --- | --- |
|  | Specialist task **removed** from this profile |
|  | Specialist task **added** to this profile |
|  | Specialist task **retained** in profile |
|  | Specialist task **revised and added** to this profile  |
|  | Specialist task **revised and retained** in this profile |
|  | New specialist task **developed and added** to this profile.  |

# Introducing Skills Statements

Jobs and Skills Australia has developed additional descriptive content to help data users to better understand and utilise the specialist task component of the Classification.

Taking the form of long-form descriptions skills statements are intended to provide better clarity and understanding of the intended meaning of the existing short-form specialist tasks, which have always summarised and stood in for a range work processes and underlying knowledge or expertise.

Providing more detail allows data users to have a more consistent understanding of specialist tasks. In turn, this will enable more joined-up, consistent skills insights to be generated across sectors and stakeholder groups – or in other words, analyses that can ‘speak to’ or be more directly compared to each other.

Additional benefits of this process have been:

* the identification of opportunities to improve our data by rewriting tasks for clarity or deduplicating similar tasks.
* to support more open access to our data.
* to incorporate important context, meaning and knowledge required to undertake certain occupations.

This last point in particular has been a common element of stakeholder feedback on the Classification since its introduction, and we are pleased to be able to deliver on bringing this critical element into the data. Examples demonstrating the outcomes of this project are outlined below.

## Increasing Clarity

As outlined in table one the creation of skills statements has allowed us to increase data clarity. Here, two seemingly similar specialist tasks have been described in greater detail, making clear that they are in fact quite different from one another, and that arbitration has a very specific meaning in a legal context.

Table one: Utilising skill statements to increase data clarity

|  |  |
| --- | --- |
| **Specialist task** | **Skill statement** |
| Mediate disputes | Act as a neutral third party by mediating conversations about conflicts or disputes. Help disputing parties reach an agreement or settlement by supporting all parties to identify issues, suggesting solutions and explore alternative resolutions. This may involve encouraging cooperation and understanding of others’ perspectives, assisting disputing parties (and in some cases, their legal representatives) to have productive conversations, and facilitating a respectful, safe and collaborative environment to ensure a fair and reasonable outcome for all parties that also addresses present and future needs. |
| Arbitrate disputes between parties to resolve legal conflicts | Act as an accredited, impartial third party in a determinative legal process to help resolve legal conflicts in a timely, confidential, and cost-effective manner. Hear arguments, review evidence, and make a legally binding and enforceable determination or award. Ensure that all parties have sufficient advance notice of any hearing or meeting, and that they are treated with equality and given a reasonable opportunity to present their case. |

## Data Improvements

A number of specialist tasks have been rewritten for clarity, or deduplicated as part of the creation of skills statements. As shown in table two several specialist tasks have been deduplicated into a single new task and a skills statement developed to provide additional detail.

Table two: Utilising skill statements to deduplicate specialist tasks

|  |  |  |
| --- | --- | --- |
| **Specialist task** | **Skill statement** | **Rewritten task** |
| Read work orders or other instructions to determine product specifications or materials requirements | Read, interpret and understand work documentation such as reports, designs, blueprints, specifications, work orders, technical information or other instructions to determine work requirements. These may include the required materials, resources, equipment, tools, machinery, timeframes, dependencies, procedures, processes, sequences, or methods to deliver the required outcome.  | Review designs, blueprints, specifications, diagrams, work orders or other documentation to determine work requirements |
| Read work orders to determine material or setup requirements |
| Review work orders or schedules to determine operations or procedures |
| Evaluate reports or designs to determine work needs |
| Review blueprints or specifications to determine work requirements |
| Review blueprints or other instructions to determine operational methods or sequences |

## Incorporating important knowledge, context, and other information

As outlined in table three this process has allowed us to enrich the dataset with important knowledge, contextual and other requirements to undertake job tasks. This has ranged from relevant laws and regulations or standards, to required expertise, important considerations, or the underlying reasons and driving factors for undertaking a task. As shown here for teachers, this has also allowed us to incorporate important stakeholder feedback relating to how and why learning activities are assigned to students and the important considerations required for doing so. The skills statement now makes clear that the specialist task goes beyond the simple provision of a task to a student without any additional context or consideration.

Table three: Utilising skill statements to incorporate knowledge, context and other information

|  |  |
| --- | --- |
| **Specialist task** | **Skill statement** |
| Assign class work to students | Assign effective and well-sequenced learning and teaching activities to students in order to support and improve academic understanding and achievement. Align learning activities with educational goals and objectives, curriculum, and student ability, skills or knowledge.  |
| Manage content of broadcasts or presentations | Manage radio or television content for broadcast including assessing the suitability of content in relation to law, broadcast standards and alignment with channel, program, show or company brand and direction. |
| Maintain records, documents or other files | Review and maintain records, documents or other files, ensuring that all details and information are correct, current and that proper labelling, indexing and categorisation has been completed. Ensure that records are stored or destroyed appropriately according to information security or other privacy requirements. |
| Design medical devices or appliances | Design medical devices or appliances that address specific healthcare needs or that can be used to alleviate, diagnose, monitor, prevent, predict or treat disease, illness, injury, or disability in patients. Review prescriptions, practitioner or patient requirements, or collaborate with healthcare professionals, technicians, researchers, or end-users to understand requirements and constraints. Utilise engineering principles, materials science, technical expertise, and medical or physiological knowledge to design devices that meet the intended purpose, and any functional, regulatory, and health and safety requirements. |

## Supporting more open access to our data

The 2021 *University-Industry Collaboration in Teaching and Learning Review[[1]](#footnote-2)*, undertaken by Bean and Dawkins, recommended that government “accelerate the development and use of the Australian Skills Classification as an open access national skills taxonomy. This will create a common skills language for industry, higher education and VET to collaborate on education program development, and more effectively meet workforce needs.”

As part of this recommendation, the Review stated that government should “scope out and undertake additional work needed for government, industry and educators to build a proxy list of rich skill descriptors to underpin the unified credentials platform” and “determine if the Australian Skills Classification, which is already matched to occupations, can be used as a proxy for rich skill descriptors to underpin the credentials platform. This will involve government and the higher education and VET sectors working together with industry to inform a more comprehensive Australian Skills Classification.”

By creating a skills statement data-field we have helped ensure the Classification fulfil almost all critical data fields and features for the creation of rich skill descriptors. By doing so, we hope to support more open access to our data, including facilitating greater machine readability, and assist the future development of rich skill descriptors from the Classification.

Jobs and Skills Australia intends to work closely with data users and representatives across industry, higher education and VET stakeholders in the coming months to inform a more comprehensive Classification and ensure our data continues to meet stakeholder needs.

## Methodology

The development of the skills statement data field involved the use of a range of available data and information, which was reviewed, validated, and synthesised by researchers in the Australian Skills Classification team. Inputs to the project included:

** Education and Training information (VET and Higher Education)** Information from training packages, units of competency, qualifications and course descriptions provided important input into the skills statements. Only Australian information was used in this context, and provided important insights into the technical and procedural requirements of some tasks, as well as important knowledge and considerations.

**Regulations, standards, accrediting or governing bodies**

Information from regulations or standards that limit, restrict or otherwise govern the undertaking of certain work tasks was used to help guide the drafting of skills statements. In some cases information was also acquired from publications from accrediting or governing bodies. In particular, this helped guide important knowledge and context for some tasks, the limits of work, or helped distinguish tasks from each other based on their typical industry context.

**Stakeholder feedback**

Wherever available, stakeholder feedback has been incorporated into the skills statements and/or rewritten specialist tasks.

**Generative AI**

****Generative AI output provided scaffolding for skills statements where researchers could not be expected to have advanced technical knowledge of industry or technical specifics and requirements and the way these are expressed. The word-vectors of the large language models underpinning the generative AI model we used allow better generation of industry specific language, terms and expressions commonly used with occupations than other language models, which return more academic results with limited vocabulary. Outputs are used as one of many inputs into the drafting process and are reviewed, verified, and edited by researchers.

**Other desktop research** – the inputs described above supported with additional desktop research to help researchers understand the processes, steps, procedures, context and guiding principles of work tasks.

# Reflecting new and trending skills

## Reflecting trending and emerging skills based on job advertisements

In March 2022, the trending and emerging skills flags were added to the Classification to reflect the digital skills that were growing in demand based on Australian job advertisement data.

Specialist tasks and technology tools marked as ‘trending’ are skills that have grown in job advertisements for a particular occupation over the last five years. Those marked with a ‘emerging’ flag are skills that are new to an occupation over the same time period. This feature added a layer of dynamism to the Classification to keep up with the rapidly evolving labour market.

This update to the Classification will include trending and emerging skills flags that have been updated to reflect the latest job advertisement data over the five-years to
31 December 2022.

The flags have also been updated to go beyond digital skills to capture other skills growing in demand such as communication, project management, organisational policy and analysis and business administration. There around 1800 trending and emerging skill flags across almost 400 occupation profiles. While there are a broad range of in-demand skills in the Australian labour market, four of the top 10 trending and emerging skills are digital. This suggests digitisation and technology is continuing to play a major role in the evolution of job roles in the economy.

## New digital skills – reflecting the changing labour market

This update to the Classification will feature 18 new specialist tasks across six emerging themes (see Table 4). These themes were identified using the Critical Technologies list (developed by the Department of Industry, Science and Resources), the National Training Register and international research on future skills.

Articulating these emerging themes into specialist tasks drew on various data sources and frameworks including job advertisement data (provided by Lightcast), VET training package information, and other international skills frameworks including O\*NET and the Skills Framework for the Information Age (SFIA).

These new emerging digital skills have been added to 31 occupation profiles in the Classification. While most skills underlying these themes are highly specialised and relevant to roles in ICT, they have also been found to be relevant across a broad range of non-ICT occupations, reflecting the role of digitisation across the contemporary labour market.

Table 4: New specialist tasks for emerging skill needs

|  |  |
| --- | --- |
| **Emerging Themes** | **New Specialist Tasks** |
| Artificial Intelligence and machine learning | * Automate work tasks using machine learning
* Train and evaluate machine learning models
* Build natural language processing models and pipelines
* Identify opportunities to apply artificial intelligence to research or projects
 |
| Automation and robotics | * Capture images using drone technology
* Apply robotic desktop automation to work tasks and systems
 |
| Virtual and augmented reality | * Design extended reality solutions
* Apply extended reality solutions in organisations
* Develop digital user interfaces
 |
| Digital methods | * Develop applications using agile methods
* Apply agile methods to manage project workflow
 |
| Cloud computing | * Create and test cloud-based serverless applications
* Develop data integration strategies
* Create a data warehouse
 |
| Cloud security | * Manage cloud identity and access
* Manage cloud threat detection systems
* Protect cloud infrastructure and data
* Respond to cloud security incidents
 |

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# Updates to the Technology Tools

This release brings enhancements to the Classification’s technology tool structure and the information available about technology tools. These changes have been informed by stakeholder feedback and are:

* Introduction of a technology tool hierarchy.
* Introduction of descriptions for all technology tools.
* Continuous analysis of job advertisement data to identify technology tools missing from profiles or additional technology tools to include in the Classification.

## Introduction of a hierarchy

In a similar structure to the specialist tasks and skill clusters, a new technology tool hierarchy has been introduced to group related technology tools into technology tool categories. The purpose is to improve usability and transferability of the underlying skills associated with technology tools.

## Extended Descriptions

Finally, to mirror the enrichment work undertaken in the Specialist Task space, extended descriptions have been introduced for technology tools. This work will provide additional clarity around the meaning and context of each technology tool and improve their usability in natural language processing models.

For example, the technology tool ‘GPS and navigation technologies’ is now accompanied by the description ‘*Devices or software that receive and provide GPS coordinates in an interactive map or other visualisation*’.

## New technology tools

Several new technology tools have been introduced into this update of the Classification based on qualitative research. Further refinements were made to ensure consistency around the level of detail across the technology tools.

## Next steps

This aspect of the Classification will continue to be improved and adjusted in response to stakeholder feedback and as technology and occupations involve. These updates will ensure that our data continues to support users across an array of use cases.

# Providing feedback

We invite you to explore the Classification via the interactive interface or by downloading the full dataset. Both are available at the Jobs and Skills Australia [website](https://www.jobsandskills.gov.au/data/australian-skills-classification%20.).

Stakeholder feedback has played a central role to improvements in this release. If you would like to provide feedback about an aspect of the Classification or discuss a use case, please contact our team via email.

1. Bean, M., & Dawkins, P. (2021) University-Industry Collaboration in Teaching and Learning Review, Department of Education, Skills and Employment, Commonwealth of Australia, Canberra, Australia. [↑](#footnote-ref-2)