

KUL2021 – ABSTRACT SUBMISSION (workshop)

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Quickly create your own pedagogical “cheat sheets” relevant to your own teaching situation.

Keywords:

metacognition, teacher development, decision support, learning by teaching, concept mapping

SHORT SUMMARY

Teachers will individually create and then share their own summaries of pedagogical aspects relevant to different teaching challenges. The workshop aims to empower teachers to recall and process broad, deep and clear thoughts, quickly and succinctly documenting them as useful personal tools for their own decision making as teachers.

ABSTRACT

This workshop is designed to help teachers develop a simple method to prepare for well-grounded decision making in conjunction with their own teaching situations. The focus of these personal “cheat sheets” (quick reference guides) will be self-reminders about pedagogy rather than subject content.

The goal will be to create and share short personal guiding notes for specific teaching situations. Examples might include oral exams, laboratory demonstrations, online lectures or many other situations where teachers face challenges while planning and carrying out different teaching activities.

As teachers, many of us have had the chance to learn about pedagogy and teaching methods, both informally and formally. One challenge is how to keep this learning in focus when time is short for preparing teaching. In this workshop, we will remind ourselves first about the power of learning by teaching in the core subject context, and then apply this to the learning of pedagogical concepts and teaching methods.

Teachers likely focus more automatically on the process of preparing core subject content for teaching, where one might break down the process into three steps:

- teach yourself first, reviewing prior knowledge and gathering updates
- create your own notes, with or without the intention of sharing them with students
- explain to students, using teaching materials and methods chosen to suit the intended learning outcomes

Many teachers experience that their subject knowledge is strengthened though the process of teaching others - as would be expected when reflecting on the pedagogical aspects of “learning by teaching” - which can also be used for student learning through peer teaching.

We will start this workshop with a short warm-up activity aimed at reminding each other about good teaching practices. Thereafter, we will be focusing on the teacher’s own learning in three steps that parallel the steps summarized above. The steps will be carried out in the spirit of think-pair-share, first individually, thinking and documenting thoughts as short notes (inspired by concept mapping), then discussing in pairs before revising notes and then sharing (teaching) to a larger group, thus reinforcing the learning by teaching others.

- teach yourself first, with broad, deep, clear thinking to recall prior learning and personal insights on a pedagogical topic of relevance to your own teaching needs
- create your own notes, intended as a quick reference guide for personal use but possible to share with peers
- explain to peers, using these notes as teaching materials to support one's own learning-by-teaching while inspiring peers (who in turn can create their own notes on this topic)

The term "quick reference guide" used here is a reminder both of the speed of their creation, and the intended ease of future use.

The workshop activities are chosen from experience in facilitating teacher development in the context of pedagogical support for teaching staff at Chalmers as well as for Chalmers students within the program Learning and Leadership.

The physical product of the workshop will be individual quick reference guides, to be used by their authors as effective personal reminders when planning and carrying out teaching activities. The collection of quick reference guides from all workshop participants will be shared within the group as inspiration for creating one's own notes applicable to these other topics. After permission, the notes will be published in conjunction with the documentation of this workshop, making them available to other teachers at Chalmers, and a wider audience who might find the method and results of the workshop inspiring.

However, the main product of the workshop is intended to be non-tangible, and constitutes the empowerment of the participants to continue in their teaching rolls with a new skill, being able to create quick reference guides of their own, to support the thinking needed to take well-grounded decisions in their own contexts.

Hopefully, the curiosity that might be kindled by wishing for a quick reference guide (or "cheat sheet" as one might tongue-in-cheek call them) on a specific topic will spark discussions on pedagogy and teaching methods in wider groups at Chalmers, enhancing an attitude of shared concern for the quality of teaching.

Quickly create your own
pedagogical “cheat sheets”
relevant to your own
teaching situation

Workshop

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Workshop agenda

- Intro to pedagogical "cheat sheet" idea
- Warm-up: good teaching practices
- Learning by teaching
 - Subject content
 - Pedagogical aspects
- Example of pedagogical "cheat sheet"
- Pick your topic
- Think – pair – share
- Wrap-up

Pedagogical “cheat sheets”

- Quick reference guides*
- Personal self-reminders

- Specific for relevant “focus area”
- Not list of course content

- Useful for decision-making
- Useful for peer support

* “Reference” does not refer to any research documentation, but rather to your own ease of “referring” to such a guide.

Recall and summarize

- Reinforce previous pedagogical learning
- Formal learning
 - Courses
 - Seminars
- Informal learning
 - Experience
 - Discussions

Warm-up – recall of good teaching practices

- Keywords, phrases, one-liners
 - Write in the Zoom chat "to everyone"
 - OK to overlap others' contributions
 - OK to submit multiple chat posts
- Take 2 minutes
 - Fill that chat with good teaching practices
- Take 2 more minutes
 - Read that chat
 - Pick your favourites

Warm-up exercise - quick recall of good teaching practices

KUL2021 Workshop on pedagogical "cheat sheets"

Active listening, focus on student needs (empowerment)

Listen to students and respond

Set clear ambitions

Be prepared

Ways of involving everyone

constructive alignment

From when I taught in high school: those first 5 minutes and capturing the room/focus/engagement

stress in the good sense of the word

Be transparent and explicit in what you mean with comments/feedback

Constructive feedback

Creating active learning possibilities

We learn what we do (for good or bad): active learning, reflective processes

Steady pace, both during a single lecture as well as during the course

Continuous assessment

Be open about your own challenges; what you can help with what you cannot

joy

Continuous assessment

modelling the behaviour / thinking we want in others

See the people behind the student lists!

Gather info on prior knowledge.

Body language that says I am listening and interested

related to leadership and fallibility: acknowledging own mistakes

Connecting what is being learnt in the course with the rest of the world

Quick and good-enough – often best!

- Quick recall
 - important points pop up first
- Less is more
 - no details so main points clear
- Short time investment
 - just do it

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Learning by teaching

- Subject knowledge strengthened by teaching others
- Relevant for teachers and students (teaching peers)
- Recall and summarize (prepare to teach)
- Present and discuss (actively teach)

Preparing for teaching – subject content aspects

- teach yourself first
 - review prior knowledge
 - gather updates
- create your own notes
 - with or without the intention of sharing them with students
- explain to students
 - using teaching materials and methods chosen to suit the intended learning outcomes

Preparing for teaching – pedagogical aspects

- teach yourself first
 - recall prior learning and personal insights
- create your own notes
 - quick reference guide (or “cheat sheet”) for personal use
 - possible to share with peers
- explain to peers
 - use these notes as teaching materials
 - support your own learning-by-teaching
 - inspire peers
(who in turn can create their own notes on this topic)

Workshop agenda

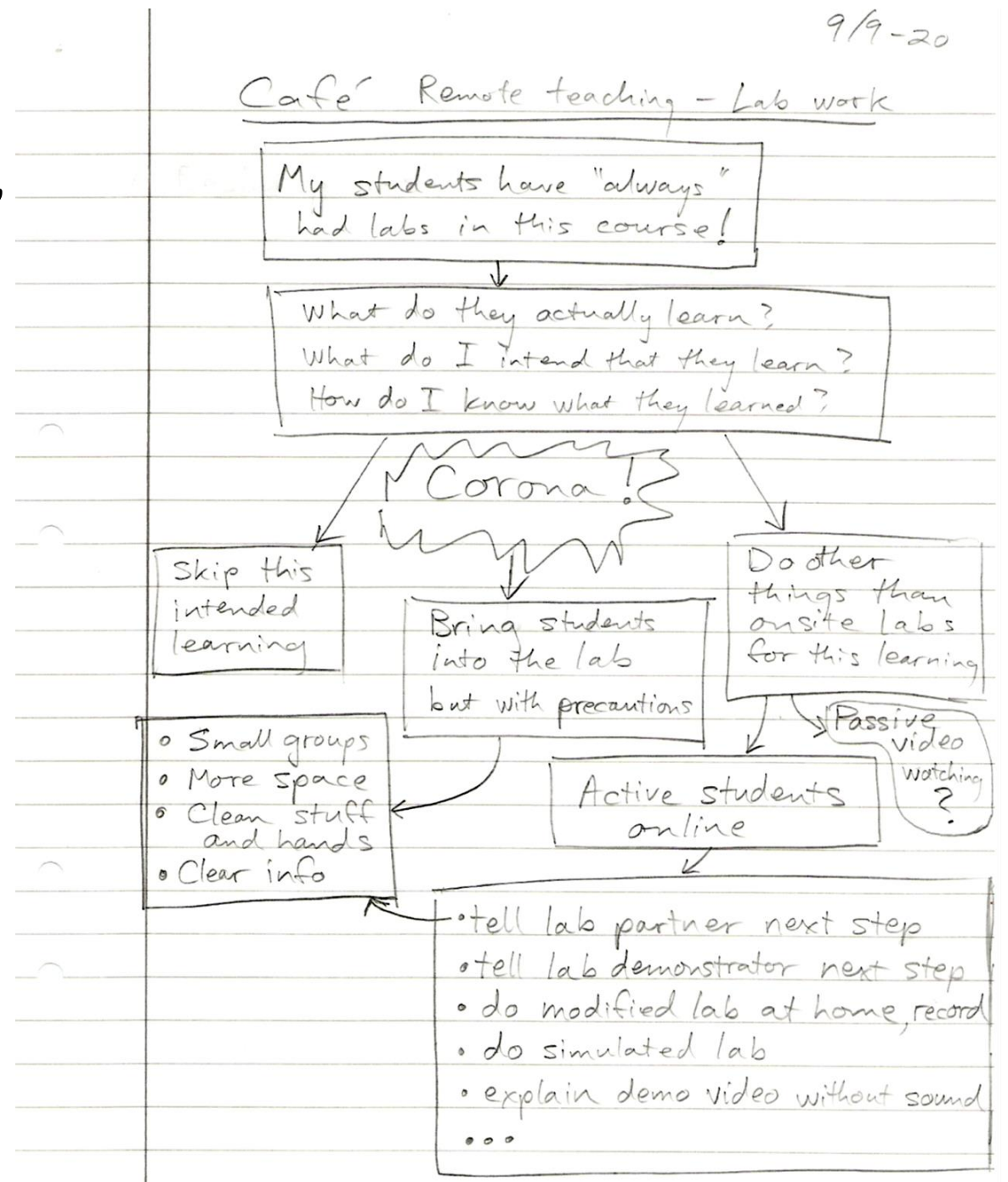
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Format for pedagogical "cheat sheets"

- Whatever works for you!
 - Sketches
 - Lists
 - Flowcharts
 - Mind Maps
 - ... whatever!

Example of pedagogical "cheat sheet"

- Lab work during Corona situation
- Other examples can be found in GRU001 Teaching Online Discussion thread [Remote teaching café](#)



Examples of pedagogical "cheat sheet" topics

- Teaching math proofs
- Handling variation in prior knowledge
- Designing assignments using simulators
- Preventing cheating during exams
- Practicing communication skills
- Avoiding discrimination of students
- Choosing calculation exercises
- Providing relevance for future employment

Choose your topic

- Relevant for your own teaching situation
- Not limited to examples provided here

- Write in the Zoom chat to everyone:
- "TOPIC": short phrase or keyword

- OK to overlap other participants' choice

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Think – pair – share

- Think
 - Individually for 5 minutes
 - Jot down notes as a rough "cheat sheet" while thinking
- Pair
 - Explain and discuss with one colleague
 - Use 5 minutes each in Breakout Room
- Prepare to share
 - Revise your "cheat sheet" (optional)
 - Make your "cheat sheet" digitally shareable (scan or photo if needed)
 - Send your "cheat sheet" by e-mail to sheila.galt@chalmers.se
- Share
 - Present to other workshop participants
 - Use max 3 minutes each in new Breakout Room

Sharing your pedagogical "cheat sheets"

- With peers at this workshop - assumed OK for all
- In documentation of KUL2021 – answer if OK or not
- Write your e-mail in the Zoom chat, followed by
 - "YES" or "NO" to sharing in KUL2021 documentation
- Make sure to send your "cheat sheet" by e-mail to:
 - sheila.galt@chalmers.se
- You will receive an e-mail from me with access to all shared "cheat sheets".

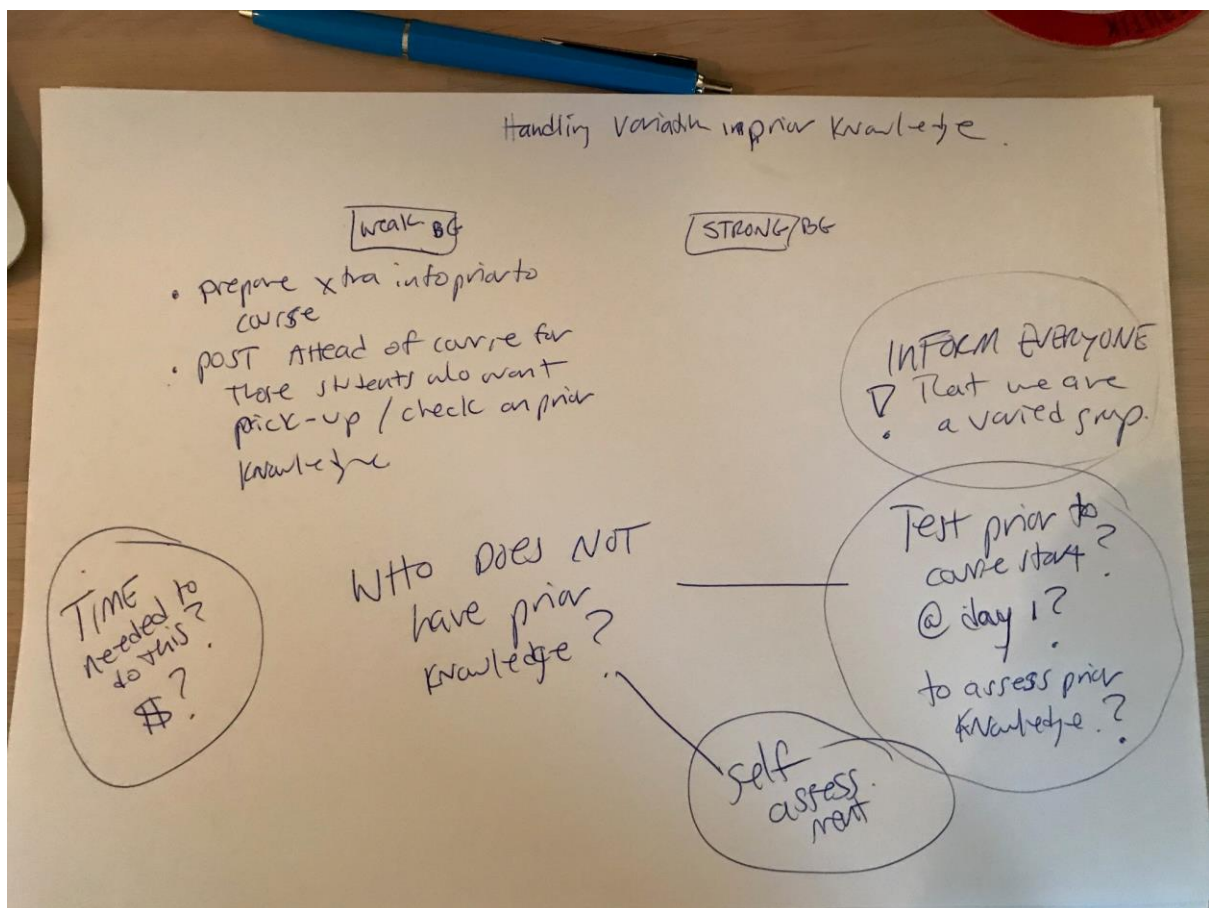
Thanks for sharing and keep up the good work!

- Keep on
 - creating pedagogical "cheat sheets"
 - using them to develop your teaching
 - sharing them with colleagues
- Watt's empowering?
 - getting caught by your teaching colleagues for using "cheat sheets" that won't interest the disciplinary board!

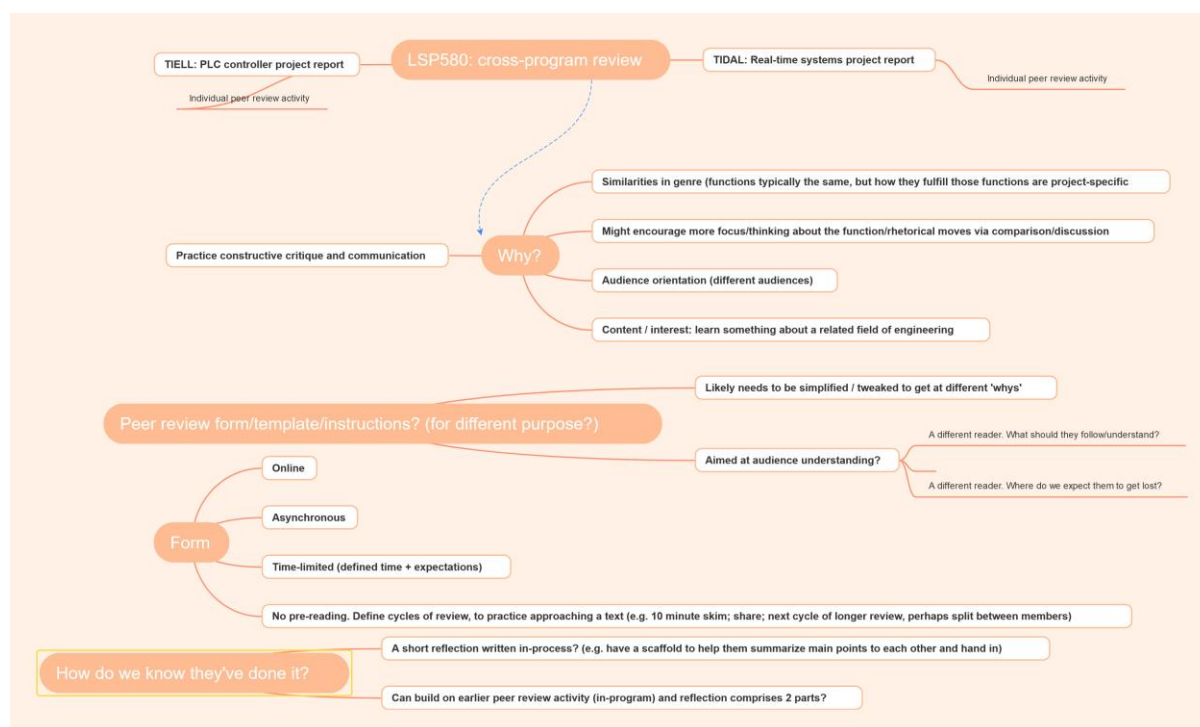
Pedagogical “cheat sheets” - quickly created during the KUL2021 workshop

Workshop participant	Topic for quick “cheat sheet”
Julie Gold	Handling variation in prior knowledge
Anthony Norman	LSP580 cross-program review
Ola Hultkrantz	Choosing calculation exercises
Elke Miedema	Doing an architecture design critique
Zoran Konkoli	Teaching math proofs
Jonas Sjöberg	Writing a report

Handling variation in prior knowledge



LSP580 cross-program review



Choosing calculation exercises

Today's topic?

Setting up the scene

Were shall I be /were will students be
 On Zoom?
 At Home?
 Conference room
 Lecture hall

Tools?

Ipad
 White board
 Others?

Interaction during exercise?

Choose two or three examples covering the topic

How to choose
 Progression

How can I get students to practice before so they know what kind of exercises they need help with?

Ask students for exercises they need help with

How collect exercises from students?
 Possible to collect in advance?

Doing an architecture design critique

Preparation;

- what should the students have (expected outcomes)
- runtrough of the day
- who gives feedback (examiner, external, peers, tutors)
- how long (for presentation & discussion)
- who is invited (only students, public?)
- where, when (room/online, date time,)

giving constructive feedback

- start positive; what is what is really great about the project)
- this is what i have heard (summarise what you have heard - what stuck)
- something to develop (highlight what could/needs to be developed - translate this into a questions: Can you tell me a bit more about How do you plan on solving)
- (ask them if there is something that they think they should work on (if not final crit))
- (ask what they thought hard)
- some positive comment to end with : I look forward seeing you develop [insert]

peer-review

- each students shall be active (assign groups/students for peer-review OR aks all students to give comments to each (written).
- constructive (teach them what constructive feedback entails)
 - positive
 - to develop
- allow them to make a concept sketch (if designed project)
- SCART - peer review method (ask antony)

Afterward

- send out thank you
- praise the work
- highlight common difficulties

Teaching math proofs

show the theorem in the light of a useful tool rather than a nuisance that needs to be learned;
practical example why the theorem is needed

state the theorem intuitively; draw graphs if possible

show what happens if some of the assumptions of the theorem are not fulfilled, i.e. in which way we lose the main result

state the theorem formally

explain the strategy of the proof, an intuitive proof

explain the proof formally (if time allows, if not point to literature)

Writing a report

