One Resource to Teach Them All

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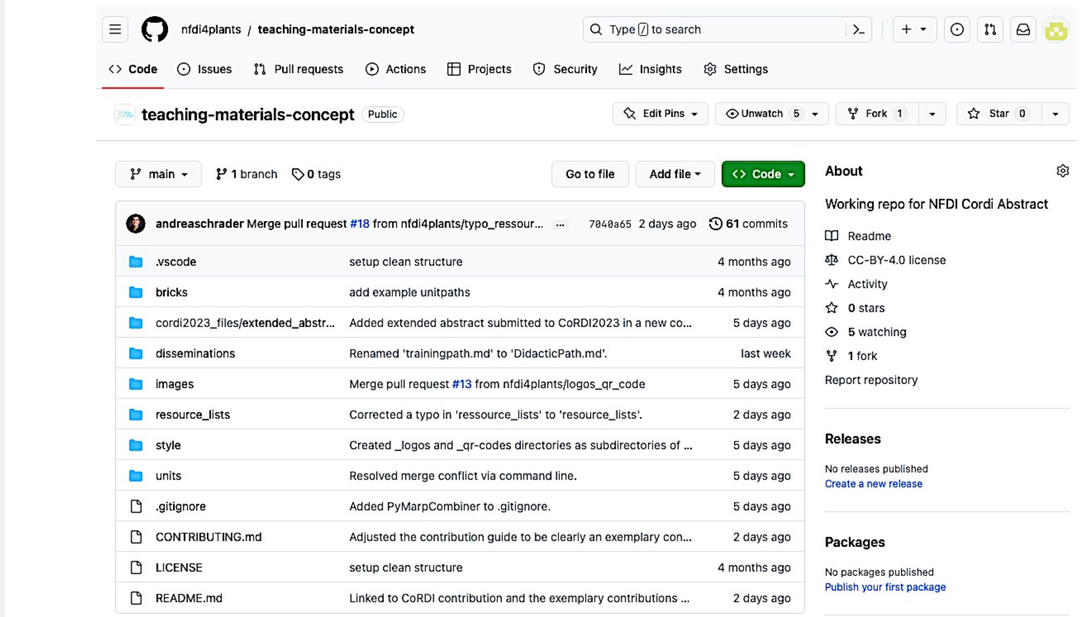
Motivation

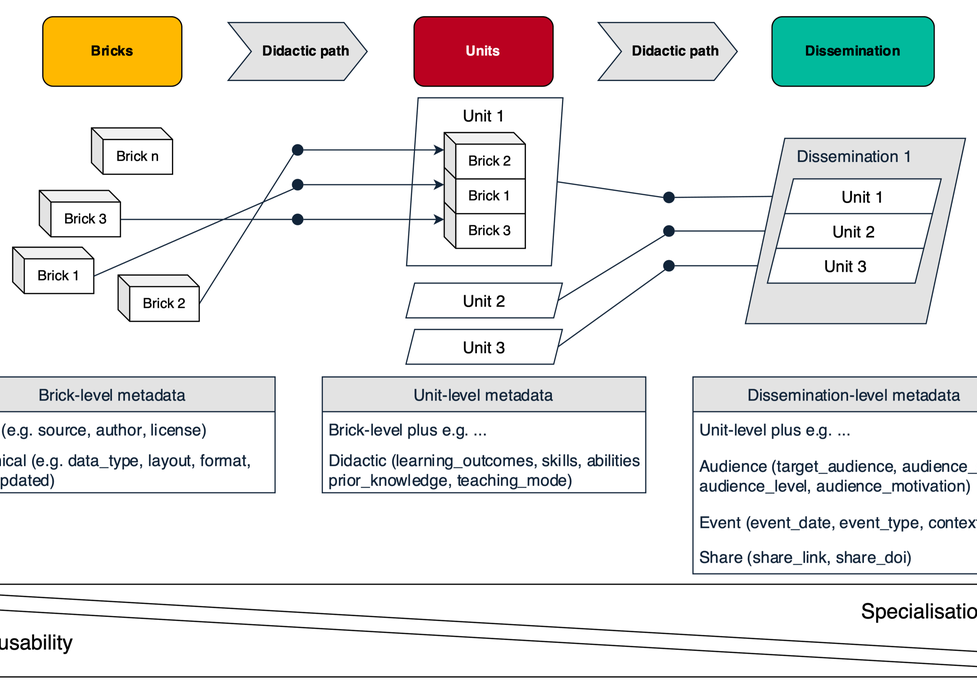
Teaching materials are often scattered, hard to find, and fragmented.

We follow the principles of Open Educational Resources (OER) promoting easy access to educational materials and increased chances of educational equity[1]. A central collection of materials allows the respective community to add and improve contributions with transparent and traceable authorship and licensing of contents.

We aim at one adaptable OER for all: a light-weighed, central, reusable, open and contribution-open resource of materials for varying learning environments. Therefore, we develop a teaching material resource based on the concept of annotated bricks along didactic paths for DataPLANT.



Screenshot of the DataPLANT teaching-materials-concept GitHub repository. Implemented and further developed in the DataPLANT Knowledge Base: https://nfdi4plants.org/nfdi4plants.knowledgebase/



Modular concept for the DataPLANT OER.

3 Levels Balance Customisation & Reuse

Bricks

- Individual slides/text/paragraph
- Smallest possible educational content snippet

Units

- Coherent building blocks - slide decks
- Cover a complete idea, thought or topic

Disseminations

- Combined building blocks
- Composed along a didactic path adapted to a learning environment, target group or person

Metadata: From Bricks to Disseminations

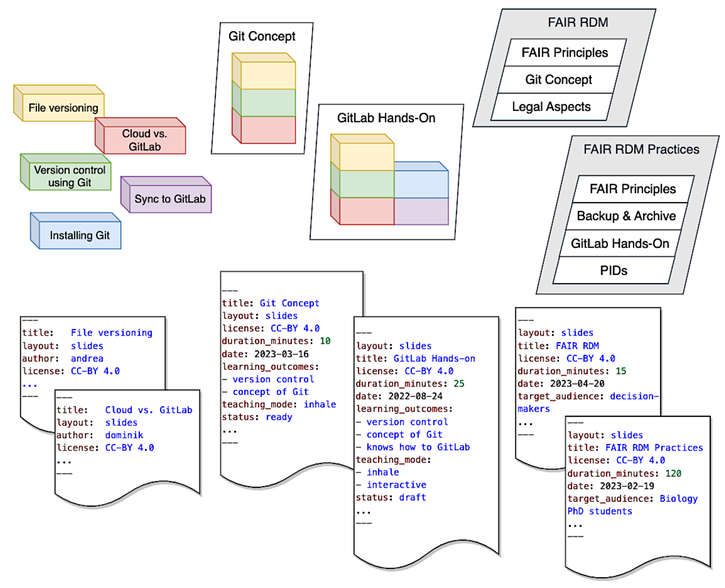
- Inspired by previous recommendations[2,3]
- Aggregated YAML front matter
  - In markdown files along didactic path upon compilation.
- Didactic Path
  - Ordered list of paths to bricks, units, disseminations
  - May contain metadata in a levelled YAML header
- Suggested Tools
  - Design: VS Code + Marp extension
  - Collaborate: Git + GitLab/GitHUB
  - Compile / Convert: (Py)MarpCombiner + Marp CLI

Didactic path

units > Git-concept-basic > DidacticPath.md

```
---
layout: slides
title: Git concept basic
license: CC-BY 4.0
duration_minutes: 5
date: 2023-03-16
learning_outcomes:
  - version control
  - concept of Git
teaching_mode: inhale-listen
status: ready
...
---

bricks/title-Git-concept-basic.md
bricks/cloud-services.md
bricks/Git-and-Git-platforms.md
bricks/Git-why.md
bricks/Git-summary.md
bricks/GitHub-GitLab.md
bricks/team-projects.md
bricks/cloud-vs-Git.md
```



Left: Didactic path example with paths relative to the root of the repository. Another option: paths relative to the output location. Right: Example “version control using Git” to elaborate our levelled concept.

Collaborations:

Visit the Concept Repository

References:
1: UNESCO (2022) UNESDOC Digital Library, Catalog Number 0000383205, accessed: Apr. 21, 2023.
2: Garcia, L et al. (2020) PLoS Comput Biol, vol. 16, no. 5, e1007854
3: Batut, B et al. - PURL: https://gxy.io/GTN:T00062, accessed: Apr. 21, 2023

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