

## Summary of notes from Software testing qualification sector workshops 8 & 9 March 2017

### Key question considered

Does NZ need a software testing qualification and what evidence of need is there?

### Context

IT Professionals New Zealand and the NZQA National Qualifications Services team are co-developers of sub-degree computing and IT qualifications on the NZ Qualifications Framework.

26 **attended** the sector meetings held 8 & 9 March 2017 in Auckland and Wellington, to explore the need for a software testing qualification in New Zealand.

It was noted that there isn't any dedicated security or testing qualification in the new IT qualification suite, as in 2013 it was thought they may sit at Level 7, outside the scope of the review. Some existing IT/Engineering degree qualifications have a paper/course (elective) within it on these topics, but no specialist qualification.

### Summary from software testing meetings

- Evidence of need for a software testing qualification through skills shortages in software testing – locally, globally, and a growth area.
- Few/limited vendor Certificates – although practicing Certifications through ITSQB ANZTB; BBST re association of software testing for practitioner badging (not entry level).
- Sector meeting feedback that job roles most likely to be entry level testing analyst and maybe engineer (dependent on pathway as more coding skills required for junior testing engineer roles). Two mindsets – user side and technical side (coding, system design).
- Two key target markets - school leavers (primarily a short study/learn on the job practical option), and re-trainers (mature re-trainers with practical IT experience).
- Compulsory practical aspects are most attractive to employers – quality of these is important. Educators would support the qualification based on feedback from industry that they would employ graduates. *Note: Need industry commitment to providing placements for practical aspects of the qualification (providers advised issues with getting placements for current degree students).*
- Important to include practical application, industry engagement, funding for employers to support proposed internships etc. Query around apprenticeships and how these might work, along with flexibility for retraining on the job/part-time.
- Diploma qualification outline – seen as an added pathway rather than a solution to the industry skills-gap problem. Maybe suitable as a strand in existing Level 6 IS or software development qualification, or a shorter standalone testing Certificate.
- The proposed dedicated qualification in the software testing space could build capability in the sector – but some interest in a short, sharp graduate programme with 2-3 months worth of practical and testing specific training with part-time options, maybe blended online learning could be attractive to employers and would-be testers.
- Proposed qualification could provide foundational knowledge for a Tier 1 software testing analyst, but requiring on-the-job upskilling/application.
- NZ Certificate in IT Practitioner (software testing strand) possible option for retraining/upskilling those with suitable practical IT experience, but not suitable for new entrants to testing.
- Threads of what buckets of learning could look like may be grouped as follows – learning (what's required), modelling (test problem/analysis), performing (testing), reporting; attributes sought include test experience, automation, people skills, organisation skills/knowledge, learning/growth mindset. Person characteristics include adaptability, important to be able to deal with uncertainty, emerging technologies systems, process and

approach. General and soft skills to include at least project management, working in teams, presentation and reporting skills.

**Following is the typed up version of what was on the whiteboard – Auckland meeting**

Exists	Gaps	Job Roles	Need
<ul style="list-style-type: none"> <li>• Testing or QA – changing role</li> <li>• ISTQB – Certification for practitioners</li> <li>• Graduates of IT related qualifications</li> <li>• Immigrants (generally post-graduate)</li> <li>• Cross skilling – different disciplines and move into testing</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptability/ability to learn</li> <li>• Attitude</li> <li>• Analytical skills</li> <li>• Tester mindset</li> <li>• Context and methodology</li> <li>• How teams function</li> <li>• Pre-requisites – broad IT base (digital technologies at school, Level 5 Certificate/Diploma or equivalent experience).</li> </ul>	<ul style="list-style-type: none"> <li>• Entry level/junior test engineers (automation scripting)</li> <li>• Entry level/junior test analysts</li> </ul> <p>Note: Development skills are advantageous for both roles but critical for test engineers.</p>	<ul style="list-style-type: none"> <li>• Not enough people with the right skills</li> <li>•</li> </ul>

**Following is typed up version of what was on the whiteboard – Wellington meeting**

Gaps	Job Roles	Need	Employ graduate?
<ul style="list-style-type: none"> <li>• Placements (<i>mentioned, not listed on whiteboard</i>)</li> <li>• Big IT picture understanding needed to do well in testing</li> </ul>	<ol style="list-style-type: none"> <li>1. Entry level/junior test engineers (automation scripting testers)</li> <li>2. Entry level/junior test analysts (user/exploratory testers)</li> </ol> <p>Note: Development skills are advantageous for both roles but critical for test engineers.</p>	<ul style="list-style-type: none"> <li>• Reskilling – short, sharp</li> <li>• Not enough people with the right skills</li> </ul>	<ul style="list-style-type: none"> <li>• Query whether the testing industry would have confidence in a Level 6 NZ qualification</li> <li>• Mindset shift required re value of a qualification at Diploma Level 6</li> </ul>

## Software testing – strawman qualification content areas

*Following is typed up version of changes to strawman from Auckland meeting*

1 Fundamental concepts of testing	2 Test design analysis (incl test phases)	3 Testing phases Pre-test environment and test data
4 Usability concepts	5 Test context and practices (incl development approaches) execution methodologies	6 Testing toolbox Techniques – automated testing, non-technical user testing
7 Communication skills - and core skills (problem solving, interpersona, professionalism etc)	8 Technical and vs Functional aspects	9 Manual vs automated testing

*Following is typed up version of changes to strawman from Wellington meeting*

1. Fundamental concepts / Quality criteria	2. Test analysis - modelling	3. Environment and Data - architecture and querying
4. Usability concepts - security, performance, accessibility	5. Testing Context and practices (inc dev approaches)	6. Testing Techniques and automation. Explorative testing (new box?)
7. Communication skills - presentation skills, reporting, professional practice, project management	8. Technical vs Functional aspects OR Functional & non-functional	9. Testing toolbox or Tool Concepts