



FC-MD

Contents

- 1 Software Process
- 2 Observational Studies
- 3 Obs. Study Example

Info-Slide

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Speaker: Forrest Shull

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Notes:

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Software Process

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- What is it?
 - Inputs →  → Outputs
- Many different software processes are necessary during software development.
 - Analysis processes
 - Construction processes
- Why care?
 - Try to improve outputs by improving process.
- Levels of software process:
 - ad hoc
 - Inputs →  (do what you think is best) → Outputs
 - systematic
 - Inputs →  Step 1 →  Step 2 → ... → Outputs
 - and many levels in between...

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- But to reason about software process we need to worry about Process Conformance
 - Do the outputs really result from the procedure we *think* produced them?
 - If I ask for systematic am I really getting ad hoc?
- Ways of handling process conformance:
 - self-reporting
 - intermediate artifacts
 - post-tests
 - observation
- Must be careful that assessing process conformance does not interfere with the process itself!

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Observational Studies

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- Observational Studies of Software Process
 - “an experimental subject performs some task while the experimenter gathers data about what exactly the subject does”
 - Distinguished from *retrospective* studies, in which data collection is done after the fact
 - E.g. questionnaires, post-mortem discussion
 - problems with accuracy
 - Observational data may be:
 - inquisitive - responses are solicited at certain points during the process execution (e.g. questionnaire-based)
 - observational - data is collected as the process is executed, without direction from the researcher (e.g. “think-aloud”)

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Observational Studies

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- Guidelines for running observational studies
 - Want minimum disruption to process and process executor
 - The process being observed should be as close as possible to the process as normally executed, but the act of observing may change the executor's behavior.
 - Want to be confident about accuracy of data
 - Ideally, collect different forms of data for every important point to help pinpoint discrepancies.

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Observational Studies

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- Experimenting with a specific method for observational studies
 - 2-person teams consisting of:
 - Process Executor
 - applies a particular procedure [PBR] with a particular goal [detecting defects in the given requirements document]
 - should “think out loud” so that the process applied can be observed.
 - Process Observer
 - helps guide the Executor through the procedure
 - prompts the Executor for specific feedback about the procedure at certain times
 - takes notes on the Executor's experiences with the procedure in practice
 - Process evaluation comes from:
 - Executor's subjective experiences
 - Observer's notes about good points, problems...

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Important Life Lessons We Have Just Learned

- Executor may need to be reminded to “think aloud”
 - Not a natural process; may feel uncomfortable; but necessary if we are to understand what’s being done
- Executor may need to be reminded to follow the process as specified (e.g. not skip steps) - but should not be *forced* to
 - Observer should record when the Executor deviates from the process, but needs to make sure that the deviances aren’t accidental
- Observer should pay careful attention and record his/her observations
 - Need to increase confidence by checking against other observations or asking the Executor directly.
- Observer needs to make sure that certain categories of questions get answered, asking Executor directly if necessary.

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Important Life Lessons We Have Just Learned (2)

- Types of issues: How can the process be better adapted to the way people actually work?
 - steps can be combined or reordered
 - the goal of a step can be better achieved some other way
 - steps can be added or deleted
- Need to ask whether observations are true in general or suited only to a particular class of user

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