

National Skills Taxonomy Discussion Paper

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DEWR Consult hub

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9 Lessons from existing taxonomies

Current limitations

(1) Quantity and volume of learning (assessed v's learned)

(2) Levels? (beginning, intermediate, advanced)

(3) Consistency

(4) Versioning

(5) Implication on award course curriculum.

(6) Application of use in growing specialised areas. Questionable currency and relevancy (recognised and helpful to students, learners, educators, and employers).

(7) Usability, capturability, and ease of reference (the ability for different parties to capture the same skillset in applying taxonomy).

10 Potential use cases for a National Skills Taxonomy

Potential challenges and unintended consequences:

- Keeping the framework relevant - If not, adoption and recognition of the framework by employers and consequently others will render the framework redundant

- International alignment - there needs to be some alignment here for international students and workforce

Non-negotiable:

Capturing skill levels is crucial, particularly in relation to higher education's role in career progression. It would be beneficial if the framework not only captures current skill levels but also maps out potential progression pathways. Additionally, it should incorporate mechanisms for recognising informal learning and on-the-job training as part of the levelling process. This is particularly important in sectors where formal education may lag behind industry developments.

11 Building a National Skills Taxonomy – design considerations

Structure

It is essential to avoid imposing a strict hierarchy, as the same skill may belong to multiple disciplines and industries. Categories should function as tags; while there may be a hierarchy of categories, the lower-level nodes should be referenced by multiple categories. This approach would significantly aid in identifying transferable skills and enable more effective skills gap analysis. Furthermore, the tagging system should be

dynamic, evolving as new industries emerge and existing ones converge.

The use of graph database concepts should be considered for capturing connections between skills, categories, industries, and more, as this would facilitate more powerful data analysis and AI applications. The graph model would not only capture direct relationships but also infer indirect relationships, such as complementary or emerging skills. This capability could prove particularly valuable for predictive analytics in workforce planning.

12 Building a National Skills Taxonomy: Implementation considerations

Data should be made accessible through various mediums, including:

- A presentational website with search capabilities to explore the taxonomy and all available data
- Downloads in multiple formats (e.g., CSV, JSON)
- An API

Given the critical importance of broad adoption of the taxonomy, it is highly desirable that the API is developed as a comprehensive data service, enabling a wide range of data retrieval options. The API should include services for:

- Ontology
- Similarity
- NLP-based retrieval, capable of parsing texts of various lengths and purposes (e.g., job ads, position descriptions, curriculum information, CVs/resumes)
- Cross-walks to other taxonomies
- Predictive analytics
- Versioning and migration

These APIs should be accessible and preferably free, at least until the adoption rate is sufficiently high, to allow developers to build products rapidly and creatively. As part of the API ecosystem, a developer portal should be established, offering extensive documentation, SDKs, and sample code to facilitate quick integration of the NST into applications.

Furthermore, a user community should be formed to promote knowledge sharing, issue resolution, and the generation of new ideas. This community could be structured to include regular hackathons, API competitions, and collaborative projects, fostering continuous innovation and ensuring the taxonomy remains relevant and widely adopted.

Consideration should be given to using GraphQL as the API format, as it supports easy and safe dynamic querying and is self-documenting/self-descriptive. Additionally, it can

accelerate modern frontend application development, thereby further advancing the adoption of the taxonomy.