

National Skills Taxonomy Discussion Paper

Submission:

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Introduction

1. We greatly appreciate the National Skills Taxonomy Discussion Paper, the consultation process and the opportunities that have been provided for feedback.
2. We are co-authors of a taxonomy of under-recognised skills that was developed in Aotearoa New Zealand to support job analysis exercises facilitating position description writing and human resource management functions (Employment New Zealand 2024[2009]). In Australia, versions of the taxonomy have contributed to research and practice aiding the more accurate valuation of feminised work and skills (Standards Australia 2012, Workplace Gender Equality Agency 2013, Fair Work Commission 2022, 2024). So one of our reasons for responding to the NST is our interest in the extent to which the NST will enable recognition of poorly-recognised skills. We attach the taxonomy as an appendix, as we will refer to it at several points in our comments on the NST Discussion Paper.
3. We believe that the development of a new Australian National Skills Taxonomy is extremely timely, particularly given the growth of service and information occupations, and the changing age, gender and socio-cultural composition of the workforce. We see a NST as an essential part of the reforms under way via the Working Future White Paper (Australian Government. Treasury 2023) and the Women's Economic Equality Ten Year Plan (Australian Government. Department of the Prime Minister and Cabinet 2023). These reforms include a re-thinking of the skills of gendered service work (Ross 2022, Hatcher 2023). Below are our responses to some of the questions in the Discussion Paper.

1. Case for change: benefits and limitations of existing skills taxonomies

1.1 What are the key benefits and/or limitations with existing skills taxonomies? What features from existing skills taxonomies are important to retain or address in a new NST?

4. The benefits of existing taxonomies depend on the extent to which they provide a consistent, unambiguous and exhaustive national classification structure within which it is possible to locate the full range of skills in current use.
5. Unless the taxonomy is underpinned by a stable and agreed definition of skill and skill domain, there are likely to be inconsistencies in its vertical and horizontal structure, with disparities in levelling and in granularity at each level, and recognition gaps.

6. Putting together educational, labour market and broader societal perspectives, as we argue later, one can define skills as learned capabilities, in other words, learned capacities applied in action. They are developed and enacted both individually and collectively, in the education system, in the community and in the workplace through use in activity. This development is shaped by social structures and relationships and interactions in work, paid and unpaid. Thus there are collective, contextual and ongoing learning elements of skill that taxonomies must recognise and classify.
7. Existing taxonomies reflect legacy labour market structures, and may thereby contribute to the perpetuation of racialised and gendered inequities based on sub-optimal skill recognition and deployment of current skills. For example,
 - a) First Nations knowledge and practice does not seem to be well represented in current skill taxonomies
 - b) The problem of immigrant skill recognition remains unresolved even in relation to formal qualifications
 - c) Interactive, interpersonal, creative and coordinating service skills have been taken for granted and characterised as 'natural' or 'innate' to women, rather than being seen as learned capabilities, and this recognition gap now been identified as a major source of gender pay and employment inequity (Ross 2022; Hatcher 2023).
8. The contemporary skill definitions listed in Appendix B of the NST Discussion Paper raise some issues that have not yet been fully resolved. These include:
 - a) The relationships among capacity or capability, the activity enabled by this capacity or capability, and life and work contexts encountered, including scope of practice and range of contexts
 - b) The debate, in competency assessment practice, over levels of learned proficiency – eg is 'problem solving' an achieved skill or is it a level of activity-based learning on the way to attaining the expertise to work in a range shifting contexts?
 - c) A tendency to separate learning from the application of what has been learned; that is, to see skill as residing in individual use of physical tools, or in the application of already-acquired mental tools (learned concepts), rather than as involving the contextual and adaptive interplay of action and internalisation of consequences, drawing on cognitive and communal resources, as described in paragraph 6 above
 - d) Debate over whether 'generic' skills, include personal traits and dispositions, and over whether the concept of 'employability skills' has any decontextualised meaning (Buchana et al 2018), and whether it is a prescriptive or descriptive/analytical construct
 - e) A focus on individual performance and on discrete performance events, rather than on individual and collaborative roles in creating and maintaining a workflow
 - f) An imbalance, in identifying skill, between reliance on formal qualifications and other indicators of expertise, including both work and life experience, resulting in ongoing difficulties in resolving RPL issues.

- g) Quality and risk management issues relating both to the proliferation of paper qualifications on the one hand and of small, poorly regulated workplaces on the other.
9. *Legacy issues in general:* The skill taxonomies listed in Appendix B of the Discussion Paper have been seeking, to varying degrees, to transcend their 20th century origins. These origins include industrial contests over skill demarcation, and managerial occupational and job analysis methodologies such as Functional Job Analysis. To the extent that existing taxonomies prioritise discrete tasks, individual performance and the use of physical tools, they may be of limited assistance in identifying the sources of productivity in the information and care economies, and are likely to be entrenching institutional inequities and socio-cultural biases. Taxonomic restructuring is thus particularly important, because the service economy now make up 80% of all production and 90% of employment in Australia (Productivity Commission 2021).
10. *The concept of ‘employability skills’ as a specific case:* The concept of ‘employability’ skills, and its various formulations, has three conflicting meanings:
- a) *‘Generic’ skills that can be expected of all school leavers or job applicants.* This formulation, as traced by Buchanan et al (2018, 22-28) originated with the Finn Review’s mathematical, science/technology, cultural, problem-solving and personal/interpersonal skills, morphed into generic ‘21st century/enterprise skills’ and the Noonan ASF Discussion Paper’s ‘enterprise and social skills’.
 - b) *Underpinning skills, a concept reliant on the gendered ‘hard/soft’ skill distinction.* This concept conflates skills with personal attributes such as ‘outgoing personality’ or with work orientations such as ‘loyalty, commitment and motivation’, The Noonan ASF Discussion Paper lists professional, technical, interpersonal and creative skills. It refers to employability skills ‘as enterprise and social skills ... not specific to any job role’ and sees them as including skills to deal with technology and data and skills to work with people and cope with change. Buchanan et al (2018, 20) convincingly argue that generic skills such as ‘problem solving’, ‘communication’ and ‘collaboration’, are ‘best acquired, paradoxically, in the context of mastering specific disciplines or fields of vocational expertise. They argue (p. 22) that the concept of generic skill is ‘meaningless if not anchored in domain-specific knowledge and expertise’.
 - c) *A highly reductive conflation of a range of intangible/invisible skills used in the service economy.* Attachment 1 provides one expanded taxonomy of skills that are wrongly characterised as ‘generic’, grouping them under the concepts of contextual awareness, interactive capabilities and coordinating skills. Importantly, this skill model identifies stages of their development through growing levels of expertise. This taxonomy sees problem-solving, for example, not as a content-free skill that can be applied universally but as an expression of the level of acquired development in the exercise of each of the three groups of intangible skills in specific situations.
11. Skills in ANZSCO, are assigned to levels that are defined primarily in terms of a) qualification or ‘equivalent’ work experience (but not lifeworld or community experience), and b) specialisation. Specialisation, in turn, is defined in terms of field of knowledge required, tools and equipment used, materials worked on, and goods or services produced or provided (Australian Bureau of Statistics 2022). Whilst tools can be cognitive and, at a pinch, affective, this definition encourages a pre-service economy

conceptualisation of what is classed as 'technical', and downplays interactive and relational skills.

12. Oddly, ANZSCO currently defines personal interaction instrumentally as an 'intellectual tool', and describes 'people and organisations' as 'materials worked on'.
13. ANZSCO lacks indicators of levels of experience-based expertise.
14. We are hoping that the ANZSCO review currently open for public discussion, addresses these issues. Otherwise, ANZSCO, in forcing a grouping of less tangible interactive skills into an undifferentiated category of 'generic'/'employability' skills, deems them as 'applicable to most occupations'. This categorisation has contributed to the placing of over a quarter of a million care workers in an undifferentiated low-skilled category (Level 4 of 5). Yet there is nothing 'generic', for example, about the range of skilled problem-solving strategies whereby, within tight time constraints, personal care workers find differentiated way to encourage every different confused and frail elderly person living with dementia into taking a regular shower; or to support each different family through the management of a peaceful death. Nor is simple low-level generic skill involved in the acute reflective observation required of early childhood workers as they scaffold individual toddlers' learning each day by observing and noting their emerging interests.
15. We would hope that the NST unpacks service economy skills commonly vaguely and generically described using terms such as 'emotional labour', 'interactive skills' and 'communication skills', so that the new terminology actually meet the definition of skill as the capability to perform a range of activities, in a way that is more granulated. We discuss taxonomic options for classification and levelling, in Attachment 1, including a systematic approach to recognising skill-deepening through workplace learning. Work process knowledge and experience-based tacit learning through activity, reflection and collaboration are not well reflected in most skill taxonomies, particularly in services. There is also an over-emphasis on individual rather than collaborative performance. It seems that the less visible the skill, the less granularity is to be found in its definition.
16. Meanwhile the Australian Government is currently supporting a project to clarify conceptualisations of foundation skills, and the manner of their inclusion in all Training Packages.
17. As part of the National Skills Agreement (NSA) the Australian Government is investing up to \$142 million over five years to improve foundation skills training quality and access. Australia has rejoined the OECD Programme for the International Assessment of Adult Competencies (PIAAC) survey. A 2023 JSA consultation process was designed to establish the parameters for a Foundation Skills research study, to report by the end of 2024. The research is intended in part to remedy issues of currency, scope, coherence and scale in existing foundation skills data (JSA 2023). The description of foundation skills training initiatives in deficit terms as a means of ensuring that no one is left behind (O'Connor 2024), suggests that they are seen as entry- or low-level catch-up skills. At the same time different categories and combinations of foundation skills are listed in training packages at all levels – suggesting that the that the term 'foundation skills' is also being used to grapple with what are also called 'generic' and 'underpinning' skills.
18. For example, foundation skills are defined in less minimal terms than literacy, numeracy and digital literacy, but still differentially, in an ASQA standards guide and in the Certificate IV Training and Assessment Training Package (Australia Government. Australian Skills Quality

Authority, nd.; training.gov.au 2022). The expansive concept includes digital literacy, reading, numeracy, oral communication, initiative and enterprise, planning and organising, problem solving, self-management, teamwork and technology.

19. The question of how to include foundation skills in the NST, particularly in terms of levelling, and the issue of alignment between foundation skill levels and levels of job-specific skills in a qualification, will need to be addressed. We believe that there is an element of conceptual confusion in labelling 'initiative and enterprise' as skills.
20. More generally, lack of definitional clarity, granularity and level-determination in the case of the less tangible skills of service industries and occupations is now recognised as a source of gender inequity in pay and occupational status. As a result, a project is under way in the workplace relations arena to revalue the skills of service work, beginning with the care economy (Ross 2022, Hatcher 2023). We understand that it is essential that the NST must be independent and removed from workplace relations contestation. But it must also be acknowledged that industrially-regulated grading and classification systems are referenced to qualification structures and that the training system cannot be expected to develop or recognise skills that are not registered in a skills taxonomy. Thus, whilst needing to maintain the independence of its domain of practice, if the NST has gaps reinforcing a systemic failure to conceptualise certain types of skills, this will have unintended flow-on consequences in helping perpetuate service skill under-recognition.

Addressing skills shortages in critical occupations and roles.

21. The NST Discussion Paper notes the importance of a common language for employers, education institutions, government, and individuals regarding skills and certifications. As indicated in this paper, one outcome of the lack of such an agreed understanding is the existence of ongoing skills shortages, reflected in or exacerbated by:
 - a) Employer inability to identify which individuals have the right skills
 - b) Individuals lacking the right mix of skills for available jobs
 - c) Disjointed career and educational pathways for individuals
 - d) Underinvestment by businesses and individuals in professional development and lifelong learning
 - e) Individuals not adequately prepared for transitions into further education or employment.
22. To these gaps we would add:
 - f) Lack of skill-based career paths within and between occupations
 - g) Employer inability to attract sufficient staff because of skill undervaluation resulting in low remuneration levels.

Lack of skill recognition, resulting the experience of undervaluation reflected in occupational wage disparities, has resulted in shortages with adverse social consequences in the case of a number of care-work occupations such as aged care and early childhood education and care. The crisis of staffing shortages and poor care quality in aged care led to a recommendation by the Aged Care Royal Commission for a skill revaluation in the industry (Royal Commission into Aged Care Quality and Safety 2021, Recommendation 84). While the workplace relations system can provide periodic redress that may temporarily ameliorate staffing shortages, it cannot solve the underlying problem of skill under-

recognition at the societal level. We are certainly not suggesting that the NST should be invoked to adjudicate skill claims – it must be above the fray – but we do believe it should not have ‘blind spots’ that reinforcing the problem that such adjudication seeks to address.

1.2 What features from existing skills taxonomies are important to retain or address in a new NST?

23. As the NST Discussion Paper identifies, ‘skills taxonomies can vary in their detail, structure, and definitions. In responding to this question, we will begin by discussing the skill definitions in the taxonomies overviewed in NST Discussion Paper Appendix B, although we return to these taxonomies in answering question 3.1. Table 1 summarises our view of the strengths and weaknesses of each taxonomy.

Table 1 Strengths and weaknesses of skill definitions in existing taxonomies

AQF review	<p>Focus on action is good but need to avoid assumption that knowledge is first learned then applied</p> <p>Uncoupling of levels of knowledge and skill is good</p> <p>Focuses on individual rather than collaborative learning and practice</p> <p>Doesn't fully recognise:</p> <ul style="list-style-type: none"> - contexts of action - experience including life experience - autonomy at 'lower' levels - tacit learning through practice - incidental learning - the 'supra' skills of reflective practice - the interactive, collective, collaborative nature of learning and action - First Nations expertise and its cultural basis
OECD	<p>Good framing in terms of Anticipation-Action-Reflection</p> <p>Inclusion of attitudes and values is positive but some risk of conflating behavioural compliance with skill. The constructs under development do however provide safeguards – particularly the DeSeCo categories</p> <p>Good focus on process and metacognition</p> <p>Inclusion of social and emotional skills</p> <p>Offers an avenue for gender, ethnicity inclusivity</p>
ESCO	<p>Identifies and categorises skills, competences and occupations relevant for the EU labour market and education and training.</p> <p>Benefit is its comprehensiveness.</p> <p>Reflects and conserves its pre-service economy origins rather than transcending them.</p> <p>Not particularly well adapted to service economy, gender equity or cultural diversity</p>
ONET	<p>Brings together a reliance on a mix of methodologies in listing 'worker characteristics', 'worker requirements', 'experience requirements', 'occupational requirements'. Uneasy compromise between person-oriented and job-oriented job analysis techniques.</p> <p>A job-matching not developmental tool.</p> <p>Concept of skill is generic and is biased towards observable task-oriented; workforce characteristics, occupation-specific information still focused on 'technology, tasks and tools' – not particularly well-suited to service jobs</p>
Singapore Skills Framework	<p>Impressively future-oriented and designed to drive development in 34 priority industries – therefore selective rather than comprehensive</p> <p>Career-oriented</p> <p>Task- rather than role-oriented</p> <p>Preserves distinction between 'technical' and 'non-technical' skills, the latter being seen as cross-industry and narrowly and individualistically defined, based primarily on individual initiative</p>

AQF Review

24. The AQF Review Final Report (2019, 8-9) makes this important comment:

The assumption that knowledge and skills can both be defined and differentiated at ten levels is flawed. The application of knowledge and skills is context dependant and cannot be automatically linked to levels of knowledge and skills without entrenching hierarchical assumptions about VET relative to higher education qualifications.

This uncoupling of knowledge and skill levels is important for recognition of skills acquired outside of qualification structures, and could avoid the ANZSCO problem of over-reliance on qualifications in determining skill level, resulting in an under-recognition of skills of experience. It would be particularly good if there were a more explicit recognition of the possibility that autonomous judgment, a relatively high level skills, is deployed in some jobs requiring lower-level qualification. The example of home care work springs to mind: personal carers frequently deal with unexpected and challenging situations on their own.

25. The AQF Report recommends a single taxonomy with eight bands of knowledge and six bands of skills It uses the categories Knowledge, Skills and Application, defining them in terms of action – the information to inform action, the capabilities to take action and the context for action:

- a) Three knowledge areas (field-specific information and ideas to inform action) are to be defined in terms of 3 focus areas (scope +complexity, inquiry and information management) at 8 levels.
- b) Five skills (abilities to take action acquired through deliberate, systematic effort) are defined in terms of 5 focus areas (self-management, psychomotor, problem-solving & decision-making, communication, cooperation/collaboration) and 6 levels.
- c) Application (defined within the context of learning and assessment) is defined in terms of autonomy, responsibility and accountability

26. It would be unfortunate, to imply, as the ASF appears to do, that knowledge precedes application in action. The two are mutually reinforcing through reflective practice. It would also be unfortunate to separate skills from knowledge as two separate categories learned independently of each other. Buchanan et al (2018) argue that skills exist only in context: specific contexts of education (including knowledge curriculum), work and social life are three such contexts.

27.]In the ASF, there seems to be limited recognition of collaborative learning, and the framework seems rather monocultural — one wonders if there was First Nations input.

OECD Learning Compass

28. The Sustainable Development Goal context is very welcome. Also commendable is the goal to move from an underpinning conceptualisation of a 'division of labour' to one of "shared responsibility", with everyone needing to have the skills, knowledge and the desire to contribute. Whilst somewhat idealistic, it is a potentially empowering basis for structuring vocational education.

29. The use of the three categories of DeSeCo project competencies as OECD Key Competence is also a welcome reframing, moving away from the 20th century legacy. Moreover this framework recognises the need to build skills both in collaborative work and in acting autonomously:

- **Use tools interactively (e.g. language, technology)**
 - The ability to use language, symbols and text interactively
 - The ability to use knowledge and information interactively
 - The ability to use technology interactively
- **Interact in heterogeneous groups**
 - The ability to relate well to others
 - The ability to co-operate
 - The ability to manage and resolve conflicts
- **Act autonomously**
 - The ability to act within the “big picture”
 - The ability to form and conduct life plans and personal projects
 - The ability to assert rights, interests, limits and needs

30. We would therefore support a thorough exploration of opportunities to incorporate the OECD approach.

ESCO

31. Like ANZSCO, ESCO heavily reflects its origins in methodologies such as occupational analysis and FJA and for the same reasons, may have the same biases. Its definition of skill involves a separating of knowing and doing, implying that knowledge is acquired and then applied

32. Whilst it slightly expands the definition of cognitive skills to include logic, intuition and creativity, ESCO does not really recognise the cognitive elements of interactive and caring work. It provides a definition of competence that may be confusing in the Australian setting, and makes an unfortunate new (and we think outdated and untenable) distinction between work involving tools and tasks and work involving independence, contingency management and self-direction. We don't think the four pillars – knowledge; language skills and knowledge; skills and transversal skills would be clearly distinguishable in the Australian context:

- Transversal skills are defined as involving core, life, physical and manual, self-management, social and communication and thinking skills and competencies
- Skills are differentiated from knowledge and include assisting and caring, communication/collaboration, constructing, handling and moving, information, management, working with computers, machinery and specialized equipment
- Knowledge includes generic element but mostly has an educational subject/disciplinary basis
- Language skills and knowledge are separated out: there may be reasons given the need for multilingualism in the EU context; perhaps this approach is something that Austral should emulate.

O*NET

33. O*NET's primary focus is occupations. With a vocational guidance orientation, it brings together both person-oriented and job-oriented analytical methodologies, including in its synthesis an update of the Standard Occupational Classification methodology that at the turn of this century was critiqued on gender grounds. This was because its links to FJA provided considerably less granularity in describing the skills of service occupations than in describing observable task skills involving visible tool use.

34. O*NET follows useful protocols for constructing a taxonomy: Hierarchical format; each object defined in relation to other objects

- Specific classificatory rules that are complete, consistent, and unambiguous
- Rigor in specification, ensuring any newly discovered object must fit into one and only one category or object
- Ensuring that each class inherits all the properties of the class above it, and also has additional properties.

It is not clear that these data input rules can guarantee rigour in incorporating input from job ads, employers and individuals.

35. There is great value in clarifying the proliferation of nearly-synonymous job titles, by reference to a skills taxonomy. In the worlds of learning and work, however, classificatory distinctions may not be so cut-and-dried. Forced differentiation into categories can have unintended consequences, if the categories overlap or are of different sizes. In ANZSCO for example, the rule that an occupational classification cannot be split across two skill levels has resulted in the relegation of many highly skilled and experienced care workers without formal qualifications to a lower skill level than qualified novices.
36. Overall O*NET's categories are rather generic and removed from the complexity of reality, and there is not a good way of registering the skills of experience.
37. There is something of a legacy of 20th century occupational and job analysis methodologies about O*NET. We are not convinced that existing job evaluation methodologies provide particularly good input data, as there is an extensive critical literature on bias in proprietary job evaluation systems. Such systems rely on their accumulation of stored data, so are inherently resistant to changes in classificatory rules. They are thus slow to respond to labour market changes. These issues are discussed in gender inclusive job evaluation standards (eg Standards Australia 2013; Workplace Gender Equality Agency 2013).
38. Whilst multiple sources of data input are only as beneficial as the quality of input from each data source, the range of O*NET data sources is nevertheless impressive.
39. We agree with the comment that O*Net lacks some granularity. In 2011, a small pilot project was funded by the then-EOWA, one of whose elements was to compare the categorisation of skills in 4 occupations (laboratory work, clerical, banking frontline, printing pre-press) in O*NET, Training packages and the Spotlight 'invisible skills' tool discussed in Attachment 1: O*NET provided the least fine-grained skill information.

Singapore skills framework

40. This appears to be primarily a workforce and career management and development tool. It is individually-focused, user-friendly and impressively future-oriented.
41. It is a SkillsFuture initiative, 'designed to promote skills mastery and lifelong learning for the Singapore workforce. As such it is an integral component of the Social Service Industry Manpower Plan'.
42. Within each of 34 industries, the SgSFw is occupationally-based. As an example, the Skills Framework for Social Service is jointly developed by SkillsFuture Singapore, Workforce Singapore, the Ministry of Social and Family Development, and the National Council of Social Service, along with industry associations, training providers, and organisations. Unlike with O*NET there appears to be limited jobholder input.

43. If the SgSFw Social Service Framework is typical of all 34 industry frameworks, each provides 'Sector Information, Occupations and Job Roles within the industry, and Existing and Emerging skills required for skills and facilitating mastery.'
44. Critical Core Skills are defined as 'transferable soft skills and competencies critical for employability and career mobility'. They are instrumentally and individualistically focused on career development – 'thinking critically; interacting with others (in order to learn), staying relevant'. We would hope that the now-superseded concept of 'soft skills', with its legacy of gender bias, is not mirrored in Australia, as it is neither accurate nor informative.

2. Potential case uses

2.1 Where could an NST best add value for individuals, employers and educators and how?

45. Tables 1 and 2 of the Discussion Paper outline potential use cases and pinpoint where existing taxonomies do not provide the information required. The NST will add most value by focusing particularly on addressing these information gaps, even whilst also enabling all nine use cases listed.
46. Therefore a design that enables use case 9 – 'dynamically responds to economic shifts and emerging roles' should be given first priority.
 - a) The Employment White Paper (Australian Government. Treasury, 2023) outlines the need to address skills shortages and proactively build a strong workforce. In particular, a more standardised way of describing skills in demand would respond to economic shifts and emerging roles by help skills matching. This function could particularly benefit people without formal qualifications. From the employer perspective, it could also help employers specify the skills they need, also enabling better job matching in the recruitment process.
 - b) Skills utilised in declining occupations could be matched to skill requirements in growing and emerging occupations, facilitating redeployment. Retraining could be better managed by a clear identification of transferable skills and skills gaps.
47. The equal second priority should be use case 4 – simplify and streamline skills recognition. This is a long-overdue need in Australia, and as Discussion Paper Table 2 illustrates, this use offers important benefits to a wide range and potentially large number of stakeholders - workers, tertiary education providers and students:
 - a) In particular, the refinement and clarification of descriptors of less visible service industry skills has been a crying need. It has fallen on the workplace relations system in Australia to do much of the 'heavy lifting' here, in a way that is quite time-consuming. As well, employers need support, such as that offered by
 - b) Reform of RPL mechanisms has long been an unrealised goal, and prioritising a project applying the NST to this use case would be highly beneficial. The use of NST nomenclature could provide a measure of both standardisation and granularity to individual portfolios, supplementing or substituting for credentials or microcredentials. Standardised nomenclature could help prevent 'puffery', for example in describing skills or in writing job titles. Both jobseekers and employers could benefit. The NST could enable people seeking RPL to frame applications effectively. Employers and education/training providers assessing RLP applications, to more quickly and accurately identify equivalence.

- c) Credit transfer among education providers as long been a fraught issue, and it is possible that the NST could also provide a more explicit framework for credential mapping, particularly in the recognition of micro-credentials and skill sets.
 - d) Recognition of overseas skills and qualifications has been in long-standing need of reform, and a clear taxonomy may prevent the wasting of talent that is currently occurring.
48. Thus we see as an equal second, and inter-linked priority to be the potential role of the NST in informing both training package design and RPL procedures,
- a) The NST could strengthen understanding of the link between recognised training packages and learning and vocational outcomes.
 - b) Links among training products could be formulated in a more inter-operable way, improving recognition/credit transfer pathways and enhancing the RPL process for training and qualifications providers.
 - c) It could be used as a basis for mapping skill families and the use of similar skills in different occupations, enhancing career mobility.
 - d) We support the Australian Universities Accord emphasis on promoting lifelong learning and providing motivation and structural /conceptual support for increased participation in learning by individuals
 - e) The NST could provide a framework for use or endorsement by educational, career and employment support providers in providing widely understood format and content for the compilation of skill portfolios.
49. But actually, use case 8 -- defining workforce roles -- is also very important. This is because it is actually quite hard to identify a skills gap rather than a labour shortage, because it means defining and absence. Employers, particularly those developing new small businesses, may not have a very clear idea of their specific skill requirements. And there may be a disconnect between micro- and macro-level workforce planning. It was our experience, doing a survey of small businesses in Western Sydney, that employers were unhappy with the skills of new recruits, but did not have a clear way of formulating the skills that were missing, or of knowing how to address these skills gaps through finding relevant training programs to access. So perceived skill shortages or deficits were actually the result of an information gap, resulting in inability to plan or to remedy particular skill deficits. Thus the role of the NST in facilitating clear workforce role definition may be a pre-requisite for both use cases 5 (identify, understand and plan for future skills demands - a government role) – and 7 (develop workforces – employers and employees). Use cases 5 and 7 are concurrent and complementary.

2.2 What are the potential unintended consequences or challenges of an NST that will need to be overcome?

- 50. There are risks of omission which can be addressed by currency maintenance protocols
- 51. Most misclassification risks can be resolved over time through technical review and governance protocols
- 52. There are issues to be worked through of alignment with other taxonomies, especially ANZSCO
- 53. There may also potentially be issues of overseas skill recognition if the Australia NST is too divergent from skill taxonomies of other countries.

54. There are also risks of disagreement, eg between industry parties as to definitions of skills, and in particular, as to specification of levels. This is an issue to be resolved by governance.
55. There are risks of divergence between jurisdictions – ANZSCO, the training system, JSA as to definitions and levels. This is a governance issue, and is discussed in depth in response to question 4.1 below.

2.3 What do you believe should be the overarching vision for the NST?

56. While recognising cultural diversity and the unique importance of conserving and applying First Nations knowledge, to support the sustainable development of national productivity and social justice by providing government agencies, the community, employers, educators, employees and their representatives with an accessible, current and readily intelligible way to understand skill content and pathways to the intertwined development and use of skill.

2.4 What guiding principles should underpin the taxonomy? Are there any non-negotiables?

57. We suggest as guiding principles: Accuracy, comprehensiveness, currency, equity, and timeliness. This would mean raking the seven principles in this order:

Priority 1 Comprehensive

It really is not a taxonomy unless it is comprehensive. And it needs to be inclusive of the skills of the whole community, including First Nations, immigrants, people of diverse genders and abilities. So the NST should not be limited to labour market skills: it needs to be capable of reflecting skills used in the household and community sectors. ANZSCO is purely occupation-focused and as noted in the Discussion Paper, is not comprehensive and seems always to lag behind the emergence of occupations. We recognise the labour-intensity of maintaining currency, but wonder if there is an interactive web-based mechanism for notifying of emerging occupations and skill demands.

Priority 2 Accessible

We fully endorse the notion that the NST should be freely accessible, without licensing or access fees, and supported by guidance and stakeholder services. Ideally, given advances in machine languages, it should be accessible for the vision-impaired, and a means of accessing translations into First Nations and community languages should be explored, at least at the broadest level if not the most granular. We acknowledge the tension of this goal with time constraints. At the least, the availability of the tool should be publicised in different language media. A system of training for service providers, such as employment services providers and school careers counsellors should be provided, and engaging gamified means of drawing users in could be explored.

Priority 3 Dynamic

Regular updating is essential for relevance. Otherwise will both be misleading and also have limited stakeholder trust and use. This goal is of course in tension with the needs for comprehensiveness and accessibility. A partial resolution might be to have a monitored site for stakeholder feedback and notifications.

Priority 4 Evolutionary

Input from unions, employer groups and industry experts will be important, and actually flows from the first three criteria. Yes, it will be important to avoid conflict with existing systems, but at the same time it will be necessary to negotiate in order to fill gaps in these.

Priority 5 Integrative

A major source of utility of the NST will be to provide stakeholders with advice as to pathways, providing an understanding of skill families, and ensuring a common language between jobseekers and employers.

Priority 6 Contextualised

This priority can actually be met by comprehensiveness, dynamism and accessibility. It will also contribute to achieving these criteria. This is because high usage, particular if involving an input or feedback function, will add to comprehensiveness and local relevance. The provision of rich data examples will enhance usability.

Priority 7 Interoperable

Because of the limitations of existing taxonomies, alignment should not be pursued at the expense of the integrity and innovation of the NST. Whilst interoperability is an issue, it should definitely not be a driving factor, as it is important to move on from taxonomies that no longer reflect the world of learning and work, and that perpetuate old inequities, such as failure to accurately classify service economy skills. Conflicts can be managed through an evolutionary approach.

2.5 How should principles be prioritised if trade-offs are required?

58. If trade-offs are required, comprehensiveness has to be the main consideration as we have already noted the problems created by gaps in taxonomies such as ANZSCO. Whilst it is noted that employers have commented on gaps, these are most likely to disadvantage jobholders. In particular, taxonomies may omit, discount or assign an inappropriately low skill level to less visible skills, and skills in newer occupations. People in equity groups, including women and First nations people, are most likely to be disadvantaged by these omissions. Indeed, in the case of aged care workers, but with a broader reference to feminised occupations,

What should an NST look like?

3.1 Design principles

Definitions and nomenclature – how should skills be defined?

Definitions of skill relevant to a taxonomy

59. 'Skill' is a difficult thing to pin down, and it has been the subject of extensive debate among academics and policy makers alike for at least the last three decades. We don't propose to cover these debates in any detail here. But we will note some starting points. First, 'skill' is a synonym for personal capacity or capability. While we can talk of 'skilled' jobs', this refers to jobs that require skilled people to do them. In addition, there is a type of skill involved in acting in a network of people and achieving membership of a 'community of practice' (Lave and Wenger 1994) – which has previously been termed 'collective competence' (Schofield and McDonald 2004).

60. Second, there is a difference between 'objective' skill and 'ascribed' or 'socially constructed' skill. This gets at the sense in which a skill can exist without having been recognised as such – although we avoid excessive philosophising on this point. And that people can be 'objectively' skilled but not acknowledged as such.
61. Third, skills and the jobs to which they apply that have long been recognised (like the capabilities underpinning welding, riveting, carpentry) are likely to have been well studied, and broken down into orderly qualification structures, backed by curricula underpinned by sound learning principles and a well-developed vocabulary. The converse applies.
62. Fourth, recognition of such skills may be further underpinned by effective employee organisations (aka unions). Historically these have been male dominated.
63. The last few decades have seen the entry of women into the workforce, the rise of new occupations, and dramatic changes to work processes, particularly in the service and care sectors. The task of itemising and recognising the objectively real but hard to pin down skills these people use has only just begun. This despite longstanding calls for and experimentation with new methods of skill recognition particularly in industries to do with care work – notably nursing, which has a 'core' of 'objectively' recognised work processes, as well as a number of less well defined and 'intangible' capacities underpinning it – that may be 'naturalised' as women's skills. In addition, 'care' work is increasingly integrated with other work, such as technology and systems management. Resource constraints have also increased the importance of skills that underpin multitasking, rectification of errors, working at speed, rapid interpersonal communication, and so on.
64. At least since Spenner (1990: 402) skill content has been defined as not only technical but also cognitive and interactional. Spenner identified two crucial job dimensions – complexity and autonomy – as two crucial skill dimensions. His concept of complexity had three sub-dimensions – level, scope and integration:
- Level** as a measure of difficulty of difficulty, embracing knowledge content, accumulated learning, required aptitudes, experience and responsibility, and capacity to handle unpredictability
- Scope** as a measure of task range (this would need to be defined in such a way as to avoid simple multiplication of tasks, or work intensification)
- Task integration**, which refers to the co-ordination of diverse activities.
65. Spenner also defined 'autonomy' as an element of skill. We note autonomy is an ambiguous concept, that can mean (1) the ability (competence) to perform a task, job or role or (2) the ability in the sense of 'having permission' to do the job (Hampson and Junor, 2011, 2015). Thus Spenner implicitly extended the concept to include power relations at work, which can encourage or discourage the exercise – and the recognition – of skill at work.
66. As mentioned above, Spenner also noted that the concept of 'skill' entails differing levels of proficiency, as in 'more or less' skilled, or indeed 'unskilled' vs 'skilled'. This also refers to 'degree of difficulty' – although 'degree of difficulty' is relative to the capability of the person undertaking the role. Registering, or operationalising skill levels is relatively easy for work processes that rely on visible tasks, but less so for work which is less visible by nature – in particular service sector work, and care work. Complicating matters is that much service or care work (for example nursing) requires a

mix of the ability to undertake specifiable technical processes – such as administering a dressing or stitching – while using interpersonal skills to facilitate this – that is, high levels of integration.

67. In summary, a comprehensive definition of 'skill' includes: personal capacity, as well as the social recognition, for example in qualifications, of that capacity, and encouragement or permission (autonomy) to exercise it. It refers to characteristics of jobs – scope and integration of tasks, and level of ability – degree of proficiency – to undertake them. It may include a capacity to work collectively (possibly not necessary to a skilled watchmaker). A less comprehensive approach to skill definition might seek to minimise one or other aspect of the above.
68. **What is the best way to provide a dynamic**, rather than a static, conceptualisation of skill – ie to capture skill development over time, through formal and experiential learning?
69. Such measures as 'volume of learning' can only work as averages due to individual differences in learning ability ('trainability') – possibly dependent in part on aptitude. There is also the issue of the quality of training, which may vary considerably between training providers. In short, people will progress through skill levels at different rates.
70. A partial answer is that capturing the dynamic process of learning depends on what type of skill and work process is referred to, and where it stands in relation to the concepts outlined above – complexity, autonomy, scope, integration.
71. Qualification streams and effective assessment processes will capture skill development over time, especially if backed up by an organised curriculum. It is less easy to map 'invisible' skills, which lie behind work processes that may not be easily noticeable, especially if ill-defined for example in terms of human attributes or personality characteristics
72. Just as the issues of defining skills content have not been adequately met, nor have the issues of training design, much less delivery, been adequately envisaged. New approaches to training will have to be developed. At present, most 'invisible' skills are learned through some variant of 'experiential learning' – or workplace learning. These probably have the most potential, although an ongoing problem is the resource-constrained nature of many workplaces (particularly care workplaces) in which workplace training is not prioritised.
73. It is a matter of debate where the concept of **competence** sits in concepts of skill that range from everyday accomplishment to virtuosity.
74. **How to capture the full dimensions of skill use at a range of levels of proficiency**, incorporating concepts of depth, breadth and integration? Here we refer to Spotlight Skills Recognition model in Attachment 1. Its purpose is to assist a supplementary job analysis process, by providing a vocabulary for registering hard-to-define invisible skills, deployed at different proficiency levels – levels that may diverge from the level at which other levels of knowledge and skill are deployed in a particular job.
75. What to do about skills that are '**invisible**' (Star & Strauss 1991) or hard to verbalise? This is a long-standing issue, as can be seen from the early dates of references cited. The skills may:

- Be internalised, somatically, cognitively or emotionally, applied in work processes that require a 'feel' for the interaction of materials and tools or for the relevance of contexts (Suchman 2000);
- Involve work with sentient bodies, the naming of some of whose processes lack social authorisation (Strauss et al., 1985, Lawler, 1991; Korczynski 2013)
- Be essential but lacking managerial authorisation or involve unacknowledged delegation, eg keeping a process going through workarounds, creating human spaces and networks, or detecting emerging contingencies (Kusterer 1978; Endsley 1995; Bolton 2010)

76. The easy answer is that it is the role of a taxonomy only to register generally agreed skills, but this approach risks obsolescence. The problem can be resolved, however, through the governance mechanisms and updating procedures that will be established.

77. It is important to ensure that skill is defined in terms of learned capabilities, acquired through the interaction of knowledge and action/activity, rather than as the application of acquired knowledge. Attachment 2 provides one model of this interaction.

Structure (skill groupings and nomenclature)

78. We are concerned about the effect of unstated binaries and hierarchies, and the risk of omissions, in the following groupings:

- **Core skills:** The concept of core skills is problematic. It is subjective: what gets relegated to the 'non-core'? It makes sense in an educational curriculum that consists of core and options, but the concept of 'core' can establish a dangerous hierarchy of concepts of 'important' and 'unimportant' when referring in a decontextualised way to skills as enablers of work activities. 'Non-core' carries the implication of 'optional'.
- **Technical skills vs non-technical skills:** This distinction is outdated and sets up a hierarchy. It is already a quarter-century since the concept of socio-technical skills was developed. And why for example are not personal care work skills a combination of technical and interpersonal? They are not one or the other, but involve the careful, negotiated use of technology with frail human beings. Tools and methods' includes only technology skills, tools used and knowledge. We are not sure where the contextual awareness, reflexive and interactive skills itemised in our 'invisible skills taxonomy' would sit in this binary. Yet the omission of these skills in job classifications has been ruled to 'lie at the heart of gender-based undervaluation' (Fair Work Commission 2022, 2024). We understand that the NST cannot be used to adjudicate workplace relations matters, but nor should it have the unintended consequence of reinforcing biased skill evaluation.
- **Behavioural:** All skills are behavioural so again the concept is a reductive one. The term appears, however, to represent a laudable attempt to avoid the technical/non-technical binary. O*NET's categories of 'subjects, tools and methods', made up of technology, tools and knowledge seems to have no place for these skills, so it is more important to find a way of registering the, rather than quibbling about the term used, provided it is well-understood.
- **Cross functional skills:** This may be a useful concept, but again what is the

implicit contrast? Specialist skills? Where is the dividing line between specialist and generalist when it comes to skills rather than to occupations? Why are interpersonal skills assumed to be generalized across occupations, rather than quite specific to particular occupational practice?

- **Cultural competency skills:** It is good to see these included, including in the SFw. Care however needs to be taken to ensure that it applies, not only to the person from the dominant culture working with people from 'minority' cultural groups, but equally to the immigrant of First Nations person navigating the 'mainstream' culture.

Granularity

79. We agree about the lack of granularity in O*NET. There may be a trade-off between the labour-intensity of taxonomy construction and maintenance. But we think, from our experience of coding in building the Spotlight taxonomy in Appendix 1, that the detail comes first, arising out of the job data, and that categories are gradually sifted and combined at higher and higher levels of abstraction, so that the broad categories emerge at the end, with levels of granularity lying under them. So this is a resource issue.
80. What we consider to be absolutely the most important aspect of granularity from an equity perspective, is that there not be widely divergent degrees of granularity between occupations. Lack of granularity is linked to compression of levels. Attention has been drawn to the problem that a low level of granularity can result in the non-recognition of skills, with some (mainly male) work processes being defined down to the 6-digit occupational level, and others (mainly female). Otherwise the outcome is the problem that has arisen in ANZSCO where types of tour guides all have their own six-digit code, whereas half a million care workers are lumped together. We believe that ANZSCO is addressing this problem, but we think it may be quite a widespread one in service occupations.

Information attached to each skill

81. We see Rich Skill Descriptors as a valuable adjunct. Examination of the RSDs attached to O*NET and Singapore taxonomies demonstrates their utility. As indicated in the NST Discussion Paper, they provide definitions and metadata clarifying and standardising the meaning of each skill descriptor in the taxonomy. As well, inclusion of keywords will help build up a conceptual map of each skill, and enhance searchability. Of course, constructing and maintaining these additional layers of information will add to the time and cost expended on the NST, but if possible, providing this additional will add value, especially if it is machine searchable.

Proficiency and levelling

82. We see the inclusion of proficiency levels as crucial to a recognition of skill deepening in the journey from novice to expert. Literatures on workplace learning deal extensively with stages in this journey. It is essential in our view that a skill taxonomy register stages through which 'human capacities are expanded ... [through] practices of learning in, for and through the workplace', (Eraut 2011; 143; Boreham et al 2005; Hampson & Junor, 2010, 2015) Such learning is an important basis of innovation (Høystrup 2010; Wenger & Snyder 2000). Skill deepening, along with technology deepening, are the two acknowledged sources of productivity growth (Quiggin 2017). The taxonomy in attachment 1 provides our systematic approach to defining five levels of proficiency,

drawn a synthesis of the workplace learning literature.

Alignment to other taxonomies

83. Our answer to this question is similar to our answer to the interoperability question: alignment to other taxonomies should not be pursued at the expense of the integrity of the framework, and its capacity to make good some of the gaps and deficiencies that we have indicated in them.

3.2 Other additional features

85. Supporting materials, usage guidelines, technical solutions technological solutions that will enable or better facilitate NST usage are all essential. Also highly desirable are machine readable formats enabling seamless integration with software systems, such as job matching platforms and HR systems, and user-friendly formats help accessibility for individuals without technical expertise – eg user-friendly website with clear navigation and explanations.
86. While this has elements of a wish-list, depending on budget constraints, usability is a key factor. And whilst we might not fully agree with the conceptual basis of the Singapore model, its web presentation is a model to emulate in its attractiveness and ease of navigation.

Implementation considerations

4.1 What are the most appropriate ongoing governance arrangements for the NST and why?

Governance

87. For the sake of ensuring timeliness and access to support, we would support option 1 - Managed within JSA and existing governance (e.g. MAB or Commissioner approval). It should be possible to co-opt or set up a regular consultation mechanism with representative from education peak bodies, and community (eg First Nations) This can be combined with stakeholder input.
88. A new National Skills Taxonomy will have to articulate with institutions that affect the delivery, assessment and recognition of training, some present requirements of which are in tension with the notion of skill developed in our submission. This 'new' notion of skill emerged in the workplace relations system, where its application in female dominated care-work occupations is currently being explored. Implications of these developments for ANZSCO and the AQF are yet to be determined. This a question of regulatory articulation among the body that emerges for the NST Framework, the JSOs administering Training Packages, and the Competency Based Training and Qualification arrangements on which they are based, and Australian Skills Quality Authority (ASQA), the body regulating Registered Training Organisations (RTOs) and their Requirements for Continuing Registration. All are administered by various other legislative, licensing and funding arrangements that include State governments and Federal Government Departments.
89. The comprehensive and commonsense notion of skill that we have expounded and that is currently being explored through the FWC may have difficulty articulating with these arrangements. This expanded concept of skill equates to personal capacity, but with a collective aspect. It consists of expanded and finely described content, whose

elements (capacities for awareness, communication and coordination – as set out in Attachment 1) exist in different combinations or ‘clusters’, and at a range of different levels of proficiency. These capacities, now encompassed within an expanded definition of skill, are conceptually distinct from personal attributes and are exercised through interactions and relations. A vocabulary to describe them is still very much in development, as a part of their recognition.

90. It remains to be seen if the new skill model’s characteristics can be accommodated in its institutional surrounds. If it is, the new skill surrounds will have to build:

- A capacity to identify and name newly emergent skills content, and describe it in qualifications
- A capacity to envisage and incorporate newly named skills content as articulated through levels of proficiency, as defined in learning theory
- A capacity to assess new skills content with reliability and validity.

91. This is a governance challenge, to be addressed with some alacrity, as the world of work is rapidly changing. Skills recognition institutions and practices have intermittently over the past 3 decades been through changes that appear significant but have left some problems of skill recognition unresolved. The new institutions and practices of skill identification should entail the capacity for competency standards to encompass a new ‘high granularity’ content, in hitherto unmapped combinations (or ‘clusters’), as well as, most strikingly, increasing levels of proficiency evident at different skill levels.

4.2 How should the NST be updated and maintained?

How skills are identified for inclusion

92. **Data driven approaches** to identifying skills can be a useful aid, long as they are thoroughly researched and validated. But we would see these approaches as a starting point, to get the construction of the taxonomy off and running — and only after the architecture has been worked out.

- (a) There is a risk of simply replicating existing sources of bias in job data. To take one example, job ads can reproduce as they can reproduce old prejudices, for example regarding the nature or level of job skills. This is particularly the case, as discussed in the Governance section of our response (para 91-94 above) when it will become necessary to address the issue of expanding the definition of what constitutes skill. With the growth of the care and service economy, the challenge is now to include intangible service skills, that are only now escaping from their characterisation as gendered personality traits.
- (b) It would be advantageous if the NST provided a fresh new leadership role in defining and documenting skill, rather than following or replicating existing practice. and the NST could provide a valuable new lens on skill. The risks of relying on job advertisements as a source of skills data have already been pointed out: they are likely to be imprecise and also to overlook less visible skills.
- (c) In general data-driven approaches are likely to rely on existing conceptual frameworks, whether licensing information or existing national or international taxonomies, that are likely to lag in an understanding of the rapidly changing world of data analytics. Use of AI however is likely to be required to provide data linking.

(d) Nevertheless, both the NST architecture and its job data cannot emerge out of thin air, and so there will be a strong need to refer judiciously to overseas models and to make heavy use of available data sources. The caveats already identified above can be addressed, including likely areas of data gaps such as under-codified service skills. The best way to manage the risk of error and omission is through consultation. Therefore we do not see data-driven and consultative approaches as alternatives, but as complementary, albeit likely to involve debate. This is a governance issue.

93. **Consultative approaches** should certainly include industry input, despite the issue of resource-intensiveness identified in the Discussion Paper. As the Discussion Paper notes, there are also the issues of stakeholder availability, not to mention representativeness, and the risks of bias and failure to look ahead. We would however suggest going beyond industry input to seeking advice from researchers and community advocates, particularly in order to ensure a sustainable economy perspective.
94. **Data quality frameworks and standards** should include advice from stakeholders representing equity groups whose skills are likely to be under-recognised on the basis of First Nations, immigrant, disability and gender status. Stakeholders qualified to advise on sustainable/green economy/transition economy skills should also have input.
95. **Data storage and dissemination** — there are good models: ABS, Singapore SFw. We are not qualified to offer more detailed opinion in this area.

Conclusion

- 96 Thank you for the opportunity to comment. The NST is a very important and exciting project. We hope that it will fill important information gaps in a way that enhances economic and social wellbeing.

Attachment 1

The Spotlight skills framework

- 1) As indicated on the Employment New Zealand website (2024):

‘The Spotlight Skills Recognition tool helps focus on the skills that job holders can build on in carrying out individual and group activities. The tool provides a better understanding of the skills used in service work that can be overlooked or taken for granted, especially skills used in interacting and relating, coordinating and shaping awareness.

Types of skills which are often overlooked are the skills of combining activities in work streams and those involved in the sensitive, responsive and integrated delivery of appropriate services to people.’

- 2) **Table 1 sets out the Spotlight taxonomic framework.** The nine skill content descriptors, grouped into three sets of three, and the skill level descriptors are the framework. The activity examples are illustrative only, and not part of the taxonomy.
- 3) The nine skill content descriptors are:

A Contextualising/Shaping awareness: capacity to:

A1: Notice and use cues and signals; take account of contexts e.g. workplace and social roles, rules, resources, regulations, conditions, risks and emerging situations

A2: Self-monitor one’s own reactions, be aware of others’ needs and responses, and guide or cue the attention, thoughts, feelings and behaviours of self and others

A3: Assess and use judgement in situations where it is necessary to evaluate antecedents, implications, impacts, outcomes or consequences

B Connecting/Interacting and relating: capacity to:

B1: Draw and respect boundaries for oneself and others; support, negotiate, persuade, de-escalate, advocate and influence in dealings with peers, people in authority, people under one’s authority or care; people outside formal lines of authority

B2: Communicate effectively verbally and non-verbally; deploy empathy, emotion work, range of aesthetic communication styles, appropriate touch, a range of language levels, registers and variations of pace; observe, listen actively; interpret, reflect back, & use silence and space effectively

B3: Work with people from diverse backgrounds of ethnicity, class, disability, age, gender and sexuality; develop a deep understanding of other cultures; understand the dynamics of intercultural interactions and relationships

C Coordinating: the capacity to:

C1: Make constant small adjustments to one’s own sequences of activities, prioritising, switching between lines of work, dealing with interruptions, picking up threads and refocusing

C2: Work out arrangements for getting things done by liaising with others; weave activities together into the overall arc or trajectory of work, facilitate, (re)schedule, accommodate, track. Systematise shared work processes, balance conflicting demands

C3: Work around obstacles, keep things on track, rectify mistakes, pick up the pieces; restore and stabilise the workflow.

The five skill levels are derived from workplace learning theory. They are described as follows:

- 1. Orienting:** Entry into a job, or relearning after significant changes to requirements or technologies requires familiarisation and (re-)orientation; consciously identifying and adopting relevant resources, rules and roles. Through observation, practice and deliberation, make explicit the sequence of actions required
- 2. Fluently performing:** Through practice, the jobholder becomes increasingly able to undertake work activities proficiently, systematising actions into smooth operations without needing to give conscious thought to the procedures being followed
- 3. Solving new problems as they arise:** Having acquired fluent proficiency, the jobholder can engage simultaneously in multiple activities, solving problems that arise whenever contingencies require automatic routines to be adjusted, responsibly applying initiative and discretion
- 4. Sharing solutions/Applying expertise:** Through being embedded in a work team or network, the jobholder helps shares work approaches with less experienced colleagues and works collaboratively to address novel problems. Dialogue and openness to alternatives are the basis for shared learning
- 5. Expertly shaping systems:** The jobholder helps embed new shared approaches or informally acquired practical expertise in the ongoing work system. Scope depends on degrees of delegation and standardization. Jobholder may use informal systems and networks.

Table 1 The Spotlight taxonomic framework

The Spotlight categories of skill and their elements	The Spotlight skill levels				
	Orienting	Fluently performing	Solving new problems as they arise	Sharing solutions/Apply ing expertise	Expertly creating systems
	Building experience through practice, reflection and learning to work with others	Applying experience in a practiced and self-reliant way	Providing resourceful solutions to problems as they arise in the course of work activity	Sharing developed expertise with colleagues or team	Embedding new solutions in work processes
Examples of work activities performed at each skill level					
Contextualising/Building and Shaping awareness <i>Capacity to:</i> <ul style="list-style-type: none"> Perceive contexts or situations Monitor and guide reactions Judge impacts 	Map unfamiliar job contexts	Consistently monitor job contexts and situations	Solve unfamiliar problems in interpreting contexts	Share new approaches to interpreting situations	Set up shared processes for monitoring contexts
	Learn to monitor & guide own and others' reactions	Consistently monitor and fluently guide own and others' reactions	Solve new problems in monitoring and guiding reactions	Share solutions to monitoring and guiding own and others' reactions	Introduce new approaches to monitoring and guiding reactions
	Learn to judge impacts	Consistently judge impacts	Solve unfamiliar problems in judging impacts	Share solutions to judging impacts	Establish new methods for evaluating impacts
Connecting/ Interacting and relating <i>Capacity to:</i> <ul style="list-style-type: none"> Negotiate boundaries Communicate verbally and non-verbally Work across diverse cultures and communities 	Find ways to negotiate work roles and boundaries	Negotiate work roles and boundaries effectively	Resourcefully solve problems in/by negotiating roles & boundaries	Share solutions in/by negotiating role boundaries	Implement shared processes for negotiating role boundaries
	Learn effective methods of verbal & non-verbal communication	Effectively communicate, verbally and non-verbally	Solve problems of/by effective verbal and non-verbal communication	Share solutions for effective verbal and non-verbal communication	Implement shared approaches to communication or relationship-building
	Learn to communicate across cultures	Communicate effectively across cultures	Solve problems of inter-cultural communication	Share solutions for inter-cultural communication	Establish systems for building inter-cultural relationships
Coordinating <i>Capacity to:</i> <ul style="list-style-type: none"> Sequence and combine activities Interweave one's activities with others' Maintain or restore workflow 	Develop methods for organising your own work	Fluently link up your own tasks into a smooth work process	Solve new problems in scheduling and managing own work	Share new approaches to organising personal work roles	Create or improve systematic approaches to integrating individual work activities
	Develop ways of linking into the overall workflow	Interweave your activities fluently with those of colleagues	Solve problems in/by interweaving your activities with those of others	Share approaches to interweaving individual & team activities	Create or improve systematic approaches to integrating team work activities
	Learn approaches to preventing/dealing with disruptions	Deal fluently with potential or actual workflow disruptions	Solve problems in maintaining/restoring workflow	Share approaches to stabilising workflow	Create systems for stabilising workflow

Attachment 2

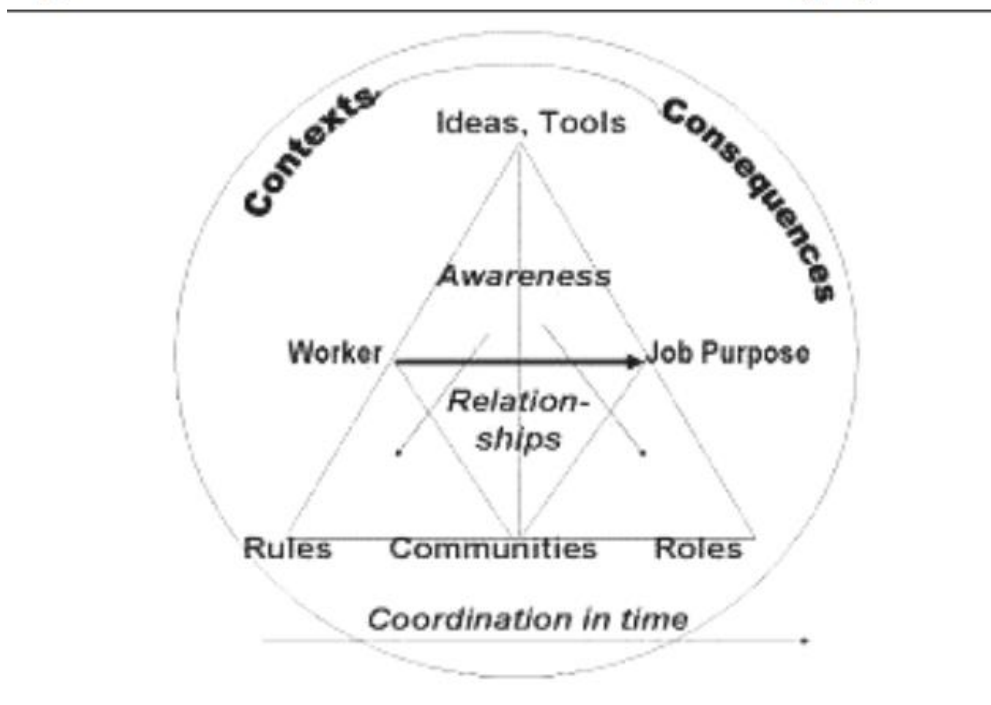
Model of the interaction of learning and practice in the acquisition and deployment of skill

This model emphasises the social or collective aspects of skill. It sees skill **acquisition** and **use** of skill as reliant on **resources** in the form of **physical tools** and **symbolic tools** (ideas), organisational and socio-cultural **rules**, and defined **roles** such as job and occupational boundaries and divisions of labour/scopes of practice.

Work activity is carried out by means of these **resources (tools, rules and roles)**. **Skill** involves the **coordination of learning and activity in time**, the **context** of the organisation, community and/or society, and awareness of the **consequences** of work activity that may change this context.

The model sees **work and learning activity** as generating **experiences** (sensory, emotional, aesthetic) perceived and understood via mental images drawn from previous experience.

Learners or jobholders alternate between activity impacting on the world outside themselves and internal assimilation of the **results (internalisation)**, comparing them with previous **experience (learning by doing)**. **Practice** involves a **continual movement between internalisation and external application**, and **proficiency** is developed as a result.



Sources: Engstrom 2001, Strauss 1993, Sawchuk 2003_

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