How Does High-Impact Work?

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This presentation assumes familiarity with Fagan Inspections

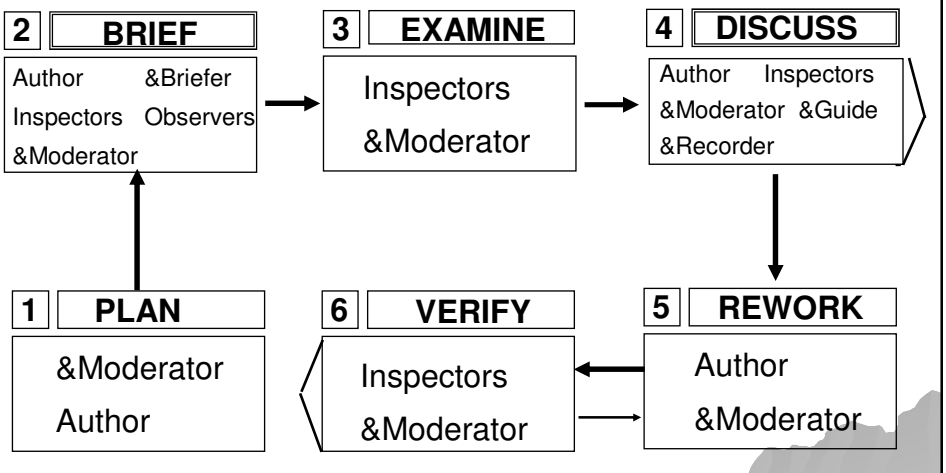
What is a High-Impact™ Inspection?

- Specific formulation of inspection process
- Changes management philosophy
- Retains Fagan 6-step process architecture
- Changes nature of analysis activities

A New Philosophy

- Technical reviews serve practitioners first, managers second, and QA third
- The goal is to have colleagues assist in detecting defects that are:
  - in the author's work product
  - reliably detectable by a tailored review process
- Information about defects in primary work products belongs to author (i.e., is not automatically reported)
- Author must respect judgment of team members
- Managers have a right to know about process

Activities & Responsibilities



2. How does a briefing session work ?

Presenter's Activities

Briefer	Provides overview of primary work products
Author	Provides background information Answers questions
Moderator	Distributes materials Describes process, assignments, and schedule Conducts session Records meeting duration and participants

Why a Briefer other than the Author?

- Provides "unbiased" description
- More easily detects missing or confusing information
- More effective at identifying assumptions
- Verifies that package is "sufficiently" comprehensible & of “appropriate” size -- may determine that package is not ready
- Improves package comprehensibility through annotation
- Allows author to listen & identify problems

Candidate Topics for Briefing

- Scope & Objectives
- History & Rationale
- Precursors
- Definitions, Conventions, & Guidelines
- Major Data Structures, Functions, & States
- Operating Environment
- Usage Scenarios
- Interfaces
- Risks
- Work Strategy
- Test Description
- Organization
- Components

Briefer should create an agenda

What About Observers?

- OK if interested in package or process and NOT disrupters
- Invite those with special knowledge and learners
- Consider audio or video taping the briefing (and questioning during discussion)

Observing at a briefing session is a great way to support project coordination and product cross-training

Learner's Activities

Inspectors

- Learn background, function, and structure of primary work products
- Understand major assumptions
- Ask questions
- Identify assumption / strategy defects

Observers

- Learn about package and/or process
- Ask few questions
- Identify assumption / strategy defects
- Pass work product defects to moderator

Rules for Briefing-detected Defects

Announce defects in

+ **assumptions**
  e.g., usage, interface, or scope
+ **strategy**
  e.g., modification or generation

Do <u>not</u> announce defects in

- **primary work products**
  (except to terminate cycle)

3. How do we examine ?

Two Activities

Comprehension

Grasping nature of work product and its parts along with their relationships and organization

Analysis

Examining details of work product to assess adequacy

Start with the Forest

Check each organizational level, from the top down, for both effectiveness and maintainability

It's often hard to evaluate overall design and spot what's missing

Moderator Guidance

Provide examination guidance in plan

- specify minimum examination time

For specific work products or work product areas, potential guidance includes:

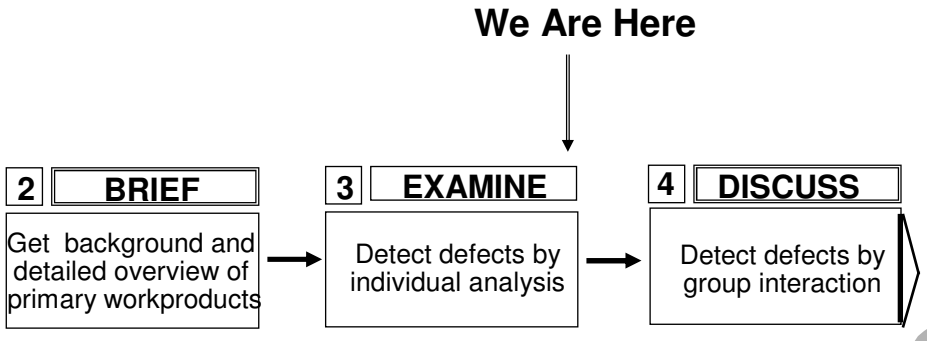
- focusing of group or individuals on specific areas or specific defect types
- usage of **specific analysis techniques**

Examination Guidelines

- Skim primary work products, consider candidate analysis methods and moderator suggestions, and then **develop your analysis agenda**
- Check results of author's analysis as well as performing your own
- Go for maximum number of major defects
- Don’t go too fast or too slow
- Obey communication rules
- When in doubt, write it down

3 1/2. Preparing for Discussion

Our Progress To Date



Previewing Examination Results

Marked-up packages and logs are given to moderator upon completion

When all materials are collected, set is passed to :

- Moderator for assessment of adequacy
- Recorder for consolidation of major defects
- Guide for refinement of group analysis strategy
- Author for orientation
- Moderator to signal completion

Guide Preparation

Create analysis agenda based on:

- work product risk issues
- examination results
- work product checklist issues
- experience & intuition
- outside expertise

Candidate Discussion Methods

- Answer questions recorded during examination

PLUS

- Paraphrase "chunks" of work product
- Review models developed during examination
- Perform selected group analysis techniques
- Discuss majors found during examination
- Describe selected minors found during examination

4. How does discussion session work ?

Author / Inspector Activities

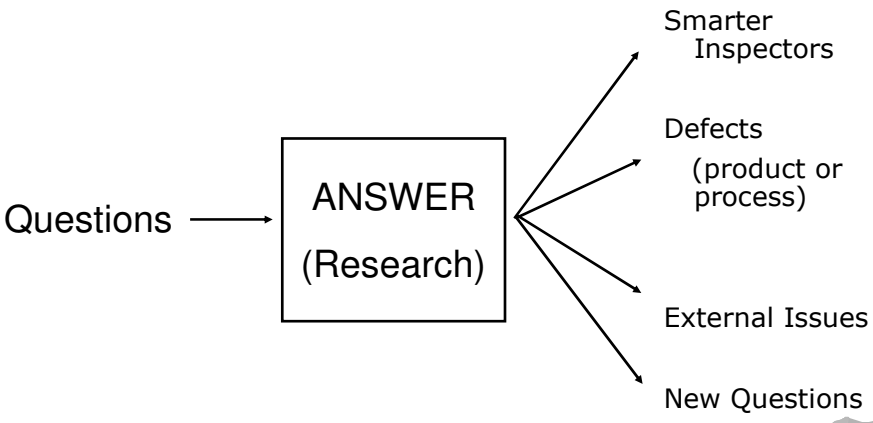
Author

Answers questions
Assesses problem descriptions

Inspectors

Summarize individual analysis results
Ask questions
Review major (critical and serious) defects
Find additional defects during group analysis
Review & revise logs
Choose work product recommendation
Define verification strategy

What Happens To Questions?



Question Coverage Strategy

- Ask general questions first
- Ask page-specific questions next
- Make sure all questions are adequately addressed

Supplementary Examination

- Questions answered or points raised may reveal need for additional examination
- Inspectors can do supplementary examination in parallel with author's rework activities

Guide / Recorder Activities

Guide

Guides inspectors through group analysis

Recorder

Reviews major defects

Records new defects and issues

Summarizes changes to list of major defects

Records recommendation and verification strategy

Moderator Activities

- Conducts meeting
- Keeps meeting on track and suppresses inappropriate behavior
- Support guide and recorder

Brainstorming Protocol

Objective - Bring to light as many issues and thoughts as possible in a limited time

Approach -

- Record it all
- Don't edit during meeting
- Tolerate some "chaff", although interferes with bug counting

Discussion Guidelines

- Use brainstorming ground rules
- Beware of the "Style Swamp"
- Detect symptoms of confusing work
- Go for maximum number of major defects
- All should participate
- All should be considerate

Afterward, all must keep details confidential

Deciding on Reinspection

Work product problems

e.g., defect density too high or too low
too many major or total defects
unusual defect distribution
very difficult to comprehend

Process problems

e.g., defect detection rate (defects per hour) too low
defect percent found during examination too low

Other Verification Alternatives

- One inspector (selected by team) "looks over" changes and compares them to recorded defects
- All inspectors "look over" changes
- Inspectors Examine (2 - 3 hours) changes with optional mini-Briefing, but no Discussion

Effectiveness Measures

PREVENTION

- Increasing "accept as is" preliminary recommendations.
- Decreasing "revise and re-inspect" preliminary recommendations.

DETECTION

- Increasing dollar value of detected defects
- Decreasing dollar impact of failure
- Decreasing ratio of "escaping" defects that are highly review-detectable to total number of "escaping" defects