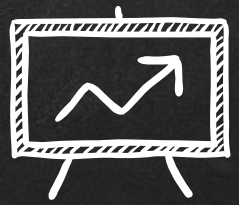

A Spectrum of Difference: Creating EPIC Software Testers

Paul Seaman & Lee Hawkins

HELLO!

I am Paul Seaman

Senior Test Engineer at Travelport Locomote

Get a buzz out of helping people

Want to see organisations embrace diversity from a multitude of angles

EPIC TestAbility Academy is my current focus to help people and contribute to diversity

I am Lee Hawkins

Test Architect at Quest Software

Career software tester

Love helping people to do better testing, both inside and outside Quest

Passionate Status Quo fan – but don't blame me for the Coles ads!

So, what's autism anyway?

"Asperger's syndrome – the engineers disorder" – Kathryn Stewart
"I think all tech people are slightly autistic" – Douglas Coupland
""

What is "autism" – Some History

- 1943 – Leo Kanner – autism from the Greek for self – autos
- Those diagnosed as autistic seemed happiest in isolation
- 1944 – Hans Asperger – makes similar discovery to Kanner
- Autism was seen as a form of schizophrenia and those affected were often locked away in institutions
- Things started to change through Bernard Rimland
- Autism is biological – moving towards the idea of "spectrum"
- 1981 – Lorna Wing – autism continuum, autism spectrum

What is autism – Current Thinking

Autism – a lifelong developmental condition that affects, among other things, the way an individual relates to his or her environment and their interaction with other people.
Spectrum describes the range of difficulties that people on the autism spectrum may experience and the degree to which they may be affected. Some people may be able to live relatively normal lives, while others may have accompanying learning challenges and require continued specialist support.

Source: https://www.autismspectrum.org.au/content/what-autism

Some myths

- ✗ Myth #1: Autism used to be rare, but now it's common
- ✗ Myth #2: People with autism lack empathy
- ✗ Myth #3: The goal should be to make autistic children "indistinguishable from their peers"
- ✗ Myth #4: We're just over-diagnosing quirky kids with a trendy disorder
- ✗ Myth #5: Autism is caused by vaccination

Source: http://www.bbc.com/future/story/20151006-its-time-we-dispelled-these-myths-about-autism

Why We Got Involved

"Service to others is the rent you pay for your room here on Earth" – Mother Teresa

Our Motivations

- [x] Giving back to the community
- [x] Desire to work with people to pass on testing skills and knowledge
- [x] We want to be part of helping people find employment
- [x] It makes us feel good
- [x] It's a really worthwhile challenge

How We Got Involved

"We make a living by what we get, but we make a life by what we give"
Winston Churchill

Finding an Organisation to work with

- ✗ Approached a number of well-known organisations – no response
- ✗ Became aware of EPIC Assist – reached out – "meeting of the minds"
- ✗ We didn't pick autism, it picked us
- ✗ EPIC assists people with disability to prepare for, find and maintain meaningful employment. They also deliver education and training, and provide services under the NDIS.

EPIC Recruit Assist

- William Elliott – Manager Diversity & Inclusion
- EPIC Recruit Assist, the Recruitment division of EPIC

> We believe that there is a hidden talent pool of highly skilled people that remains largely 'invisible' to the job market and therefore largely untapped.
> EPIC Recruit Assist can help businesses build and engage workforces that encourage a culture of diversity and inclusion.

http://epicassist.org/au/recruit-assist/

Putting It Together

"Plans are nothing; planning is everything" – Dwight D. Eisenhower

Working with EPIC – Developing the Idea

- ✗ EPIC Recruit Assist believed that some autism traits aligned well with software testing:
  - Extreme attention to detail,
  - An appreciation of predictability,
  - The ability to recognize patterns, and
  - A strong capacity to be highly focused for prolonged periods.
- ✗ EPIC Recruit Assist could generate employment opportunities for people on "the spectrum"
- ✗ Together, we named the programme "EPIC TestAbility Academy"

Finding an Audience

- ✗ We needed the right people – a mix of attributes/considerations
- ✗ We needed a way to find these people
- ✗ EPIC – Facebook, Twitter and their own website
- ✗ A basic aptitude test as “condition of entry”
- ✗ Assessment in the hands of EPIC Recruit Assist consulting with us

How are we going to run this? – Logistical Issues

- ✗ The right class size?
- ✗ We need consistency – in the venue, session time, presenters, etc.
- ✗ How do we work with people on "the spectrum"? – No experience
- ✗ We need computers
- ✗ We need to store stuff!

This Costs Money

- ✗ EPIC Recruit Assist cover all costs incurred
  - Ross House room rental
  - Craig's attendance
  - Snacks and drinks
- ✗ We both provide all our time for free (William takes us for lunch or dinner occasionally and we each have an EPIC travel mug ☺)

What do we teach? - Developing a Syllabus

- ✗ Breadth in the syllabus was really important.
- ✗ Emphasis on skill development via practical application of theory.
- ✗ The syllabus focuses on testing skills, testing approaches and also provides a cursory introduction to programming.
- ✗ Skills such as communication, collaboration, critical thinking and analysis are consistent themes.
- ✗ Every session to include a review of previous content.

What do we teach? – Some Open Questions

- ✗ What is the "right" class size?
- ✗ Have we got the content at the right level?
- ✗ What will really engage the class participants?
- ✗ How much work can we get through in a single session?
- ✗ How much work can participants cope with in a session?

The ETA Syllabus in a Nutshell

- ✗ What, why and who of testing
- ✗ Testing techniques (boundary value analysis, equivalence partitioning, decision tables, all pairs)
- ✗ Static testing
- ✗ Waterfall and agile development – and implications for testing
- ✗ Exploratory testing (a big focus of the syllabus)
- ✗ Bug reporting
- ✗ Testing tools
- ✗ Introduction to Ruby programming (thanks to Scott Miles 👍)

12 SESSIONS

That might sound like a lot, but it's really not

2 HOURS PER WEEK

Focused short classes (plus homework in between)

6 STUDENTS

Small group

Meet the First ETA Group

The Fun Part!
Running the Sessions

"The art of teaching is the art of assisting discovery" – Mark Van Doren

Session Planning and Structure

- ✗ Introduction, revision, new stuff – our basic lesson plan
- ✗ Rules of engagement
- ✗ Sharing the teaching – easier than you might think
- ✗ We knew what we wanted to cover in each session – but were prepared to change
- ✗ Meaningful discussion regularly reshaped both our session planning and our delivery within sessions

Our Modus Operandi

- ✗ Had a laugh – there's always room for this!
- ✗ Encouraged students to talk about their experiences
- ✗ Set homework to be completed between sessions
- ✗ Introduced new tools
  - Github
  - Mind mapping
  - James Lyndsay's "Black Box Puzzles"
- ✗ Established central contact for communication between sessions

Spectrum Differences – Challenges & Opportunities

- ✗ Consistently challenged individuals but remained aware of their differences
- ✗ Encouraged working in ways they were comfortable with in order to meet task goals
- ✗ Discussion and space to think – a key focus for us
- ✗ We were amazed by what we heard
- ✗ We aimed for patient listening over excessive talking – important for engagement and focus

Lessons Learned

"Don't get burned twice by the same flame" – Christian Kondo

What Two Naive Testers Learned Along The Way

- ✗ Goal alignment with an organisation is crucial
- ✗ It took longer than EPIC or we thought it would to find ideal candidates for a programme like this
- ✗ We planned far too much content for each session
- ✗ Keep it simple – and let complexity develop in the group
- ✗ Real world examples and exercises worked well

And a few more things we noticed

- ✗ We weren't successful with homework being routinely completed
- ✗ Pairing is tricky
- ✗ There are some incredibly creative thinkers in our first group
- ✗ A sense of team formed – and collaboration grew week to week
- ✗ Maintaining a safe & consistent environment built confidence
- ✗ With the right support in the right organisation, those on the autism spectrum could add neurodiversity and very different insights

Looking to the Future

"The power of imagination makes us infinite" – John Muir

What's Next for ETA?

- ✗ First run of ETA has just ended
- ✗ More runs of ETA in the pipeline
- ✗ Improved classes based on feedback & lessons learned
- ✗ Deepening our own understanding of autism
- ✗ Software testing jobs for some of the first course participants?

THANKS!

What questions do you have?

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