

How Effective Are Your Testers?

A Cross Cultural Experiment

By Jennifer Flaa, CEO Vettanna LLC

Observation One

Testers that have been trained by Vettanna find more bugs and test more thoroughly (find bugs in a wider variety of areas) than testers that have not been trained by Vettanna.

The Data

In a recent survey of five random Vettanna testing projects, bug find statistics were reviewed to determine the effectiveness of Vettanna and client testers. The five projects met the following criteria:

- Vettanna testers and the client testers had to have equivalent years of testing experience.
- The same client and Vettanna testers were on the project from the start to the end of the project.
- All testers were conducting testing at the same phase in the project. (There were no testers writing test cases or writing/running automation while other testers were testing).
- All Vettanna testers are trained in the Vettanna Career Path Training program, none of the client testers have been trained by Vettanna.
- All five projects were internet applications designed to be used by normal consumers.

Testing Project	Vettanna to Client Tester Percentage	Percentage of Bugs Found by Vettanna Testers
1	50% of testing workforce	81%
2	50% of testing workforce	53%
3	12% of testing workforce	40%
4	20% of testing workforce	46%
5	30% of testing workforce	72%

The data above illustrates that Vettanna trained testers made up one half or less of the total testing workforce and yet they found significantly more than their fair share of the bugs. In addition, the bugs found by Vettanna testers are primarily Priority 1 (Crash, Hang or Blocking Bugs) or Priority 2 (Feature Failure Bugs).

Observation Two

Several of Vettanna's client's and industry colleagues (CEOs, VP and Directors of Engineering and QA/Testing) have noted that US testers find more bugs and their test cases cover a broader area and test data than testers from (or located in) foreign countries (i.e.: India and China). In addition, the bugs that are being missed by the non-US testers are easily found by end users or US testers.

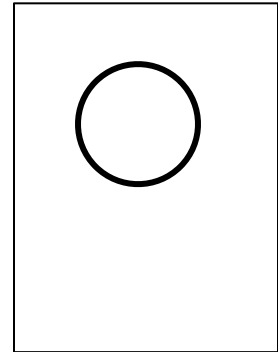
The Experiment

Since Vettanna's training classes consist of multi-cultural testers, we decided to run a non-scientific experiment in several of the beginning and intermediate classes to illustrate how the testers think differently about the item being tested and the variables (or test data) they manipulate to test the item. The size of the classes range from six to twenty participants and the testers ranged in experience from less than one year to ten years (typically the test managers who sat in on all or part of the sessions). All classes had testers that originated from the US, China, India and other countries. This demographic information was compiled both conversationally and on the end of course evaluation.

At the start of the first day of class, each participant was given a white sheet of paper with a circle on it and a box of crayons.

They were given the following information:

- This is an experiment Vettanna is running in all their training classes.
- The testers have 15 minutes to "test" the circle.
- The testers were not told what the experiment was for or what it was about.
- The same information was given at the end of the last day of class, after the participants had completed the Vettanna Career Path Training program.



The Expected Results

How should a tester think about this testing problem?

- What are the **attributes** of the item under test (the circle)?
 - Inside the circle
 - The edge of the circle (black outline)
 - Outside of the circle
- What are the **variables** (test data) that can be applied to the item under test (the circle)?
 - The color of the crayon
 - The intensity that the crayon is pressed
 - The shape that is drawn
 - Null space vs. colored space
- What are the **types of tests** or test case that can be executed?
 - The expected use of the circle (Functionality testing)
 - Unanticipated use of the circle (Error Condition testing)
 - Possible overuse of the circle or variables applied (Stress testing)
 - How the circle looks to the user (GUI testing)
 - How the circle could be used by real users (User Scenario/Use Case testing)

The Actual Results

From class to class the results were very similar and very insightful as to how the testers were thinking about the testing problem. Appendix A shows a graphical sample of the results before the training class from participants from India, China and the US. It cross references with the Expected Results shown above and it also shows an example of the results after the Vettanna Career Path Training.

Appendix A shows that the US testers considered the most attributes, variables and test types and the Chinese and Indian testers considered the least. The most commonly missed tests were:

- Testing the edge (limit) of the circle
- Testing for error conditions
- Testing stress conditions
- Testing real world user scenarios/use cases

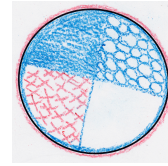
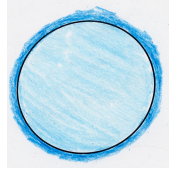
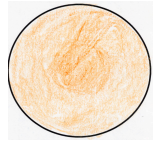
A non-technical person might wonder how one would even think of that in respect to a drawing of a circle and a box of crayons. It does take some creative thinking to apply those types of tests to the circle. However, when you compare the results of the circle to the types of software testing that are typically missed by untrained testers, these are some of the types of testing that are regularly being overlooked.

At the bottom of the results table there is a tally of the total number of testing points considered and the scores range from 5 testing points covered to a total of 25 testing points covered.

Do you want to release your software with 1/5 the coverage you could be getting with Vettanna trained and certified testers?

Summary

The skills, methodology and training expertise provided through Vettanna certified training enables testers to become more effective and professional. The training encourages a close working relationship with engineers and teaches them what they need to ask for and deliver to engineers in order to foster an effective working relationship. The Vettanna training teaches testers to think about and focus their job, skills and test processes into a larger, more organized and repeatable framework that supports the quality of the product. Finally, testers with Vettanna Career Path Training and Core Competancy Certification provide a solid baseline of skills and knowledge that create a high quality testing/QA department within your organization.

Appendix A: Actual Results Before and After Vettanna Career Path Training


	India Before	China Before	US Before	After Training
Attributes				
Inside	1	1	1	1
Edge	0	0	0	1
Outside	0	1	1	1
Total Attributes Tested	1	2	2	3
Variables				
Color crayon	1	1	2	9
Intensity	1	2	1	2
Shape	0	0	3	5
Null Space	0	0	1	1
Total Variables Tested	2	3	7	17
Test Types				
Functionality	1	1	1	1
Error	0	1	1	1
Stress	0	1	1	1
GUI	1	1	1	1
User Scenario/Use Case	0	0	0	1
Total Test Types Tested	2	4	4	5
Total Tests Points Tested	5	9	13	25

Appendix B: Partial List of Vettanna Clients**Testing Clients**

Autodesk
eBay
Chiron - Novartis
Fallon Advertising
FastTrack Systems
OpenTable
Project Invision International
TheFind.com
There Inc
Versata

Training Clients

Allied Telesyn Phillipines
AOL
Boeing
Dell
eBay
Kaiser Permanente
Health Central
LabOne
Microsoft
OpenTable
Pet Insurance.com
Prepaid Legal Services
Project Invision International
SkyCable Manilla
Tescom
US Airforce

Market Sectors

Aerospace
Advertising
Banking
Biotech
Consulting
Defense
Health care
Internet Commerce
Manufacturing
Pharmaceuticals
Retail
Software Development
Telecommunications

Appendix C: What Clients Are Saying About Vettanna Core Competency Training

The Managers Who Purchased Vettanna Training

"I think the training was of significant benefit to my team. I find that they are adhering to the test case format (title, steps, test data, expected results) and I think they find it very helpful. I've especially seen huge improvements in the work of some of the more junior people on the team – like day and night! The course was a wise investment – I'm glad we did it. Thanks!"

Stacy Sarkis, QA Manager, OpenTable

"Vettanna had initially helped us over several years with test execution and test plan development while we were building a new Quality Assurance organization. Once we were up and running, however, we contracted with Vettanna to help us develop and implement a comprehensive training program for processes and best practices. We had grown dramatically in a very short time (hiring 80 new people within a year), and we needed to optimize our team resources by ensuring that we all spoke the same language, followed the same procedures, and prevented redundancy. Following their training program, we saw marked improvement in our overall testing capabilities, where we effectively balanced our Black Box, White Box and Automated test teams and streamlined our efforts accordingly."

Carol Savary, Director of Quality Assurance and Change Management, eBay Inc

"Vettanna provides a thorough, structured approach to testing application software and applied technologies. Their test methodologies allow the flexibility necessary to deliver a total testing solution designed specifically to meet our development needs."

Gary McEwan, Director, Advanced Business Solutions, Autodesk Corporation

"Thanks for being an advocate for the engineers." *Frequent Comment by Engineering Managers from Retail, Internet Commerce and Biotech.*

The Course Participants

"Vettanna's Customized QA Training Services are an excellent resource for any organization interested in developing their Quality Control (QC) talent! The classes are catered to your specific needs and the information is presented in a clean, concise and organized fashion. The instructors are focused, lively and engaging, with real world experience to illustrate the subject matters discussed. Vettanna's training is nothing like other multi-day seminars and you never leave the classroom drained! ... I would highly recommend Vettanna's training as it provides software testers with the essential skills inherent to performing their jobs! "

Patricia Martin - IT Quality Control Engineer - Pharmaceuticals

"The quality of instruction and subject matter that I received through Vettanna has been incredibly beneficial to my SQA career. The instructors were extremely thorough and knowledgeable. The classes gave me a solid understanding of testing techniques and strategies while introducing a formal presentation of test case construction, incident reporting, and other vital aspects of testing. They also have an awesome bug tracking apparatus. For someone starting out in the business or someone who wishes to advance their SQA career, Vettanna provides the instruction and tools to accomplish it."

Daniel Lucero, QA Engineer, Neuromedia

"I liked the advice for interacting with engineers and other stakeholders. In my experience this is often overlooked. I really enjoyed the class and have learned much more than expected." *(From Course Evaluation)*

"I liked the acronyms and memorization tools. I really enjoyed the class. Your energy level is superb! The insight is wonderful and you really seem to know your stuff." *(From Course Evaluation)*

"I really enjoyed your class. You have a great sense of humor. Great job of voice inflection and body language...clever, witty, funny and charming presentation." *(From Course Evaluation)*