Learning and Teaching in Higher Education (5 ECTS)

DAY 2 – APPROACH TO LEARNING AND TEACHING

Samu Tikkanen & Linda Mäkinen
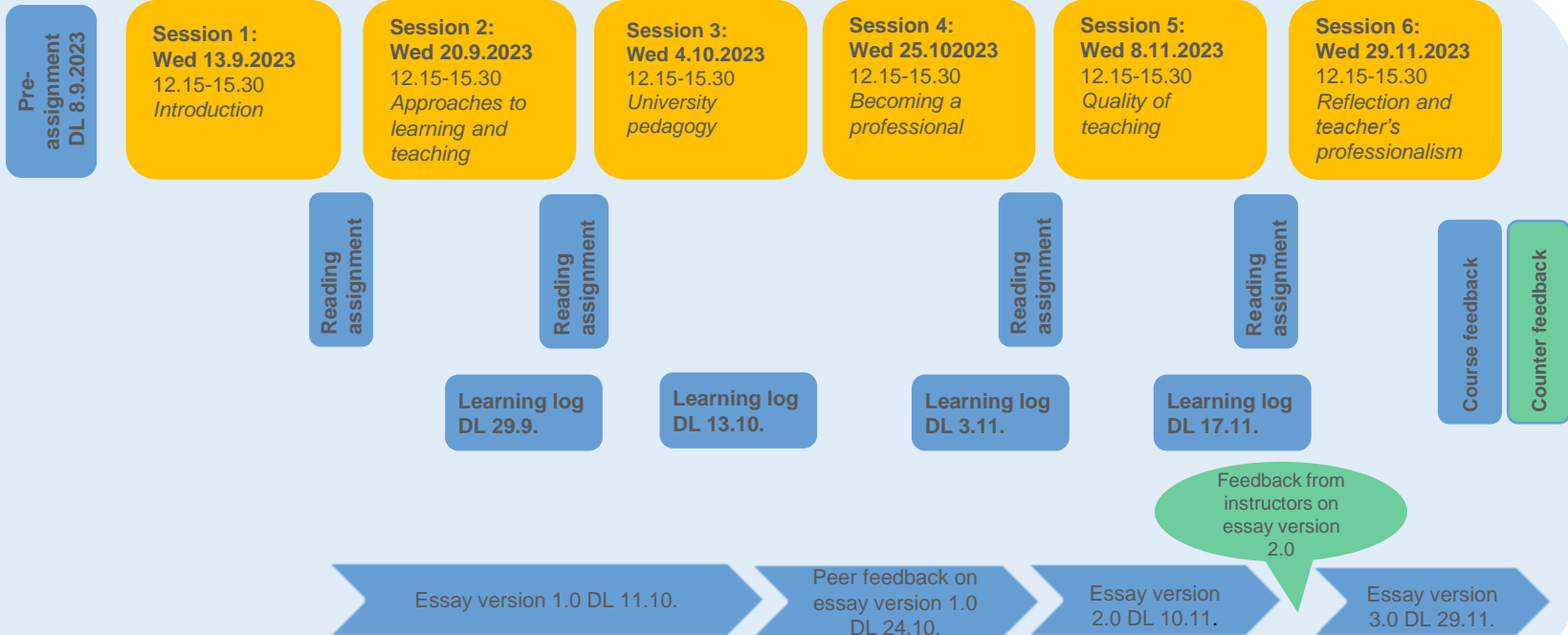
20.9.2023

Learning and Teaching in Higher Education (5 ECTS)

Course timeline 13.9.-29.11.2023

Pre-assignment DL 8.9.2023

Session 1:
Wed 13.9.2023
12.15-15.30
Introduction

Session 2:
Wed 20.9.2023
12.15-15.30
Approaches to learning and teaching

Session 3:
Wed 4.10.2023
12.15-15.30
University pedagogy

Session 4:
Wed 25.102023
12.15-15.30
Becoming a professional

Session 5:
Wed 8.11.2023
12.15-15.30
Quality of teaching

Session 6:
Wed 29.11.2023
12.15-15.30
Reflection and teacher's professionalism

Reading assignment

Reading assignment

Reading assignment

Reading assignment

Course feedback

Counter feedback

Learning log DL 29.9.

Learning log DL 13.10.

Learning log DL 3.11.

Learning log DL 17.11.

Feedback from instructors on essay version 2.0

Essay version 1.0 DL 11.10.

Peer feedback on essay version 1.0 DL 24.10.

Essay version 2.0 DL 10.11.

Essay version 3.0 DL 29.11.

Individual reflecting & processing during the course

Schedule today 12.15–15.30

Orientation

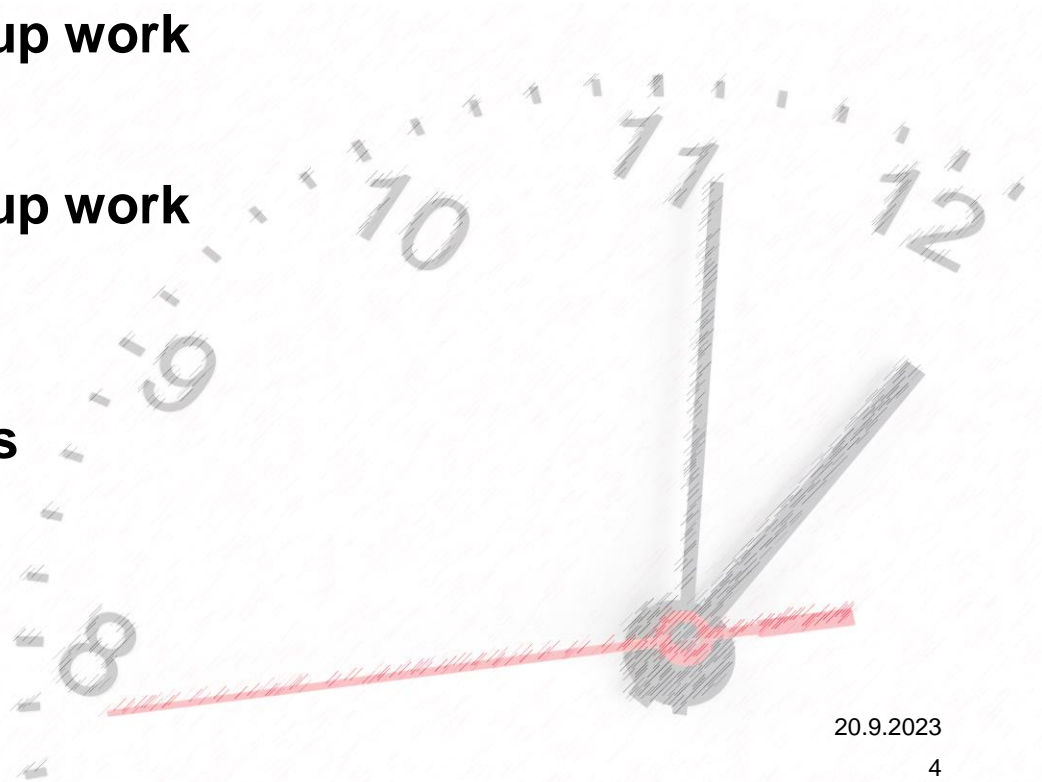Learning theories

Learning-centred culture – Group work

   BREAK

Learning-centred culture – Group work continues

   BREAK

Course assignment instructions

For the next time

20.9.2023

Learning outcomes for this course

After the course, you:

- will be able to identify, define and evaluate factors that affect your teaching,

- will be able to recognize different learning theories and have become aware of how they influence teaching,

- have formed own approach to teaching / teaching philosophy and you have knowledge on how to develop your teachership and teaching,

- you recognize factors which affect to the quality of teaching,

- know how to consider students as experts of the future, have reflected on your own expertise and your development as a teacher,

- be able to understand your own teaching in a wider context and envisage the expertise provided, by your own field of teaching and the future prospects of the field.

Learning theory / Theories of learning / Conception of learning / Approach to learning…

Learning theory / Theories of learning – a scientific theory explaining learning, based on research

Conception of learning / Approach to learning - individual's conception of learning

References: Murtonen, M. (toim.) 2017. Opettajana yliopistolla.

Lindblom-Ylänne, S. ja Nevgi., A. (toim.) 2009 Yliopisto-opettajan käsikirja.

Learning theories

FIVE QUESTIONS TO LEARNING THEORIES

1. WHO LEARNS?

2. WHY DO THEY LEARN?

3. WHAT DO THEY LEARN?

4. HOW DO THEY LEARN?

5. WHAT IS THE LIMITATION OF THE THEORY?

Based on Engeström, Y.
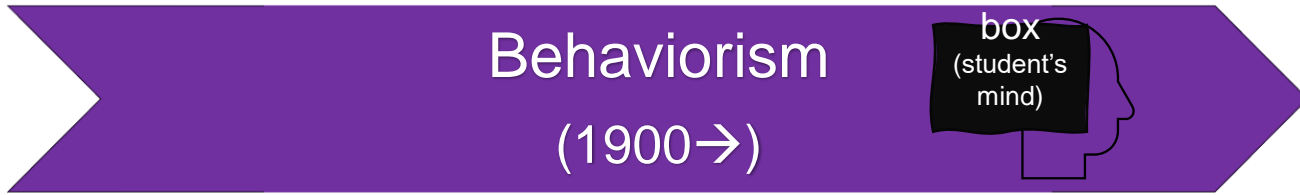
Picture: Stock Images

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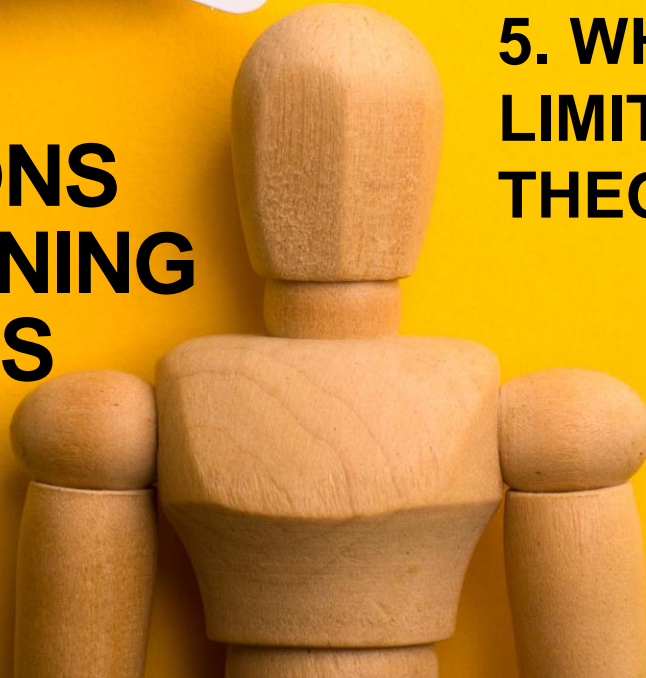
About learning theories

Behaviorism 1900 →

Cognitive learning theory 1950→

Constructivism 1960 →

Humanism and self-theories 1970→

Behaviorism
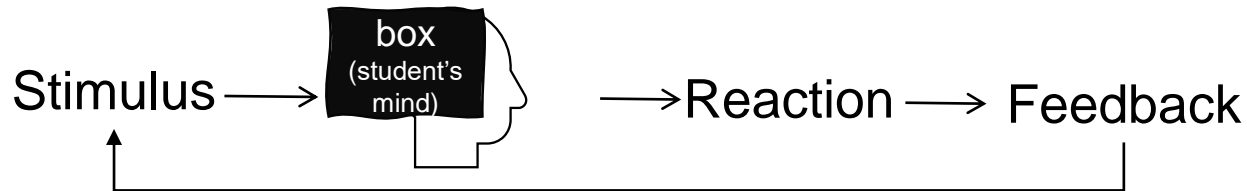
(1900→)

box (student's mind)

Key actor/role: teacher

Learner's role: passive, responses to stimulus through repetitive practice

Learning is seen as a change in external behaviour. Learning is something that can be observed and measured.

Learning process according to behavioristic learning theory:

Stimulus ⟶ box (student's mind) ⟶ Reaction ⟶ Feedback

Learning theorists: Pavlov (1903, 1927), Watson (1913, 1924), Skinner (1938, 1971)

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Cognitive learning theory (1950→)

How? Cognitive learning theory replaced behaviorism as a dominant paradigm in 1950-60. Black box of the human mind became criticized → it should be opened and understood.

Student's role: an active data processor. Mind is seen as a computer that encodes and processes information.

Teacher gives lots of encouragement and positive feedback.

Learning is an internal mental process, a change in schema (mental model).

Learning theorists: Piaget (1896-1980), Miller (1956)

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Constructivism (1960 →)
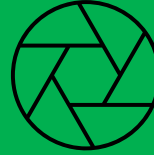
**Learner's role:** active, constructing knowledge

Learning and teaching should be designed in a way that builds on the students' background/previous knowledge.

Teacher's role: a facilitator who encourages students to discover principles for themselves and to construct knowledge and meanings (as an individual or as a group).

Learning is active, contextual and situational process.

Learning theorists: Jean Piaget (1970), Maria Montessori, John Dewey
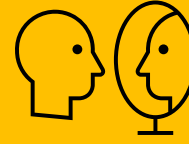
Learner's role: an individual who is ultimately motivated and wants to grow personally.

Teacher's role: a facilitator who encourages the students to have control of their learning and creates a safe learning environment where subject matter is relevant to the learner's interest.

Learning is a lifelong process and natural for human beings. Self-efficacy, self-control and motivation are essential for learning.

Learning theorists: Abraham Maslow (1970), Albert Bandura (1977), Carl Rogers (1969, 1983), Malcolm Knowles (2005)

Behaviorism
1900 →

Cognitive learning
theory 1950→

Constructivism
1960 →

Humanism and
self-theories
1970→

- ➢ **Connectivism**
- ➢ **Neuroscience**
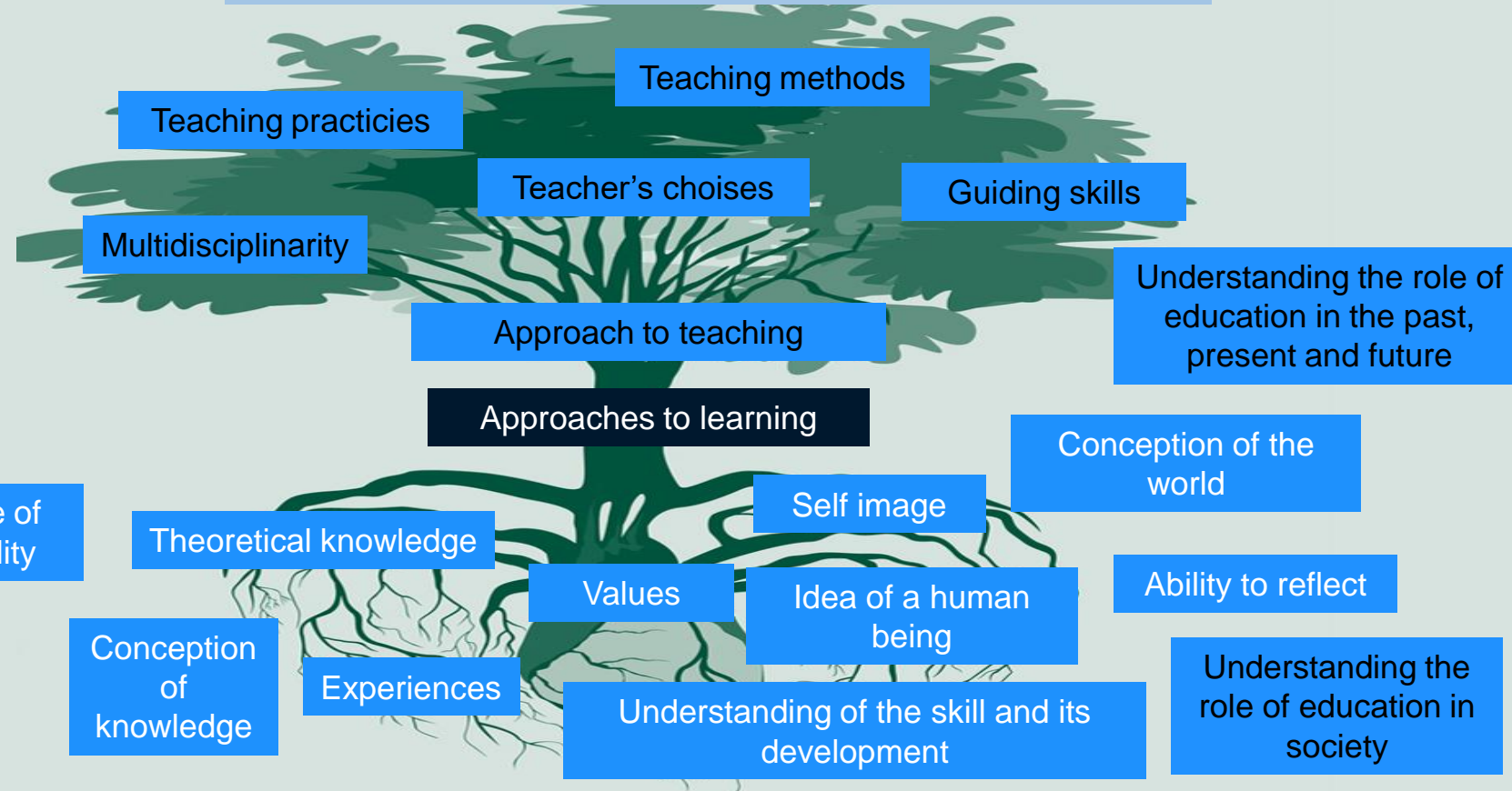- ➢ **Social constructivism**
- ➢ **Social learning theory…**

Learning theories affect and produce pedagogical approaches and methods.
- positive pedagogy, feminist pedagogy…
- flipped learning, problem-based learning (PBL)…

"Learning theories are explanations of the learning process. It is not a matter of choosing or aligning to one theory or another but of using this understanding of learning as a process to make sense of the teaching designs available and guiding the use of these to best effect to secure learning outcomes"

Stewart, Martin 2021. Understanding learning. Theories and critique. In the book Hunne, Lynt & Chalmers, Denise (edit.) 2021. University Teaching in Focus. A learning-centred approach. 2nd edition. London: Routledge. p. 18

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Learning and teaching environment

Teaching methods

Teaching practicies

Teacher's choises

Guiding skills

Multidisciplinarity

Understanding the role of education in the past, present and future

Approach to teaching

Approaches to learning

Conception of the world

Knowledge of sustainability

Self image

Theoretical knowledge

Values

Idea of a human being

Ability to reflect

Conception of knowledge

Experiences

Understanding of the skill and its development

Understanding the role of education in society

Cultural, social, ecological, technological and societal environment

Learning-centred culture

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Education: Future-led learning

We take greater societal responsibility in degree education and continuous learning with elevated student experience.

1. Our long-term purpose: We spark the game changers of tomorrow.

2. Our current focus of development: Future-led learning. We take greater societal responsibility in degree education and continuous learning, in and across our key areas. We elevate student experience and quality of learning.

3. The planned actions: Renewing educational offering, developing our digital and engaged learning environment, integrating sustainability and multidisciplinary studies into programmes, advancing learning-centricity and focusing on holistic wellbeing.
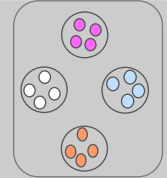
Education: Future-led learning | Aalto University

Gallery walk: What is learning-centred culture and how could we promote it?
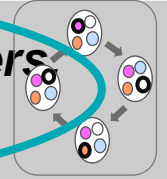
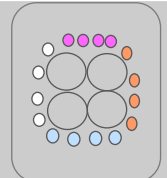*1. Thinking about given topic individually (5 min)*
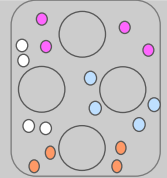
2. Group work→ poster about the topic (25 min)

*3. New groups, presenting the original poster to the others, discussion and additions to the poster (4*10 min)*

4. Summary together (10 min)

Gallery walk, Chapter 4.15 in Hyppönen, Lindén (2009):
Handbook for teachers: course structures, teaching methods and assessment (aalto.fi)

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Choose and circle 1–2 aspects from the poster you would like to promote more as a group.

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Topics for the posters

Discuss and illustrate/write your ideas on a poster. Include concrete actions.

GROUP 1: Teacher's perspective

- What is learning-centred culture?
- What kind of teaching activities support and promote learning-centred culture?

GROUP 2: Programme (programme manager's perspective)

- What is learning-centred culture?
- How could "Degree programme manager" or "Professor in charge of the major" support and promote learning-centred culture?

GROUP 3: Student's perspective

- What is learning-centered culture?
- How could a student affect learning-centred culture?

GROUP 4: University/department

- What is learning-centered culture?
- How could a university/department support and promote learning-centred culture?

EXAMPLE GROUP 1: Teacher's perspective

What is learning-centred culture?
What kind of teaching activities support and promote learning-centred culture?

Answer from group 2

Answer from group 1

Answer from group 3

Answer from group 2

Answer from group 4

Answer from group 1

Answer from group 4

Answer from group 1

Answer from group 1

Answer from group 4

Answer from group 3

Answer from group 2

Answer from group 2

Answer from group 3

Answer from group 2

Answer from group 3

Answer from group 4

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Step 2 groups:

Group 1:	Group 2:	Group 3:	Group 4:
Riikka	Mari	Hedon	Heidi
Eduardo	Susanna	Elif	Harri
Farid	Sesilja	Girish	Valeriya
Emma	Janne	Jose	Kai
	Christine	Inge	Julia

Step 3 groups:

Group 1:	Group 2:	Group 3:	Group 4:
Riikka	Mari	Hedon	Heidi
Harri	Eduardo	Susanna	Elif
Girish	Valeriya	Farid	Sesilja
Christine	Jose	Kai	Emma
	Janne	Inge	

BREAK
Until 14.35

20.9.2023

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How to promote learning-centred culture?

➢ Teaching design takes into account students' prior knowledge and needs.

➢ Utilizing activating teaching methods.

➢ The teacher guides students for independent thinking and knowledge construction.

➢ Assessment on learning and selected teaching methods highlights understanding and deep learning (aligned with intended learning outcomes).

➢ Supporting learning by encouragement & motivation.

➢ Paying attention to learning atmosphere and workload.

➢ Students may participate in curriculum planning and course design.

➢ Student feedback is systemically collected, analysed and utilised.

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Course assignments

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Assignments for the next session 4.10.2023, instructions on MyCourses

Assignment: Educational research in your own field of science, DL 3.10.2023 (before next session)

Learning log 1, DL 29.9.2023
(on MyCourses under today's session)

Reading assignment: Chapter 4. Discipline-based teaching, p. 81–105. https://primo.aalto.fi/permalink/358AALTO_INST/ha1cg5/alma999510057406526

Start writing your essay, version 1.0, DL 11.10.2023

Learning log 1, DL 29.9.2023 (on MyCourses under today's session)

The aim of the learning logs is to focus and follow your learning and become aware of your thought processes. Learning log is a reflective writing concerning the topics presented in the previous contact session. It is a unique record of your thinking and learning during the course.

Each learning log's DL is always on Friday before the next contact session. The length of one learning log is around 0,5–1 A4-page or one hour of writing. Learning log is only visible for the teachers but we will provide anonymous group feedback of the learning logs.

In the learning log you can think *for example*:

•What were your thoughts after the teaching session?

•What supported your learning in the teaching session?

•What kind of thoughts and ideas arouse to you concerning the themes presented?

•How can you apply these ideas to your own teaching?

•Where would you like to focus in the future? etc.

Search: Educational research on your field DL 3.10.2023

Aim: Familiarize yourself with educational research on your field.
Assignment: Search and select one educational research paper from your field. You can select the research paper based on your own interest. Think how your approach to learning and teaching could benefit from the research paper.

Add the details in the data bank in MyCourses. Be prepared to present the details and discuss in a small group on the third teaching session.

- Reference to the paper
- Goals / research questions of the paper
- Motivation for the work. What is the problem addressed?
- What kind of data is collected and how it is analysed, if there is an empirical part in the work?
- Are there any learning theories / models in the background?
- What are the central results and conclusions?
- How can the results be applied in teaching practice?
- Using the scale from 1 to 5, would you recommend this paper to your colleague to read? 1=definitely no, 5= definitely yes:

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Data bases / websites where to find papers to read

- **Aalto Primo**
- **Web of Science: Social sciences citation index**
- **ERIC**
- **Google Scholar**
- **https://www.sciencedirect.com**
- **Ieee Xplore, https://ieeexplore.ieee.org**
- **Wiley Online Library, http://onlinelibrary.wiley.com**
- **https://peer.asee.org**
- **http://aapt.scitation.org**
- **http://www.tandfonline.com**

Journals

- Journal of Engineering Education

- European Journal of Engineering Education

- Computer Science Education

- ACM Transactions of Computing Education

- IEEE Transactions on Education

- IEEE Transactions of Learning Technologies

- Computers & Education

- British Journal of Educational Technology

- Journal of Chemical Education

- Chemistry Education Research and Practice

- Journal of Management Education

- International Journal of Art & Design Education

Some engineering education research and computer science education conferences

- Frontiers in Education (FIE)

- Annual SEFI conference

- American Society for Engineering Education conference (ASEE)

- Research in Engineering Education Symposium (REES)

- Innovation and Technology in Computer Science Education (ITiCSE)

- International Computing Education Research conference (ICER)

- Koli Calling – International conference in computing education research

Journal of University Pedagogy (Yliopistopedagogiikka)

- Review articles and writings focusing on teaching and learning in higher education.

- The journal contains topical information on academic development as well as accounts and reports of university pedagogical experiments and development projects.

- It is issued twice a year online.

- The journal is published by Peda-forum, the Finnish network of expertise in university pedagogy and academic development.

- Articles and writings are published in Finnish, in Swedish, and in English.

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Essay version 1.0: My approach to learning and teaching

The aim of this essay is to begin to formulate your approach to learning and teaching. When you combine theoretical knowledge with your prior experiences, reflect on your values and thoughts, you begin to develop your own approach to learning and teaching. You can use your pre-assignment, learning logs and discussions of learning concept (mindmaps) as a starting point for your essay.

- The essay is written in a reflective, personal and appropriate style. Use references and cite them properly.

- The length of final essay version is around 4–6 pages.

- Deadline for version 1.0 is on the 11th of October 2023.

- You will give and receive peer feedback on the essay version 1.0.

- More instructions for the essay can be found on MyCourses.

Thank you!

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