Testing the "Untestable"

Creativity
And
Software Testing

Dave Woods, SMART Technologies

- SMART Board Interactive Whiteboard
- SMART Displays and Tables
- Interactive Classroom Tools
- Notebook Software and Content

Dispelling the Non-Myth Myth?

- Not a lot of general discussion out there on testing and creativity

- Most common statement:
- "It's a myth that testing isn't creative!"

- But nobody's really insisting it isn't...

Before We Go On:

"Testing is an extremely creative and intellectually challenging task."

"Others often don't believe this."

Ghosts of Testing Past

- The history of "disempowered" testing
- Testers as "script executioners" only
- Not deeply engaged with the team
- Limited autonomy / decision making
- Verification, not exploration

Part of the "past"?
Definitely not part of the "future"

In Case Anyone Asks...

"What takes more creativity, putting the bugs into the product or finding them once they are there?"

Why Creativity is Fundamental

"Testing is something that we do with the motivation of finding new information. Testing is a process of exploration, discovery, investigation, and learning. When we configure, operate, and observe a product with the intention of evaluating it, or with the intention of recognizing a problem that we hadn't anticipated, we're testing. We're testing when we're trying to find out about the extents and limitations of the product and its design, and when we're largely driven by questions that haven't been answered or even asked before. Testing is focused on "learning sufficiently everything that matters about how the program works and about how it might not work." - Michael Bolton

Great testing == Great Ideas == Creativty

Warning from James Bach

"I'm not sure what most people mean by the word creativity. Some people seem to use it to mean the ability to produce new and different ideas. Other people use it to talk about self-expression. For still others it connotes a corrosive fog where intelligence turns to mush. **So, I try to avoid the term."**

Definition of Creativity

"The process of having original ideas that have value."

"Creativity, it has been said, consists largely of re-arranging what we know in order to find out what we do not know."

"Creativity doesn't create something out of nothing but, rather, recombines ideas that already separately exist."

Six Ways to Be Creative (For Testers)

#1 - Stop Doing Uncreative Stuff

Testing vs Checking

Quoth Michael Bolton (again):

"**Checking** is something that we do with the motivation of *confirming existing beliefs*. **Checking** is a process of *confirmation, verification, and validation*. When we already believe something to be true, we verify our belief by checking....checking is focused on *making sure that the program doesn't fail*."

Checks are normally regressions to be repeated.

Automate your checks: use your brain for tests.

Explore!

- Written "scripts" are not *inherently* evil
- But: how much structure do you need?
- Minimize your overhead

- Session based exploratory testing:

- Allows maximal creativity with guidance
- Charter / mission + notes

A Note on Chaos and Creativity

- Session-based ET vs "ad hoc"
- Creativity is NOT infinte degrees of freedom
- Art itself flourishes in structure
- Get your structure to be minimally sufficient
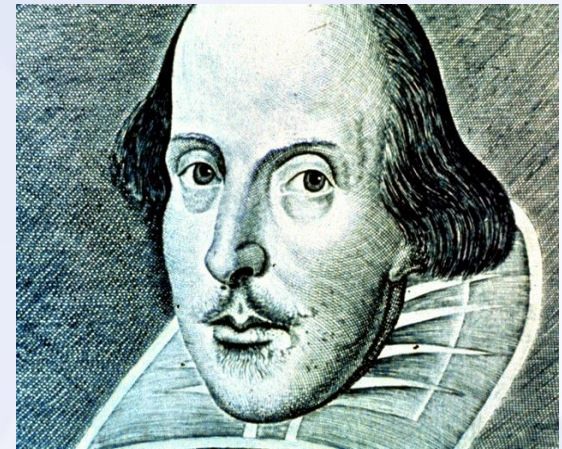
#2 – Lie, Cheat and Steal

Taking Ideas from Nearby

- Other groups: tech support, writers, field

- Your developers (what scares them?)

- Mine the bug database for analysis

- Domain expertise

- Most shocking idea: read your manuals

Taking Ideas from Outside [*]

- The test world at large:
- Bolton, Bach, Kaner, Hendrickson, Goucher
- Blogs, Books, Videos, Conferences, etc

- The Enemy (if you are a product company)

- Outside of testing completely
- http://blog.traditionalcake.org/2008/11/lego-mindstorm-drawing-robot.html

  Please consult your corporate counsel before following any advice associated with this slide. Thank you.

#3 – Expand Your Powers

Automation + Exploration

- Build tools to assist you, not just for checking
- Examples from use:
  - SMART "user Oracle"
  - table state recorder
  - LADEBUG

Expand Your Toolbox

- And expand your mind....
- Open source tools....

- Playing with different open-source tools can show you new ways of doing things

#4 -Use The Social Network

- Pair Up!
  - pair testing generates ideas
  - pair testing is "automatic" learning

- Gang Up! - Test-O-Rama
  - get the whole team to test together
  - bribe, feed, or challenge them
  - do it regularly, not as a
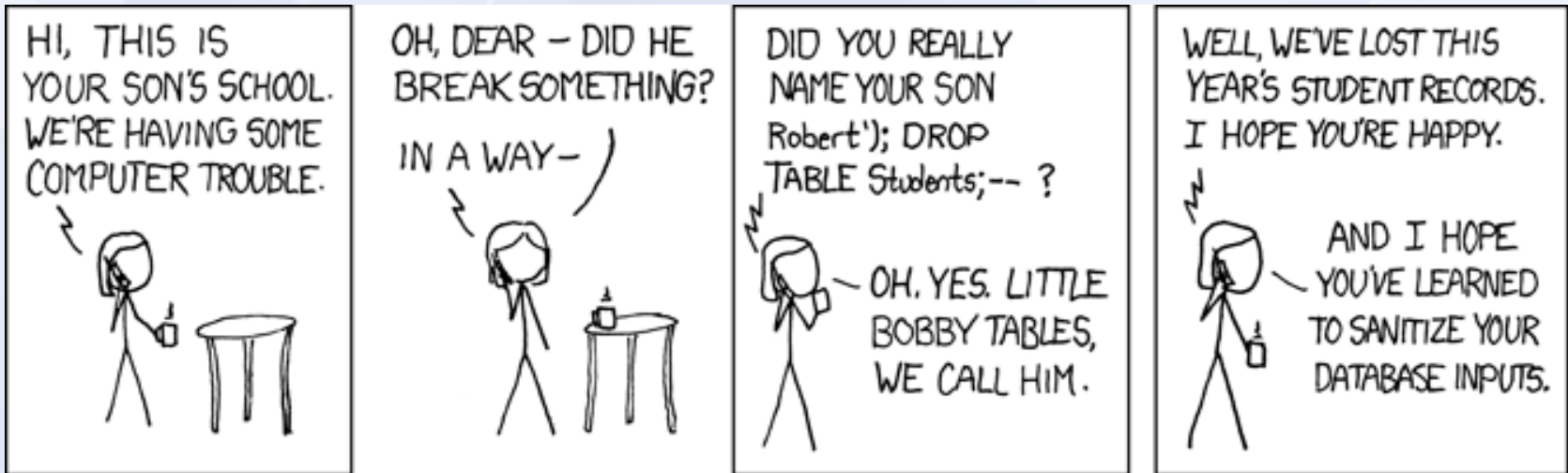 "desperate monkey maneuver"

WARNING:

*This slide may contain **slightly** controversial suggestions*

- Compete with your developers

- Spend time with people who love your product

- Record yourself doing hands-on testing and then watch the results

#5 – Play! (with intent)

- Set your Keyboard to Dvorak (or your colleague's keyboards)
- Set Bing as the default search engine in Chrome
- Break things to see what they look like inside
(both hardware and software)

I know, it's not accurate or "professional" to say we "break" things.
But it is FUN. And getting the unexpected to happen is testing.

Games with the Doc Fuzzer

- Wrote a tool to get documents for Google
- Configurable by language (top 500 words)
- Configurable by number of words
- Configurable by file format
- Configurable by the "damage quotient"

- Simple tool, but could play with it in many ways

#6 - Practice Your Creativity

Six Thinking Hats (E. De Bono)

Lateral Thinking (de Bono again)

- Focus Tools: redefine or invert the problem

- Provocation Tools: outlandish exaggeration

- Disproving Tools: "the majority is always wrong"

- (I used this last to come around to new tools)
- www.sikuli.org

Mind Maps / Brainstorming

- Mind Maps give your ideas structure and relationship, and allow you to see new ones
  - FreeMind, Personal Brain

- Good old-fashioned brainstorming can be used with mind maps or other tools. Get your team together

But I Have An Actual Job To Do!

Your environment matters:

- independent thought must be encouraged
- freedom to experiment and sometimes fail
- diversity of opinions and ideas welcomed
- freedom from arbitrary constraints

Beautiful testing is possible.

In Summary:

- Be curious about everything
- Try new things
- Play
- The reward should be knowledge
- Be honest
- Focus deeply and for uninterrupted time
- Simplicity rules – minimal structure
- Really understand your craft and your domain

Legally Required Slide

Contact david.michael.woods@gmail.com for resources.