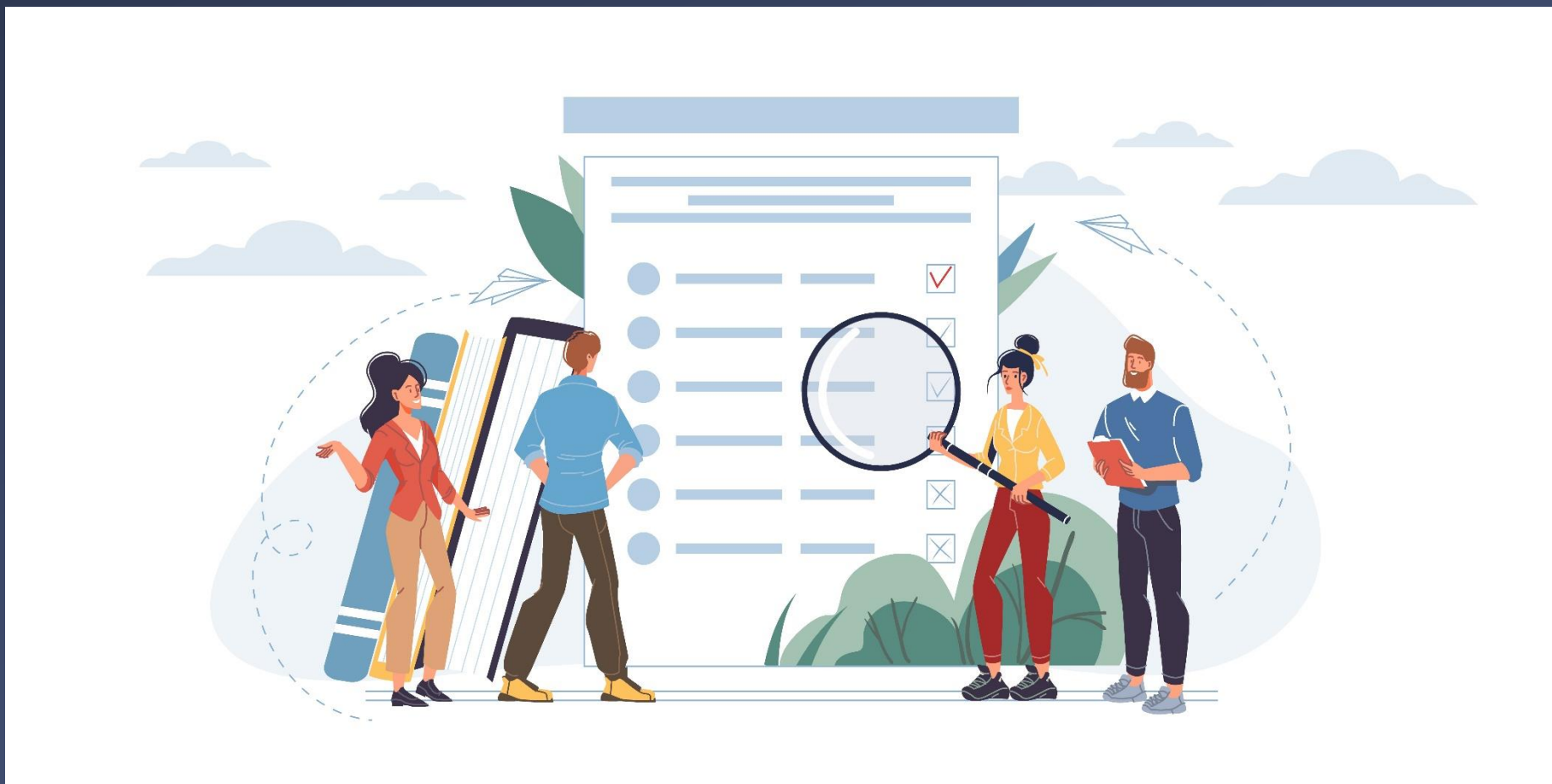



Review and inspection techniques

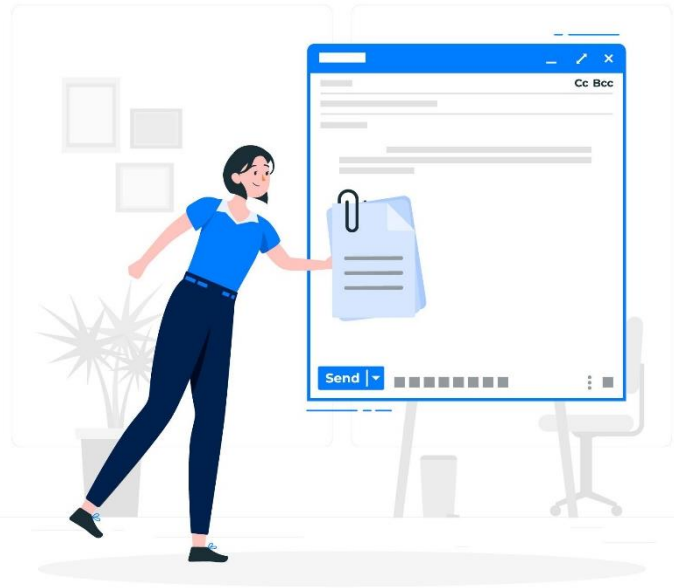


General

With review and inspection techniques you can evaluate and improve the quality of a delivered result in a structured way. The great thing about these techniques is that you can use them for virtually all completed deliverables on both the left- and righthand sides of the V-model. Most other test techniques are based around testing physical results and are, therefore, primarily used during the test phase “on the right side of the V.”

- 
- more formal
1. Distribution for commentary
 2. Walkthroughs
 3. Peer reviews
 4. Fagan inspections

1. Distribution for commentary



Your document is finished and you submit it to the parties involved with a request for feedback (also known as an email pass-around). This is **an informal technique** that we all use. It is an excellent way to inform others and acquire substantive feedback.

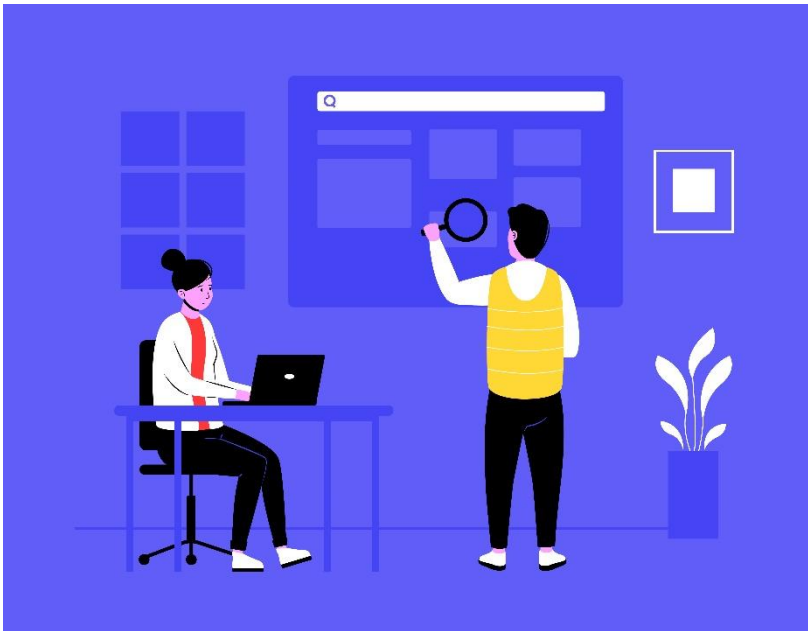
Be aware that recipients may or may not read your document and give you feedback, depending on the document's importance and their available time. Of course, your way of asking and following up on the process are also important factors.

2. Walkthroughs



During a **walkthrough**, an author presents the contents of the document, the underlying thought processes, the deliberations and the decisions that have been made. Contrary to a Fagan inspection, the author plays an active role in a walkthrough. The main goal is to inform others and learn from each other. **Finding defects is less important than acquiring support**, although it is definitely a factor. As with a Fagan inspection, it is advisable to **assign roles prior to a walkthrough**.

3. Peer reviews



A **peer review** is a review undertaken by a **colleague** at the same level as the author. Peer reviews can occur at the author's initiative or as part of a standard process. For example, you can set a rule that states new software code cannot be checked in to the system until it has passed a peer review. Personally, I believe it is highly useful to always conduct a peer review before a result is delivered or tested. Doing so **benefits the project**, it is a **great way for people to learn from each other** and it contributes to the quality of **communication and collaboration** within the team.

Source: The Complete Project Manager, 2016

4. Fagan inspection



While working at IBM in the 1970s, **Michael Fagan** was concerned by the amount of time that was wasted on repair activities during software development projects. These repair activities mostly occurred near the end of a project after the test phase. They even continued after the client had already started using the product. This made the **lead time of projects unpredictable** and had a **negative impact on IBM's product quality and image**.

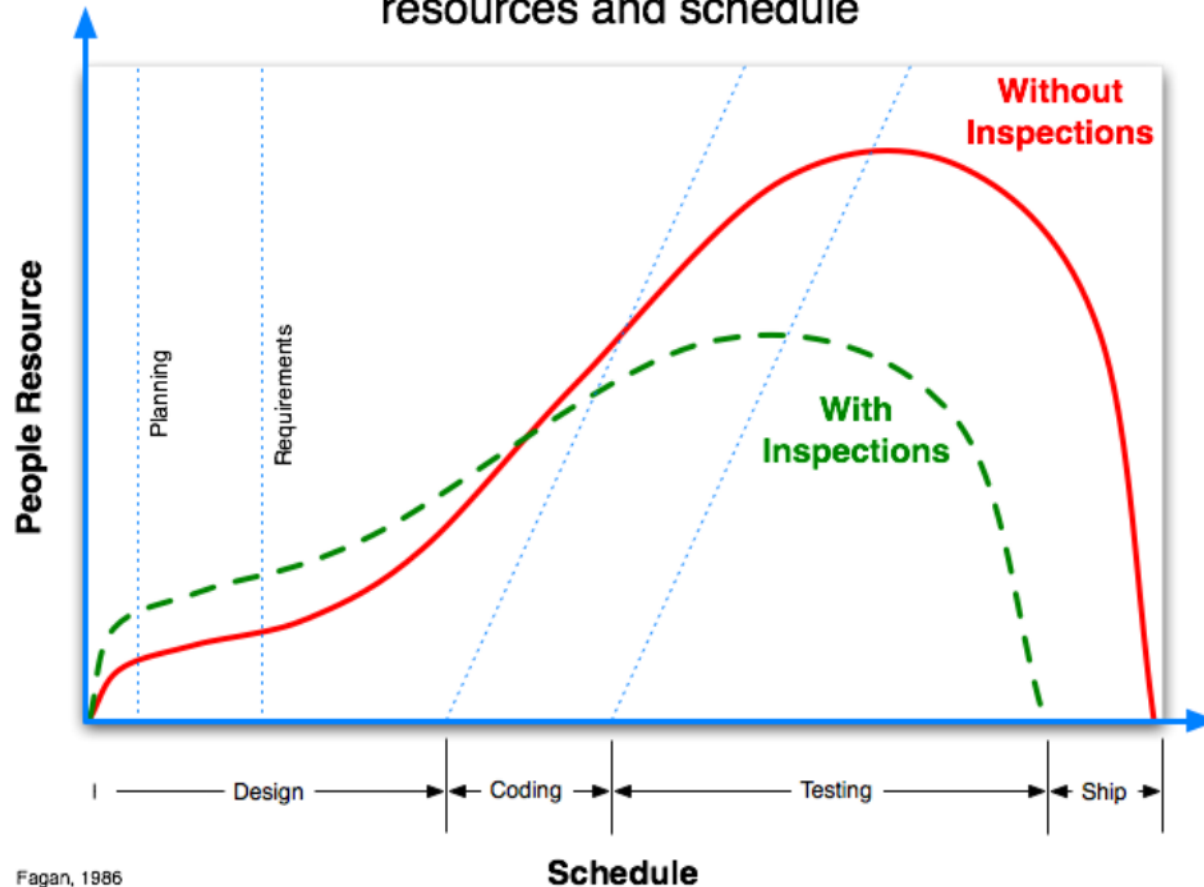
Fagan, an experienced quality engineer, decided to utilize quality assurance techniques from the world of hardware development. In addition to testing end results, he also had intermediate results **inspected in a thorough and structural manner**.

After some exceptionally positive experiences with this approach, he introduced the Fagan inspection process in 1976. This inspection process is basically **a test process for documents**. Since you do not want to wait until you can test the final result, you will have to test its precursor. In many cases this is not a physical deliverable but a document.

Source: The Complete Project Manager, 2016

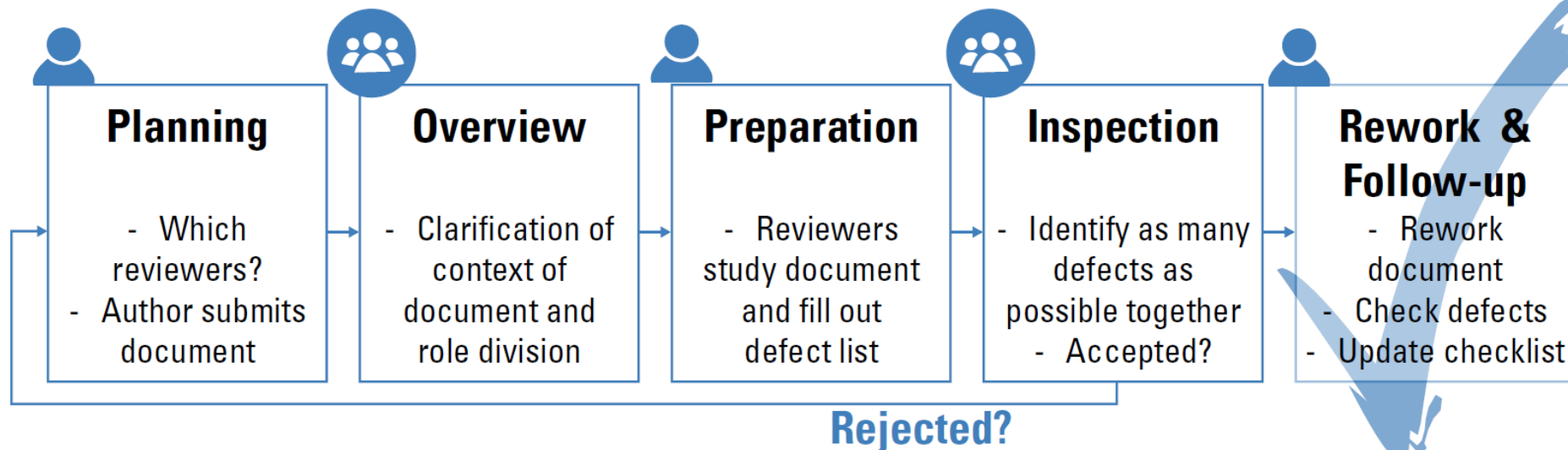
4. Fagan inspection

With and Without Formal Inspections:
Development models for people,
resources and schedule



Source: Fagan M. E., 1986

4. Fagan inspection: process



Collecting defects is the goal.

**So no discussions (the author should not respond in the meeting),
no discussion of possible solutions and no pointing fingers
about who caused the fault.**

Source: *The Complete Project Manager, 2016*

4. Fagan inspection: roles

Moderator

Leads the inspection, schedules meetings, controls the meetings, reports inspection results, and follows up on rework issues. Moderators should be trained in how to conduct inspections, including how to keep participants with strong technical skills but low social skills from killing each other.

Author

Created or maintains the work product being inspected. The author may answer questions asked about the product during the inspection, and he also looks for defects. The author cannot serve as moderator, reader, or recorder.

Inspector

Attempts to find errors in the product. All participants actually are acting as inspectors, in addition to any other responsibilities.

Good people to invite as inspectors include: the person who created the predecessor; those responsible for implementing, testing, or maintaining the product; the customer; a quality assurance representative to act as standards enforcer; etcetera.

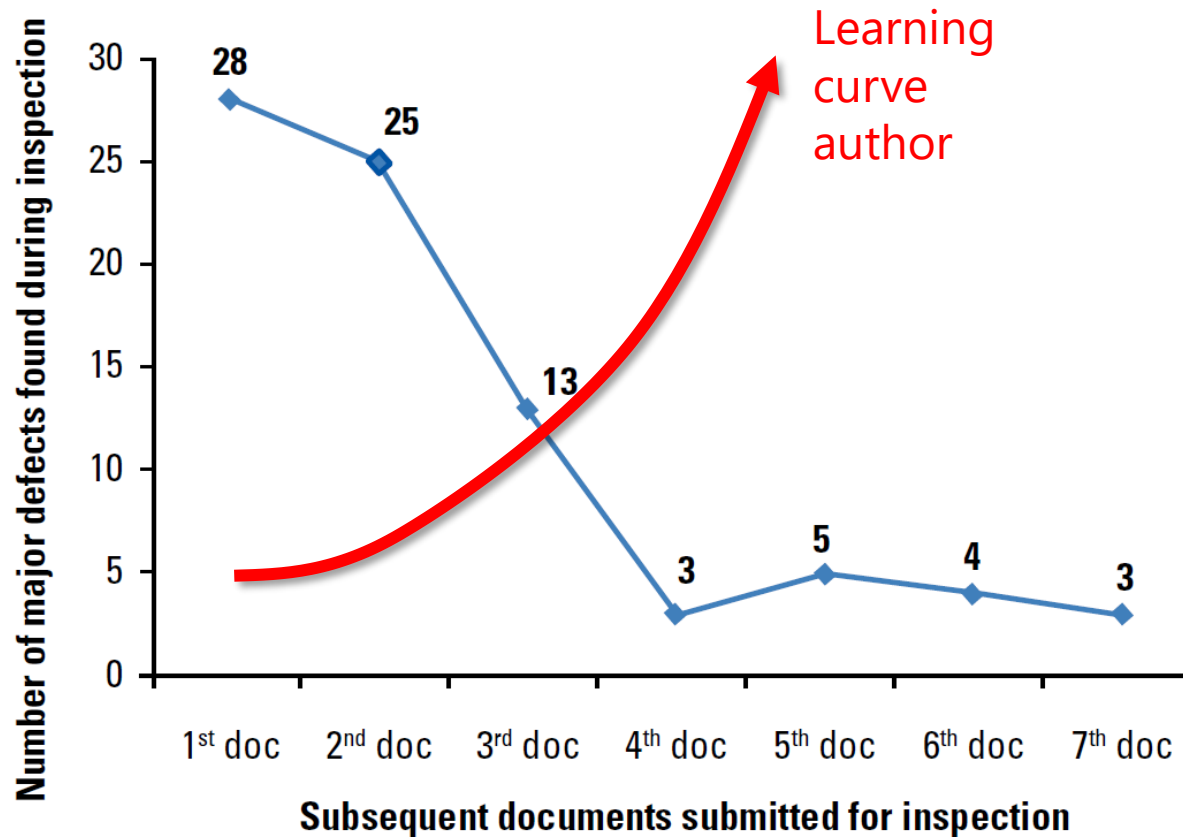
Source: Karl E. Wieggers, 1995

4. Fagan inspection: defect list

Page	Line	Description (defect)	Severity			
			M	m	?	t
6	7	Under scope, the subsystems for department X and Y are missing	x			
6	12	Create proper delineation. It is currently unclear that the maintenance phase is not part of the project.	x			
6	18	What do you mean by this remark?			x	
7	10	Add a diagram of the project organization		x		
7	15	interface = project interface				x
8	20	Two project results are missing: deliverable x and deliverable y	x			
9	15	Also include the reservation of test systems in the plan (resources)	x			

Typically, an Excel template is used with a macro to merge input from the review members prior to the review session into one document.

4. Fagan inspection: the learning effect is huge!



*Fagan inspections are good for the quality improvement of the document, but even better for the **author's growth!***

Tom Gilb, the author of the standard work *Software Inspection*, uses a study conducted at Ericsson in 1997 to demonstrate that an individual's learning curve is raised much higher through formal inspections than what could be otherwise achieved with training or process improvements in the organization itself. The figure shows that the number of major defects found during inspections drops from 28 to a mere 3-5 as a result of just four subsequent stages of learning.

Source: The Complete Project Manager, 2016



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