

Department of Education  
and Training

# Everybody's Core Business

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Supplementary Report:  
Findings from the literature

August 2016

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# ASSESSING GENERIC COMPETENCIES

## Introduction

Generic competencies have long been recognised as important and a lot of work has been done to define them. After the Mayer Key Competencies, they became Employability Skills, and more recently, the Core Skills for Work Framework was developed. In Australia and overseas, the concept of 21<sup>st</sup> century skills is also gaining traction through the Assessment and Teaching of 21<sup>st</sup> Century Skills project.

But despite these definitions and frameworks, and some agreement on what the skills are, employers continue to complain that graduates are not “work ready”.

It’s possible that lack of progress is partly because these skills still aren’t being formally measured and assessed, and as the saying goes, “what get’s measured, get’s done”. Without a measure and an assessment against that measure, there is no way of knowing who has those skills and to what degree, and there’s little motivation to find out. Measuring and assessing also holds people and organisations accountable for the resulting success or failure. It gives data to show what’s been done or not done, and what needs to be done differently.

But measuring and assessing generic competencies presents unique challenges. Failed initiatives, like the proposed ‘Job Ready Certificate’, suggest it’s a sticking point.

## Benefits of assessing generic competencies

At the macro level, assessing generic competencies puts a national focus on skills that are so vital to the success of our economy, of individual businesses and of individuals. It puts responsibility on educators and employers to develop these skills and gives them a common language for conversations about what’s being aimed for, who does what, and the skill levels of individuals.

At a more micro level, students and teachers in schools that are collecting data on generic competencies report positive influences on teaching and learning, and school performance. These include (Soland et al. 2013 pp10-11):

- U greater efforts to improve the quality of curriculum and instruction because of accountability, particularly when the assessment includes open-ended items that measure complex problem solving (Center on Education Policy 2006; Hamilton et al. 2007; Lane, Parke, and Stone 2002; Stecher 2002).
- U increased effort to improve school performance, through programs for low-performing students, the use of data to improve decision making, professional development and other supports to improve teaching (see Hamilton 2003, Stecher 2002, and Faxon-Mills et al. 2013)
- U a sense of professionalism among educators, especially when they are heavily involved in assessments. For example, Stecher (1998) shows that assessments requiring more teacher involvement can positively influence attitudes and beliefs about teaching, inform curriculum and instruction in meaningful ways, and change how teachers go about measuring skills in their own classrooms.

Soland et al (2013) also point out that an effective assessment tool can give teachers data they need to identify students’ learning and challenges and pinpoint what can be done to help them. Effective assessment gives teachers information they wouldn’t otherwise have and information that will help students improve their performance. The right kind of assessment results can also improve communication and motivation. Having concrete data can help teachers become more intentional about fostering these competencies, and can provide a common vocabulary among teachers,

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parents, and students. Having regular data can encourage teachers to meet regularly to discuss student needs.

## Some of the challenges

### The nature of generic competencies

The very nature of generic competencies raises particular assessment challenges. They are tacit, context-dependent and interconnected (Sweet, R. 2008 p19). Because they are less cognitive, more performance oriented and more attitudinal, they have a significantly different emphasis and scope from other educational assessments. Their assessment can't always be readily amalgamated with subject assessments. Their tacit and attitudinal nature also means they need to be translated into concrete indicators of the types of behaviour young people should demonstrate to succeed in further study or work.

### The mismatch between schools and workplaces

The way generic skills are thought of, taught and assessed in a school context does not always correspond with how businesses think about and develop the skills they need in their employees. In a paper on generic competencies in higher education, Bennett et al (2015) make this point.

*“While nearly all students will participate in teamwork activities during their degrees, for example, it is likely that the way in which these are positioned and assessed does not translate into the ability to function successfully within a team in the workplace.” (p.6)*

In previous research, employers have said they don't think schools would find it easy to develop and assess employability skills, and that if real job readiness is to be assessed and reported, then real behaviour in real workplaces will need to be assessed. (Sweet, R. 2008 p8).

Even if this was to happen, there is also the issue of variances in how workplaces define the specific skills and attributes they need. It can depend on the workplace and it can depend on roles within it. For example, some people work in large teams, and need different teamwork skills and attributes than those working with one or two others. The communication skills needed in customer service are not the same as those needed by digital developers. Accommodating these differences in assessment tools can be challenging.

### Competing priorities of sectors

Assessing generic competencies to prepare young people for higher education or work, brings together the sometimes competing views and priorities of three different sectors—schools, higher-education and employment. How generic competencies are assessed will depend on whose requirements take precedence. For example, if assessment is primarily to satisfy employers, who want to know that the skills assessed are relevant to their workplace, then assessment tools would aim to mimic workplace scenarios and assessment may even take place in workplaces during work placements. But if schools are solely in charge of assessment, they're likely to dismiss these approaches as too difficult and costly and instead assess in ways that can easily integrate with what they already do.

### Time and resourcing

Assessing generic competencies can be time and resource intensive, and schools already feel pressured by lack of time and resources. A review in 2009 by the Commonwealth Parliament looked at the impact of combined study and work on the success of youth transitions and Year 12 attainment, and investigated the potential of recognising and accrediting the employability and

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career development skills gained through students' part time or casual work. One informant commented on a previous process established by the WA Curriculum Council to recognise part-time work as part of structured workplace learning which contributed to secondary qualifications. She suggested the program was unsuccessful due to the demands placed on all involved parties and the lack of resources.

### **Equipping teachers to assess**

Recent Australian research has highlighted the fact that some teachers are worried that they are not equipped to assess job readiness without extra training, and that they have too many other things to do in any case (Sweet, R. 2008. p8)

### **Achieving consistency in a national approach**

A national approach to assessing generic competencies will require consistency in what is assessed and the assessment process (Sweet, R. 2008, p4). As assessment would be done by schools, which are the jurisdiction of state and territory governments, agreeing on a national approach would be no small task.

## **Criteria for evaluating approaches to assessment**

### **Fitness for purpose**

Assessment should fit the purpose for which it's carried out. Soland et al (2013) identify the following four broad purposes:

- u monitoring system performance
- u holding schools or individuals accountable for student learning
- u setting priorities by signalling to teachers and parents which competencies are valued, and
- u supporting instructional improvement


Clarifying the purpose of assessing will inform the most suitable type and method of assessment, and the degree of rigour required. For example, 'high stakes testing', like examinations to decide entry into university, demands evidence that is reliable, fair, valid and credible.

The purpose may vary for each stakeholder. For example, learners may need information about their performance, to make decisions about work and study and where and how they can improve their skills. Teachers and trainers need information that will inform their practice and how they can help individual students. Schools want to know how they are performing in equipping students for work and further learning. Employers want information about the skills someone can bring to their workplace.

In considering the purpose of assessment, the distinction is commonly made between formative assessment (to aid in the learning process) and summative assessment (to make final judgments). Some assessments are formative or summative only, and some aim to be both, especially when students will have another chance at the same kind of summative assessment at a later time.

### **Cost**

For school systems with limited budgets, cost is an important factor in deciding whether and when to use an assessment. Assessment costs are often driven by the complexity of the test format, which means that assessments of some generic competencies may be more expensive than more traditional assessments. Although some measures require only a brief paper-and-pencil survey, others involve complex computer simulations and rating schemes, with multiple observations of a



student. As a result, the cost of purchasing and using different measures can vary substantially. To complicate matters further, the complexity of the test format often mirrors the complexity of the competency being measured, which means some of the highly valued competencies, such as creativity, are frequently the most expensive to assess. At the same time, technology has made it possible to reduce some costs associated with complex assessment. For instance, electronic scoring algorithms can replace human raters in some situations, and many of the computer-based simulations are much less costly than a similar, hands-on activity. (Soland et al. 2013, p12 )

## **Logistics**

Clearly, cost does not come only in the form of a price tag on an assessment. Staff time in particular represents a cost, in terms of both dollars and time taken from direct instruction or other activities. More complex measures often require time to teach educators how to administer, score, interpret, and use them. For example, for test responses that are scored by teachers, test developers frequently try to promote high levels of rater agreement by providing detailed instructions and rubrics that help teachers score the test in a consistent manner. While this approach tends to help increase reliability, it typically requires teachers to reallocate time from instruction and other activities in order to participate in the necessary training. At the same time, reports from countries using this approach suggest that teacher involvement can be quite valuable as a professional development tool and can inform instruction. Given these tradeoffs, educators wishing to use complex assessments need to think carefully about whether the investment of time and resources will be worth the potential benefits.

Technological requirements are also an important consideration. Schools must be sure they have the technological infrastructure to administer and score the tests and to make sense of the data they produce. In particular, schools must ensure that the computers they have are powerful enough to run simulations, and that there are enough consoles to allow a reasonable number of students to complete the assessment. Schools also have to provide support to teachers who may be less familiar with the technology, as well as when glitches inevitably arise. These demands will only increase as the sophistication of the technology increases. (Soland et al. 2013, p12)

## **Reliability**

Reliability has both technical and conversational meanings, though the two are not unrelated. Put simply, scores on a test are considered reliable if a student taking the test would get essentially the same score if he or she took it again under similar circumstances (and assuming no learning occurred as a result of the first administration). At heart, reliability is about consistency. Inconsistency results from the effects of measurement error on scores, and different sources of error can contribute to this lack of consistency.

A test or assessment with low levels of reliability will not provide useful information about students. If a score is determined more by chance than by the student's skills in the tested area, the score will not be useful for decision making.

In the discussion paper for the Job Ready Certificate, Sweet proposed that for assessments of job readiness to be reliable, they should be based on behaviour observed over a fairly long period rather than only a brief period. It was suggested that work placements used for the award of the Job Ready Certificate should be required to be a minimum length of five days.

It was also suggested that assessments would be more reliable if based on several ratings rather than just one and that the award of a Job Ready Certificate should be based on several assessments rather than a single assessment. This was also seen as fairer to young people, as it gave a chance to improve their work.

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## Validity

Validity is the most important consideration when evaluating the quality of a test or assessment. The term refers to the extent to which there is evidence to support specific interpretations of assessment results for specific uses or purposes. For example, a test claiming to measure student ability to conduct arithmetic operations with fractions may produce consistent scores but would not be considered valid if it tested only addition and subtraction of fractions but not multiplication and division. While this example is clear-cut, others are not.

A convincing validity argument generally involves synthesizing evidence from a variety of sources. Examples of the types of evidence that can support a validity argument include evidence based on test content (e.g., expert evaluations of the extent to which test items are representative of the domain that the test is designed to measure), evidence based on response processes (e.g., interviews with examinees as they “think aloud” while taking the test in order to determine whether the test elicits the intended responses), and evidence based on relationships with other measures or other information about examinees collected either at the same time or in the future (e.g., the extent to which scores on a reading test correlate with scores on a different reading test, or the extent to which they predict later performance in postsecondary education) (American Educational Research Association et al. 1999).

Examining multiple sources of evidence can help test users understand the extent to which the test measures what they think it measures and whether it is an appropriate tool for the particular decision they or others are interested in making.

## Fairness

Fairness is perhaps the easiest concept to understand because it extends well beyond assessment. It also relates directly to validity: a test should measure the same construct for everyone and should support valid interpretations of performance for the intended purposes of the test. Issues of fairness arise when a test wrongly characterises the performance of a given student subgroup in some systematic way. For example, much research shows that standardized tests of academic content can be biased against students who do not speak the native language, because getting the right answer is determined more by language status than understanding of the tested subject (Abedi 2002; Abedi 2006a; Abedi 2006b; Haladyna and Downing 2004).

Implicit in this example is an important distinction: just because a test is harder for one group than another does not make it unfair. Rather, bias (unfairness) arises when students with the same ability in the subject from two different groups perform differently. As a clarifying example, bias would not be present if poor students receive lower scores than their peers due to lack of sufficient instruction or low levels of family resources to support education (these are certainly major problems, just not ones of test bias), but it would be a fairness issue if poor students receive lower scores because they are less familiar with the language, scenarios, or logic of the test than their peers, despite having equal knowledge of the tested subject.

Assessments will be fairer if there is an opportunity for moderation of differences between ratings: for example through self-assessments by students and the involvement of schools’ work placement co-ordinators if there are disputes (Sweet, R. 2008)

## Credibility

Research conducted for the Job Ready Certificate highlighted the importance of credibility, especially with employers. Similarly, the inquiry into student transitions from school to work, found that inquiry participants were concerned about whether a certificate around employability skills would have sufficient credibility to hold weight within the employment market (The Parliament of the Commonwealth of Australia 2009, p53).



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To have credibility with employers, the Government acknowledged that employers would have to be involved every step of the way. Submissions emphasised the need for the end product to be something that is meaningful to both the student and employer. The Australian Chamber of Commerce and Industry, for example, expressed concern that the Certificate may be ‘another thing that could be fraught with difficulty where the intention is very good’ (Parliament of the Commonwealth of Australia 2006, p69)

However the most consistent view was that in order to be valued in employers’ eyes it needs to be owned and supported by employers and it should be awarded by a national, independent, employer- or industry-led body. No clear proposals emerged about which body this should be, and there was little sign of major national employer bodies putting their hand up to do the job. (Sweet, R 2009, p4)

### **Simplicity and clarity**

The assessment process must be simple, affordable and easy to use to gain support from schools and employers. It should not need a lot of specialised training to use. The assessment process must not be complex and time consuming: employers are busy people and schools already have many demands upon their time (Sweet, R. 2008, p4).

The assessment process will need to help teachers reinforce and encourage in young people the type of behaviour that demonstrates job readiness. It should also help young people to shape their own behaviour. And so it will need to be in plain English that is readily understandable by the target group of young people. Jargon will have to be avoided. For example “Gets along well with others” will probably work better than something like “Demonstrates communication skills that contribute to productive and harmonious relations in the workplace”(Sweet, R. p4).

The assessment process will need to be quite explicit about what is expected of young people. An approach that does not make this clear but tries to “embed” job readiness skills, attitudes and behaviour in existing curriculum content or to “map” them against the content of other school or vocational education programs is unlikely to do this (Sweet, R p4).

Ratings will be improved if each element of behaviour is clearly defined in plain English, and if each point on a five-point scale is independently defined. Scales like this are called behaviourally-anchored rating scales, and they are widely used in industry for employee performance appraisal.

A well constructed and clearly worded rating scale should not require formal training in assessment (Sweet, R. 2008).

### **Approaches**

There are a number of possible approaches to assessing generic competencies. Deciding which measure to use inevitably involves tradeoffs. For example, a highly reliable assessment may be costly. Often, a number of approaches are used together, to increase the reliability of assessment and to give students and teachers opportunities to be involved, and to give and act on feedback.

Assessment of generic competencies can either be discrete or integrated with other academic learning. The benefit of assessing separately is that the competencies become a focus in themselves, emphasising their importance and allowing teachers and students to concentrate solely on those competencies. The benefit of integrated assessment is that it is more contextual and accurate to work situations where competencies are exercised in order to achieve a work task. Some think that generic competencies should only be assessed in an integrated manner.

*“The respondents to the primary research and the expert workshops all agreed that the delivery of generic, theory-based personal employability skills (discrete delivery) was not an appropriate method of delivery and that this would reduce the impact to learners and employers. Many*



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*respondents suggested that the most appropriate way to deliver personal employability skills was through direct links with learners' main programmes and the terms contextualisation, integration and embedding, and that "one size did not fit all learners or all education providers". All respondents indicated that they need to have real employability skills delivered and assessed in the context of work, and they need to be relevant to the learner and their aspirations. (Deloitte UK report p34)*

### **Best practice principles**

It's useful at the outset to highlight some best practice principles, which should guide the approach taken. According to Gibb (2015), assessment of soft skills should:

- u explicitly connect soft skills with performance goals (educational or organisational), and clarify what good performance is;
- u be comprehensive;
- u balance both qualitative and quantitative measures;
- u rely on both observable behaviour and a learner's perceptions of their behaviours;
- u be fair and objective;
- u be technically sound, using valid and reliable observations, quality information, data and inferences;
- u provide useful feedback and opportunities to close the gap between current and desired performance;
- u include self-assessment and reflection in learning;
- u be adaptable to new and evolving skill needs;
- u give teachers information that can be used to help shape teaching; and
- u encourage positive motivational beliefs and self-esteem around learning.

### **Technology in assessment**

There are various ways in which technology is being used to achieve a greater employability focus in assessment practice. These include:

- u providing rich evidence of employability skills (through audio and video recording devices, webcams, e-portfolios)
- u enabling learners to capture and reflect on the process of learning (through e-portfolios, blogs, video annotation software)
- u capturing work-related performance for appraisal by a tutor or mentor (through audio and video recording devices, webcams)
- u creating opportunities for employment-related assessments that are difficult to create in the classroom (i.e., virtual worlds, online simulated professional and vocational environments)
- u supporting scenario-based assessment (through online diagnostic tools, computer-generated/marked assessments)
- u supporting peer assessment and review (using software tools such as Peerwise or WebPA)

- U mapping opportunities for acquiring and assessing wider employability skills across complex curricula i.e., medicine (using mind mapping and curriculum mapping tools)
- U mapping assessments and learning outcomes against employability outcomes; making these visible to all stakeholders (via curriculum databases, virtual learning environments or VLEs, learning portals).

(From <https://www.jisc.ac.uk/guides/transforming-assessment-and-feedback/employability>)

## Assessment formats

Soland et al (2013, pp18-32) outline various assessment formats that can be used to formally and discretely assess generic competencies, and the advantages and disadvantages of each approach. These are summarised below.

### **Multiple choice**

Standardised multiple choice is a popular assessment format because it is efficient, inexpensive and easy to score. It can be used to measure much more than recall of knowledge. For example, a type of multiple choice measure called “situational judgment tests” can be used to assess interpersonal competencies by presenting students with real-world scenarios to test their ability to make choices that promote collaboration and enhance teamwork. But there are some constructs that can’t be assessed using multiple choice, such as the ability to construct a logical argument or generate a large number of possible solutions to a problem.

### **Self-reporting (Likert)**

Likert-style self-report items get students to rate their own generic competencies, by asking them to respond “strongly agree” to “strongly disagree” to a range of statements, such as “I talk to adults when I have concerns about school.” They can also be used to measure some psychological constructs such as “growth mindset” (for example, Carol Dweck’s brief self-response questionnaire on her website <http://mindsetonline.com/testyourmindset/step1.php>.) and a student’s level of intrinsic motivation.

Like other multiple choice assessments, these are inexpensive to administer, but they are not always reliable because students may not always have an accurate picture of themselves or they may give answers they think their teacher wants, rather than honest answers.

### **Open response**

Open response assessments allow teachers to measure competencies that are difficult or impossible to measure using the more constrained multiple choice format, and is well-suited to measuring things like problem solving or creativity. They potentially give teachers more information about how students think. However, they are not as efficient or reliable. They need to be scored by human raters and because they can take some time to answer; fewer questions can be asked, making the results less reliable. Also, scores assigned by different raters can vary considerably. To increase consistency between raters, raters need to be trained on what it means to reach a given performance level on criteria.

### **Portfolios**

Portfolios are collections of student work that are scored against some predetermined criteria. They’re gaining popularity as a means of assessing 21<sup>st</sup> century competencies. Teachers are usually involved in helping students put

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portfolios together, which has the benefit that students are given feedback on their work and the opportunity to improve it, but has the drawback that the final product may not be a very reliable indicator of a student's competency, because of the teacher involvement. There can also be some variability in how portfolios are assessed, unless highly structured scoring processes are developed to increase the reliability and validity of this approach.

### ***Performance assessments and simulations***

Performance assessments and simulations require students to perform “authentic” tasks, either in real-world settings or in a computer simulation. For example, students might demonstrate their communication and collaboration skills by doing a group presentation. This assessment approach can be more meaningful for students than paper-based assessment and more credible in the eyes of employers. These approaches are, however, time consuming and costly, and they can be difficult to set up. Research shows, for instance, that the cost of administering performance assessments is three times greater than for open-response measures, and yet reliability of scores is comparable (Stecher and Klein 1997). They can also be less reliable, with student's scores depending significantly on the nature and difficulty of the task and on who rates their performance.

## **International examples**

### **Ontario Skills Passport**

**Web address:** [www.skills.edu.gov.on.ca](http://www.skills.edu.gov.on.ca)

The Ontario Skills Passport (OSP) was developed by the Ministry of Education (EDU) and the Ministry of Advanced Education and Skills Development (AESD) and is designed to help learners and job seekers see themselves as “knowledge workers” with skills that they can develop in school and training programs and transfer to the workplace. It provides clear descriptions of Essential Skills and work habits and a suite of resources to support its use in a wide range of education and training contexts.

Learners can use the OSP tools and resources to assess, build, document and track their skills and transfer them to further education, training, the workplace and everyday life. These skills can be demonstrated in the classroom, co-operative education and other experiential learning opportunities, Specialist High Skills Majors and Ontario Youth Apprenticeship Programs, Community Involvement, volunteer opportunities (e.g. SpeakUp and Students as Researchers Projects) and extracurricular activities. This information helps learners develop their Individual Pathways Plan (IPP) as they answer the questions: Who am I? What are my opportunities? Who do I want to become? and What is my plan for achieving my goals?

Teachers can use the OSP with learners to meet curriculum expectations and help learners understand and value their Essential Skills and work habits. Learners will be engaged and feel confident when they recognize that the Essential Skills and work habits they are developing and demonstrating at school are relevant and are transferable to further education, training, the workplace and everyday life. Employers can use the OSP for assessing the performance of learners in the workplace with regard to Essential Skills and work habits, for assessing and recording demonstration of these skills and work habits, and for hiring and training employees.

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Skill levels are provided for each Essential Skill. These skill levels indicate the level of complexity involved in the use of a skill in a particular task. Level 1 tasks are the least complex and level 4/5 tasks are the most complex. Skill levels are associated with the workplace tasks and not the workers performing these tasks.

The Essential Skills are:

- u Reading Text
- u Writing
- u Document Use
- u Computer Use
- u Oral Communication
- u Numeracy
  - § Money Math
  - § Scheduling or Budgeting and Accounting
  - § Measurement and Calculation
  - § Data Analysis
  - § Numerical Estimation
- u Thinking Skills
  - § Job Task Planning and Organizing
  - § Decision Making
  - § Problem Solving
  - § Finding Information

The website includes an informal test, called "Test Your Skills" that gives students an idea of their level of ability in Reading, Document Use and Numeracy. Each test activity illustrates one of the skills at a particular level of complexity. The site also provides the correct answer for each activity, so test takers can get an idea of the level of task complexity they can handle well. They can use this information about their abilities when reviewing Essential Skills profiles, to reflect on whether they have the skills they will need to do what they want to do.

### **Chicago public schools**

**Website:** [http://cte.ed.gov/employabilityskills/index.php/profiles/profile\\_chicago](http://cte.ed.gov/employabilityskills/index.php/profiles/profile_chicago)

With a high rate of students entering the workforce at graduation, Chicago Public Schools wants to ensure that its students are ready for both college and career. The district researched employers' needs related to employability skills and sought to find or create an assessment tool that could both support teachers' instruction of employability skills and evaluate students' readiness for internships and jobs. Specifically, the Career and Technical Education (CTE) division at Chicago Public Schools wanted a tool that could transform classrooms into 21st century skill learning centers instead of using more traditional assessment methods.

The criteria for assessment were:

- u No cost
- u Observational-based scoring

- u Formative approach
- u Easy to administer and score
- u Applicable to all industries

In partnership with the Chicago Workforce Investment Council, the Chicago Public Schools conducted a comprehensive review of existing employability rubrics, standards, and assessments. This review helped to identify a common list of 16 employability skills and to understand related assessment options.

To guide this research, CPS established a set of criteria for selecting an assessment and compared existing assessments to see if they met these criteria. In particular, the district wanted teachers to be able to evaluate how students applied employability skills in different contexts rather than to simply understand their meaning. Ultimately, CPS concluded that no existing assessment met these criteria, so the district created its own rubric and process for assessing students' employability skills.

The assessment measures 16 skills in five categories: fundamentals, work ethic/character, problem solving, interpersonal skills, and computer literacy. Teachers, employers, or counsellors rate students as meeting, exceeding, or failing to meet standards and expectations for each skill. The online format facilitates quick turnaround for data analysis and instructional improvement. To support teachers' use of the rubric, CPS has incorporated its employability skills into curriculum and professional development offerings.

In the initial roll-out in 2010, 87 percent of CTE students enrolled in CPS were assessed, with 47 percent being deemed "work ready." Focus groups conducted with CTE instructors highlighted positive feedback from teachers, especially related to the rubric's clear focus on a discrete set of skills, the relevance of these skills to jobs in all industries, the ease of administration and scoring, and the formative value of the tool.

After two years of implementation, assessment completion rates have risen to above 90 percent. Immediately after the rubric was launched, it was adopted by the district's largest afterschool program, which serves over 20,000 youth. The tool has also evolved to a citywide initiative supported by the district and its sister agencies. For example, the assessment is now mandated by the Chicago Department of Family and Support Services for all 200 of its funded out-of-school programs. Within two years, over 100,000 students, ages 6-21, across a variety of different programs, are benefiting from the tool.

CPS administrators also acknowledge the rubric's value to employers, especially as a tool to screen students for internships—guaranteeing to employers that interns have the necessary skills to succeed in the workplace.

### **WorkKeys assessment (US)**

**Website:** [www.act.org/content/act/en/products-and-services/workforce-solutions/act-workkeys/about-act-workkeys.html](http://www.act.org/content/act/en/products-and-services/workforce-solutions/act-workkeys/about-act-workkeys.html)

WorkKeys is a skills assessment system that helps employers select, hire, train, develop, and retain a quality workforce. The assessments measure the foundational and soft skills that employers feel are essential to success in the workplace. Students, job seekers, and professionals can use WorkKeys to learn more about their strengths and weaknesses and gain a valid way to demonstrate their abilities to

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employers. Educators and employers can use it to help determine student, applicant, and employee qualifications.

Each WorkKeys assessment offers varying levels of difficulty. The levels build on each other, incorporating the skills assessed at the previous levels. For example, at Level 5, individuals need the skills from Levels 3, 4, and 5. The complexity can also increase as the quantity and/or density of the information increases.

Successful completion of WorkKeys assessments in Applied Mathematics, Locating Information, and Reading for Information can lead to earning the National Career Readiness Certificate™ (NCRC®), a portable credential earned by more than 3 million people across the United States.

### **The Graduation Performance System**

The Asia Society partnered with the Stanford Center for Assessment of Learning and Equity to develop the Graduation Performance System. An important aspect is a portfolio of student work that is used to measure student progress in a number of areas, with particular emphasis on global competence. This is broken down into sub-skills, including investigating the world, weighing perspectives, communicating ideas, taking action and applying expertise within and across disciplines. The system is also designed to assess competencies such as critical thinking and communication. Practitioners have a great deal of flexibility in the content of portfolios, however, Asia Society fosters consistency by providing standards for the portfolio content, a series of performance targets and rubrics, sample curricula and examples of student work. If the final product meets standards, then students are deemed globally competent.

### **The Programme for International Student Assessment (PISA) collaborative problem solving**

A new portion of the PISA has been developed in partnership with ETS, which measures collaborative problem solving using a computer-based simulation. Students interact with avatars, rather than working with other students, to increase the reliability and validity of the assessment by removing the potential for a student's score to be influenced by the skills and behaviours of his or her partner. Specifically, three competencies being measured are establishing and maintaining shared understanding, taking appropriate action to solve the problem, and establishing and maintaining team organization. Each student receives multiple questions designed to measure all three competencies. Unlike many other innovative tests of this nature, the assessment is intended to be summative.

The test is entirely computer-based and is only available to countries that have switched to the computer version of the general PISA. Units range from five to twenty-five collaborative interactions around a particular problem scenario. For each unit, multiple measurements of communications, actions, products and responses are recorded. Each of the individual questions (five to thirty per unit) provides a score for one of the three competencies. Some questions are multiple choice and others are open response. For example, during a scenario about factory efficiency, students respond to multiple-choice questions about what tasks his or her partner should perform and write an email to the person in charge about what must happen next.

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A pilot of this test was launched in 2015 so there is little publicly available information about the reliability and validity of test scores and the assessment is meant to be field tested in 2016.

### **The Mission Skills Assessment**

The Mission Skills Assessment (MSA) is currently being used to improve student outcomes in dozens of independent schools in the United States. Soland et al (2015) interviewed teachers, principals and other administrators in three participating schools to understand how the MSA is shaping instruction.

The MSA is a collection of instruments that measure the interpersonal and intrapersonal competencies, including collaboration, creativity, ethics, resilience, intrinsic motivation and learning to learn. It's still in early stages of development, but currently consists of student surveys, multiple-choice questions (especially related to situation judgment) and teacher observations of student behaviour. Virtually all of the competencies are measured using multiple assessment formats. This allows developers to better disentangle sources of error and increase the precision of measurement.

Students are scored on each competency and the results are aggregated up to the school level. The MSA is intended to provide schools guidance on whether they are succeeding in their mission to promote not only academic but also inter- and intrapersonal development. It is used for institutional improvement purposes, and the results are only reported at the school level. This protects students from potentially unfair labeling at a very young age, but still plays a formative role.

#### ***Benefits***

While Soland et al (2015) only spoke to people in three schools and the findings cannot be generalized, they found that teachers noted the following improvements to practice:

- u An increased intentionality about fostering the competencies as a result of having data on them. For example, by seeing how the MSA measures creativity, teachers were better able to incorporate it into their own teaching and assessment.
- u A heightened ability to collaborate on fostering these competencies by sharing a common vocabulary.
- u The ability to connect competencies with other outcomes of interest. For example, results from MSA-based research suggest that time management is correlated with grade point average. Though teachers suspected this was the case, the confirmed evidence was helpful because it allowed them to disentangle the effect of time management from other factors, such as motivation.
- u More engaging approaches to teaching and learning. For example, emphasising creativity in projects, led to students producing more inventive projects.
- u With the right approach, measuring these competencies made some students feel more valued, especially those who are not as academically gifted but who demonstrate other competencies, such as resilience. For example, dyslexic students, who have to be resilient to overcome setbacks and challenges, can receive well-deserved recognition.

#### ***Challenges***

Despite the benefits of the MSA, there were some accompanying challenges:



- U Fostering buy-in from teachers who tended to associate measurement with accountability and were wary that an assessment would be used to evaluate—either formally or otherwise. School administrators went to some lengths to communicate that the intended use of the MSA was to monitor effectiveness of the school as a whole and to help teachers generate effective practices for measuring 21<sup>st</sup> century competencies. Teachers' scepticism diminished as they became more comfortable with the assessment, realised it was not too burdensome and could see its benefits.
- U Because best practices in teaching 21<sup>st</sup> century competencies are still being developed, teachers had to manage a level of ambiguity about what a construct was capturing, whether measures were assessing what they wanted and how best to teach the competencies. In most cases, this ambiguity prompted professional conversations about instructional approaches and how best to drive improvement. But teachers had to be open to trying new, untested approaches and seeking feedback from colleagues.
- U The need to be careful not to label students. Being careless about communicating assessment results to students, especially when measuring intrapersonal or interpersonal competencies could damage their self-perception. To avoid this, the skills challenges began with a discussion about how students had improved those skills in the past and several teachers recognised students' improvements on a skill between one assignment and the next, rather than only recognising overall performance on a single task.

### **Assessment and Teaching of 21<sup>st</sup> Century Skills Project**


**Website:** [www.atc21s.org](http://www.atc21s.org)

The purposes of this project were set out in a Call to Action issued by Cisco, Intel and Microsoft at the Learning and Technology World Forum in London on 13 January 2009. It was an international project which ran from 2009 – 2012 with distributed leadership, managed by the University of Melbourne under a contract between it and Cisco, Intel and Microsoft.

The purposes of the project were to:

- U mobilise international educational, political and business communities to make the transformation of educational assessment and, hence, instructional practice a global priority;
- U specify in measurable terms high-priority understanding and skills needed by productive and creative workers and citizens of the 21st century;
- U identify methodological and technological barriers to ICT-based assessment;
- U develop and pilot new assessment methodologies; and
- U examine and recommend innovative ICT-enabled, classroom-based learning environments and formative assessments that support the development of 21st century skills.

The project website contains a series of modules to introduce the parts of the ATC21S™ project. ACT21S™ is described as a system, rather than a set of tests or a series of complex games and tasks. The title of the project was deliberately coined to focus on the idea of linking assessment and teaching of twenty-first century skills.



The approach is formative and the information that is provided to the teacher by the assessment tasks is expected to enable teaching interventions that promote the growth of the students. The idea of growth is important. The project is built on the foundation of a conviction that students develop and grow socially and intellectually both naturally and through intervention by school and community-based programs. ATC21S™ has been designed to help that process of social and cognitive growth. Thus, the ATC21S™ system consists of several components. The first component is a guide to what a developmental system looks like and how it differs from a deficit model of education (diagnosing and fixing problems). The second module explores the nature of the ATC21S™ skills and the way they have been defined in the assessment context. The third module then explains and leads the user into the system and the tasks. The fourth module presents information about the tasks and the final module provides a limited set of examples of possible teaching strategies and activities.

The tasks are different to many that students, or for that matter teachers, are used to. They look like games and they engage the student (and teachers). The reports are not about scores, grades or ranks. They tell the teacher what the student is ready to learn. They chart the class profile to illustrate how varied the class is with respect to the relative progress of student and the likely differentiated instruction groups in the class. The scoring is kept to the background and only an interpretation of the score is provided in reports.

The project developed a selection of online collaborative problem solving tasks. Taking a developmental learning approach to assessment and instruction, they aim to move student's learning forward along a path of increasingly complex knowledge, skills, and abilities. This approach allows a focus on students' readiness to learn, scaffolding and building upon their current stage of learning.

## Australian examples

### Victorian Certificate of Applied Learning

VCAL is a hands-on option for Victorian students in years 11 and 12. It gives students practical work-related experience, as well as literacy and numeracy skills and the opportunity to build personal skills that are important for life and work. Like the Victorian Certificate of Education (VCE), VCAL is an accredited secondary certificate. Students study in four strands: literacy and numeracy skills; industry specific skills (for example modules from a recognised VET certificate); work related skills that includes work placement, a part-time apprenticeship or part-time work as well as units or modules to help work preparation such as job interview skills; and personal development skills, which can include projects in the community or school to develop teamwork and confidence. Applied learning in the community or workplaces is a central part of the VCAL strategy. The development of key work related competences is an explicit aim of units in the Work Related Skills strand. Detailed guides are available to help teachers put in place appropriate teaching methods to develop these skills.

Detailed assessment criteria are provided for each of the units' learning outcomes, and a range of assessment methods is suggested for each. These could include, for example:

- U a portfolio of accumulated evidence;
- U teacher observation and/or checklists;

- u evidence accumulated through project or program participation;
- u awards from recognised programs;
- u self-assessment inventories; and
- u oral or written reports

### **Work Studies (South Australia)**

A subject called Work Studies is available for students studying for the South Australian Certificate of Education. Workplace learning is described as an important and integral part of the subject, enabling students to develop vocational skills, including employability skills. Students plan and organise their own activities for the workplace learning part of the course. In addition to structured work placements and part-time apprenticeships, these activities can include:

- u part-time jobs;
- u simulated work placements;
- u student businesses created as a school project;
- u worksite visits;
- u community voluntary work; and
- u parenting or caring.

Although criteria are suggested for judging students' performance during these activities, the methods of assessment can be quite varied, including self assessment, teacher assessment and employer reports and judgements. How employability skills and job readiness are assessed and reported can be indirect rather than explicit.

### **Workplace Learning (Western Australia)**

Workplace Learning is a senior secondary course accredited by the Curriculum Council of Western Australia in December 2007. A central aim of the course is the development of the eight agreed employability skills, as well as occupational health and safety skills. While personal attributes that are important in work are referred to they are not outlined explicitly. Participation in structured workplace learning is intended to develop employability skills. Students are assessed while in the workplace and the assessment process is verified by the workplace supervisor.

Evidence that can be used to assess the achievement of workplace skills includes observation, checklists, diaries, written reports, self evaluation forms and workplace supervisor evaluation forms. Performance is reported in five grades from A to E. For employability skills these are:

A: Consistently demonstrates the employability skills in the workplace as well as a range of other contexts.

B: Consistently demonstrates the employability skills in the workplace and at least one other context.

C: Demonstrates the employability skills in the workplace and usually one other context.

D: Demonstrates the employability skills in the workplace but provides limited demonstration of these in other contexts.

E: Provides limited demonstration of the employability skills in the workplace and other contexts.

### **Work Studies (New South Wales)**

Work Studies has been an approved Content Endorsed subject for the NSW Higher School Certificate since 1993. Its broad aims include developing knowledge and skills for the transition from school to work, and developing an understanding of what work is about, how it is changing, and how it influences lifestyle. Work placement is a core part of the course, but there is a lot of flexibility in deciding how much time it should take, from quite brief to extended, and what the nature of the experience should be. A wide range of assessment methods is suggested, and these are not standardised. They can include diaries, projects, debates, written tests, teacher observation, video analysis and research assignments.

### **Work Education (Australian Capital Territory)**

Work Education is a subject accredited by the ACT Board of Senior Secondary School Studies. Improving the transition to work, including through the development of employability skills, is a central aim of the course. A Certificate I in Workplace Skills (a nationally recognised VET qualification) is incorporated into the course. It is recommended that students undertake a minimum of 100 hours of structured workplace training. A wide variety of assessment methods is used including diaries, student portfolios, student presentations, role play and structured interviews. Assessment criteria include the application of employability skills. Assessment can take place in the workplace or in a simulated environment. Performance in each unit in the course is reported in five grades from A to E. For problem solving, as an example, these grades are defined as follows:

A: Identifies, clarifies and solves problems, making good use of information and resources

B: Identifies problems and develops strategies to help solve them, using information and resources effectively.

C: Develops strategies to help solve problems, making use of relevant information and resources.

D: Develops some problem-solving strategies, making limited use of relevant information and resources.

E: Develops some problem-solving strategies, making very limited use of relevant information and resources.

## **Past Commonwealth Government initiatives**

### **Generic skills passport**

In 2009, the Commonwealth Government conducted an inquiry into combining school and work, and supporting successful youth transitions. The final report of that inquiry suggested that the Government recognise the generic skills developed by students through the full gamut of activities they may undertake outside school. It was suggested that employability skills acquired in the workplace be documented and evaluated, but recognised the challenges in doing this equitably, as work is not linked to a formal VET qualification.

However, evidence received throughout consultations with students suggested that they would like to have this information recorded. The view was that such an initiative would provide opportunities for students to reflect on the skills they are developing through their various activities, and to identify skills that complement their classroom learning and are valued by employers. It would also extend opportunities to document employability skills to those who cannot access paid part-time for various reasons, such as remoteness.

The report suggested that if students were presented with the option to voluntarily register their work arrangements with their school, as per a suggestion from the Geelong Regional Vocational Education Council, this would contribute an awareness of students' work-related activities to teachers. A common message conveyed during the inquiry was that teachers lack knowledge about the part-time work arrangements of their students.

The report also acknowledged that it would not be feasible to expect that employers would manage this process, but that most of the responsibility would rest with students to document their activities.

The committee envisaged a national generic skills passport which is easily accessible to students both online and through their schools. This passport would consist of a template which contains a series of skill recognition proformas based around the Employability Skills Framework, where students can identify where they have demonstrated having acquired a particular skill. Responsibility for developing and maintaining the record would rest with the student, and the passport would be validated by employers, supervisors or team leaders.

The report acknowledged likely skepticism as to how much weight a generic skills passport would hold with employers if it is not validated through accredited assessors, but took the view that it would still be advantageous to students and employers without creating an administrative burden or an onerous assessment and reporting process.

(Parliament of the Commonwealth. 2009, pp60-61)

### **Job Ready Certificate**

In 2009, the Commonwealth Government conducted consultations on the feasibility of introducing a "Job Ready Certificate". In brief, the certificate would:

- U Assess the job readiness of senior secondary students who are taking vocational education programmes and report on this at the end of Year 12, before they leave school and enter the workforce.
- U Assess and report personal attributes that are important in work as well as agreed key employability skills.
- U Be assessed in the workplace, during work placements that are part of upper secondary vocational education programs.
- U Be a national stand alone certificate, additional to existing upper secondary and vocational education qualifications. (Sweet 2008, p2)

The final report from those consultations concluded that support for the proposal was "at best mixed" (Sweet, 2009, pii). Key national employer groups, whose support would be essential for implementation, were not on board and there was a strong view that certification of employability without parallel efforts to develop it was seen as adding little to existing arrangements.

Those consulted did not think that a proposal of this kind should be limited to secondary students doing school vocational education programmes, but that it should be universal and that students should have the chance to demonstrate employability skills in other ways such as their part-time jobs and through voluntary work.

Despite these reservations, consultation participants strongly favoured employers having a major role in awarding the certificate, including in setting the rules that should govern its award, and in its management and quality assurance at the national level. There was strong support for employers playing the major role in workplace assessment of employability, but in conjunction with self-assessments and assessment by education and training institutions.

(Sweet 2009)

## Commercial products

### Bliip

To address the challenge an Australian company, BliiP Employability has developed a user-friendly, fully automated, web-based platform to enable measurement and demonstration of employability skills through both self-assessment and ratings by referees. The use of various ratings is called a multi-rater or 360-degree feedback system.

Through the global, cloud-hosted platform students can gain a Skills Profile that demonstrates a whole range of skills and attributes that they would not normally be able to show a prospective employer. The tool compares the various assessments to determine where the student is performing well and areas for improvement.

The Skills Profile is based on the BliiP Global Model of Employability Skills. The model was developed using international research that found there were more similarities than differences in the employability skills valued across countries.

The BliiP Global model has defined five clusters of employability skills including Personal Attributes, Working with Others, Achieving at Work, Future Skills and Learning. Within each cluster is a range of skills and attributes valued by employers and seen as the key to success in the workplace.

Examples of how BliiP works:

- U A student completes a self-assessment by responding to statements about their own behaviour. They also ask their teachers, sports coaches, personal referees or a part-time job employer to complete the same survey. When raters have finished a skills profile is delivered to the student online in multi-media form and as a PDF they can download.
- U Secondary schools are able to utilise the BliiP platform to provide 'Job Ready Certificates' for final year students.
- U Universities, Colleges and the Vocational sector can assess students pre course to identify the employability skills requiring development and post course to graduate students with the 'employability edge'.
- U Customised solutions can be developed to measure skills for specific courses/ programs e.g. hospitality, health and engineering

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# MEASURING LITERACY AND NUMERACY SKILLS

## England

New national curriculum and assessment requirements were introduced from September 2014. The new curriculum removes the system of 'levels' for reporting progress, and instead expectations for the end of each stage have been developed. National assessment in literacy and numeracy is only done for the ends of key stages 1 and 2 (primary school level).

The General Certificate of Secondary Education, GCSE, (equivalent to year 9 or 10) has also been comprehensively reformed with the aim of making it more challenging and exams more demanding. Assessment is now mainly achieved through examination, not coursework, with exams requiring students to demonstrate competence in reading and writing at length, and in mathematical skills. Changes to some subjects are still being introduced (in 2016 and 2017).

Similar reforms are being introduced for A levels (equivalent to year 12).

Criticism of the reforms has focused on the impact on disadvantaged learners. Students from poorer families have in the past relied more on vocational subjects to reach GCSE expected levels, but these options will no longer be as available. The government's response has been that the 'dumbing down' of curriculum and assessment does not benefit disadvantaged learners and that they have not been well-served by qualifications with little or no labour market value.

The reforms have also introduced increasing privatisation. School structure, establishment and ownership is becoming more varied, while curriculum is becoming more rigid. League tables have become an important feature of the educational landscape, providing information to differentiate between school choices. As a result, there appear to be a growing number of commercial providers of assessment tools and analysis software that will help schools with benchmarking and metrics.

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## Northern Ireland

IN 2014, recommendations were made by the Confederation of British Industry that:

- U the study of maths and English should be made compulsory up to age 18 for all those remaining in education or training.
- U consideration should be given to introducing vocational A levels with more business involvement in course design
- U there should be a statutory requirement for all young people at key stage 4 and 5 (key stage 4 relates to years 11 and 12, age 15-16 which is the end of compulsory education) to undertake work experience.

“Learning for Life and Work” appears to be a compulsory area of learning at key stage 4 in school education. As a minimum it includes specific skills in the areas of employability, personal development and local and global citizenship. E.g. employability skills listed are:

- U explore self employment and identify relevant sources of support;
- U examine the impact of globalisation on employment;
- U investigate the recruitment and selection process, taking into account the rights and responsibilities of employees and employers;
- U consider how employees and employers might maintain an effective working environment;
- U investigate the increasing social responsibility of business in the community; and
- U develop a personal career plan based on relevant information and guidance.

Achievement in maths and English is at age 15-16 is measured through the centralised assessment of the GCSE as those subjects are undertaken by most students.

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## **Scotland**

The Scottish system is based on what they call the Curriculum for Excellence with the aim of developing successful learners, confident individuals, responsible citizens and effective contributors.

The senior phase of secondary education (ages 15-18) includes academic and vocational qualifications, including Skills for Work (a range of qualifications in various industry sectors) and a Certificate of Work Readiness (based on an employer-assessed work experience placement),

Scottish Survey of Literacy and Numeracy (SSLN) is an annual sample-based survey that monitors national performance in literacy and numeracy in a number of schooling years (P4, P7 and S2 – this equates to age 8-9, age 11-12 and age 13-14). All mainstream schools are invited to participate and randomly selected students complete the literacy or numeracy tasks. The focus of the survey alternates, literacy one year and numeracy the next, so that each skill is assessed every two years. SSLN provides a snapshot of literacy and numeracy achievement at a point in time and allows for comparison over time.

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## Ireland

There are no standardised tests of reading or mathematics available currently for secondary-level schools in Ireland.

Although reports and strategies attempt to draw on available data from a range of assessments (including national assessments of primary school students), the policy emphasis is predominantly on improving outcomes through improving professional practice, building school leadership capability and improving the learning experience. Criticism of the current syllabus approach to Irish and English includes not providing students with opportunity to engage with non-literary texts and not adequately addressing the social and cultural applications of literacy skills in the modern age, and not encouraging or supporting the development of cognitive and higher-order thinking skills.

Ireland has attempted to use data from PISA and PIACC to consider the literacy and numeracy outcomes of from schooling – in particular looking at the lower age brackets of PIACC.

National Assessments in English Reading and Mathematics (NAERM) are conducted with primary school students every 5 years (2014 was the 8<sup>th</sup> in the series of assessments). Results in 2014 showed the first significant improvements recorded in more than 30 years. All targets for primary level in the National Strategy were reached well before the target date of 2020. Strategy targets are now being reviewed.

Ireland's aim is to extend NAEMR to at least one point in post primary school.

'Project Maths' was being introduced into secondary schools before the 2012 PISA round. Results showed a notable improvement in maths outcomes for the schools introducing Project Maths (a curriculum reform initiative for maths learning that focuses on problem solving in real life contexts and involves additional literacy demands for students). Project Maths is cited as a better way of teaching maths for post primary students, placing greater emphasis on student understanding of mathematical concepts – but challenging for teachers and needs to be supported by extensive continuing professional development.

Improving literacy and numeracy outcomes from schooling is prioritised in *The National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020*. The strategy covers all levels of schooling. In relation to outcomes at post-primary level, the aims for improving outcomes are:

- U each school to set goals and monitor progress in achieving demanding but realistic targets as part of their school improvement plan
- U extend national assessment of maths and reading (similar to NAPLAN) to students at the end of the second year in post primary education (and use data from these assessments to set improvement targets)
- U increase awareness of importance of digital literacy
- U improve PISA results (increase percentage of students performing at or above level 4 by 5% and halve the percentage performing at or below level 1 by 2020)
- U increase percentage of students taking Higher Level mathematics exam at the end of the junior cycle (equivalent to end of Australian Year 9) to 60% by 2020
- U increase percentage of students taking Higher Level maths exam in Leaving Certificate (equivalent to Australian Year 12) to 30% by 2020.

Subjects in the junior and leaving certificates are offered at three levels: Higher Level (Honours), Ordinary Level (Pass) or Foundation Level. For the leaving certificate, Irish and Maths are offered at foundation level, but English is only available at higher and ordinary level. (foundation level English is available for the junior certificate). Points are awarded for different subjects according the grade received and the level of the subject taken. Since 2012 a pass in higher level maths has been awarded 25 bonus points.

Leaving Certificate Vocational Program – similar to leaving certificate but with a concentration on technical subjects and some additional modules with a vocational focus.

Leaving Certificate Applied – self-contained two-year course involving a cross-curricular, rather than subject based, approach.

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## **New Zealand**

The NZ curriculum focuses on the competencies young people will need for study, work and lifelong learning to go on to realise their potential. There are National Standards for reading and writing and mathematics for years 1-8 (ages 5-13) that set out what students should be able to do after each of the first eight years at school.

National Certificates of Education Achievement (NCEA) are the main secondary school qualifications. NCEA is designed to be flexible, encompassing traditional school curriculum areas and alternative programs. NCEA allows schools to develop their own courses and is not constrained to a one year time frame (students may complete in less time or more). NCEA can also be achieved after the student has left school, this is done by applying credit for further study or workplace learning that students complete after leaving school. Records of achievement are quite detailed (and complicated), listing elements of skill achieved at various levels with results codes, credits awarded and relevant dates. Sample: <http://www.nzqa.govt.nz/assets/qualifications-and-standards/Results/Sample-ROA.pdf>

To achieve the NCEA, level 1 literacy and numeracy requirements must be met. These can be demonstrated through achievement of a wide range of other subjects (a mapping document lists all of the units that will provide credit for literacy and for numeracy at the appropriate level). This approach relies on the principle of embedding literacy and numeracy within all teaching and learning, and developing and demonstrating skills in context. Various support resources and guidelines are available to help providers of school and tertiary education with the process of embedding, and then assessing, literacy and numeracy.

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- U Ministry of Education, The New Zealand Curriculum, <http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum>
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- U Guidelines for assessing Level 1 Literacy and Numeracy unit standards, <http://www.nzqa.govt.nz/assets/qualifications-and-standards/qualifications/ncea/NCEA-subject-resources/Literacy-and-Numeracy/Resources/Planning-implementation-and-assesment/Guidelines-for-assessing-Literacy-and-Numeracy-unit-standardsJan13.pdf>
- U Ministry of Education, New Zealand Report on the National Education for All 2015 Review, <http://unesdoc.unesco.org/images/0023/002321/232185e.pdf>

## Australia

### New South Wales

The Record of School Achievement (RoSA) was introduced in 2012 as a cumulative credential that allows students to accumulate their academic results until they leave school – designed primarily for students who leave before receiving their Higher School Certificate (HSC). RoSA has associated literacy and numeracy tests which are voluntary. Test reports give an overview of a student's level of achievement in literacy and numeracy, based on the ACSF. Test results are reported separately from RoSA and are not a requirement of its award. No information appears to be provided about why a student would choose to sit these tests or how the results might be used by schools, employers or other educators.

It has very recently been announced that NSW will be introducing similar requirements to that of Western Australia for students to be awarded their HSC.

#### References

- u Board of Studies Teaching and Educational Standards NSW, <http://www.boardofstudies.nsw.edu.au/rosa/credentials/explanatory-numeracy.html>
- u Sample literacy test results, [http://www.boardofstudies.nsw.edu.au/rosa/pdf\\_doc/literacy-test-report.pdf](http://www.boardofstudies.nsw.edu.au/rosa/pdf_doc/literacy-test-report.pdf)

### Victoria

Victoria has introduced a new Victorian Curriculum F-10 which sets out what every student should learn during their first eleven years of schooling. The curriculum incorporates the Australian Curriculum and reflects Victorian priorities and standards.

Approximately 10% of students do not complete a senior secondary qualification or a vocational certificate (2013, report listed below). Report suggests a number of initiatives to strengthen senior secondary pathways. They are:

- u Introduce VCE (Baccalaureate) and Industry Pathways as new forms of recognition of achievement within the current VCE and VCAL
- u Investigate new specialist pathways within VCE
- u Implement new VCE Extended Investigation study
- u Introduce measures to encourage study of Chinese at senior secondary level
- u Introduce new Higher Education VCE scored studies
- u Review VCE studies in learning areas of English, Maths, Science and History, incorporating content for the Australian Curriculum as appropriate

VCAL includes four compulsory strands:

- u Literacy and numeracy skills
- u Work related skills
- u Industry specific skills
- u Personal development skills

#### References

- u Victorian Curriculum F-10, <http://victoriancurriculum.vcaa.vic.edu.au/>

- U Victorian Curriculum and Assessment Authority, Strengthening Senior Secondary Pathways, 2013, <http://www.vcaa.vic.edu.au/Documents/Strengthening-Senior-Secondary-Pathways-VCAA.pdf>

## Queensland

To achieve the QCE students must meet literacy and numeracy requirements. For literacy these can be met by:

- U at least a Sound Level of Achievement in one semester of English, English Extension, English Communication or English for ESL Learners
- U at least Sound Level Achievement in English assessed by a Senior External Examination
- U at least Sound Level Achievement in the short course in literacy developed by the QCAA
- U completion of one of these certificates: Certificate I in Core Skills for Employment and Training – Communication, Certificate II in Core Skills for Employment and Training – Communication, or Certificate II in Skills for Work and Vocational Pathways
- U at least a pass grade in a literacy course recognised by the QCAA
- U at least a C on the Queensland Core Skills Test
- U at least a 4 for an International Baccalaureate (IB) exam in Language A English Language and Literature or Language A English Literature.

For numeracy these can be met by

- U at least a Sound Level of Achievement in one semester of Maths A, Maths B, Maths C or Prevocational Maths
- U at least a Sound Level of Achievement in Mathematics A or Mathematics B assessed by a Senior External Examination
- U at least a Sound Level of Achievement in the short course in numeracy developed by the QCAA
- U completion of one of these certificates: Certificate I in Core Skills for Employment and Training – Numeracy, Certificate II in Core Skills for Employment and Training – Numeracy, Certificate II in Skills for Work and Vocational Pathways
- U at least a pass grade in a numeracy course recognised by the QCAA
- U at least a C on the Queensland Core Skills Test
- U at least a 4 for an International Baccalaureate (IB) examination in Mathematics or Mathematics Studies

The Queensland Core Skills Test is a common state-wide test conducted by the Queensland Curriculum and Assessment Authority for Year 12 students. The test contributes information of the calculation of Overall Positions (Ops) and Field Positions (FPs) which are used to select students for tertiary entrance. Individual results on the QCS test (graded from A to E) are reported on the student's Senior Statement or Statement of Results.

The QCS consists of 4 papers – a writing task (600 words), a short response paper and two multiple choice papers. The results are combined into one grade.

## References

- u <https://www.qcaa.qld.edu.au/senior/certificates-qualifications/qce/learning-options-requirements/literacy-numeracy-requirements>

## Western Australia

Online Literacy and Numeracy Assessment (OLNA) was introduced as part of WACE reforms to 'raise the bar in senior secondary education. Students have to sit OLNA if they don't reach band 8 in their year 9 NAPLAN. They have six opportunities to pass OLNA before the end of year 12 (twice per year in years 10, 11 and 12). Students who do not achieve the literacy and numeracy standard by the time they leave school cannot be awarded the WACE, but they can apply to the Authority to re-sit the literacy and numeracy assessment at any age.

OLNA is aligned to Level 3 of the ACSF in literacy (reading and writing) and numeracy. The reading and numeracy components of the assessment each comprise 45 multiple choice questions. Students have 50 minutes to complete each of these components. The writing component is a typed response of up to 600 words. Students have 60 minutes to complete the writing component. Assessment rounds are conducted twice per year.

Schools in WA are actively providing information to students and parents about the OLNA requirements and providing opportunities to complete practice tests.

## Reference

- u <https://www.mediastatements.wa.gov.au/Pages/Barnett/2015/11/OLNA-results-on-track-for-WA-students.aspx>
- u <http://wace1516.scsa.wa.edu.au/assessment/olna>

## South Australia

The SACE has compulsory literacy and numeracy requirements that are supposedly benchmarked to the ACSF level descriptions in reading, writing and numeracy. To meet the requirements students must gain a C grade or better in the relevant Board-accredited subject.

For the literacy requirement the subjects are:

- u English (stage 1)
- u English as an additional language (stage 1)
- u Essential English (stage 1)
- u any stage 2 English subject.

For the numeracy requirements the subjects are:

- u Mathematics (stage 1)
- u General Mathematics (stage 1)
- u Essential Mathematics (stage 1)
- u any stage 2 mathematics subject.

## References

- u SACE Board of SA, <https://www.sace.sa.edu.au/documents/652891/ab3299cb-1c09-4552-801a-cb9f57a93d65>



# YOUNG PEOPLE'S TRANSITIONS

## REPORT: Young people in education and training 2014, NCVER

The NCVER report looks at data for young people, aged 15-19, in education and training between 2010 and 2014. However, 2014 was the first time that NCVER could provide an estimate of the extent and nature of all accredited VET delivered by Australian training providers (total VET activity) – so there is no backward compatible information for that part of the data.

### Young people's participation

The NCVER data show that the proportion of young people in school drops markedly after age 17 (shown in table below).

	Age 15 %	Age 16 %	Age 17 %	Age 18 %	Age 19 %
Males – at school	98.9	92.3	71.7	19.0	1.7
Females – at school	99.3	95.1	75.0	16.7	1.6

**Source:** Table 1, Estimate of participation of Australians aged 15 to 19 years in education and training by age and sex, August 2014, *Australian vocational education and training statistics: Young people in education and training 2014*, NCVER (page 8)

So, if we are thinking about where young people go after school it is probably most informative to look at those aged 18 and 19 years.

There are some notable differences between the sexes – females are more likely to be in higher education or other VET, males are more likely to be in apprenticeships or traineeships or not in education and training (shown in the table below).

	At school %	Higher Education %	Apprenticeship or traineeship %	Other VET %	Not in education and training %
Males – age 18	19.0	26.2	11.1	9.1	34.6
Females – age 18	16.7	36.5	4.3	12.1	30.3
Males – age 19	1.7	26.4	14.4	9.7	47.8
Females – age 19	1.6	37.2	5.2	12.8	43.2

**Source:** Table 1, Estimate of participation of Australians aged 15 to 19 years in education and training by age and sex, August 2014 (page 8)

*Note: the NCVER table warns that there is some overlap between data collections that makes it difficult to avoid double counting and this has resulted in more people in education and training than the total number of 15-year-olds (based on ABS population data).*

## REPORT: Outcomes from Vocational Education and Training in Schools, experimental estimates, Australia 2006-2011, ABS

This report is the first time data from the Census of Population and Housing has been integrated with VET in Schools data. It provides longitudinal outcomes of VET in Schools students and allows for deep analysis because it is not restricted by the small sample sizes often present in survey data. The data allows analysis five years after students were at school, giving them time to settle into post-school life.

The data focuses on students who were in year 11 in 2006 and were doing VET in Schools as part of their studies, and looks at their destinations five years later, in 2011.

### Who does VET in Schools?

For 2006 Year 11 and 12 students, the uptake of VET in Schools was higher for:

- u Males (42% compared with females 38%)
- u ATSI students (54% compared with non-Indigenous students 39%)
- u Students from disadvantaged areas (47% compared with students from advantaged areas 28%)

Most VET in Schools students were doing only one qualification (64%) and most were doing qualifications at Cert I or II (85%).

### Outcomes for VET in Schools students

The report provides information on what students are doing five years after their participation in year 11, examining whether they:

- u are fully engaged in work or study

2006 Year 11 Students...	Proportion fully engaged in work or study in 2011
...who went on to higher education (regardless of whether they participated in VET in Schools)	95%
...who did not go on to higher education	
u males	69%
u males who did VET in Schools	73%
u females	56%
u females who did VET in Schools	59%
...who studied VET in Schools at Cert I level	73%
...who studied VET in Schools at Cert II level	74%
...who studied VET in Schools at Cert III level or above	78%

u are employed full-time

2006 Year 11 Students...	Proportion employed full time in 2011
...who did not go on to higher education	
u males	63%
u males who did VET in Schools	66%
u females	46%
u females who did VET in Schools	49%
...males, who studied trade-based fields in VET in Schools	59%
...males, who studied non-trade fields in VET in Schools	54%
...males, who studied computer science in VET in Schools	37%
...males who studied information systems in VET in Schools	46%
...males who studied performing arts in VET in Schools	44%
...females who studied tourism in VET in Schools	46%
...females who studied office studies in VET in Schools	43%
...females who studied personal services (hairdressing and beauty therapy) in VET in Schools	42%

## REPORT: Evaluation of the National Partnership on Youth Attainment and Transitions: A report for the Department of Education, 16 January 2014, Dandolo Partners

The report evaluates the impact that coordinated national policies and programs have had on youth participation, attainment and transitions. It draws on data from ABS and NCVET.

*“Since the early 1990s, there has been a notable increase in the proportion of young people who are neither in education, employment nor training.”*

In terms of transitions into the labour market, since 2008 there has been a considerable drop in full-time employment for young people not in full-time education, more so than for the 15–64 year age group. In addition, the proportion of 15–24 year-olds fully engaged in employment, education or training is still not at the same level as pre the Global Financial Crisis, particularly for the 20–24 year age group where it has continued to drop.

Transitions for young people are in general getting longer. Other research shows that not only have levels of full-time employment decreased for the 20–24-year age group, but also that other life transitions such as independence (leaving home), home ownership, marriage and parenthood are occurring later.

Much of the data in this reported is reported for the 15-19 year age group and the 20-24 year age group. The second age group provides more useful information on the experiences of young people after leaving school, as until age 17 the majority of the population is still at school.

The proportion of all 18-24 year-olds enrolled in higher education increased from 19.9% in 2006 to 23.6% in 2012. While participation in higher education has increased for young people from all five quintiles (of socio-economic disadvantage/advantage), the rate of increase has been larger for the top three quintiles.

### Proportion of young people enrolled in higher education by SES quintile and age, 2006 and 2011

Cohort	Year	Q1	Q2	Q3	Q4	Q5	Total
Age 18-19	2006	14.7	14.4	18.0	20.4	34.8	24.9
	2011	19.5	17.1	24.9	29.5	47.8	28.7
Age 20-24	2006	12.2	12.6	16.3	17.5	30.4	22.1
	2011	15.7	15.2	18.7	23.1	35.9	25.8

*(Quintile 1 includes the most disadvantaged and Quintile 5 the least disadvantaged)*

Increases in unemployment have also been spread unevenly over the socioeconomic groups, with the proportion of young people in quintile 5 employed full-time dropping by 5.5% between 2006 and 2011. Indigenous Australians and those in remote locations are also significantly more likely to be not fully engaged in work or study than other cohorts.

The age at which young people transition to work has increased markedly since 1986:

- u In 1986 the age at which half of all people were not attending full-time education was 16.8 years; in 2013 the comparable age is 19 years
- u In 1986 there was an average difference of 1.3 years between finishing full-time study and being employed full-time; in 2013 the comparable difference is 3.9 years
- u Other transitions (moving out of home, home ownership, marriage, starting a family) are also happening later.

For 20-24 year olds:

- u Engagement in full-time education has been gradually increasing (from 2000 to 2013)
- u VET enrolments have increased slightly from 2010 to 2013
- u Full engagement in employment, education or training dropped following the Global Financial Crisis (from about 80% in 2008 to about 76% in 2009) and has continued to decline (to about 74% in 2013)
- u Participation in full-time employment has dropped 8.0% between 2008 and 2013, but full-time education has increased only 0.9% over this time.

For 20-24 year olds without Year 12:

- u Participation in Cert III and above has increased (from 3.3% in 2008 to 4.7% in 2012)

For VET graduates:

- u 48.6% of 15-19 year old VET graduates went on to further study in 2013
- u 38.8% of 20-24 year old VET graduates went on to further study in 2013.

## Factors examined in the evaluation

The evaluation report looks at many national and State/Territory initiatives and programs aimed at improving transitions for young people. These include actions to:

- u Improve the quality of, and access to, career development support
- u Provide multiple learning pathways, e.g. VET in Schools, structured work placement, programs to re-engage at risk groups
- u Incorporate career development skills into learning approaches
- u Establish school, business and community partnerships
- u Adjusting youth entitlements and income support payments.

There does not appear to be a direct focus on the need to build the work readiness skills of young people, although perhaps it is implied within programs that focus on career development, industry partnerships and flexible learning pathways.

One of the programs evaluated in the report is Youth Connections, an initiative that provides a flexible case management approach to help with youth transitions. Since 2010 the program had provided support to almost 75,000 young people (measured in September 2013). Although the program achieved successful outcomes for the majority of participants, 40% did not achieve a final program outcome (i.e. improved engagement in work or study for a minimum of 13 weeks). Reasons for young people not achieving positive outcomes through the program were identified as:

- u Lack of personal motivation to engage or make changes
- u Transience/unstable accommodation
- u Lack of family support, negative parental influence or family dysfunction.

Barriers to learning that were identified and addressed through the Youth Connections program were reported as:

- u Low self-esteem – 56% of young people in the program
- u Behavioural problems – 50%
- u Low literacy and/or numeracy – 48%
- u Socialisation issues – 42%.

## Recommendations from the evaluation

The evaluation concludes that the National Partnership on Youth Attainment and Transitions has made a positive impact but there is still much to be done. Australia's youth unemployment, engagement and educational outcomes are considerably behind those of other OECD countries, and in some areas they appear to be deteriorating. To make further progress in this area the report identifies three broad priority areas:

- u Getting education fundamentals right
- u quality education provision, establishing sound “education fundamentals” which are described in the report as ranging from a robust and engaging curriculum through to teacher quality and accountability (see diagram below)
- u Keeping young people engaged in education and training and addressing disengagement
- u Supporting successful transitions to sustainable employment.

The 'education fundamentals' section of the report states:

*“School climates should reinforce positive behaviours that are valued in the workforce. A positive school environment that encourages excellence and achievement is more likely to help young people to value education and aspire to and achieve good educational outcomes... Despite the clear need to develop curricula that are flexible and appealing to young people, there must be an ongoing focus on provision of subjects that are highly valued by the labour market.”*

## **REPORT: How young people are faring in the transition from school to work, Foundation for Young Australians**

This report forms part of a collection of findings compiled by the Foundation for Young Australians. The collection – *Unlimited Potential: a data and information resource on young Australians* – is available online, providing user-friendly access to data on a range of related topics:

<http://unlimitedpotential.fya.org.au/>

This report draws on similar data to that used by NCVET in *Young people in education and training 2014*, and by the ABS in their experimental estimates for the outcomes from VET in Schools, and also on the Longitudinal Survey of Australian Youth (LSAY).

Many of the findings in this report have already been picked up in previous reports above. A couple of relevant sections are included below.

### **Transitions to work are getting longer**

The overall age at which young people are transitioning into full-time work is getting higher. In 2013, the age at which young people transition into work was 23.4 years (22.4 years for males and a bit over 24 years for females). At the time of the GFC in 2008, the average age of the transition to full-time work was 21.8 years.

### **The proportion of young people not in employment, education or training (NEET) is increasing**

The NEET group are not homogenous, with some voluntary, and some not. They have been categorised as including:

- U conventionally unemployed
- U unavailable – includes carers and those who are sick
- U disengaged – not seeking employment or education but not restricted to do so
- U opportunity seekers – seeking work or education but holding out for opportunities befitting their skills and status
- U voluntary – travel, holidays, involvement in the arts etc<sup>1</sup>.

This group is an important indicator of the smoothness of the transition from education to work for young people<sup>2</sup>.

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<sup>1</sup> Eurofound (2012) NEETs Young people not in employment, education or training: Characteristics, costs and policy responses in Europe. Publication Office of the European Union: Luxembourg

<sup>2</sup> OECD (2013) Education at a glance 2013: OECD indicators, table C5.2d, OECD Publishing

In 2014, an estimated 13% of 15 to 19 year olds, and 26% of 20 to 24 year olds were NEET. In recent years, the size of this group has been increasing because of an increase in the 20 to 24 year old age groups. In 2014, 20 to 24 aged NEETs were more likely to be:

- U young women than young men (29% compared to 22%). The main reason is because women are more than twice as likely as men to take on caring responsibilities, such as looking after children.
- U Indigenous: in 2012/13 about two-thirds (67%) of young Indigenous women and half (51%) of young Indigenous men were not fully engaged.

## REPORT: Youth Transitions Evidence Base: 2012 Update, Deloitte Access Economics

This report uses data from the LSAY Y03 to present a statistical profile youth transitions and in doing so measures them against an objective of successfully entering the labour force, or undertaking further study with that goal. For this study, individuals making good transitions from school are those who over three or four of the four annual surveys since leaving school have been fully engaged in either full-time work, full-time study at or above Certificate III level or a combination of part-time work and part-time study at or above Certificate III level.

Transition outcomes were classified as described in the table below.

Activity	Classification
1. Full time study at or above Certificate III	Good
2. Full time work	Good
3. Part-time work and part-time study at or above Certificate III (concurrently)	Good
4. Full time study below Certificate III	Mixed
5. Part-time work (satisfied)	Mixed
6. Part-time study	Mixed
7. Part-time work (unsatisfied)	Poor
8. Unemployed	Poor
9. Not in the labour force	Poor

Analyses in the report also took account of whether or not work was in a skill appropriate occupation. Outcomes were measured cumulatively over a period of four years.

The cumulative results after four years for all school leavers were:

- U Good transition 82.0%, comprising:
  - § Full-time study all years 20.3%
  - § Full-time work all years 12.5%
  - § Full-time work or full-time study all years 21.8%
  - § Part-time work and part-time study at Certificate III or above (concurrently) all years 0.0%
  - § Other combinations 27.5%

- u Mixed transition 14.0%, comprising:
  - § Full-time study below Certificate III all years 0.0%
  - § Part-time study all years 0.0%
  - § Part-time work (satisfied) all years 0.1%
  - § Other combinations 13.9%
- u Poor transitions 4.0%, comprising:
  - § Unemployed all years 0.2%
  - § Not in the labour force all years 0.2%
  - § Combinations of poor transition outcomes 3.6%

Based on outcomes in Year 1 of the longitudinal study, some young people were categorised as being 'at risk' of poor transition. While 15% of young people were identified as 'at risk' after Year 1, only 4% of all young people were later reported as having poor transitions. This indicates that some transition success can be achieved despite a poor initial start post school.

The report identifies some cohorts as being less likely to have good transitions:

- u Non-completers of Year 12
  - § 25.9% of early leavers were initially at risk, compared with 12.7% of year 12 completers
  - § 11.1% of early leavers have poor transitions over four years, compared with 2.5% of year 12 completers
  - § 23.7% of early leavers have mixed outcomes over four years, compared with 11.9% of year 12 completers
  - § Close to 20% of early leavers go on to full-time study in the year after school, compared with more than 50% of year 12 completers
  - § 10.1% of early leavers study for four years after leaving school, compared with 22.5% of year 12 completers
  - § Females who are early school leavers have poorer transitions than males – only 48% of female early leavers have a good transition, while for male early leavers the figure is 76% (By the final year of LSAY03 (2010) 26% of female early leavers had dependent children compared with 6% for female year 12 completers.)
- u Students who did not work part-time while at school
  - § 49% of early school leavers who did not work part-time while at school had a good transition and 17% had a poor transition, for early school leavers who had a part-time job while at school 77% had a good transition and only 7% had a poor transition
  - § Year 12 completers who had a part-time job while at school also had better transitions, although the difference is not as great.
- u Indigenous Australians
  - § 65% of Indigenous Australians experience good transitions, compared with 82% for non-Indigenous Australians
  - § 11% of Indigenous Australians experience poor transitions, compared with 4% for non-Indigenous Australians



(Note: Many Indigenous Australians leave school before Year 9 and are therefore not captured in the LSAY sample. The figures for Indigenous Australians need to be interpreted with caution.)

U Young people with a disability

§ 71% of people with a disability make a good transition, compared with 83% for those without

§ 6% of people with a disability make a poor transition, compared with 4% for those without

U Literacy and numeracy

§ Low levels of self-reported literacy and numeracy skills were associated with poorer transitions

§ The highest (self-assessed) numeracy levels were associated with better transition outcomes than the highest literacy levels, although the difference is minor

U Location

§ Young people from a metropolitan area had a marginally higher rate of good transitions than those from provincial or remote areas. However, young people from remote or very remote areas had notably lower rates of poor transition (1%) compared with metropolitan or provincial areas (both 4%)

Note: An individual's location is recorded at age 15 and does not reflect any moves made after that time. The LSAY data therefore shows outcomes in relation to where young people are from, rather than for where they are now (which is how ABS point-in-time data on engagement in work is reported).

U Socio-economic status

§ Young people from low socioeconomic backgrounds (measured in this report using the highest international socio-economic index of occupational status, derived from the occupational status of the individual's parents) had a substantially lower rate of good transitions and a higher rate of mixed and poor transitions.

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