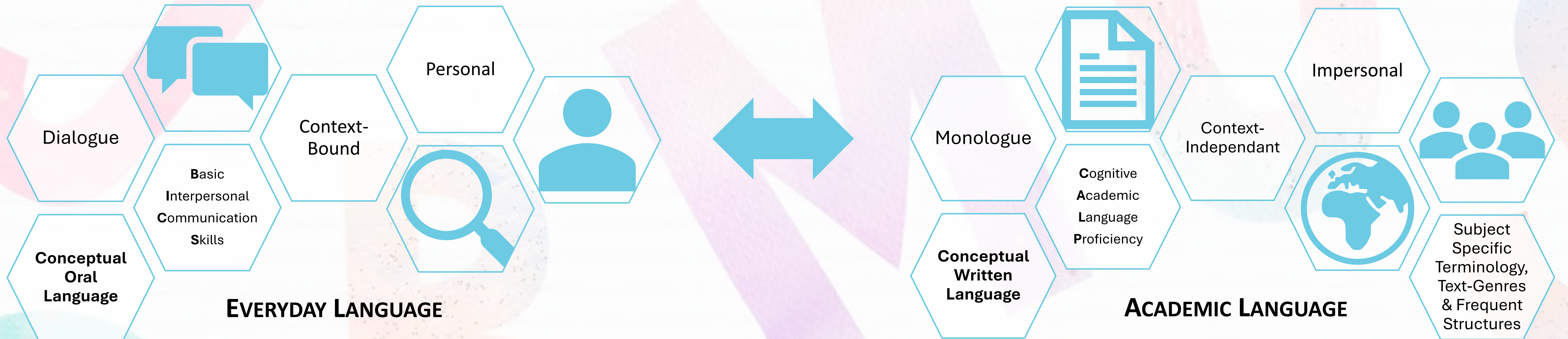




## Language? Why?

Language proficiency refers to the ability to use natural language in written and oral form to describe, explain or discuss subject content.

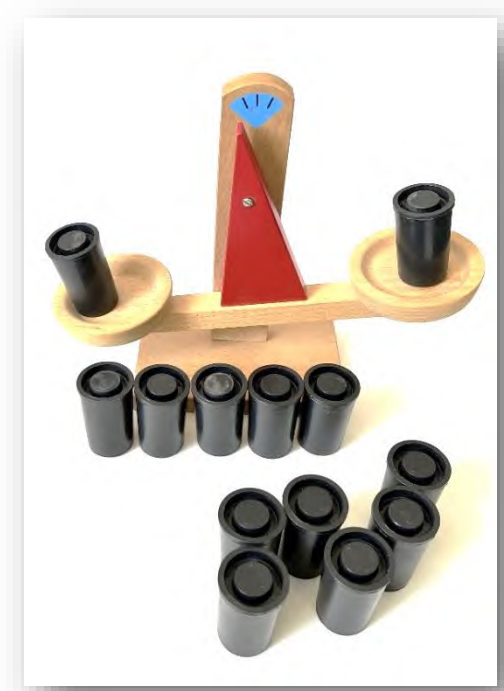
- Language support in all subjects, including first language support for second language learners, is essential for educational success [5]
- Teaching in heterogeneous groups with varying language proficiency is a routine part of every teacher's daily business [5, 6, 8]
- Language skills needed in the subject classes should be something taught and learned within the subject rather than an entrance ticket for learning in class [1, 4, 7]
- Lack of sufficient language practice can lead to avoidable disadvantages, particularly affecting students who did not practice the required educational language outside school [3]



## Course: Discipline-Specific Language Learning in CS

### CS Unplugged

**Learning target:** Reflecting communication and linguistic requirement to explain abstract CS concepts while distinguishing between conceptual oral and written communication in the context of CS.



**Activity:** Students perform a CS Unplugged [2] sorting task by sorting identical-looking but differently weighted objects using a mechanical scale, with defined communicative roles and language observation.

Put it here.

If the element is lighter than the pivot element, it is sorted into the first row.

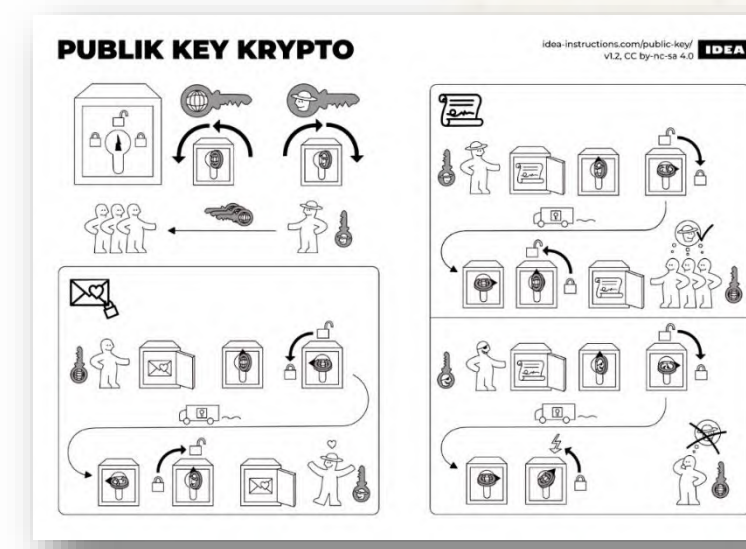
**Arrangement:** Groups give instructions while one executes the task, followed by analysis and comparison of abstract vs. concrete language.

### Unexpected Writing Exercise

**Learning target:** Developing an idea of the difficulties of the writing process.

**Activity:** Students write explanatory or argumentative texts on complex topics, such as encryption, using algorithm visualizations.

**Arrangement:** After writing individually, students discuss challenges faced and reflect on needed linguistic support.



<https://idea-instructions.com/public-key/>

- Module placement:** Part of the compulsory-elective CSE-module of the master's program
- Since:** 2019/2020, 5 runs so far
- Duration:** 1 Semester, 90 min per week
- Design:** Students explore aspects first and get theoretical input afterwards
- Examination:** Portfolio containing all the work of the semester and reflections on them and a focus topic that is elaborated further and a presentation of the focus topic

Conceptual oral and written language

Linguistic Characteristics and Challenges in CS Class

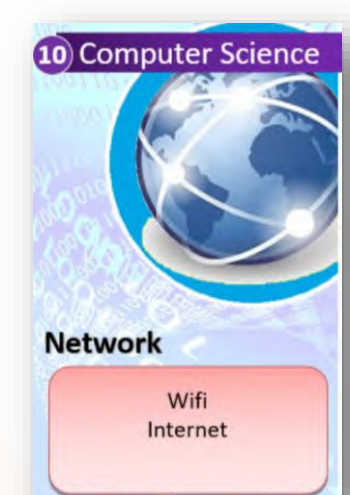
Guidelines for Language-Sensitive Teaching: Application on CS

Writing and Text-Genres in CS Class

Analyzing Final Exams / Reading in CS Class

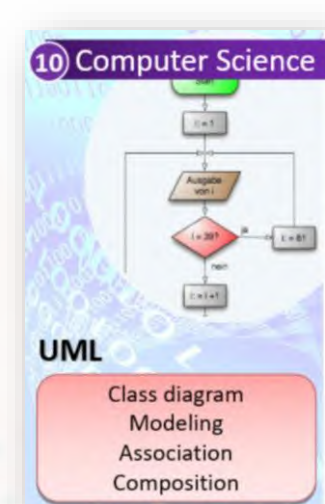
### CS Taboo

**Learning target:** Developing the ability to explain technical terms clearly without relying on related vocabulary or prior shared experiences.



**Activity:** Students play a CS version of Taboo, explaining terms to their partner without using specified taboo words.

**Arrangement:** Pairs compete, and language observation is conducted through transcript analysis to highlight communication challenges.

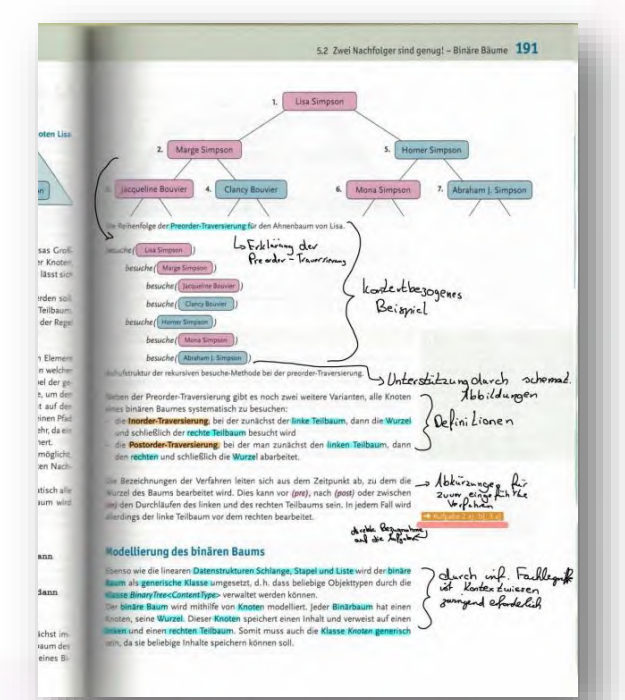


### Analysis of Authentic Textbook Passages

**Learning target:** Gaining an understanding of linguistic challenges and peculiarities in CS textbooks.

**Activity:** Students examine vocabulary introduction, grammatical structures, text types, and task clarity, including discontinuous texts like tables and diagrams.

**Arrangement:** Each student analyzes a different textbook and presents their findings to the class for discussion.



Informatik 2 – Lehrwerk für die gymnasiale Oberstufe, Schöningh Verlag, 2014

