

Review Types

Informal review

(buddy check, pairing, pair review)

- * Main purpose: detecting potential defects
- * Possible add. purpose: generating new ideas or solutions, quickly solving minor problems
- * Not based on formal process
- * May not involve a review meeting
- * May be performed by a colleague of the author or by more people
- * Results may be documented
- * Varies in usefulness depending on the reviewers
- * Use of checklists is optional
- * Very commonly used in Agile development

Inspection

- * Main purposes: detecting potential defects, evaluating quality and building confidence in the work product, preventing future similar defects through author learning and root cause analysis
- * Possible further purposes: motivating and enabling authors to improve future work products and the software development process, achieving consensus
- * Follows a defined process with formal documented outputs, based on rules and checklists
- * Uses clearly defined roles which are mandatory, and may include a dedicated reader (who reads the work product aloud, often describes it in own words)
- * Individual preparation before the review meeting is required
- * Reviewers are either peers of the author or experts in other disciplines that are relevant to the work product
- * Specified entry and exit criteria are used
- * Scribe is mandatory
- * Review meeting is led by a trained facilitator (not the author)
- * Author cannot act as the review leader, reader, or scribe
- * Potential defect logs and review report are produced
- * Metrics are collected and used to improve the entire software development process, including the inspection process

Walkthrough

- * Main purposes: find defects, improve the software product, consider alternative implementations, evaluate conformance to standards and specifications
- * Possible add. purposes: exchanging ideas about techniques or style variations, training of participants, achieving consensus
- * Individual preparation before the review meeting is optional
- * Review meeting is typically led by the author of the work product
- * Scribe is mandatory
- * Use of checklist is optional
- * May take the form of scenarios, dry runs, or simulations
- * Potential defect logs and review reports are produced
- * May vary in practice from quite informal to very formal

Technical review

- * Main purposes: gaining consensus, detecting potential defects
- * Possible further purposes: evaluating quality and building confidence in the work product, generating new ideas, motivating and enabling authors to improve future work products, considering alternative implementation
- * Reviewers should be technical peers of the author, and technical experts in the same or other disciplines
- * Individual preparation before the review meeting is required
- * Review meeting is optional, ideally led by a trained facilitator (typically not the author)
- * Scribe is mandatory, ideally not the author
- * Use of checklist is optional
- * Potential defect logs and review reports are produced

Review Techniques

Ad hoc

Reviewers are provided with little or no guidance on how this task should be performed.

They often read the work product sequentially, identifying and documenting issues as they encounter them.

Ad hoc reviewing is a commonly used technique needing little preparation.

This technique is highly dependent on reviewer skills and may lead to many duplicate issues being reported by different reviewers.

Checklist-based

It is a systematic technique, where the reviewers detect issues based on checklist that are distributed at review initiation.

Review checklist consists of a set of questions based on potential defects, which may be derived from experience.

Checklist should be specific to the type of work product under review and should be maintained regularly to cover issues missed in previous reviews.

The main advantage here is a systematic coverage of typical defect types.

Reviewers should also look for defects outside the checklist.

Scenarios and dry runs

Reviewers are provided with structured guidelines on how to read through the work product.

Scenario-based review supports "dry runs" on the work product based on expected usage of the work product.

Scenarios provide reviewers with better guidelines on how to identify specific defect types than simple checklist entries.

Reviewers should not be constrained to the documented scenarios only.

Perspective-based

Reviewers take on different stakeholder viewpoints in individual reviewing: user, marketing, designer, tester, operations. This leads to more depth in individual reviewing with less duplication of issues across reviewers.

Reviewers should also attempt to use the work product under review to generate the product they would derive from it.

Checklists are expected to be used.

It is the most effective general technique for reviewing requirements and technical work products.

Key success factor is including and weighting different stakeholder viewpoints appropriately, based on risks.

Role-based

Reviewers evaluate the work product from the perspective of individual stakeholder roles (experienced, inexperienced, senior, child, etc.), and specific roles in the organization (user administrator, system administrator, performance tester, etc.)

The same principle apply as in perspective based reading because the roles are similar.

Organizational Success Factors for Reviews

- Each review has clear objectives, defined during review planning, and used as measurable exit criteria
- Review types are applied which are suitable to achieve the objectives and are appropriate to the type and level of software work products and participants
- Any review techniques used, such as checklist-based or role-based reviewing, are suitable for effective defect identification in the work product to be reviewed

- Any checklist used address the main risks and are up to date
- Large documents are written and reviewed in small chunks, so that quality control is exercised by providing authors early and frequent feedback on defects
- Participants have adequate time to prepare

- Reviews are scheduled with adequate notice
- Management supports the review process (by incorporating adequate time for review activities in project schedules)
- Reviews are integrated in the company's quality and/or test policies

** plus people-related success factors: right people involved, meetings are well managed, atmosphere of trust etc.*