Building a Free Courseware Community Around an Online Software Testing Curriculum

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Subproject of CCLI 0717613: Adaptation & Implementation of an Activity-Based Online or Hybrid Course in Software Testing

Starting point: hybrid course:
- undergrad & grad students
- students watch video lectures at home
- students and instructor do activities (labs, discussions, etc.) in live class
- lectures evolved from successful practitioner courses

Industrial training subproject:
- **Partner with a professional society to develop, deliver, and sustain the BBST (Black Box Software Testing) courses**
- **Work from an analogy with the Free / Open Software communities:**
  - **give courseware away free**
  - **sell support services**
  - **the service providers provide sustaining engineering for the courseware**

Academic subprojects:
- University initiative (adapt the course to other campuses in hybrid and fully online formats)
- College initiative (adapt the course to A.S. technician degree for software testers)

Challenge 1: Training Model

Four-week online professional development courses

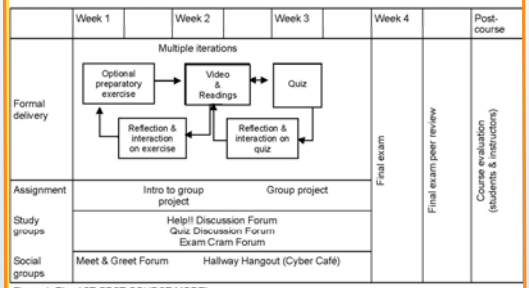


Figure 1: The AST-BBST COURSE MODEL

Two courses complete:
- Fundamental issues of software testing
- Bug advocacy

Twelve courses with video / slides complete:
- Function testing
- Domain testing
- Scenario testing
- Test design
- Risk-based testing
- Analyzing requirements for test documentation
- Combination testing
- Specification-based testing
- Exploratory testing
- Scripted testing
- Regression testing
- Analyzing requirements for GUI regression

Challenge 2: Adoption Model

- Courses free to AST members
- Word of mouth from experts (blog reviews)
- AST Certification at completion of 10th course
- Customized courses good toward AST certification if taught by an AST-certified instructor

Challenge 3: Development Model

Training needed for:
- video delivery
- creating multiple-choice questions
- designing course (e.g. objectives, assessments)
- Video: supplement existing courses with short clips of trainees
- Standards for Writing Multiple Choice Questions: www.satisfice.com/kaner/?p=24

Challenge 4: Business Model

- AST materials are free to all. Courses are free to members.
- AST has finite capacity (likely, 3 courses in parallel per month) & will not customize
- AST refers overflow/customization prospects to certified instructors, who can offer courses for AST credit
- **This is the paid service model--for services beyond the basics, the client pays. Thus, AST instructors can create a business teaching BBST courses.**

Challenge 6: Recruitment Model

- Currently, we invite a top student to be a junior instructor in a subsequent class. Typical courses have 1 certified lead, 1 co-instructor, and 1 new instructor.
- At this time, we have more volunteers than capacity to mentor them.
- **Every certified instructor is required to lead one free BBST course of each type that s/he is certified to teach. This is how we will sustain volunteer teacher availability after the novelty wears off.**

Challenge 8: Instructor Retention

- IF there is significant demand for commercial and/or in-house trainers, retention will be easy. If not, we will have a problem to solve.

Challenge 9: Funding the infrastructure

- Such as, pay for cameras or travel to train co-instructors in video course development
- Currently grants from NSF, some corporate, and substantial personal (Kaner / Fiedler / Barber / Bach) donations (which are unsustainable over long term.)

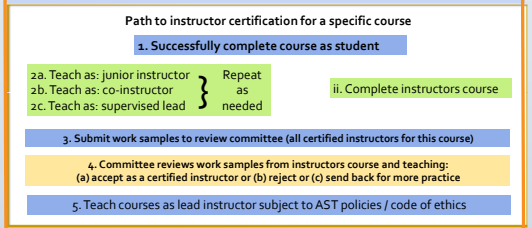
Challenge 10: IP Model

- Creative Commons license.
- Evolving from attribution+share/alike to only attribution
- Despite generous license, we still face academic and commercial plagiarism (annoying).

Challenge 5: Maintenance Model

- Instructors suggest improvements in bbstinstructors.org forum
- Fieldstones (suggested standard responses / notes) go to the bbstinstructors wiki, often after vetting in the forum
- Core changes / enhancements all done by Kaner or Fiedler (unsustainable over the long term)
- We expect to evolve to a chief instructor model, where the chief instructor "owns" all revisions to the course
- Many enhancements will come from 2-10 minute short clips that disagree with main lecture, illustrate it, or discuss it further. We expect courses to evolve toward a compulsory core and optional satellites.

Challenge 7: Instructor Training Model



Instructor Development Resources
- Self-paced fully online instructors' course
- Face-to-face instructors' course at conferences
- Apprenticeship model for professional society members
- Online Instructors Forum
- Meetings (AST Education SIG) at conferences
- Annual Workshop on Teaching Software Testing
- Annual BBST Board of Advisors Meeting

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