How could open source in vocational education work?

Simone Weiß

February 2, 2025

Agenda

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Who am I

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Who are the Apprentices

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Why it matters

04
Where can open-source be used

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Concrete Examples

We are Elektrobit

Your software solution provider

35 YEARS AUTOMOTIVE EXPERIENCE

10 YEARS OPEN-SOURCE EXPERIENCE

EMBEDDED LINUX SYSTEM WITH YOCTO

EB CORBOS LINUX BUILT ON UBUNTU

Who am I

The role of Open Source and Education in my work

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Embedded Systems Developer, Product owner
Elektrobit – Driving the future of software

- "Always" a OSS user
- Degree in computer science
  - Did not do vocational Education
  - Came into with OSS there
- Worked mostly on embedded Linux distributions
- Product owner of EB corbos Linux – built on Ubuntu (open-source product)
- Now I also take care of our Apprentices
- Private: Cats and nature

Who am I

The role of Open Source and Education in my work

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The Question: Can I just teach them the same way I was taught?

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Who are the Apprentices

Some statistical data

Apprentice

- **How many learn computer science via vocational Education**

Who are the Apprentices

Some statistical data

Apprentice

- **How many learn computer science via vocational Education**
  - More and more (German numbers), is the 14th most done vocational education

Year	Apprentices
2021	42821
2022	44429

  - Of those there is a 1:10 ratio between female and male Apprentices

Who are the Apprentices

Some statistical data

Apprentice

- **What is the educational background?**

Who are the Apprentices

Some statistical data

Apprentice

- **What is the educational background?**
    - New Starters in 2023

Background	Apprentices
Not graduated	120
"Junior high"	564
GCSE	5124
A-levels	6405

~15-19 years old

Sources for numbers:

https://www.statistischebibliothek.de/mir/receive/DEHeft_mods_00161232

Who are the Apprentices

Previous Open-source knowledge – data from our apprentices

Apprentice

- **Let's estimate:**
  - Do you know what open source is?

Who are the Apprentices

Previous Open-source knowledge – data from our apprentices

Apprentice

50 % know what open source is initially

- **Let's estimate:**
    - Do you know what open source is?
    - Can you name an open-source license

Who are the Apprentices

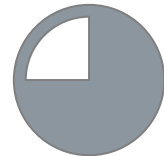Previous Open-source knowledge – data from our apprentices

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75 % Can not name any concrete open-source license

Who are the Apprentices

Previous Open-source knowledge – data from our apprentices

Apprentice

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  - o Do you know e.g., what GPLv2 is?

Who are the Apprentices

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Apprentice

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- **Let's estimate:**
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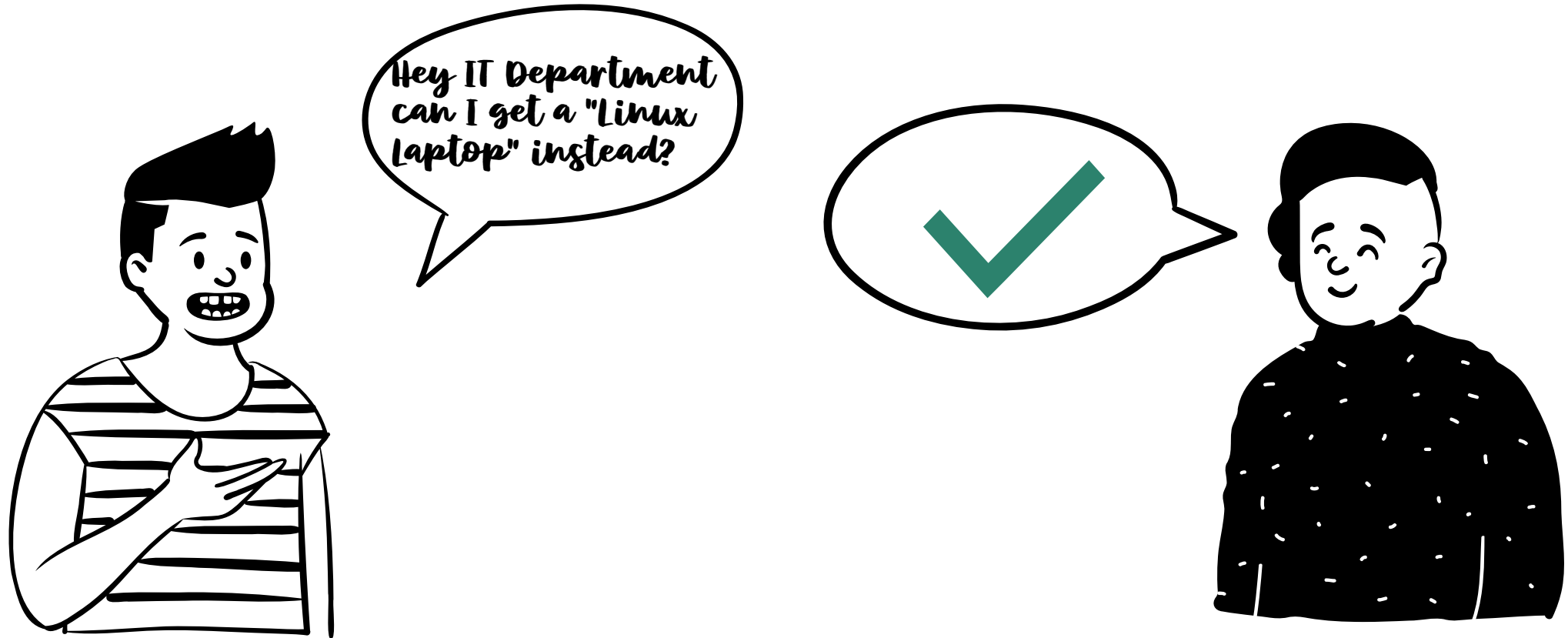75 % Can not name any concrete open-source license

95 % Can not give any details about any open-source license

Why it matters

For us

Why it matters

For us

Access to open-source education resources

- Safes time
- Makes more independent.
- Possible teach something I do not know much about

They will be future IT specialists

- Should be our requirement to teach them about OSS
- Often decide on basic setups like operating systems

Will be contributing just as other IT guys

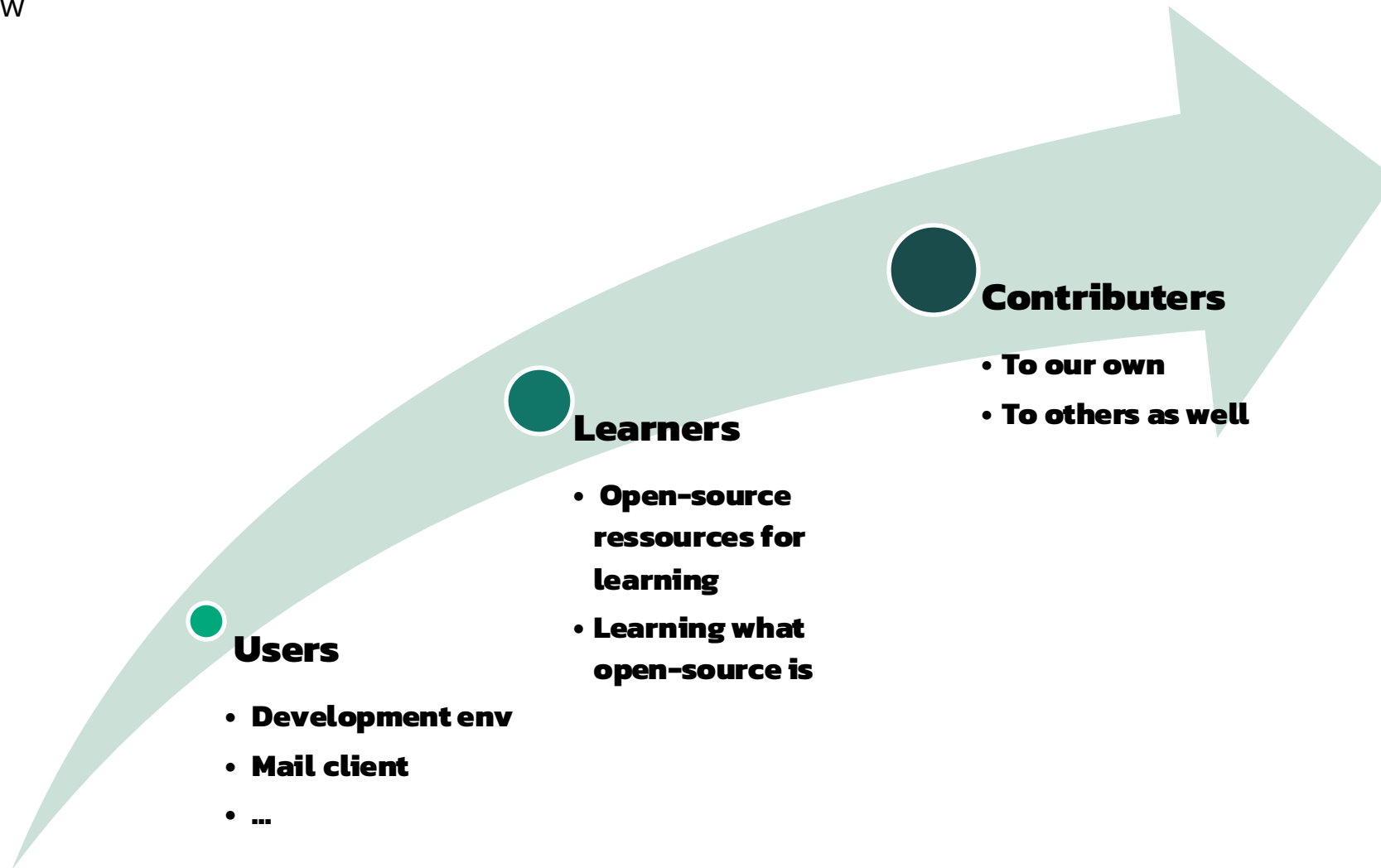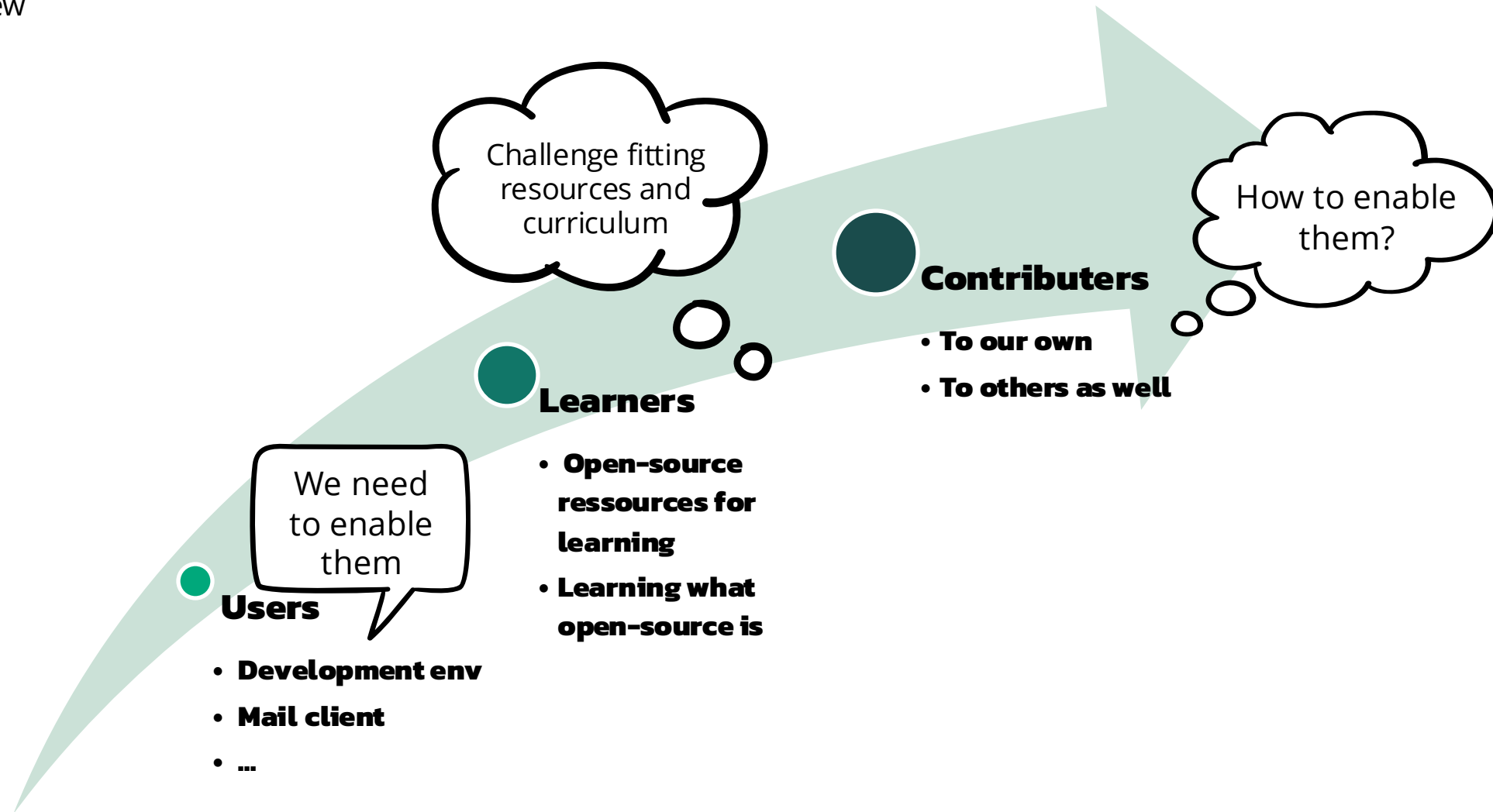- Same reason as why it matters when educating students

Why it matters

For them

Where can open-source be used

An overview

Users

- Development env
- Mail client
- ...

Learners

- Open-source ressources for learning
- Learning what open-source is

Contributers

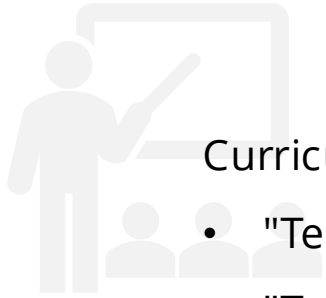- To our own
- To others as well

Where can open-source be used

An overview

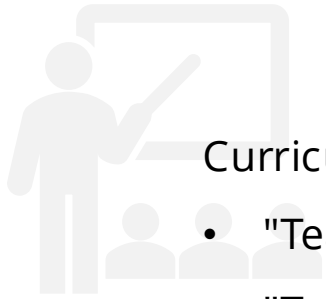# Where can open-source be used

Fitting resources and curriculum

Curriculum:

- "Teach what open source is"

- "Teach about licenses"

- Otherwise: nothing

- But of course, we can us open/source material for teaching e.g., programming

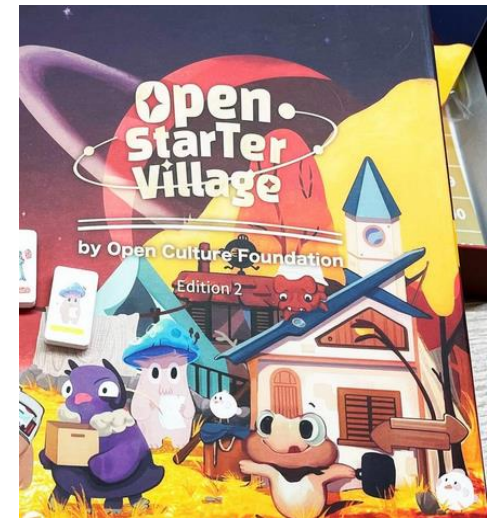# Where can open-source be used

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"Teach what open source is"

and "Teach about licenses"

- Use same resources as for "normal university students"

- But why not start with a game

Suggestion: https://openstartervillage.ocf.tw/en/resource/

Where can open-source be used

The rest – what do we know ...

Use ?	Category	Example
No	Visual programming languages for kids	
Yes, first few weeks	Visual programming language For teens	
No (or very talented Apprentices)	Material for university students/adults	

Also, more than just programming to become an IT Specialist needed

Where can open-source be used

How to enable contributions

Main questions normally are

How

What

Afraid

Where

Where can open-source be used

How to enable contributions

How	Afraid	Where	What
Teach as normal	**Practice internally**	**Own OSS**	**Start small**
Consider language barrier	**And externally**	**Where interested**	**Spelling**
	Hold Hands (literally)		**Bugs**
			Final thesis

E.g., https://github.com/firstcontributions/first-contributions
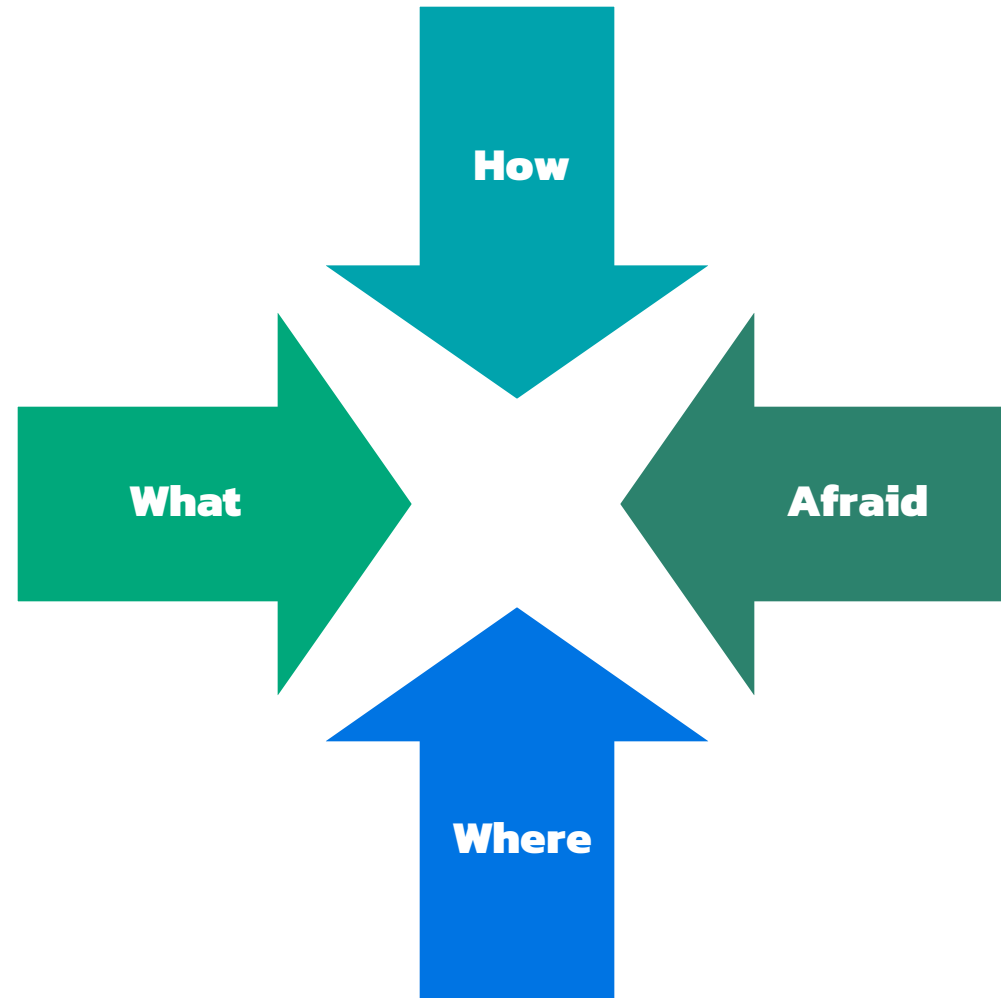
A concrete example

Concrete examples for teaching - git

Introduce
- "Fachunterricht"
  - Give it yourself
  - Recordings won't work
- Use open-source presentation

Game
- Ensure age appropiate
- e.g.,
  - learngitbranching.js.org
- ohmygit.org

Practice
- Either online
- But normally I need to come up with something my self

Use
- Daily hopefullly
- Provide resources for further reference, e.g., git-scm.com/book
  - Yes, searching online is hard for them

A concrete example

A concrete example contribution plan
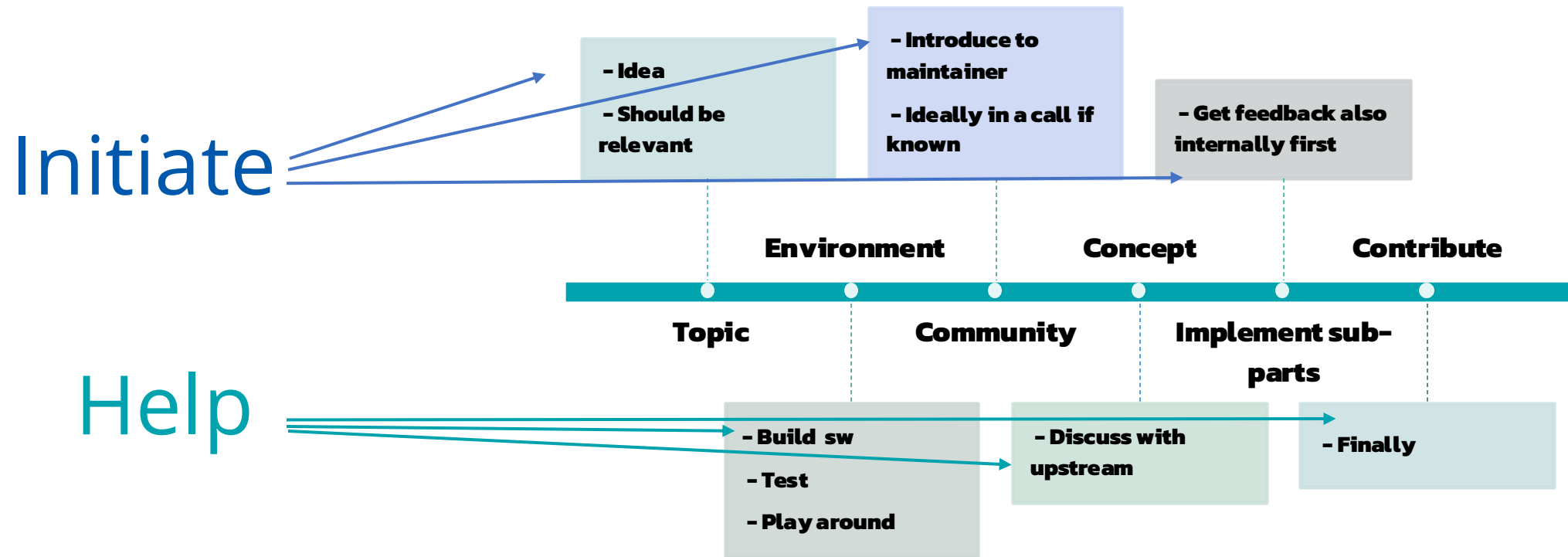
Questions?

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