Pedagogical founding structures
The webinar programme on
ICT IN PEDAGOGY

9.12.2022

Dr Minna Lakkala & Dr Liisa Ilomäki, University of Helsinki

High-quality remote teaching changes the teacher's role and the planning of teaching

Transition from "teaching" to organizing conditions for learning ("opportunities to learn")

1. To plan, structure, and orchestrate the learners' activity by establishing the underlying educational conditions → Pedagogical Infrastructure Framework ("design")

2. To participate in the working process as a guide and expert model who provides guidance to the learners when needed ("scaffolding")

(Häkkinen 2002, Correnti ym. 2012, Bielaczyc 2006, Paavola ym. 2002, Jones ym. 2006, Lakkala & Ilomäki 2015)
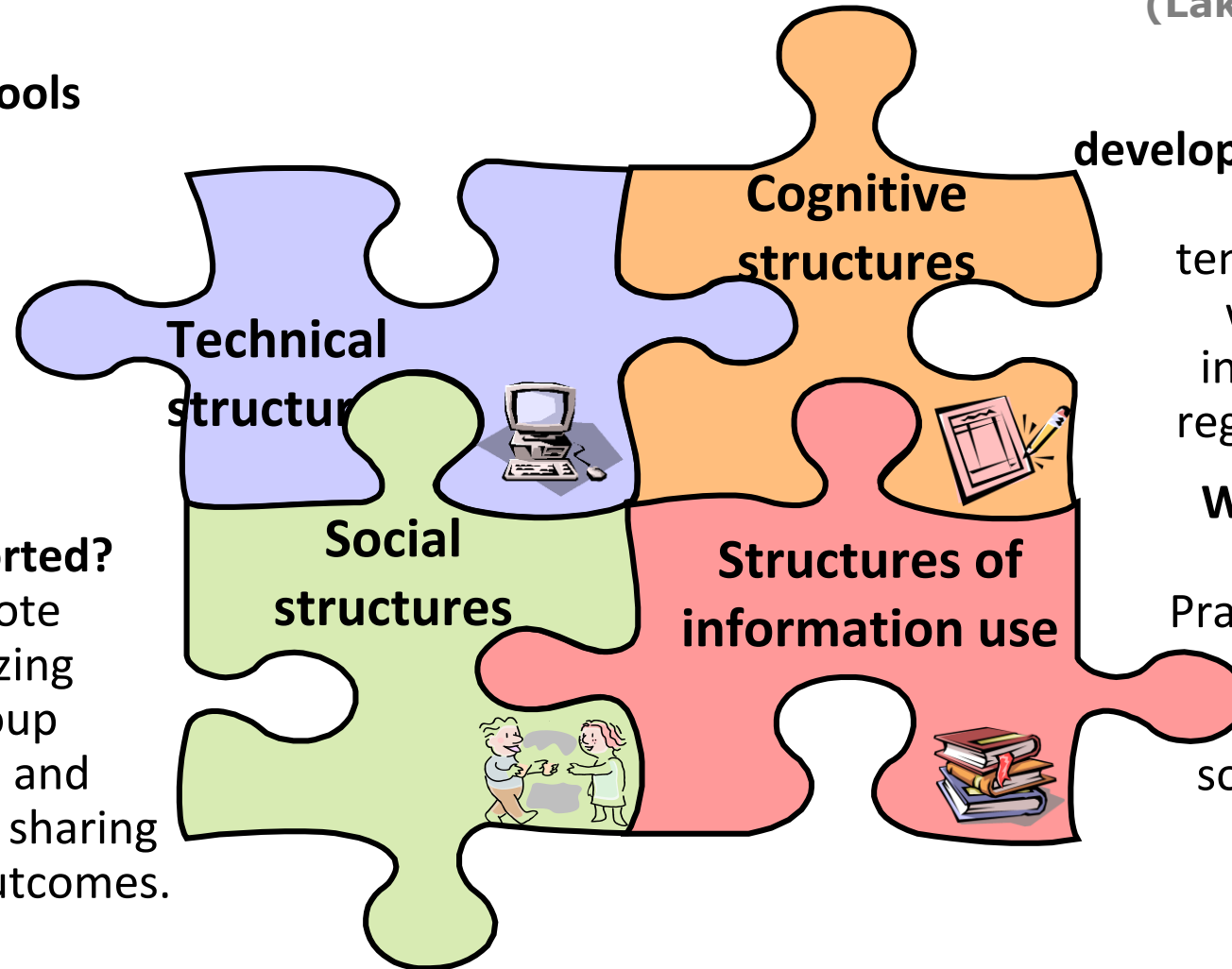
Pedagogical Infrastructure Framework

What kind of digital tools are in use?
Providing digital tools and technical advice; appropriateness of tools; organizing the use of technology.

How to support the development of "metaskills"?
Providing models and templates; explaining the ways of working; tasks including planning, self-regulation and reflection.

How collaboration is organized and supported?
Task goals that promote collaboration; organizing collaboration and group work; responsibilities and rules for group work; sharing of the process and outcomes.
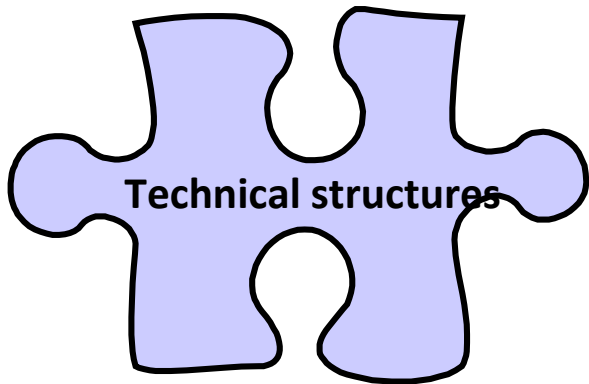
Why, how and by whom knowledge is used?
Practices with information and domain content; nature of information sources; students' role in creating and sharing knowledge; authenticity of tasks.

Technical structure

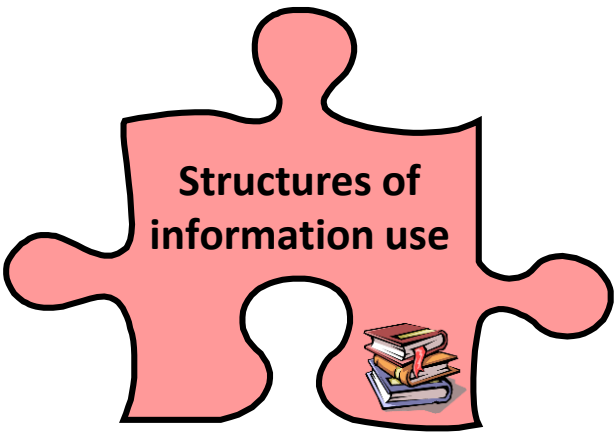Cognitive structures

Social structures

Structures of information use

Technical structures

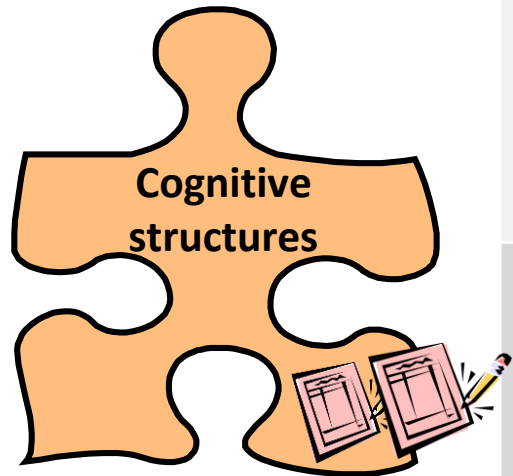| For example	Solutions
Role of digital tools in teaching	Tool for lecture presentations; as learning material; tasks for independent practicing; searching for information from sources; tool for interaction; students' content production; collaborative knowledge creation
Appropriate use	Some possibilities of the tools are unused (e.g. students' work is not shared with others); too complex tools are used for a simple task (Google Classroom when Google docs is sufficient); relevant tools for the learning goals (Kahoot for practicing vocabulary, Flinga for sharing ideas)
Teaching digital skills	Digital tools are used without guidance; basic skills for using the tools are taught; versatile digital skills are practice integrated with authentic tasks

Technical structures

Social structures
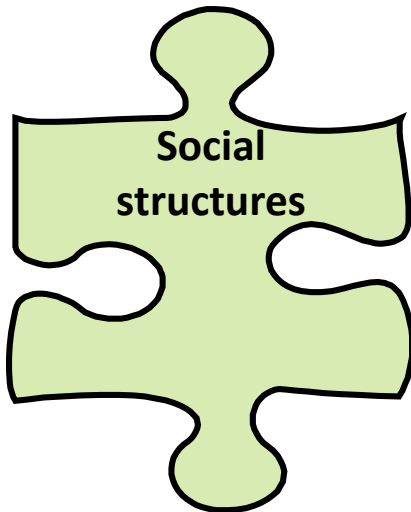
For example	Solutions
Collaborative nature of the tasks	Only individual tasks; joint discussions; sharing students' work with everyone: small group tasks, extensive project-like group work
Structuring group work	Group work is voluntary; students can choose group members; groups are formed under the guidance of the teacher; teamwork practices are agreed (roles, responsibilities, digital workspaces, commenting, etc.); also group work skills are taught
External contacts	No external contacts; interaction with another teaching group; contacts to another schools; outside visitors in classes; students collaborate with external partners (e.g. interview with parents, visit to a local store)

Social structures

Structures of information use

For example	Choices
Nature of tasks	Learning the textbook contents; practicing factual knowledge; applying learned knowledge; small-scale knowledge production; open, challenging production task
Integrating subjects	The contents of only one subject; the teacher combines things from various subjects with teaching; students use the products made in another subject (e.g. translating some outcomes in language learning); tasks that genuinely combine several subjects (multidisciplinary learning units)
Authenticity of tasks	Themes from curriculum/textbook as they are; teacher chooses various topics of interest; the students get to choose some topics; the task is based on students' interest on the topic

Structures of information use

Cognitive structures

For example	Solutions
Explicitness of goals and assessment criteria	The goals and evaluation criteria are not explained to the students; the goals and criteria are told orally; the goals and criteria are written in the course guidelines and they are discussed with the students
Modelling the ways of working	Good work strategies are not addressed; the teacher gives guidance randomly to individual pupils; the teacher explains the procedures orally to everyone; the pupils get clear models and written instructions about the procedures (e.g. study skills, commenting on others, writing a report)
Tasks supporting metaskills	No support for metaskills; self-evaluation at the end of the task; students plan their working process; students comment on each other's work, repeated self- and peer-evaluation during the working process

Cognitive structures

Group work about the pedagogical infrastructure

Create together good examples of pedagogical design solutions representing different elements of pedagogical infrastructure. Think especially what new you could try in teaching.

Write your ideas in the Flinga wall.