

Embracing the Silence



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Best Practice '23 Presentation

Context



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Pandemic

Complete shift to online
teaching



Badly received course

Conflicts between teachers
and students, bad
evaluations, overall
frustration



New teaching team

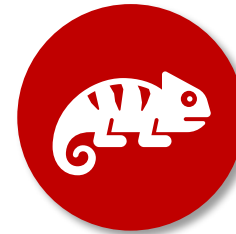
Complete switch of teaching
staff in this course



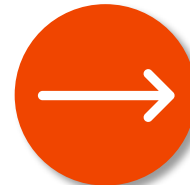
Challenge



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Students neither turn on their
camera nor their microphone

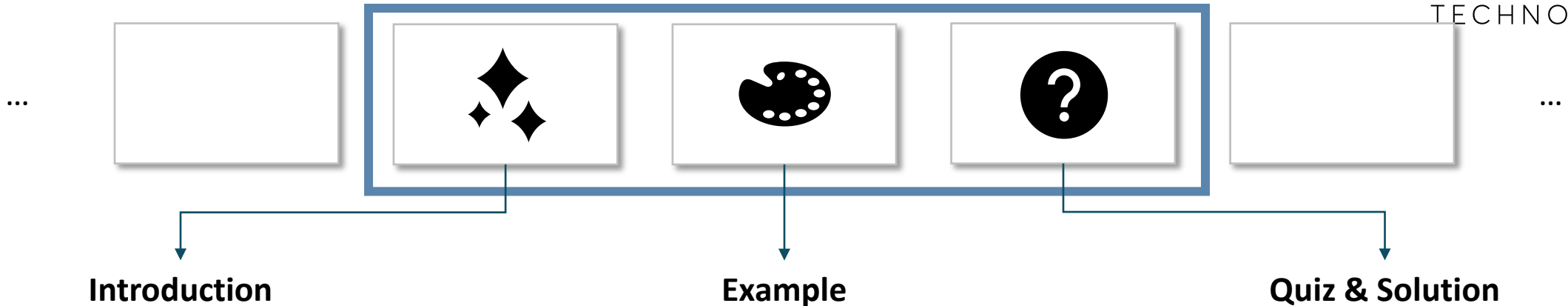


One-directional interaction

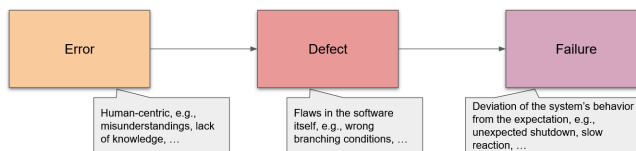


Impossible to detect confusion
among students

Solution: Embrace the Silence ... but open another channel



Defects, bugs, errors, failures?



The purpose of testing is to find defects

A **good** test is one that fails (Keep this in mind when writing your own tests)

Discipline and process is important to catch defects as soon as they are introduced

Few notorious examples among many many more

February 2020: Heathrow disruption

More than 100 flights to and from London's Heathrow airport were disrupted on Sunday 16 February, 2020, after it was hit by technical issues affecting departure boards and check-in systems, leaving passengers with little information about their flights and limiting the use of electronic tickets.

Ariane 5

On June 4th, 1996, the very first Ariane 5 rocket ignited its engines and began speeding away from the coast of French Guiana. 37 seconds later, the rocket **flipped 90 degrees** in the wrong direction, and less than two seconds later, aerodynamic forces ripped the boosters apart from the main stage at a height of 4km. This caused the self-destruct mechanism to trigger, and the spacecraft was consumed in a gigantic fireball of liquid hydrogen.

The disastrous launch cost approximately \$370m, led to a public inquiry, and through the destruction of the rocket's payload, delayed scientific research into workings of the Earth's magnetosphere for almost 4 years. The Ariane 5 launch is widely acknowledged as one of the most expensive software failures in history.

In the first week of July 2019, users across the globe found themselves unable to load photos in the Facebook News Feed, view stories on Instagram, or send messages in WhatsApp. Although Facebook didn't detail the reason for the outage, it did release a statement claiming the issue had been accidentally triggered during "routine maintenance".

Quiz: Errors, Defects, and Failures

Quiz: Errors, Defects, and Failures

Q	Answer	Reasoning
1	Failure	Result of a defect in the system, i.e., the behavior of the system deviates from the expected behavior
2	Error	Human-centric source for potential defects in the system
3	Defect	Flaw in the software itself, which may lead to a failure (e.g., system becomes non-responsive)
4	Error	(see 2)
5	Failure	Outcome of one or many defects in the code
6	Failure	Most likely the outcome of defects in the code regarding access rights

Implementation



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Zoom-internal “poll”

Quiz: Errors, Defects, and Failures

For all of the listed events, determine if it is an error, defect, or failure.

1. The system deletes entries from the database
2. Developer misinterprets requirements
3. Non-terminating loop
4. Taking implementation shortcuts ("quick-and-dirty code")
5. System crashes
6. Admin locked out of the system

The quiz will be available for 10 minutes.

Categorize the following events

Poll | 1 question

1. The system deletes entries from the database (Single Choice)

☐ Error

☐ Defect

☐ Failure

[Launch](#)

- + Can be prepared in advance
- + Does not interrupt the flow of the lecture
- ✗ Difficult to reuse quiz and results

External tool

PA1417 L1: Fundamentals

This form contains all quizzes from lecture 1 of the course PA1417. You can use it to test your general knowledge of main concepts regarding the fundamentals of testing.

Julian.fratini95@gmail.com Konto wechseln

Nicht freigegeben

Errors, Defects, and Failures 6 Punkte

For each of the following events, determine if it is an event, defect, or failure.

	Error	Defect	Failure
The system deletes entries from a database	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developer misinterprets requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-terminating loop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking implementation shortcuts ("quick-and-dirty code")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System crashes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admin locked out of the system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- + Can be prepared in advance
- ✗ Sends students to another website
- + Persistent beyond one lecture

Usage



For Students:
Individual Assessment

A form for individual assessment. It consists of two main sections. The top section is enclosed in a red border and contains three horizontal bars: the first is green with a green checkmark icon to its left, the second is red with a red 'X' icon to its left, and the third is grey with a grey empty circle icon to its left. The bottom section is enclosed in a green border and contains three horizontal bars: the first two are grey with grey empty circle icons to their left, and the third is green with a green checkmark icon to its left.

Quiz: Errors, Defects, and Failures

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For Teachers:
Overview

A form for teacher overview. It consists of two main sections. The top section is enclosed in a red border and contains three horizontal bars: the first is green with a green checkmark icon to its left, the second is red with a red 'X' icon to its left, and the third is red with a red 'X' icon to its left. The bottom section is enclosed in a green border and contains three horizontal bars: the first two are red with red 'X' icons to their left, and the third is green with a green checkmark icon to its left.

Effect & Reception



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Continuous Attention

Students follow the course
because everyone is
prompted every few slides



Engaging Conversations

Quiz results spark follow-up
conversations



Appreciation

Quizzes are the single-most
appreciated feature of the
new course

Consequences & Limitations



Question Type

Pattern only works with
single- or multiple-choice
questions



Assessment Type

Quizzes only test
understanding, not higher-
level types of knowledge



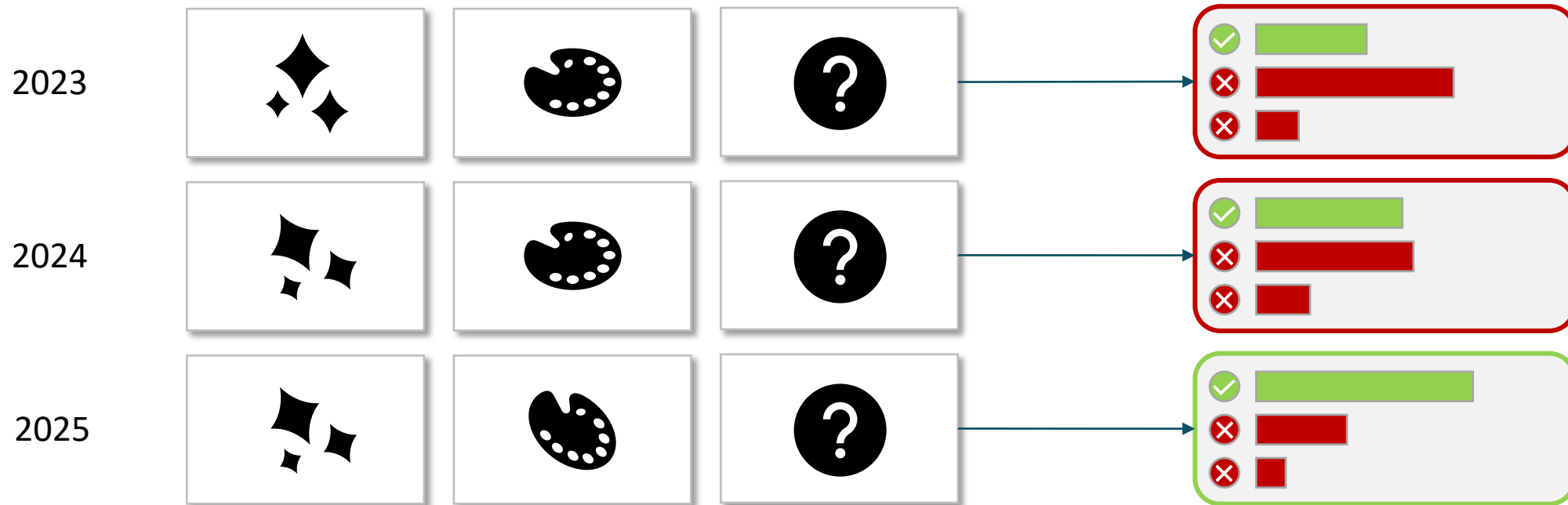
Commitment

Students will now keep
their cameras shut off all
the time

Potential: Evaluating Course Material Changes



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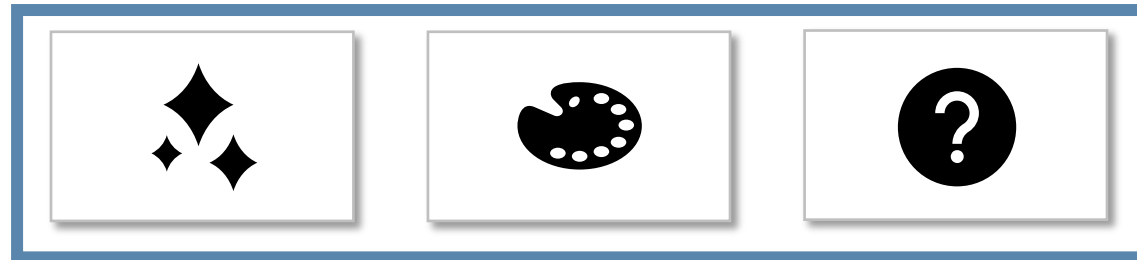
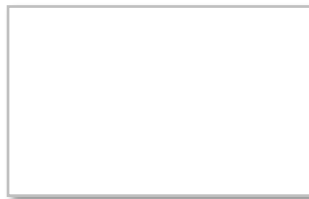


Summary & Conclusion



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Continuous Attention



Limited Question Types

Engaging Conversations



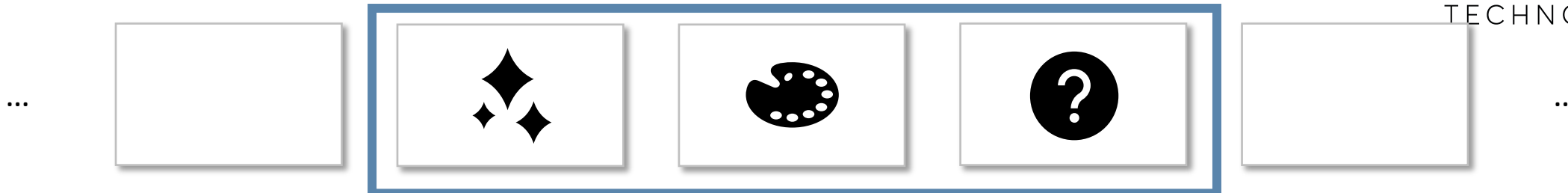
Limited Assessment Type

Appreciation



Commitment

Summary & Conclusion



Continuous Attention



Limited Question Types

Engaging Conversations



Limited Assessment Type

Appreciation



Commitment

Thank you for your attention.

