

The Value of ISTQB Certification and Training

A White Paper by Randall W. Rice, CTAL

Rice Consulting Services, Inc.
P.O. Box 892003
Oklahoma City, OK 73189

405-691-8075

www.riceconsulting.com

Introduction

A key question that should be asked and answered about any skill-building effort – training, mentoring, certification, etc. – is, “what is the value to the organization and to the individual?”. The ISTQB (International Software Testing Qualifications Board) program for software tester certification has been in existence since 2002, and was introduced in the U.S. in 2004 by the ASTQB (American Software Testing Qualifications Board).

There are other software test certifications, such as those offered by the QAI Global Institute and the International Institute of Software Testing (IIST). This paper focuses only on the ISTQB certification and its unique value proposition. Additionally, the value of training in software testing is also shown.

There are strong critics of the idea of software test certification. Those opinions can be found easily on the web. The purpose of this paper is not to refute those arguments, but rather to show the value of certification for those considering it.

The thesis of this paper is that any certification or training is market-driven. Without the demand for certification and training, none would exist. Ultimately, it is up to a company or individual to seek certification and training based on the value they see in it. There are no requirements in the industry for a software tester to be certified and/or trained (e.g., licensing). If the case for no certification has more merit than the case for certification, then the community of software testers and their managers will agree and the market for certification will disappear.

However, the trend for obtaining test certifications appears to be increasing. Since 2004, the pace of certifications has continued to increase at a strong growth rate in the U.S.. Currently, over 10,000 testers hold the CTFL in the U.S. and over 150,000 people internationally hold the CTFL. It appears that the ISTQB program is the certification of choice based on numbers of people certified.

Basis of Findings

The information contained in this paper is based in actual results seen from adopters of the ISTQB program in their companies. Also, data from ASTQB-sponsored surveys are shown. While these surveys are taken from those already involved in the ASTQB program, it is helpful to see the attitudes from people who sponsor and/or hold ISTQB certifications.

Basis of Certification

The ISTQB certification program has Foundation, Advanced and Expert levels – all defined by common English language international syllabi:

CTFL – Certified Tester Foundation Level, 40-question multiple-choice exam, 1 hour, \$250 exam fee.

CTAL – Certified Tester Advanced Level, 100-question multiple-choice exam, 3 hours, \$200 exam fee + \$100 one-time qualification fee, 3 years of verifiable full-time experience in software

The Value of ISTQB Certification and Training

or systems testing, development, quality assurance, engineering or a related field, and must hold ISTQB Certified Tester, Foundation Level (CTFL).

The three advanced level certifications are Advanced Test Manager, Advanced Test Analyst, and Advanced Technical Test Analyst.

Expert Levels – This level of the program is approaching deployment, so full details are not yet published. The initial areas are Expert Test Manager, Expert Test Automation and Expert Test Process Improvement.

Disclaimer

The author, Randall W. Rice, CTAL (Full) is currently Treasurer of the Software Testing Qualifications Board. He was also a founder of the CSTE program from the Quality Assurance Institute (QAI) in 1997. Rice Consulting conducts training in the ISTQB Foundation and Advanced Level certifications.

The Value of ISTQB Certification

There are other software tester certifications, so what is the value of ISTQB certifications?

Builds a Common Vocabulary of Software Testing

Over the years, each company and each tester have come to use various test-related terms in their own ways. This leads to misunderstandings and miscommunication between people and teams that can cause project delays and missed defects. We have seen this on many consulting projects performed by Rice Consulting. For example, one group may fail to perform a certain type of level of testing because they didn't realize everything the desired testing involved due to a lack of test terminology knowledge.

One test manager of over 200 people credits the ISTQB Foundation Level Certification for a smooth project and early delivery, mainly due to having a common basis of terminology.¹

Conveys Common Practices for Software Testing

The ISTQB syllabi are not test standards or test processes, but they are based on a broad consensus of international test experts in all industries and test standards from a variety of sources – IEEE, ISO, BSI and others. By understanding this broad road of testing, your team becomes aware of proven practices that are effective in software testing and when to use one technique over another.

As test manager and adjunct professor Marc Rene writes, *“Certification across an organization gets all testers on the same playing field with terminology, approaches, methodology, and general testing principles. Certifications focus on foundational testing knowledge and sound testing practices. Furthermore, they allow all testers to have a shared understanding about the maturity*

¹ Joe Gance, former test manager at EchoStar presented this information at a debate of software test certifications at the AST conference in Seattle in 2007

The Value of ISTQB Certification and Training

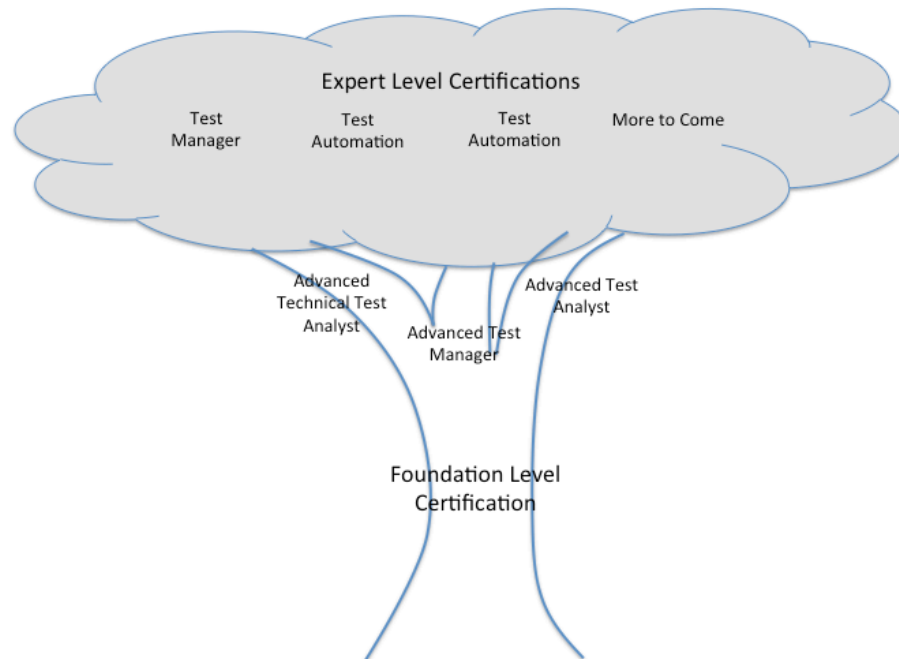
of testing processes in the organization. Certification also provides a competitive edge – allowing skilled testers to find the right defects with the right amount of effort.”²

Using effective processes for testing is a major step toward high levels of defect detection, better software and happier users.

Establishes a Framework for Skill Building

There are many topics available for training in software testing, but which ones are best for the development of your team? The ISTQB certification program lays out a tree structure of training, with well-defined syllabi and learning objectives developed by international testing experts. The ISTQB syllabi forms a strong basis of topics and timings that can be applied at corporate and university levels.³

This structure starts with Foundation Level as the trunk, then major branches of Advanced Levels for Test Managers, Test Analysts and Technical Test Analysts. Then, Expert Levels are in development for topics such as Test Automation, Test Management and Test Process Improvement.



² <http://www.astqb.org/why-istqb/director-quality-services-pub.php>

³ Higher education using the ISTQB syllabi include Villanova and Rhode Island College.

Builds Credibility and Professionalism for Your Team

As a tester or test manager, people must find you credible, or they won't believe your message. While test certification does not mean someone is a great tester, it does attest to a level of knowledge they have achieved.

In a recent ASTQB survey of certified testers and test managers:

- 96% of managers feel that professional certification helps to demonstrate professional competency.
- 92% of managers feel that professional certification helps to gain professional recognition.
- 94% of managers feel that a software tester is more valuable to the organization after receiving professional certification.
- 98% of managers believe that certification helps in career development.
- 93% of testers believe that ISTQB Advanced Level Certification helps testers to gain professional recognition. In addition, 94% believe it helps testers to demonstrate a higher level of professional competency.⁴

Has International Recognition and Consistency

With over 150,000 CTFLs worldwide and over 10,000 CTFLs in the United States, the ISTQB program is the most recognized and adopted in the world. There are over 50 countries that participate in the ISTQB. You can rest assured that the ISTQB certifications will be known by others.

Many international companies are adopting ISTQB certification as a way to get consistent training of all their test teams worldwide on a common syllabus.

Transfers Practical Knowledge for Software Testing

The ISTQB certifications require that you demonstrate the ability to actually perform key learning objectives. At Rice Consulting, our goal is not only to prepare people for the ISTQB exams, but also to impart practical testing knowledge that will be used for years to come. We do this by including value-added topics and all major course points are reinforced with exercises.

Training is not required to take the ISTQB exams, however it is strongly encouraged. The entire ISTQB program depends on training providers to promote it and to deliver the training services. This allows candidates to choose the training vendor and method that best meets their needs. The goal of achieving an ISTQB certification is not to get letters after your name – it is to build software testing knowledge. This knowledge can be obtained through self-study and/or through formal training.

⁴ ASTQB Newsletter, March 2011 and June 2011

Demonstrates Investment in People and the Testing Process

One of the key indicators of management support of software testing is the level of investment in people, processes and tools. Management sponsorship of software testing certification and training is a tangible way to show that management understands and values skill building.

A challenge in building good teams is keeping the best people. Skill development is one of the five major things people value in their job according to Human Resources expert Susan Heathfield.

“Employees want to learn new skills, develop their capabilities, and grow their knowledge and careers. Making developmental opportunities available to each employee demonstrates your commitment to helping them develop their careers. They appreciate this.”⁵

The Value of Formal Training

Learning the Subtleties of ISTQB Terminology and Approaches

People who have been in the testing field for many years may understand topics from their experience and previous training. However, people with over 30 years experience have failed the CTFL exam – not because they lack knowledge, but because they lack the ISTQB perspective.

Small details in understanding can make the difference between passing and failing the exam. The syllabi provides the learning objectives and what should be covered in a training course. They do not convey the knowledge behind the topical outline. That is where formal training comes into play.

Instructor Guidance and Feedback

A good instructor will make sure all learning objectives are covered and that your questions are answered. With self-study, you are largely on your own. Terminology and process details are explained so the candidate will be able to understand the concepts and apply them on the job.

Focused Attention

Whether in live classroom training or in e-learning, you are focused on the topic of software testing for a period of time. This is more than just reading a book. (Which, by the way, reading books on testing is something few testers do.)

⁵ http://humanresources.about.com/od/managementtips/qt/four_factors_b4.htm

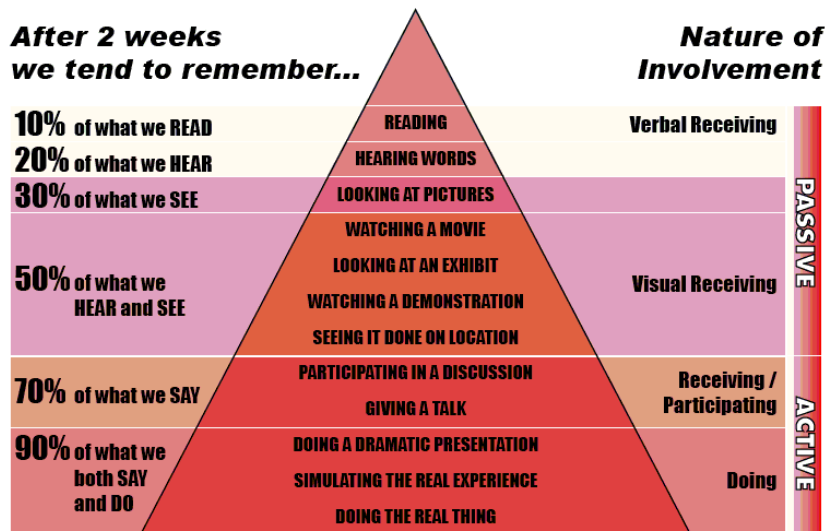
Making the Best Use of Your Exam Investment

A candidate can re-take the exam at any time if they don't pass. However, each exam sitting is \$250. With training, you have a much better chance of passing the exam, plus you get the benefit of testing training which can be used on the job for years to come.

Practical Application

Any type of software testing training should include practical exercises to reinforce the key concepts. People only retain 50% of what they hear and see, but 90% of what we say and do.⁶ Accredited ISTQB training must include exercises for each training objective that requires candidates to perform on the exam.

Cone of Learning (Edgar Dale)



Edgar Dale, *Audio-Visual Methods in Technology*, Holt, Rinehart and Winston.

Analysis of Return on Investment

Some people may say that software test certifications and training are expensive. This begs the question, compared to what?

Let's take an example of a company that has 10 testers to be trained and certified. At the present time, each release of software at the company averages 20 post-release defects found by users and not by testers.

⁶ Edgar Dale, *Audio-Visual Methods in Technology*, Holt, Reinhart and Winston

The Value of ISTQB Certification and Training

Research from Rice Consulting shows it is not unusual for a production defect to cost over \$4,000 to find, fix, re-test and re-implement. Twenty defects at this cost would be around \$80,000 per release.⁷

At 2011 rates, a Rice Consulting ISTQB Foundation Level course for 10 people would cost around \$13,000, including instructor travel expenses.

If the training resulted in a defect reduction of 20% (there would be 16 post-release defects found), the defect cost in this example would be \$64,000 for a savings of \$16,000. This would more than pay for the training and certification.

However, this just considers the cost savings for one release cycle. If the improvement efforts continue for future releases, the cost savings would be seen in each release. This could justify even more training and more process improvement.

In addition, it's not uncommon to optimize testing processes and reduce the cost of testing by the better use of techniques, skills and tools. A 10% cost savings is on the low side for test improvement processes conducted by Rice Consulting.

If the testing budget is \$500,000 per year, test process optimization could save \$50,000 per year, while finding more defects than before!

That kind of cost savings can pay for a lot of training, certifications and other things (such as tools).

This kind of return on investment is not automatic from certification and training. Management leadership and support are required to improve processes and lead people in creating better software using the information gained from certification and training.

Summary

The value of anything depends on what someone sees in a product or service. When it comes to test certifications and the training needed to achieve them, you are not buying training and certifications. You are buying consistency of software testing knowledge, higher levels of credibility, reduced defects, more efficient and effective testing, and happier end-users.

Of all the test certification programs, the ISTQB program is the most recognized and adopted, with over 150,000 certified testers worldwide. In the U.S., there are over 10,000 CTFLs, which means this is the strongest program by far in the U.S.

⁷ Capers Jones has an excellent paper on the cost of defects at www.semat.org/pub/Main/PubsandRefs/a_short_history_of_the_cost_per_defect_metric.doc. As of 2009, Jones writes that industry information showed the cost of post-production at around \$5,000 each.

The Value of ISTQB Certification and Training

If you compare the cost of certification and training with the cost of software defects, it is easy to see how the certification and training pay for themselves in terms of better software and more efficient test processes.

About the Author



Randy Rice is a leading author, speaker and consultant in the field of software testing and software quality. Rice, a Certified Software Quality Analyst, Certified Software Tester, Certified Software Test Manager and an ASTQB Certified Tester – Advanced Level (Full), and a Fellow of the Life Office Management Association, has worked with organizations worldwide to improve the quality of their information systems and optimize their testing processes.

Mr. Rice has over 34 years experience building and testing mission-critical projects in a variety of environments.

Randy is a director of the American Software Testing Qualifications Board and has been published by *Better Software*, the *Journal of the Quality Assurance Institute*, *Crosstalk* and *Enterprise Systems Journal*. He is a regular speaker at international conferences on software testing in North America and Europe, and is also publisher of *The Software Quality Advisor*. He is co-author with William E. Perry of the books, *Surviving the Top Ten Challenges of Software Testing* and *Testing Dirty Systems*.

Randy serves as Treasurer for the American Software Testing Qualifications Board (ASTQB). He also served as chair of the Quality Assurance Institute's International Software Testing Conference from 1995 – 2000 and was a founding member of the Certified Software Test Engineer (CSTE) certification program. As author and trainer of many software testing training courses, Randy has had the privilege of training thousands of software testers throughout North America.

Randy can be reached at rrice@riceconsulting.com