Literacy and Numeracy for Adults Assessment Tool:

Contribution to Educational Outcomes in New Zealand

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Tertiary Education Commission

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Contents

Abbreviations

ELN   Embedded Literacy and Numeracy

EPIs   Education performance indicators

ILPs   Individual Learning Plans

ITOs   Industry Training Organisations

ITPs   Institutes of Technology and Polytechnics

LNAAT   Literacy and Numeracy for Adults Assessment Tool

NSN   National Student Number

PTEs   Private training establishments

SAC   Student Achievement Component

TEC   Tertiary Education Commission

TEOs   Tertiary ducation organisations

Key point summary

This qualitative research study on the Literacy and Numeracy for Adults Assessment Tool[1] (Assessment Tool) aimed to find out:

- how Assessment Tool results are used with learners
- how Assessment Tool results are used to inform teaching and organisational practices
- how information from the Assessment Tool is used to contribute to educational outcomes for learners.

This research was conducted by the Tertiary Education Commission (TEC) from March to June 2014. Face-to-face interviews were held with programme managers, tutors, literacy and numeracy advisers. Learner focus groups were conducted in nine organisations: four institutes of technology and polytechnics (ITPs), three private training establishments (PTEs) and two industry training organisations (ITOs).

Use of Assessment Tool

The Assessment Tool is used in the following ways by organisations:

- Most organisations administer the Assessment Tool within the first three weeks of a course, although this varies depending on the type and length of the course.
- Organisations use a range of messages and strategies to increase student 'buy in' and engagement with the Assessment Tool; achieving strong learner engagement was seen as a challenge, and a critical success factor.
- A paper-based version of the Assessment Tool is used with learners who are not in classroom-based environments and/or cannot easily access a computer or the internet. Paper-based assessment is also used with learners, both young and older, who are unfamiliar with computers, since this can be a barrier to using the Assessment Tool.
- Some organisations use the Assessment Tool at higher levels (in addition to the TEC requirement for foundation-level study) because it is seen as 'good practice' and beneficial for learners.

Use of Assessment Tool results

Feedback to learners about Assessment Tool results varies. It ranges from no information to Step level information to strand level information. It also depends on the type of study the learner is involved with and the organisation's capability and capacity to use the results.

The ITPs and PTEs in this study use the results of the Assessment Tool in similar ways, namely to:

- gauge where learners are at and whether they are in a course they are likely to succeed in
- talk with learners about their literacy and numeracy strengths and weaknesses

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[1] http://www.tec.govt.nz/Resource-Centre/Software-tools/Literacy-and-Numeracy-for-Adults-Assessment-Tool/

- direct learners at Step 2 or below to learning support, tutorials, or to using Pathways Awarua (an online learning system that helps strengthen numeracy, reading and writing skills)[2]
- inform deliberate acts of teaching that target specific areas of literacy and numeracy need
- develop differentiated teaching practices
- inform placement of learners for peer support and group work
- review initial and progress data at a programme or organisational level
- conduct on-going, reflective discussions and inform professional learning.

ITOs use of results varies from ITPs and PTEs, as ITOs have a different delivery model. ITOs use the results to:

- provide advice to training advisers or workplace educators on how to support trainees at the various Step levels, including getting additional, specialist literacy and numeracy support for those at Step 2 and below
- review data at an organisational level
- report to industry sector groups.

Both of the ITOs in this study are grappling with progress assessments and how the data might be used.

All of the organisations in this study are more comfortable using the Assessment Tool as a diagnostic rather than as a measure of progress in literacy and numeracy. While they work hard to get learners to take a progress assessment they feel it is challenging to obtain meaningful data because *of the factors that hinder the validity of results – namely learner attitude, length of programmes, time and timing.* Overall, the way organisations use progress assessment results vary, as does the value they place on them.

Contribution to educational outcomes

Tutors and programme managers are aware of their organisations' education performance indicators and their importance for funding purposes.

In general, the organisations in this study consider the use of results does contribute to educational outcomes, but the extent is difficult to ascertain or quantify. The common threads are:

- while organisations recognise that the use of results, along with other data, informs deliberate acts of teaching, which leads to more informed practice, those interviewed struggled to know or quantify the extent to which this contributed to overall educational outcomes
- ascertaining the contribution to outcomes was confounded by the concerns organisations have about the validity of progress assessment results.

It is clear from this research that, since the introduction of the Assessment Tool in 2010/11, conversations about it have changed. They have moved from "How do we do this

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[2] https://www.pathwaysawarua.com/

assessment?" and "How do we introduce our learners to this assessment?" to "We have learners with these results and we know what to do about it". This change has not happened overnight.

Comments from programme managers and tutors show the work they have put in and the reflective practices that have led them to being able to now work in the way they do.

Comments from learners show that, as a result of their tutors' work and discussion, they too have an understanding of their own literacy and numeracy skills and what is required for their programmes of study and employment.

However, the work continues to be challenging, particularly in relation to progress assessments and being able to measure 'true' gain in literacy and numeracy. Organisations continue to grapple with this, and it will be interesting to see their progress over the next few years.

The use of Assessment Tool results and how they contribute to educational outcomes is not easily described or quantifiable. However, from this research, enough of an indication has been gained to show there is a contribution but that what is most important is the teaching practice.

Good teaching practice is more important than the tool … the tool's a good start. (Tutor, ITP)

Introduction

This report describes how tertiary education organisations (TEOs) and industry training organisations (ITOs) are using results from the Literacy and Numeracy for Adults Assessment Tool (Assessment Tool) to inform their teaching and learning practices, and the extent to which this information contributes to educational outcomes for their learners. The information in this report supplements the quantitative data the Tertiary Education Commission (TEC) collects on Assessment Tool use and the progress of learners.

Intent of the Assessment Tool

Development of the Assessment Tool started in 2008 and became compulsory for TEOs and ITOs to use in 2011. The Assessment Tool is, predominantly, an online adaptive tool. It was designed primarily to provide robust and reliable information on the reading, writing, numeracy and vocabulary skills of adult learners. This information can then be used to inform the development of learning interventions that match learners' needs and strengthen their literacy and numeracy skills.

The Assessment Tool allows learners to track their progress over time and enables educators and organisations to report on the progress made by groups or cohorts of learners. The Assessment Tool was also designed to generate nationally consistent measures of learners' skill levels and skill gain over time.[3]

From 2014, literacy and numeracy assessments were required in embedded Student Achievement Component (SAC), industry training and Youth Guarantee programmes at Levels 1–3.[4] The TEC provides full information about the Assessment Tool on its website.[5]

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[3] How to use the TEC literacy and numeracy assessment tools (2013). www.tec.govt.nz/Documents/Forms%20Templates%20and%20Guides/Using-the-literacy-and-numeracy-assessment-tools.pdf (accessed 20 January 2015).

[4] Note, the Assessment Tool is also required in intensive literacy and numeracy funded programmes and workplace literacy programmes, but these fall outside of the scope of this review because learners in these programmes are unlikely to be undertaking qualifications at Levels 2 and 3.

[5] Tertiary Education Commission (2014). *Literacy and Numeracy for Adults Assessment Tool.* www.tec.govt.nz/Resource-Centre/Software-tools/Literacy-and-Numeracy-for-Adults-Assessment-Tool/ (accessed 20 January 2015).

Approach to the research

The Assessment Tool is nested within a body of work related to embedded literacy and numeracy. While the evidence shows that embedding works[6] and provides an understanding of what embedded practice looks like (see Appendix 1), this research explores practices within tertiary education organisations and ITOs. It explores how Assessment Tool results are used and contribute to improved educational outcomes for learners.

This research aimed to find out:

- how Assessment Tool results are used with learners
- how Assessment Tool results are used to inform teaching and organisational practices
- how information from the Assessment Tool is used to contribute to educational outcomes for learners.

The nine organisations surveyed (four institutes of technology and polytechnics (ITPs), three private training establishments (PTEs) and two ITOs)[7] were selected through a purposive sampling approach. Their selection was informed by information the TEC has about their Assessment Tool use and the need for a small cross section of organisation types.

Data were gathered from March to June 2014 through face-to-face interviews with programme managers, tutors, literacy and numeracy advisers, and learner focus groups. Structured questionnaires were used to ensure equivalent information was collected by two researchers. Eighty-two people were spoken to. This included programme managers, tutors (vocational and literacy and numeracy), literacy advisers (n=51) and 31 learners.

Interviews were recorded and transcribed. Data were analysed separately by two researchers using an inductive approach looking for patterns and themes. The researchers then conducted an analysis workshop where the patterns and themes were analysed for similarities and differences within and between the organisations.

Ethics

The Australasian Evaluation Society's *Guidelines for Ethical Conduct of Evaluations*[8] were used to guide the conduct of this research. Before agreeing to participate, organisations were sent an information sheet outlining what participation would mean for them and the main question areas. One of the ITPs subsequently required a full ethics approval process. As part of the ethical consent process, interviewees were informed that participation was voluntary and were provided with an explanation of the purpose of the work and what it would be used for. Individual interviewees were assured of anonymity and the right to withdraw from the interview process at any stage.

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[6] Alkema, A. & Rean, J. (n.d.). *Adult literacy and numeracy: An overview of the evidence.* Wellington: Tertiary Education Commission.
[7] Three organisations, including a wānanga, declined to participate in the research because of work pressure.
[8] Australasian Evaluation Society (2013). *Guidelines for Ethical Conduct of Evaluations.* www.aes.asn.au/images/stories/files/membership/AES_Guidelines_web.pdf (accessed 20 January 2015).

Findings

Findings from this research are reported in three sections that describe:

- Assessment Tool use
- teaching and organisational practices
- the contribution that information from the Assessment Tool is making to educational outcomes for learners.

Each section is divided according to organisation type: ITP, PTE and ITO. This approach is used because of the different ways these organisations operate, the different programmes they run and the diverse learner groups they work with. Each section starts with a summary of key points and conclude with a commentary on the findings.

Assessment Tool use

This section describes how the Assessment Tool is being used in organisations. The focus of the research was on the use of Assessment Tool results to inform teaching and organisational practices and the contribution this makes to educational outcomes for learners. However, before getting this information, it was important to determine the extent of use of the Assessment Tool and how this is managed across the organisations. The research found:.

- Most organisations in the study administer the Assessment Tool within the first three weeks of a course, with some variation caused by the type and length of the course.
- Organisations use various messages and strategies to increase student 'buy in' and engagement with the Assessment Tool; achieving strong learner engagement is seen as a challenge, and a critical success factor.
- A paper-based version of the Assessment Tool is used where learners are not in classroom-based environments and/or cannot easily access a computer or the internet. Paper-based assessment is also used with learners, both young and older, who are unfamiliar with computers since this can be a barrier to using the Assessment Tool.
- In addition to using the Assessment Tool as required by the TEC in foundation level study, some organisations also use it at higher levels because it is seen as 'good practice' and beneficial for learners.
- Feedback to learners about Assessment Tool results varies, from no information, to Step level information, to strand level information. Feedback is dependent on the type of study the learner is involved with, and the organisation's capability and capacity to use the results.

Institutes of technology and polytechnics

Administering the Assessment Tool

The ITPs in the study administer the Assessment Tool in one of two ways: either through literacy and numeracy specialists who work with departments or through tutors (literacy and numeracy or vocational) who take responsibility themselves.

Administration of the Assessment Tool varies within and between ITPs. Generally, ITPs use the online snapshot version, but the full reading and numeracy assessments and paper-based snapshot are also used.

> *It is not necessarily the best tool but due to spread of where programmes are delivered, and volume of students, the snapshot is used because it's logistically easier.*

One ITP administers the Assessment Tool in tutorial sessions because:

> *It is about doing the assessment in a place that they [students] are familiar with rather than taking them out of class.*

Ideally, the ITP would like to do this in the first week of a course, but it is not possible because not all students are fully enrolled at that time. Students use their own laptops to complete the assessment, but on-site computers are available to book, and for some, there is the option of using the Assessment Tool at home.

We do have the option of them taking home their codes and doing it at home but we really don't like them doing that. We like to have them under our supervision so that we are getting an accurate result.

Another ITP assigns specialist literacy and numeracy tutors who "are very versed in giving feedback". This means literacy and numeracy staff get results quickly and can identify students in need. This ITP also uses the results to identify students who do not have the literacy and numeracy skills to undertake the course they have enrolled in. These students can have their fees refunded or are referred to, or placed, in a transition course. This ITP, and one other that also took this approach, was clear in stating the Assessment Tool is not being used to screen learners but to "achieve optimal placement" for them.

The timing of the initial assessment also varies between and within ITPs but is usually during the first one-to-three weeks of a learner's course.

We do it three weeks in so hopefully we have already started building a relationship so that if they are anxious they can talk to us about it.

Right up front, first week, we already know the ones or twos where the support needs to be done … what is good about this is that it has been able to identify those students very early on in our lessons and learning and thus they have a much better chance at succeeding.

Generally in week two to three, after they have been inducted into [using] the computers and more familiar with campus and grounds.

We use it on our placement day – this is a foundation to check whether they are in the right place or they need to be somewhere else.

While the ITPs mainly use the online adaptive version, one ITP talked of the challenges it faces when using the Assessment Tool and its rationale for using a mix of online and paper-based assessments. The challenges include:

- wide regional spread and types of courses (for example, several on-job training courses, such as forestry)
- variability of internet connection
- limited access to computers
- the time it takes for some students to obtain a National Student Number, which is required for the online version
- students not being present on the day the literacy and numeracy specialists travel to each region to undertake the assessment.

This ITP recognises the timeframe implications with the paper-based assessments, as it can take three-to-four weeks to get results back to tutors. Consequently, it is trialling iPads for online assessments in its regions. While 'teething problems' have occurred because of internet connections, the educators say this is a better alternative than the paper-based version.

Although the ITPs have worked around timing issues and continue to grapple with ensuring all students use the Assessment Tool, two ITPs commented on some of their learners' lack of familiarity with computers and how this affects their ability to use the Assessment Tool.

One of the things is that this is a computer-based test and the assumption is that all of the kids coming in have computer skills, and that is actually far from the truth.

Talking to learners

All of the ITPs in this study believe it is important to give learners the right information about the Assessment Tool, its purpose and their results while ensuring they are comfortable about its use. ITPs talk to learners before they use the Assessment Tool, and have guidelines for this, along with Powerpoint presentations that tutors can use. Most tutors, however, are now familiar with the Assessment Tool and feel comfortable messaging it in their own way.

A tutor at one ITP commented that their adult learners want to know why they have to do an assessment and the rationale behind it. She tells them they are doing it for her, "wherever they are at", as she needs to know this information.

ITPs try to feed information back to learners as quickly as they can. When doing this, tutors at one ITP use the Learning Progression Charts or profiles[9] because they believe the combination of oral and visual feedback makes it easier for learners to follow.

We want to convey to them where they are and to have a clear direction that we want to take them.

Tutors also reassure learners not to be concerned and that there are areas of their learning that will be worked on.

Tutor 1: *[Learners] listen, they are attentive to it. But for most of them I do not think they fully understand.*

Tutor 2: *I would agree with that. I think that initially they don't [understand]. But then they are always eager to know where they sit. Even if you say it is only for them, they still like to compare … I think they don't fully understand all of the implications of how it fits together but [do understand] the bottom line of how do I know what I need to improve.*

Tutors at another ITP talked more broadly with learners about what their results mean, what they are doing well and what areas they will need to work on. In some cases, tutors tell learners they will be able to work on areas for improvement in class and for others, it might mean having additional support from a learning centre.

I don't think you have a discussion saying you are at level two and need to go to level four. You say we are going to help you improve and you need to up your skill level for this and it's relevant because … and they go back and do the Assessment Tool and quite often by mid-year they have reached maybe one/two levels above where they start.

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9   The profiles provide a broad set of examples of what learners can do at each step of the Learning Progressions. They are written in language that is easy for learners to understand. National Centre of Literacy and Numeracy for Adults (2012) *Reading Learner Profiles.*
www.literacyandnumeracyforadults.com/resources/355615 (accessed 20 January 2015).

Only one of the tutors did not provided feedback to learners on their results as she (along with others in her department) did not see any value in doing this.

Learners' understanding

Learners in three of the ITPs spoke about the Assessment Tool, with some being more able than others to remember using it and their discussions with tutors about results. They all understood the purpose of the tool and its diagnostic nature.

Just to show the tutors what everyone's level is … It just helps the tutor.

They are also aware that not all learners value it in the same way.

I don't necessarily think it is just how it is sold to us, like how it is good. Like what you were saying, a lot of older students take it more seriously, and the younger ones just breeze thought it. Generally it is because the older ones actually have a grasp of where they want to go in life and the young ones really don't give a shit … it's not only towards numeracy and literacy, it's towards classes as well.

The learners all commented their results had been shared with them and showed awareness of what they meant.

Interviewer: *So, did anyone talk to you about what Step 1, or Step 3 or Step 4 or Step 5 meant?*

Student 1: *Sort of, well they said … Step 3 needs a little bit more work, you know.*

Student 2: *Yeah, you are like kind of just under where, for your age. Steps 4 and 5 are sort of where we should be sitting.*

Interviewer: *Did you know what that meant?*

Student 2: *Nup … kind of like normal, and yeah, you need to get three or above and it's like okay … and if you got higher than that, then it's like okay. Then you are good.*

Private training establishments

Administering the Assessment Tool

Each of the three PTEs has literacy and numeracy staff who either administer the Assessment Tool or work with vocational tutors to do so. The PTEs use similar messaging to the ITPs but seem to take a 'softer' more individualised approach, as they are often working with second-chance learners or those who have not had successful school experiences. The timing of assessments is, like the ITPs, dependent on the length of courses.

Most tutors are using the online version. However, the paper-based version is used by one tutor who is working mainly with older learners in workplace settings, with the rationale being:

It's a big issue with people over a certain age, the computer thing is not working for them. They sit there, and the first thing they say is, 'Well what are they testing me for, how I

can use a computer? 'Cos I'm, I've never seen this kind of thing before'. And so we have a big panic going on so I give them hard copies ... and I have been finding that they are working, they are coping with it better because it is familiar … I've had people have complete melt-downs at the computer.

Talking to learners

Tutors at one PTE said they described the assessment to learners as being a way of empowering their learning. By finding out where learners are at, tutors can understand individual learning needs and establish Individual Learning Plans (ILPs). At another PTE, tutors said talking to learners is about giving them confidence to use the Assessment Tool.

By preparing them to do the initial testing and giving them that confidence. That it is ok for them to sit down and make any mistakes. Just trying to encourage them. And it is because these students have come from where there is a gap, and they haven't made it into the polytech. So we are the provider that will take them and really try and help them and try and encourage them to do well …

Learners at these PTEs are given individualised feedback on their results, their strengths and weaknesses and what they need to work on. As one tutor commented, talking at the Step level would be meaningless for learners.

Learners' understanding

Learners spoken to in the PTEs understood the purpose of the Assessment Tool and how their results were going to be used to inform what they were going to be taught. Because the interviews took place a few months after they had used the Assessment Tool, they found it difficult to articulate much more than the high level information they had been given.

Interviewer*: Tell me what you thought about it?*

Student*: It was pretty good.*

Interviewer*: What was good about it?*

Student: *How it tells you what your level is.*

Interviewer*: Anything else?*

Student: *And it explains what you need to do.*

At one PTE, however, the learners were fully aware of where they were currently at and the level of literacy they needed to go on to further study. For example, one of the learners undertaking an early childhood qualification knew she was on Step 3, that she needed to be at Steps 5 or 6 to go on to study early childhood at university and that this would require a lot of work for her.

Industry training organisations

Administering the Assessment Tool

ITOs have a different delivery model from ITPs and PTEs. Learning largely takes place on-job and through learning materials supplied by ITOs. Face-to-face teaching is limited and

provided through education providers. Of the two ITOs in this study, one has no off-job provision and the other has one day of off-job training for each qualification.

Both ITOs have found solutions to the challenges of administering the Assessment Tool to their highly dispersed workforces. Both use the snapshot paper-based version of the Assessment Tool. One ITO has trainees from one industry sector either complete the initial assessment in advance and bring it to their block course or complete it at the block course.

> *We get a very high strike rate because they have got nowhere to go. They have got nowhere to hide.*

Another of the ITO's industry sectors has trainees complete the initial assessment at sign up.

> *The model suits us but there is a whole lot of other ITOs that it would not suit at all because they don't have off-job training. LNAAT [Literacy and Numeracy for Adults Assessment Tool] is a big part of what we do… it is almost like we are on the bus and travelling along, whereas some of them haven't even decided to get on the bus yet … they are struggling and it's largely because their training model makes it very difficult.*

The second ITO has trainees complete the assessment in the workplace, but the timing varies. For some places, it is done on sign-up and for others the ITO waits up to six weeks, once it knows the trainee is going to stay in the job. A workplace trainer conducts the assessment.

Talking to the learners

Trainees at one of the ITOs have contact with training advisers who talk to them about the Assessment Tool. While the training advisers are provided with information, it is not generally used because the Assessment Tool is not part of business-as-usual.

> *... there was all the fears at the start that trainees won't do it because it is just like school, and they left school to come here because they didn't like school … We were told that the tutors and the training providers wouldn't like it. Our own staff initially needed to be persuaded. But, we have gone through that now and it is just there, it just happens.*

For this ITO, there is an expectation the Assessment Tool will be used by trainees at qualification Levels 1–4, and the ITO is looking to include the assessment at diploma level where it is seeing trainees struggle with writing.

The second ITO uses the Assessment Tool mainly with Level 2 trainees, with information being given to the trainees by in-house educators. Information is provided on the ITO website, and a series of roadshows have been held that included information about the Assessment Tool. Workplace managers are told the Assessment Tool "is an opportunity to find out what sort of support trainees might need".

Both ITOs in the study have centralised data-entry systems, and so providing feedback on results to trainees is challenging. One sends results to the off-job provider and training

adviser, but trainees are generally not told their results unless they ask. The ITO uses this approach because of the number of trainees and dispersed nature of their workplaces.

They are not in little classrooms, they are out in the sticks … it would be an administrative nightmare – 10,000 people to tell … secondly they wouldn't understand the result anyway … unless you go [to the] trouble of explaining all the details.

The other ITO relies on the in-house educators to download results from the ITO's learning management system. However, as one educator commented, it is difficult to find the time to do this given that she undertakes her educator work on top of the full-time role she has.

Comment

The information provided by the organisations in this study shows the initial assessment is part of their business as usual. They have worked through the logistical challenges around time and place for administering the assessment. They have also found ways to message the rationale for use of the Assessment Tool for learners.

Information gained from the learners in the study shows they have been consulted about the Assessment Tool and have a general idea of what it means for them.

Working in this way is a starting point for organisations to discuss literacy and numeracy with their learners. It also provides a way of making literacy and numeracy overt in programmes and for discussing how these skills are needed both for study and in the learners' social, community and working lives.

Informing teaching and organisational practice

This section describes how organisations use Assessment Tool results to inform their teaching and organisational practice. It outlines the pedagogical and support practices provided at the learner, classroom and programme level and how Assessment Tool data are used at the organisational level.

The ITPs and PTEs in this study use the Assessment Tool results in similar ways, namely to:

- gauge where learners are at and whether they are in a course they are likely to succeed in
- talk with learners about their literacy and numeracy strengths and weaknesses
- direct learners at Step 2 or below to learning support, tutorials or Pathways Awarua
- inform deliberate acts of teaching that target specific areas of literacy and numeracy need
- develop differentiated teaching practices
- inform placement of learners for peer support and/or group work
- review initial and progress data at a programme or organisational level
- conduct ongoing, reflective discussions and inform professional learning.

Because ITOs have a different delivery model, their use of results varies from ITPs and PTEs. ITOs use the results to:

- provide advice to training advisers and workplace educators on how to support trainees at the various Step levels, including getting additional, specialist literacy and numeracy support for those at Step 2 and below
- review data at an organisational level
- report to industry sector groups.

Both ITOs in this study are grappling with progress assessments and how the data might be used.

All of the organisations in this study are more comfortable using the Assessment Tool as a diagnostic rather than a measure of progress in literacy and numeracy. While they work hard to get learners to take a progress assessment, they feel it is challenging to get meaningful data because of the factors that hinder the validity of results – namely learner attitude, length of programmes, time and timing. Overall, the way organisations use progress assessment results varies, as does the value they place on them.

Institutes of technology and polytechnics

The ITPs in this study were clear about the fact that the Assessment Tool is one piece of evidence that supports their decision-making. However, they pointed out it has heightened their awareness of literacy and numeracy levels and affected the way they teach their learners.

> *Good teaching practice is more important than the tool … the tool's a good start.*

Talking about literacy and numeracy

As discussed, the Assessment Tool is a starting point for discussion about literacy and numeracy. It helps learners to become aware of what they can do and where the gaps are in their knowledge. This information is then used to inform the teaching of literacy and numeracy within a curriculum context.

While the conversation about Assessment Tool results has made literacy and numeracy levels evident, the extent to which literacy and numeracy teaching was covert or overt depended on the subject matter being taught, the tutors' approach and the degree of interest tutors thought learners would have relating to literacy and numeracy. However, the learners spoken to in this study were fully aware of literacy and numeracy and how it is used in their vocational learning.

> *On the comprehension side of it, and the literacy part, a lot of it is data extraction. You get given a random question and you have to know what parts of it are important, and what parts of it you can use for your formulas. I guess that is like when you get on to the job, you get given a question again, but now that you have understood how to work through it, you can come to an answer.*

Learners also acknowledge its importance for their learning and gaining future employment.

> *Because like there is some bloody big words in these books, and there's some technical, you know calculations to do …*

> *For our trade, it would be numeracy. But, also I guess, I know some students may not know how to read, so that is also important. Yeah, you have got to read instructions and stuff.*

The learners specifically appreciated learning literacy and numeracy within the context of something (for example a subject), that was interesting and relevant for them. As a tutor commented:

> *I guess it is covert but we inform them that what we are doing is to help them, and we are making it relevant to the course. We are not asking them to read Shakespeare or Byron. We are asking them to read manuals that are pertinent to what they are going to do in the future. So that they can see how knowing what these words mean, and that helps them… If you have your context towards what you are teaching them the same with core reading, then it means something to them. They know why, that it's just not an exercise in bringing their literacy or their numeracy up. It's actually going to be relevant for what they are doing in the future.*

Tutors at one of the ITPs who are preparing learners for higher level study have deliberate conversations with them about their levels of literacy and the requirements for courses they wish to move on to. While some tutors talk about the actual literacy Steps, others discuss the need for learners to increase their skill levels.

> *So, what I say to them is, Step 4 is what would be expected of people coming in at open entry level. But we are aiming for you to exit the programme at hopefully Step 6, because that will be required for a degree next year… you will be specifically taught these reading skills, along with writing skills. I am very hopeful that by the time*

you resit it next semester that you will be operating at Steps 5 or 6. So, I am quite specific about what the requirements of the course are … I get the opportunity to actually address a lot of what is asked of them in the test … I teach them reading skills, we revise grammar, punctuation and sentence structure, and do a lot of academic writing… Within six weeks, their academic writing … after input in my class and on Moodle … would be Step 5.

The tutors believe if learners see the relevance of or understand the reason why something is being taught, they are more likely to buy into it. Some of the learners also talked about how it was good for them to know what their literacy and numeracy levels were and that this had not been discussed with them since primary school.

Yeah, and like when you are on like a lower level and you know that you need to improve cause like if they tell you like you need to go on to this level.

It's good to know that you've got this low score because you need something to work on and then once you achieve that high score, it's like, 'Yes, mean, I feel mean'.

And then when you do improve it's like, 'Yes, I've done something'. You get all proud of yourself and it means that my tutors are actually teaching me stuff.

Deliberate acts of teaching

Tutors provided several examples of teaching strategies and conversations they use with learners to support their literacy and numeracy learning. For example, tutors recognised that a reading activity they were giving to a Youth Guarantee engineering class was at a higher Step level than their learners' Assessment Tool results.

We did some work on the words that might be ones that people didn't understand … this carried on from the skimming and scanning work we have been doing … [then] wrote out questions, sort of lead them to where some of the answers might be … it's really getting them engaged more at this stage in the year.

Another tutor talked of using results to inform the classroom conversations he has with his engineering students.

So, teaching practice changes in the sense that being aware of the score on the test, would mean that, when particular students start asking questions in class, you go, 'Okay so this is a level one or two student', [then] the explanation, or the way I'm going to approach it … is going to be informed by it [the Assessment Tool].

But, a lot of it is around a really good educated guess as to where people already are. So, you have got a group of students, someone asks a question, 'I'm not understanding this'. As a teacher, you are immediately making an assumption as to what is missed, and you are trying to plug that gap. The tool, just being aware of which students are at which level and not even having looked at any detail, gives you a bit of feel for it. Like if this student is really low level, I'll probably want to target my answer a bit lower. So, in that sense, it affects what is happening in the classroom.

While this tutor talked about targeting teaching at the Step level, others gave examples of looking at the specific skills where learners had gaps, such as critical reading, and then working to address these. These tutors were open with learners that this was being worked on. Others also described how they specifically looked at Assessment Tool data at the strand level.

> *What we do … we will look at the overall summaries of the students. Say in my class, I will look and see, 'Are they good at analytical thinking?' So you identify the specific areas of teaching that you need to target. Something that is almost always lacking in our foundation students is that they … tend to be poor at that critical and analytical thinking. We try and work a lot on those. We do three level reading ... We have different strategies that we use in order to encourage them to do that. We decided to go back to using the academic vocab list because that was a need …*

Other tutors commented on the way the Assessment Tool gives them an indication of the starting point for teaching.

> *A couple of years ago, [X] was standing at the board teaching one of the guys Sohcahtoa … and every kid who goes to high school does trigonometry, but none of them really understand what it means. [X] put it in such terms with this guy at the board that when he turned round there was another half a dozen of them standing around the back and saying, 'That's what it's useful for, that's how I can use it'. So those lights start to come on and that's why the Progressions are so good, because we can identify at what level we have to start off with and progress through those levels.*

While tutors recognise the need to support learners at different levels, they also acknowledge that literacy and numeracy in vocational subjects take on a wider meaning. An area discussed in two of the ITPs was the requirement for all trades' learners, regardless of their literacy levels, to learn the literacy, in particular, the vocabulary, of the trade.

> *But, also with all of the trades there is vocabulary that is of a specialist nature, and words quite often have different meanings within that trade environment, to what they do in an everyday environment. So, a lot of bringing the students up to speed with the literacy of their trade is applicable to the whole class not just the people who are normally struggling with their literacy skills. Those things are being built into the whole programme, so that they are benefitting everybody.*

These deliberate acts of teaching continue to evolve through practice, reflection and discussion. Where vocational tutors have participated in professional development and continue to have professional discussions within their organisations they feel their experience and capability has increased and they are better able to support learners with their literacy learning.

> *They have got to read, and the answers are not in the text, you have got to read a little bit further and then go back and think what could that word mean? So, yes, I have, I have changed. If a student says I don't know what the word means, I might have given it to them years ago, now I tell them to read the rest of the paragraph, out*

loud, and let's get the dictionary. So I am doing a lot more of that than I did perhaps six or seven years ago.

Learners in retail and tourism courses at one ITP in the study, while saying the questions in the Assessment Tool "were a bit boring", recognised their importance in informing tutors about how and what they needed to learn. They also commented on the importance of literacy and numeracy.

We need to read a lot on our course and use numbers such as percentages and fractions.

These learners had used their Assessment Tool results as a starting point for working independently on Pathways Awarua.

Placing and supporting learners

Tutors and programme managers at three of the four ITPs described using the initial Assessment Tool results for assessing whether learners would be able to cope with courses and for redirecting them to other courses or organisations if required.

We are aware that we don't want to use the tool as a screening tool, I mean, we don't want to do screening. But, the idea of optimal placement appeals to us.

A lot of students who come through [the] school system in New Zealand quickly learn how to hide shortcomings. It's not until half-way through that [the] tutor starts picking up problem[s] ... so the tool is a god-send. In [the] first week we can pick up Steps 1 and 2 and identify where support needs to be.

Three of the four ITPs described Step 2 as being a threshold for learners who need extra support. This is provided through tutorials in a learning support unit, independent use of Pathways Awarua or grouping with peers in the classroom.

In relation to Pathways Awarua, learners are expected to use it in their own time at home or are given computer access on site for use during self-directed study time. Even though learners are using it in their own time, they are monitored or directed by tutors.

I remember [tutor] coming in and just being like, 'Oh, nah, you go past all of this, that stuff is way too easy ... and you need to be doing these ones' …

The learners had mixed views about having to use Pathways Awarua. For example, one learner found it "annoying" as he was at the ITP to learn engineering, but another recognised its usefulness, "… the numeracy helped out because we've got heaps of pi times diameter times height squared …".

The learners also know they need to help themselves and not just leave it to the tutor to improve their literacy and numeracy. In contrast, tutors spoke of the difficulty in getting learners to go for additional tuition and learning support, and the importance of relationships with students to get them to this point.

One of the ITPs has in-class support for learners rather than sending them to a learning support unit. This ITP identifies learners at the lower steps of the Learning Progressions and

shares the information with learning services and team managers in the trades area. It is then over to the tutors to respond to this information.

> *So, we are actually trying to get more student learning support services to come in and work with the guys as a group. If they want individual assistance then they can also make individual appointments, which they don't want to do, they would prefer to just stay in their classes. Then we get them to work in their classes, but we don't identify them, more that everyone is getting help, sort of thing.*

> *Yeah, and it is not giving them specific tasks to do that are separate from the rest of the class, as a part of the class they are all in there, embedded in there. They are not being picked on or identified.*

This in-class support is also seen as a way of working with the diverse groups of learners while simultaneously freeing up tutors to work with those at higher literacy steps.

The Assessment Tool data were also seen as one of the pieces of information used to inform pairings or groupings of learners. The sense is that this is about caring for and protecting students at the same time as helping them learn.

> *Because, there is a real thing with kids that age, they don't want to be taken aside, to be seen to be the dumb one, the one that's always being given the extra help, they don't want that.*

> *So, it's gauging on an individual basis where they are, and what they need. That's what the assessment is good for … So, learning where they are and putting those with less ability with those with more ability, so that everybody gets some benefit from it, is what it is good for using … it helps us balance the teams up.*

Analysing data at programme and organisational level

Along with other data, ITPs are using the Assessment Tool data at the programme and organisational level for examining aspects such as learning needs, course retention and completion.

One ITP in the study noted it was important to identify learners' literacy and numeracy levels early on in a course. This is because data analysis over a three-year period has shown that the learners with lower literacy levels than a programme required them to have, were more likely to withdraw. Another ITP commented its data analysis of learners who did not complete showed a correlation between those on Steps 2 and 3 for reading and non-completion.

> *Some programmes … we did do quite a careful analysis at the end of who had withdrawn or not completed, what Step they were at and certainly there was a strong correlation between people who were at Step 2 or three for reading and who didn't. But there was also a good number of people who were at Steps 5 or 6, who just didn't, who maybe just found that actually this is just not for me or something else happened in their life …*

The latter finding, that learners on Steps 5 and 6 do not complete a course, was also evident at another ITP.

> *It is interesting though that our research showed that a lot of those who don't complete in the younger level, it is not because of their literacy, numeracy levels. We tracked the [X] programme … over three years, and the ones who didn't complete often were higher levels of [literacy and numeracy], so it is that learnt behaviour rather than the actually academic abilities of the students.*

Tutors at one of the ITPs said senior management was also interested in the Assessment Tool usage and results. The tutors think this is mainly driven by ITP funding requirements.

> *We have got a head of [X] who has got a big interest in this and actually our gains. Because we are worried about funding and gains, which is horrible. But, that seems to be the way of it …*

Ascertaining the validity of literacy and numeracy progress

While tutors value using Assessment Tool results to inform their teaching practice, they expressed concern about using them to measure learner progress. They question the validity of the results, because of some learners' approach to the assessment, as shown in the conversation below.

Interviewer: *So you said you were on a Step 1 and a Step 3.*

Female student: *And then he went up.*

Male student: *Yeah, to a five and six.*

Interviewer: *Wow. In the space of how long a time?*

Female student: *Well, were you one and three at the start of last year?*

Male student: *Yeah.*

Interviewer: *How did that happen?*

Male student: *I actually tried [in] the reading one, 'cos [last time] they got me to do the reading like ten minutes before lunch, it was like, 'nah, I want to go'.*

Female student: *Yeah, and that is like a big thing. It's like heaps of us don't want to do it. You know, they say, 'Oh, a test, I don't want to do this'.*

On a positive note, learners are talking about their literacy and numeracy results – they know their own Step levels and each other's. The snippet of conversation above, however, highlights their attitudes toward testing. Because the Assessment Tool is what some tutors describe as "low stakes", they thought learners did not take it as seriously as they could, which leads to poor results. This can be compounded by time and timing.

In relation to time, this is about the extent of progress that can be expected to occur in short semester programmes. In longer courses, the issue of timing arises as a result of learners having to use the Assessment Tool when they are preparing for end of year assessments or

assignments that contribute to their qualifications. In addition, one tutor spoke of "test fatigue" caused by the number of times learners have been assessed.

> *I've seen that some students are assessed between eight and 12 times. Now, test fatigue must set in. We see it in those results. Because, some of them go in, they start at Step 3, Step 4, they go up slightly, and then it just levels off. They have threes, twos and so on, because they just can't care about this. Test fatigue could be an issue, as we go down the line …*

Learners interviewed for this study, who had not sat a progress assessment, were unable to confirm this view. However, some thought they would take a progress assessment seriously because they would like to see what improvements they had made. Others felt that the positive attitude of older students affected how they approached the Assessment Tool.

> *A lot of older students take it more seriously, and the younger ones just breeze through it. Generally, it is because the older ones actually have a grasp of where they want to go in life and the young ones really don't give a shit.*

Private training establishments

The PTEs in this study use Assessment Tool results in similar ways to the ITPs. The main difference is that the deliberate acts of teaching and support for those with low literacy levels happen within the mainstream teaching programme. This approach has probably developed because of the types of programmes the learners are in, including workplace literacy, small class sizes and the specialist literacy expertise of the tutors.

Targeting the gaps

The three PTEs in the study specifically target learners' gaps in their literacy and numeracy programmes and their vocational programmes. One tutor said they take this approach because it is the best way to move learners up a Step on the Learning Progressions. In reference to the workplace literacy programme, this tutor commented:

> *… We look at in the strand, where the gaps are. So if, for example, they have got a gap in their vocabulary then we will do something around vocabulary to boost their vocabulary so that they have got more confidence when they go back in the tool even though they might only have filled that one gap, they make a significant gain because everything else they read they've got a wider range of skills … That has been trial and error, but that has been how we are using it. And that is where we are finding we are getting a better lift for the learner …*

> *One of the issues I have around the tool is a lot of people who are new to the tool think that if someone is at Step 2 they are really low and useless. But, that is actually not correct. Because I work with people who are at Step 2 all the time and they are very capable people but they have gaps. That is why they come out at Step 2. Once you fill the gap in they can jump to like Step 3 or Step 4.*

Another tutor in the same PTE works with vocational learners. This tutor also targets numeracy and literacy skill gaps and works closely with groups of learners on Step 2 and below, using contextualised materials and Pathways Awarua. While this tutor thought these

learners were unhappy about being singled out for additional support, "they felt like they were being punished … [and wanted to] work themselves out of this class", they have become competitive in points gathering on Pathways Awarua, and the vocational tutors are seeing a difference in their engagement levels.

> *… Just not quite as frustrated, they can actually start to see a difference. I've seen a difference with writing, with just simple sentence structure. Instead of one or two words, I'm actually seeing a line. And you know a full stop. And it may not be the best spelling but we are getting there. And as soon as I say, 'Now, don't forget, I want a complete sentence', and they all go, 'I know, I know. We'll do it'. Whereas before they were saying, 'What is it?' So they have made a shift in their thinking.*

The 'targeting the gaps' approach is seen as important for getting students to understand where they are at and what they need to do to improve. Of note, and as exemplified by the comment below, is that this is a time-intensive method and may only be possible where class sizes are small.

> *And I'll ask them … why do you think you struggled with that question, and we will get a conversation going … it becomes pretty obvious to them, if they can see that they are doing pretty well in one area … We never just hand it to them and say, 'Oh that's, you know, you are at Step 3 and that's ok you only really need to be at Step 4 to do most things'. That means nothing to them …*

Another tutor teaching an embedded programme in the same PTE also follows this approach. This tutor uses the Assessment Tool alongside other diagnostic tools to inform his literacy and numeracy teaching. In his class, learners at Step 2 and below had additional teaching in a literacy group, and those on Step 3 were able to cope with the course materials through a guided reading approach or self-directed, paper-based literacy exercises.

Learners in this tutor's class found it difficult to articulate anything specific relating to literacy and numeracy in their course work. The tutor explained this had probably occurred because he does not overtly refer to literacy and numeracy, rather, he integrates them into his teaching practice. As a trained primary school teacher, this is his preferred approach. All his learners use Pathways Awarua and enjoy it because they like competing for points. However, they knew it was more than just about the points, and that the levels at which they were working were also important, especially for those looking to go on to higher levels of study.

Another PTE in this study also targets gaps. Assessment Tool results are used to inform ILPs, and tutors subsequently use a teaching approach from a content, context and pedagogical perspective that they think will best suit the learner. The Learning Progression profiles[10] are also used with learners as a plain-language way of describing reading, writing and numeracy levels. This PTE has noticed learners' gaps in comprehension and understanding an audience when completing written tasks. As with the other PTEs, students

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[10] National Centre of Literacy and Numeracy for Adults (2012) *Reading Learner Profiles.* www.literacyandnumeracyforadults.com/resources/355615 (accessed 20 January 2015).

use Pathways Awarua to support their learning, and they are encouraged to do so outside of the classroom and after they have completed their courses.

The other PTE in this study is also starting to use a more targeted approach. Previously, the Assessment Tool results of learners at Step 3 and below have been given to tutors so they know where to target additional support. This is based on the assumption the tutors have the knowledge to work with the data. Starting from the PTE's next intake, literacy and numeracy facilitators are planning to work more closely with tutors:

> *… What we are doing is, one of the literacy and numeracy facilitators will not only print that [information] off but actually have a one-on-one session with the tutor … and say there are four students in your class who are struggling with literacy and numeracy and these are the gaps, this is where they have a problem, this is how you can help them and this is your ILP map and your modules for Pathways.*

Analysing data at programme and organisational level

Organisational data analysis takes place in all the PTEs, primarily to target gaps and inform approaches to teaching and/or support programmes. In the example cited above, the PTE also said its revised organisational approach has developed from a process of ongoing self-reflection and discussion of the Assessment Tool data. In addition to data analysis informing teaching, this PTE now runs fortnightly internal professional development workshops. Initially, these covered the Assessment Tool itself and how to introduce it to learners followed by how to use the results. Tutors are now at the stage of using the data to inform their teaching practice.

> *What I am seeing all the time is comprehension … it sticks out quite a bit, as a gap, in all the students. So … future workshops coming up would be a workshop in which tutors would say here are some really simple comprehension strategies, to build into the class work.*

While tutors at this PTE expressed concern about the use of Assessment Tool data for compliance and funding purposes, they now recognise its importance as a diagnostic tool.

> *It is not just data for government, it is how can we use the data as an organisation to improve our practice.*

Another PTE in this study said it has meetings where Assessment Tool results are reviewed and decisions are made about what learners need, their gaps and, if they are in a vocational programme, whether they need additional support.

> *… two or three times a year, it is usually after I have done the initial assessments and gone through all of that, or the mid-year assessment, or the end of year assessment. I will say to them, okay so this is an issue we've got. This is how we know to set up our literacy group, so we have got some people who are at Step 1 and they have got a clear issue with, say spelling or whatever it is ...*

Expectations of literacy and numeracy progress

Like the ITPs, PTEs also struggled with progress assessments. First in getting them completed and, second, around the expectations of what sort of progress learners can be expected to make and over what timeframe. As a tutor at one PTE commented:

> *Because I can't have a group for six months, they could still be on Step 2. I don't want to have it said that, 'How come you haven't moved them onto the next step?' It is very unlikely that they will, because we are still plugging away at these gaps and that is where they will stay until they have got that understanding. A lot of these students have missed big chunks of their learning, for whatever reason.*

An educator at another PTE had similar concerns about the time it takes for second-chance learners to show progress and that this is unlikely to be achieved in the 14-week programmes run by their organisation. This tutor was also concerned about how much gain TEC expected learners to make. This apprehension was based on the newness of the Assessment Tool, its subsequent lack of benchmarking of results and the possibility that TEC could tag funding to this progress.

> *It hasn't been in operation long enough … there is no international benchmarking … So my concern is that we are jumping in too quickly to tag it to funding.*

Learners interviewed for this study thought they would take their progress assessments seriously for both intrinsic reasons – wanting to do well for themselves and to see how much they had improved – and extrinsic reasons – they know they need good results to help them progress to further study. One learner who had recently completed a progress assessment talked of her improvement:

> *Because we did our test yesterday … I definitely improved on my numeracy … from my first one. I think I was on Step 4 and yesterday I think I got up to Step 6.*

Industry training organisations

Because ITOs use a different delivery method from ITPs and PTEs, they take a different approach in their use of Assessment Tool results. Learning for ITO trainees occurs on-job and through learning materials, therefore, it is not possible for ITOs to deliver deliberate acts of teaching based on Assessment Tool results.

As the provider of learning and assessment resources, it is not possible to tailor them specifically to individual learners. While one of the ITOs tried including literacy and numeracy exercises and strategies in its training materials, this proved unpopular with trainees because of the amount of material they had to work through. This ITO is now looking to provide supplementary booklets for literacy and numeracy.

Advice on support for learners

The two ITOs in this study took different approaches to providing support for learners, based on their training models. One ITO has a model where a trainee has direct contact with a training adviser, for the other, the trainee is reliant on an in-house educator or training co-ordinator to support their learning. Both ITOs provide tutors with advice on what to do with trainees who are assessed at particular Steps.

One of the ITOs reviews Assessment Tool data at the organisational level and uses a range of strategies to inform its work with trainees. Results are sent weekly to tutors and training

advisers. As "a rough rule", trainees assessed at Step 5 and six are deemed as being able to manage the training materials without support, those on Steps 3 to 4 are linked to a mentor.

This ITO has 250 trained mentors who meet for one hour weekly or fortnightly with trainees. The mentors are volunteers from all walks of life and range in age from 20 to 70 years old. They do not come from a trainee's workplace. Mentors are given one day of training and do not have literacy and numeracy expertise. The ITO sees these people as "a sort of life coach, mother, best friend and [who] sort of cajole you on". The ITO links the mentors with trainees on Steps 3 and 4 and who may be struggling. The rationale for this is that the ITO believes trainees on these steps:

> *Sometimes just need a bit of confidence, motivation, structure and purpose … we have had some quite outstanding success with the mentoring programme.*

Those trainees who are assessed at Steps 1 and 2 are asked if they would like in-depth support from a literacy specialist. If they say yes, the ITO then accesses funding for this through Workbridge. The ITO takes this approach because it is not eligible to access other TEC-funded programmes for trainees enrolled in an embedded qualification because of the 'double-dipping' issue. The alternative is to put the trainee's Training Agreement on hold until they have the requisite literacy and numeracy skills to undertake the qualification. The ITO does not do this, as it believes trainees learn better through a contextualised approach rather than a generic education approach that has failed them in the past.

The focus for the other ITO in this study has been on getting tutors and training advisors to use the Assessment Tool, and in the first half of 2014 its use increased considerably. This ITO has a workplace educator who supports trainees by providing workbook-based learning materials. The ITO provides recommendations to support these educators in their decision-making about trainees, based on trainees' results in the Assessment Tool.

Trainees at Steps 5 and 6 are seen as being capable of self-directed study. Recommendations for trainees at Steps 3 and 4 include creating embedded resources based on the examples in the Learning Progressions books; group learning opportunities; one-to-one tutoring; peer support and/or mentoring; and using Pathways Awarua. Recommendations for trainees at Steps 1 and 2 are similar to those at Steps 3 and 4 but with the additional advice that workplace educators should consider accessing external literacy programmes before a trainee starts on their ITO study.

Previously, this ITO had put literacy strategies into the learning materials, but this made the materials too large (and subsequently off-putting for trainees), so it is now looking to develop these as a separate booklet. In addition, the ITO is aware that some educators are starting to use examples and strategies from the Learning Progression books with trainees, as recommended.

While the educators at each of this ITO's workplaces have responsibility for looking at the trainees' results, few have taken the opportunity to do so. The ITO commented, however:

> *There have been some surprises when educators see there is value for the organisation when results of the diagnostic are used.*

This ITO thinks the lack of use can be attributed to educators working in environments where there are many pressures on retention and the constant need to recruit and train new staff. This view was supported by a training co-ordinator in workplaces with a large number of employees.

Analysing data at programme and organisational level

In addition to sharing results with training advisers, one of the ITOs in this study has conducted some data analysis. It identified a weakness in ratios and proportions and acknowledges the importance of having these skills in the industry, "Mixing chemicals, it's farm life 101". While nothing has been done about this as yet, the ITO recognises that, had it not been for the Assessment Tool, it would not have been able to identify the issue.

With this ITO's focus on Assessment Tool results, awareness has extended beyond the teaching and support process, with a large employer and large industry body now showing an interest in results. The latter, as part funder of the ITO, now requires a report on the Assessment Tool results and what the ITO is doing to improve them. While the ITO acknowledges this is a work in progress, it has been able to report on improvements in scores, "It wasn't massively big, but it was in the right direction". The ITO believes reporting has led to people in the sector having more knowledge about what literacy levels mean, particularly at the low levels.

> *We are now spending quite a bit of time in saying to people … an LNAAT [Literacy and Numeracy for Adults Assessment Tool] score of one or two means a reading age of seven, eight or nine, that kind of area. That has quite a traumatic impact on people and we have backed up the scores with dyslexia screening …*

In 2013, the other ITO in this study provided information to the sector on the Assessment Tool results of around 270 reading assessments that showed nearly 6 percent of trainees were Step 2 and below. The ITO reported that, initially, there appeared to be little interest in terms of increased uptake of the tool, but the results heightened the awareness of literacy levels. (Note that, in 2014, this ITO revised its approach to the Assessment Tool and the number of assessments increased considerably.) While busy recruitment environments are likely to contribute to this lack of uptake, one training co-ordinator thought the Assessment Tool results did not tell them anything they did not already know. This co-ordinator also felt the national results did not paint a true picture of the literacy and numeracy skills of their workforce because, when they had trialled the Assessment Tool, they suspected managers had not put their lower-skilled workers through it.

Within this industry, however, are examples of employers starting to use results to inform what they do. The ITO provided an example of a large employer that is developing a new process as a result of "being surprised" by the low levels of literacy it was seeing. This employer is taking a research approach to assess the extent to which the interventions it is using are making a difference. This includes:

- keeping track of the embedded literacy interventions it is using with trainees
- comparing pre-assessments and progress assessments to ascertain the success of the interventions

- where a progress assessment shows a lower result, examining the conditions and/or environment under which it was administered to see if this contributed
- preparing aggregated results to present to the Board to inform future funding for training.

Both of the ITOs in this study have found solutions to increase the rate of progress assessments. In one ITO, because most trainees go on to undertake a further qualification, the progress assessment is completed on the first day of off-job training for that qualification. The other ITO offers an incentive to employers in the form of an 'Assessment Support Payment' to compensate for the time off work the trainee takes to complete the assessment.

Comment

Comments from the tutors and learners in this study show the Assessment Tool results are being used to inform teaching and organisational practices. While differences exist, depending on the type of programme and organisation, it is clear progress has been made since the introduction of the Assessment Tool and since the research undertaken in 2011 by Haggland and Earle (2013).[11] Here, the researchers found, amongst other things, that:

- there is a need for the Assessment Tool to be seen as part of the wider organisational literacy and numeracy programme
- it is about more than just setting learners up to 'take the test'
- educators need to be able to understand assessment for learning and use information for diagnostic purposes
- learners need to be engaged in the learning process and understand why the assessment matters
- organisations need to have the resources to support educators to use the Assessment Tool.

As the evidence in this section shows, each of the points covered by Haggland and Earle (2013)[12] are now part of the way organisations conduct the business of education. They are more data driven and more data savvy. They use data to inform deliberate acts of teaching and to review and reflect on organisational levels and progress. Learners also seem to be more knowledgeable about literacy and numeracy and the contribution they make to their learning. This may have occurred as a result of the deliberate conversations tutors and others have with their learners and trainees about Assessment Tool results.

However, while the organisations in this study are comfortable with using the Assessment Tool as a diagnostic, they are less sure about its use to check and report on proficiency improvements. This is because of the factors these organisations believe hinder the validity of results, namely learner attitude, length of programmes, time and timing. Although some organisations have attempted to address this through their messaging to learners and by incorporating Assessment Tool results into learners' formal grading systems, it continues to challenge and concern them.

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[11] Haggland, J. & Earle, D. (2013). *Engagement is key.* Wellington: Ministry of Education. www.educationcounts.govt.nz/publications/numeracy/engagement-is-key (accessed 26 January 2015).
[12] Ibid.

Contribution to educational outcomes

This section describes the contribution that information from the Assessment Tool is making to educational outcomes for learners.

Tutors and programme managers in this study are aware of their organisations' education performance indicators and their importance for funding purposes. Overall, the common threads for the organisations in this study are that:

- using Assessment Tool results, along with other data, contributes to educational outcomes and informs deliberate acts of teaching, which leads to more informed practice, but the extent of the contribution is difficult to determine
- ascertaining the contribution of the Assessment Tool to educational outcomes was confounded by the concerns organisations have about the validity of progress assessment results.

Institutes of technology and polytechnics

Generally, ITP tutors and programme managers thought the use of Assessment Tool results to inform teaching practice contributed to the mix of success factors for learners. ITPs were clear, however, that various factors were involved, including the learners themselves, the overall use of evidence-informed teaching, and pastoral and academic support.

> *The Assessment Tool is 'a good start'; it is a good way to identify where a student is.*

> *It's just not [a] big enough influence. It's good for its ability to identify and for students to know that we care enough to try.*

> *We always push the tool is only one instrument ... more people are doing other things as well ... for assignments and things.*

> *... the tool is definitely helpful you can't deny the fact that there is an opportunity to know where your student is at and then put things in place to develop their skills. What I am saying is, how big an impact is that on their success?*

While the ITP tutors thought it was difficult to obtain hard evidence of contribution, some acknowledged that the early identification of learning issues through Assessment Tool data enabled them to act quickly and spend more time on targeted teaching of learners.

From this study, it appears ITPs are familiar with looking for evidence about what contributes to positive educational outcomes.

> *It is providing us with evidence I think. In this world of everything needing to be applied for funding, it is another one that we can use as evidence … Before it was during week seven or eight, that is half way through the semester. Now we are doing it earlier, it is better for the student. So it has provided us with evidence, particularly in foundation, under degree programmes that we have never really had before. So it is providing us with evidence to inform the development of curriculum. In terms of success of our students, the success rate is around about the same …*

Underpinning these factors is the preparedness and motivation of learners to take up the support that is offered to them. The learners spoken to in this study were interested in their results and in improving them. Tutors, however, reported this is not always the case, and it can be difficult to get learners to use the advice they are given based on their Assessment Tool results, especially where it requires the learner to make a commitment in their own time.

> *… the Step 3 students – it's hard to persuade them to actually engage with the extra help that they require. So if they don't, they tend to be the ones who, not so much fail, as do not complete the programme.*

As discussed, one ITP has examined completion data and Assessment Tool results and found a correlation exists between learners on Steps 2 and 3 for reading and subsequent withdrawals or no completion. However, the data also show some learners on Steps 5 and 6 were also non-completers. This suggests – as can be expected – that more than simply literacy and numeracy levels contribute to educational outcomes. This thinking is supported by tutors in another two ITPs, specifically with regard to younger learners.

> *Again it cannot be an across-the-board question. I'm working with youth and absolutely not, it has nothing to do with it. But the other people working with adult students perhaps it does ... if I had students not completing or passing it has nothing to do with what they are capable of … what the tool has brought them out as. It's all about what is going on personally in their lives.*

> *Analysis showed that for younger students who do not complete – it was not because of literacy and numeracy levels. Over three years the ones who did not complete were often [at] higher levels so it is that learnt behaviour rather than actually [the] academic abilities of students.*

Another issue in linking the use of Assessment Tool results to educational outcomes is the challenge of measuring literacy and numeracy gains because of the difficulty ITPs have with getting learners to engage fully with a progress assessment.

> *It is not so bad at the beginning, but because there is that insistence of redoing the same test, the second time around they are all really tired. So they are very committed to doing very well at the beginning of the year, they are keen to do it. Some of them also get quite nervous about it. But at the end of the year, they just want it over and done with. So you always have to do quite a sell.*

Although this link was not specifically articulated by the ITPs in this study, their concerns are worth considering in relation to the Assessment Tool's contribution to educational outcomes. If statistically significant gain does not happen in the progress assessment, it is likely to be difficult to see how using Assessment Tool results can improve outcomes for learners if they have not improved their levels of literacy and numeracy.

As described earlier, one of the ITPs undertook considerable data analysis in 2012 and 2013. The ITP concluded that, as the Assessment Tool results were 'low stakes' for learners, those at Steps 4 and above had little engagement with it and, therefore, achieved lower

results than might be expected. The ITP has made a recommendation to its senior management team for Assessment Tool results to be integrated into module assessments. The initial assessment will establish the baseline and then learners will be offered two opportunities for a progress assessment, with the higher of these scores contributing up to 15 percent of their overall module assessment grade.

Another ITP talked about how it is exploring improving student engagement with the Assessment Tool by linking it to wider outcomes, such as employment, financial and health literacy, and the importance of developing literacy and numeracy skills in relation to these.

Private training establishments

Tutors and programme managers in the PTEs in this study have similar views to those in ITPs in that it is difficult to determine the overall contribution of the Assessment Tool to educational outcomes. They were, however, positive in their thinking that using results to inform what and how they are teaching does make an overall difference to outcomes for their learners. As one of the literacy tutors said:

> *If we can get all tutors on board and fully understanding that we are plugging gaps and how to do that I think that is going to definitely improve our outcomes. It must do.*

A tutor at one PTE said she and the vocational tutors were starting to see a difference in what the learners who came for literacy support were able to do with their writing, therefore, this must make an overall difference for them.

At another PTE, the learners themselves acknowledged the improvements they had made to their skills in literacy and numeracy and put this down to the regular use they had made of Pathways Awarua.

> Student: *Because we did our test yesterday ... I definitely improved on my numeracy. Starting from my first one, I think I was on Step 4, and yesterday I think I got up to Step 6.*
>
> Interviewer: *Oh, well done … how long was your course for?*
>
> Student: *We are up to week 18 … That is the improvement that I have made, due to doing the Pathways. Working on it every second day.*

One of the challenges for PTEs (and ITPs) is the expectation of 'how much' gain will be achieved and over what timeframe. While PTEs acknowledge some learners just need a 'kick start', others thought it can be difficult not only to show improvement in 20-day programmes but to then compare this with gains made in one-year programmes. One PTE felt this was compounded by the fact it is more difficult to show improvement in reading because it is a complex activity compared with something like 'place value' in numeracy, which is 'easy to teach'.

As with the ITPs, tutors at the PTEs in this study had concerns about the validity of progress assessment results, given the attitudes and approaches of some learners. The PTEs have

sought solutions to this, with one PTE talking to learners about the importance of the result and offering them the opportunity to sit the assessment at another time.

> *Once this is on your record, it's there. You can't change it. That is going to be your outcome. So if you don't feel up to doing it today maybe we'll have a fresh start tomorrow.*

Another PTE gives certificates to learners as a way of credentialing their results. Learners have the opportunity to get a certificate with "achieved" for taking the assessment and "achieved with excellence" if they maintain their result or make a Step gain. The tutors also tell the learners that they want to be able to use their results and they are only able to do this in a meaningful way if the results are a true indication of what the learners can do.

> *They don't find the tool fun or engaging and that is why they switch off, they just want to run out and join their friends. So, one of the things we have done as an organisation, is we give them a certificate … it shows that, 'Yes, I have improved my literacy and numeracy'. Hopefully they start taking the test seriously and see value in it. Because otherwise, in the past, they didn't actually see the value.*

PTEs were clear that the Assessment Tool is but one measure of the difference being made to outcomes for learners and that they were also looking at measuring other outcomes alongside educational achievement. This included looking at graduate destinations (employment outcomes and/or progressing to higher levels of education) and measuring softer skills such as confidence and self-esteem or self-efficacy.

Industry training organisations

The two ITOs in this study had different views from the PTEs on the extent to which Assessment Tool results contribute to educational outcomes. One ITO thinks use of the Assessment Tool results does make a difference to educational outcomes because it is a way of being able to monitor trainees.

> *It is one of the tools that we use to have a closer relationship with tutors and our providers. LNAAT [Literacy and Numeracy for Adults Assessment Tool] scores become a topic of dialogue between training advisors and tutors at the workplace. So we now know the difference between Johnny who is lazy but capable and Jack who is keen but struggling with numeracy, literacy and readings skills. That is quite an important difference.*

As discussed earlier, the ITO also talked about the importance of understanding the results at an organisational level and for talking to employers. For example, it is looking to share results with larger employers that have shown an interest, on the basis the results are used as a development rather than an employment tool. Interest in the results from industry sector groups has also given the ITO extra responsibility to show it is putting interventions in place so results improve.

At the individual trainee level, this ITO believes the Assessment Tool results are a means of bringing literacy and numeracy levels into the open with trainees who may have been able to hide this while they were at school.

> *They can't turn their back and pretend it isn't there because you have to regularly engage with it … now we have said to these people, we would really like you to do literacy and numeracy. It is really important.*

The other ITO in this study has not been able to see the extent to which use of the Assessment Tool results makes a difference to educational outcomes. This is possibly due to the low uptake of the Assessment Tool up until 2014 and being reliant on workplace trainers to access results through the ITO's learning management system and then use them to support trainees. This may change, however, because the ITO now has a more focused and supported approach to the Assessment Tool.

Comment

As might be expected, the organisations in this study found it difficult to quantify the extent of the contribution Assessment Tool results make to overall educational outcomes for learners. Tutors and programme managers acknowledged a contribution is likely because of the early identification of learners' literacy and numeracy skills and the deliberate acts of teaching or supporting interventions that follow. Data interrogation at the organisational level has also been useful for identifying the big picture themes and issues.

However, organisations continue to grapple with what they see as a true measure of literacy and numeracy gain and, consequently, literacy and numeracy outcomes, because of how learners approach the progress assessments. Two organisations are trying innovative ways to improve on this, one by looking to make the Assessment Tool part of formal assessment and the other by credentialing learners through certificates.

Conclusion

It is clear from this research that, since the Assessment Tool's introduction in 2010/11, the conversations about it have moved from, "How do we do this assessment?" and "How do we talk to our learners about this assessment?" to "We have learners with these results and we know what to do about it". This has not happened overnight and it is difficult to gauge how widespread the change is across the sector.

Comments from the programme managers and tutors in this research show the work they have undertaken to get to where they are now. This has happened through discussion, reflective practice and continuous professional learning within their organisations.

Comments from learners show that, as a result of their tutors' work and discussion, they too have an understanding of their own literacy and numeracy skills and what is required for their programmes of study and employment.

However, the work continues to be challenging, particularly in relation to progress assessments and being able to measure learners' 'true' gain in literacy and numeracy skills. The TEC is looking to support this through a work programme that will develop benchmarks for statistically significant gain.

The contribution of Assessment Tool results to educational outcomes is not easily ascribable. However, enough of an indication is evident from this research that there is a contribution, but what is important is the teaching practice.

> *Good teaching practice is more important than the tool … the tool's a good start.*

Future considerations

The organisations in this study were purposively selected on the basis of their Assessment Tool use, as such, they have provided examples of practice that all organisations should develop and use. Therefore, the TEC and other organisations could consider investigating:

- the extent to which the practices described here are common to ITPs, PTEs, ITOs and wānanga, then use this information to inform future professional development
- the development of resources that target specific Assessment Tool items so educators and learners know the "where to next"; alternatively, they could make connections between Assessment Tool items and Pathways Awarua modules
- the use of tutors and programme managers to champion ways of working with the Assessment Tool. This could be done through case study videos or regional professional learning communities
- the different ways this research could be promoted so more organisations see the benefit of the Assessment Tool and realise its potential.

Appendix 1: Embedded Literacy and Numeracy (ELN) practices

Whole organisation components	ELN practice components	Emergent embedded practice includes:	Partial embedded practice includes:	Mature embedded practice includes:
Teaching, learning and assessment	Use of Learning Progressions	Using the Learning Progressions to inform teaching and learning practice.	Using the Learning Progressions to map programmes and courses and to inform teaching and learning programmes.	Literacy & numeracy demands of all NZQF Level 1 – 3 programmes and courses are well documented and written in terms of the Learning Progressions.
	Use of Assessment Tool	Using the Assessment Tool pre- and post- programme at the learner level to inform teaching and learning programmes or individual learning plans.	Using the Assessment Tool pre- and post-programme at the learner level to inform teaching and learning programmes and individual learning plans; engage learners with results; monitor learner progress; report to other relevant staff.	Using the Assessment Tool pre- and post- programme at the learner level to inform teaching and learning programmes and individual learning plans; engage learners with results; monitor learner progress; report to other relevant staff. Using the Assessment Tool information at the organisational level to improve ELN practice and learner success.
	ELN in vocational programmes and courses	Starting to embed literacy & numeracy into vocational programmes through a review and rewrite of course materials.	Progressing of embedding literacy & numeracy into vocational programmes through a review and rewrite of most course materials and provision of some professional development to staff.	Embedding literacy & numeracy into vocational programmes is evident in course materials, teaching and learning practice, and self-evaluation processes for ELN quality.
Human resources and professional learning	Professional Development and extent of literacy & numeracy qualifications	Some vocational teaching staff either have or are working towards literacy & numeracy qualifications. Some staff have attended professional development.	At least half of all vocational teaching staff either have or are working towards literacy & numeracy qualifications. Most staff attend continuing professional development for ELN. Recruitment and staff training policies require qualified literacy & numeracy staff.	Majority of vocational staff have or are working towards literacy & numeracy qualifications. (Within some TEOs this is an organisational requirement.) ELN is adequately resourced to support learning, teaching, resource development and on-going ELN development. The continuing professional learning programme ensures all staff understand the ELN strategy and have the necessary knowledge and skills to perform their roles. Continuing professional learning includes a variety of internal and external needs-based professional development.
Vision, aims and outcomes	Organisational approach to literacy & numeracy	No strategic approach to ELN at the organisational level.	Having ELN policies at the programme level. Using Assessment Tool results at programme level. Developing organisational awareness of ELN. Having quality ELN as 'business as usual' within programmes.	A written strategy describes the whole organisation's approach to ELN. An operational plan(s) with clear roles and responsibilities ensures implementation of ELN. A valid, consistent and transparent system in place to measure learners' literacy & numeracy progress includes using the Assessment Tool. Quality ELN is becoming 'business as usual' within the whole organisation. Staff contributing to the ELN knowledge base at regional/national level.