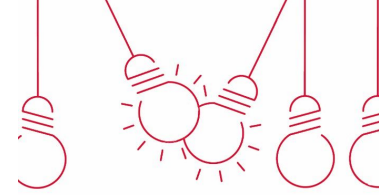




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Effective use of Active Learning Classrooms

Dr. Marlies Venhuizen-ter Beek
Drs. Wytze Koopal
5 april 2022

(version with group work incorporated)



Active Learning at University of Groningen

Definition Active Learning (ALC) by Shroff, Ting & Lam (2019):

“The basic premise of active learning involves focusing on reinforcing higher-order thinking skills and instructional techniques, requiring learners to actively participate in the ownership of their learning.”

Shroff, R. H., Ting, F. S. T., & Lam, W. H. (2019). Development and validation of an instrument to measure students' perceptions of technology-enabled active learning. *Australasian Journal of Educational Technology*, 35(4).

<https://doi.org/10.14742/ajet.4472>



Active Learning Classrooms at University of Groningen

Definition Active Learning Classrooms (ALC):

“[ALC] facilitate collaborative, connected and active learning, ...(in spaces that) are technology-enabled and allow for students to use their own devices... as well as having comfortable furniture that is configured easily and quickly by academics and students to suit different pedagogies.”

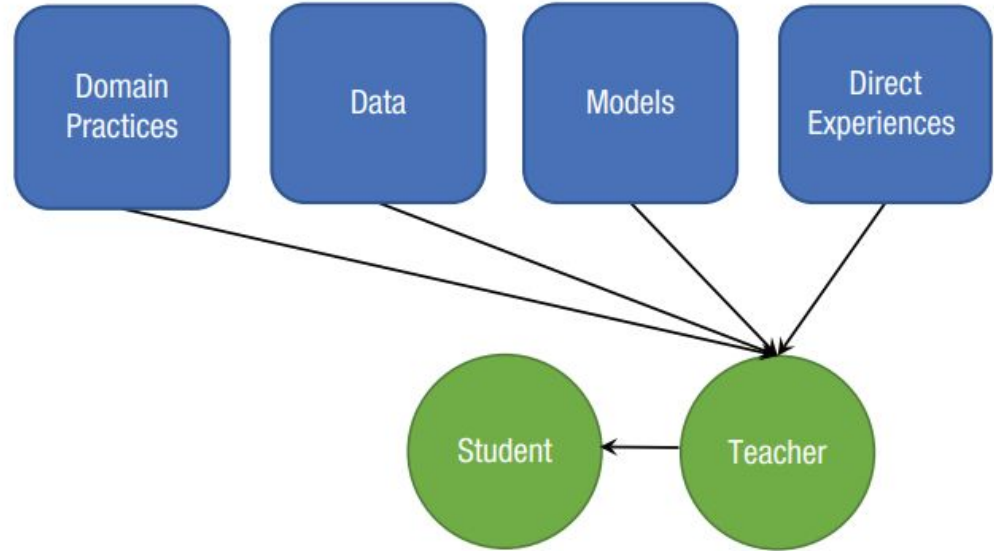
From Fraser, K. (2014). Introduction. In K. Fraser (Ed.), Future of learning and teaching in next generation learning spaces (Vol. 12, pp. xv-xxiii). Bingley: Emerald Group Publishing Ltd.

http://dx.doi.org/10.1108/S1479-3628_2014_0000012024

'Traditional' academic learning teaching



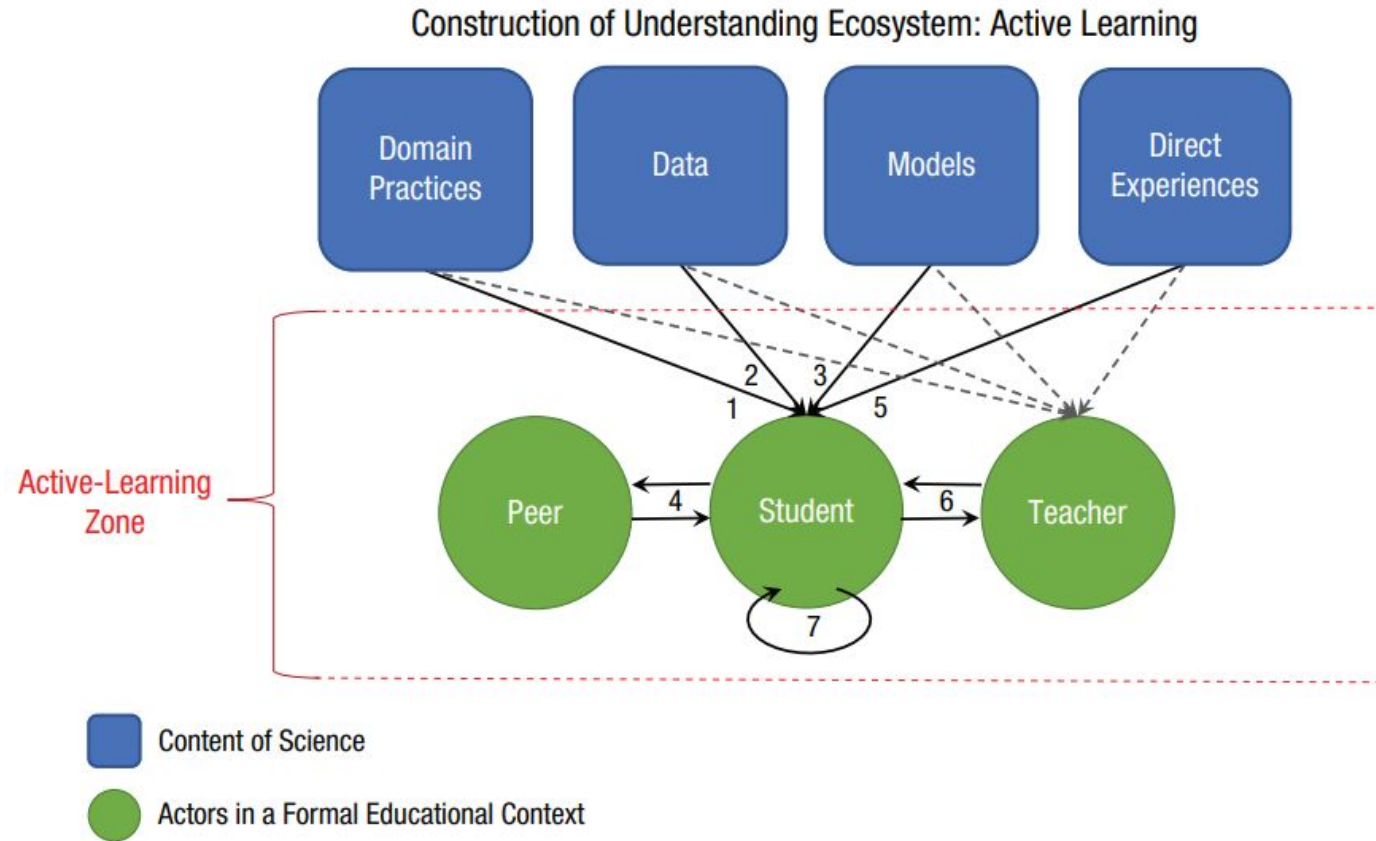
Construction of Understanding Ecosystem: Traditional Learning



■ Content of Science

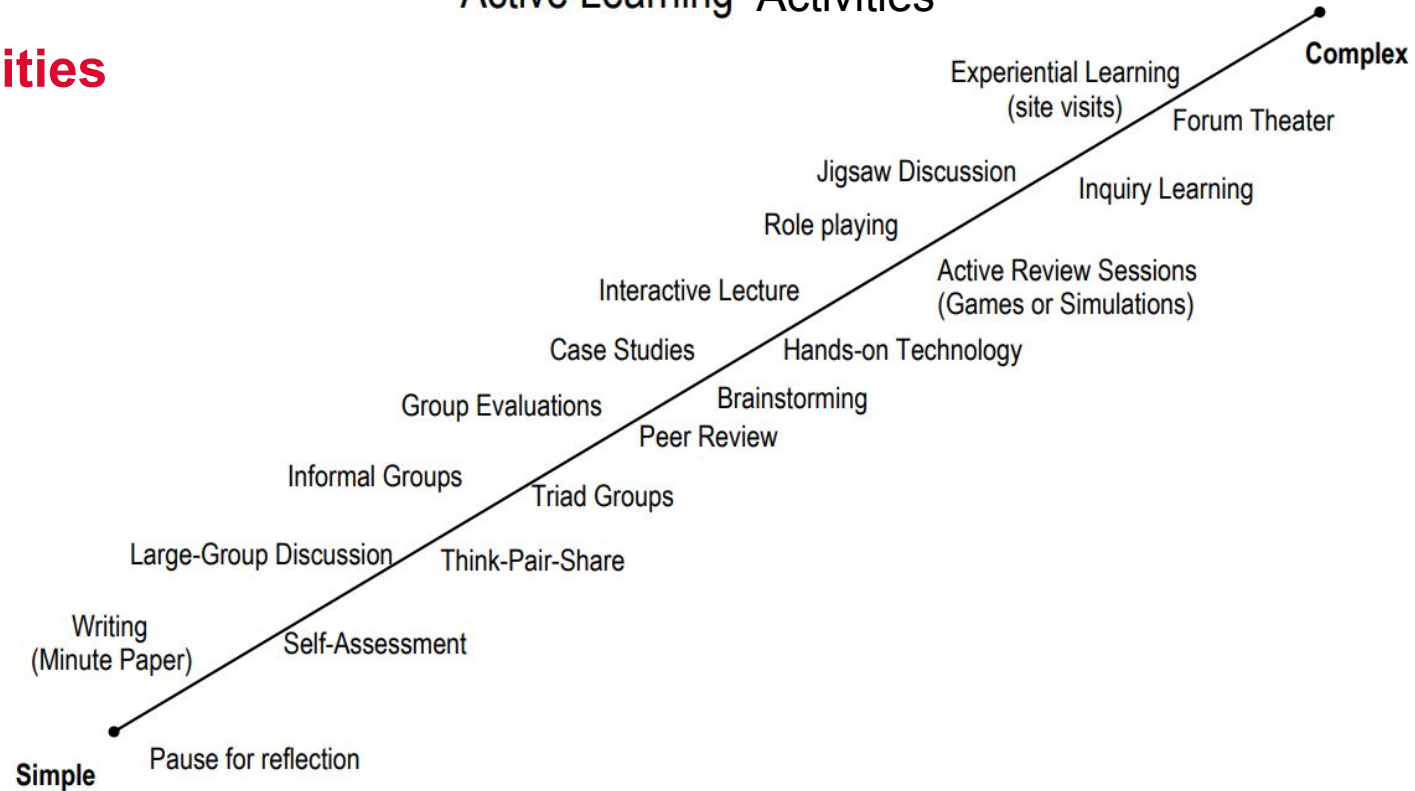
● Actors in a Formal Educational Context

Active learning



Active Learning Activities

Example activities



This spectrum arranges active learning techniques by complexity and classroom time commitment.

Prepared by the Center for Research on Learning and Teaching, University of Michigan



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Recent example: UN Model simulation

Dr. S. A. (Stephen) Adaawen
Faculty of Spatial Sciences

Number of students: 20



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Workshop activity

Yes, we're active learners!

15-20 minutes



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Active learning: What and why

Use the interactive whiteboard (Jamboard: <https://edu.nl/knj9r>). Please work in groups. Take 15 minutes. Discussion questions :

1. What kind of active learning activities would you like to use (or have used) in your course? (see also handout)
2. Why you would want to do that? What kind of (didactical) benefit would that bring to your students?

You will be asked to present your results to the whole group.



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edu.nl/knj9r

Results with 2 minute pitches

You can walk around, or check Jamboard to see input of other groups

Present your group's main results in 2 minutes (*2 minute pitch*).

Think along with the presented idea's, and think about why you could use this example yourself

<https://edu.nl/knj9r>



edu.nl/knj9r



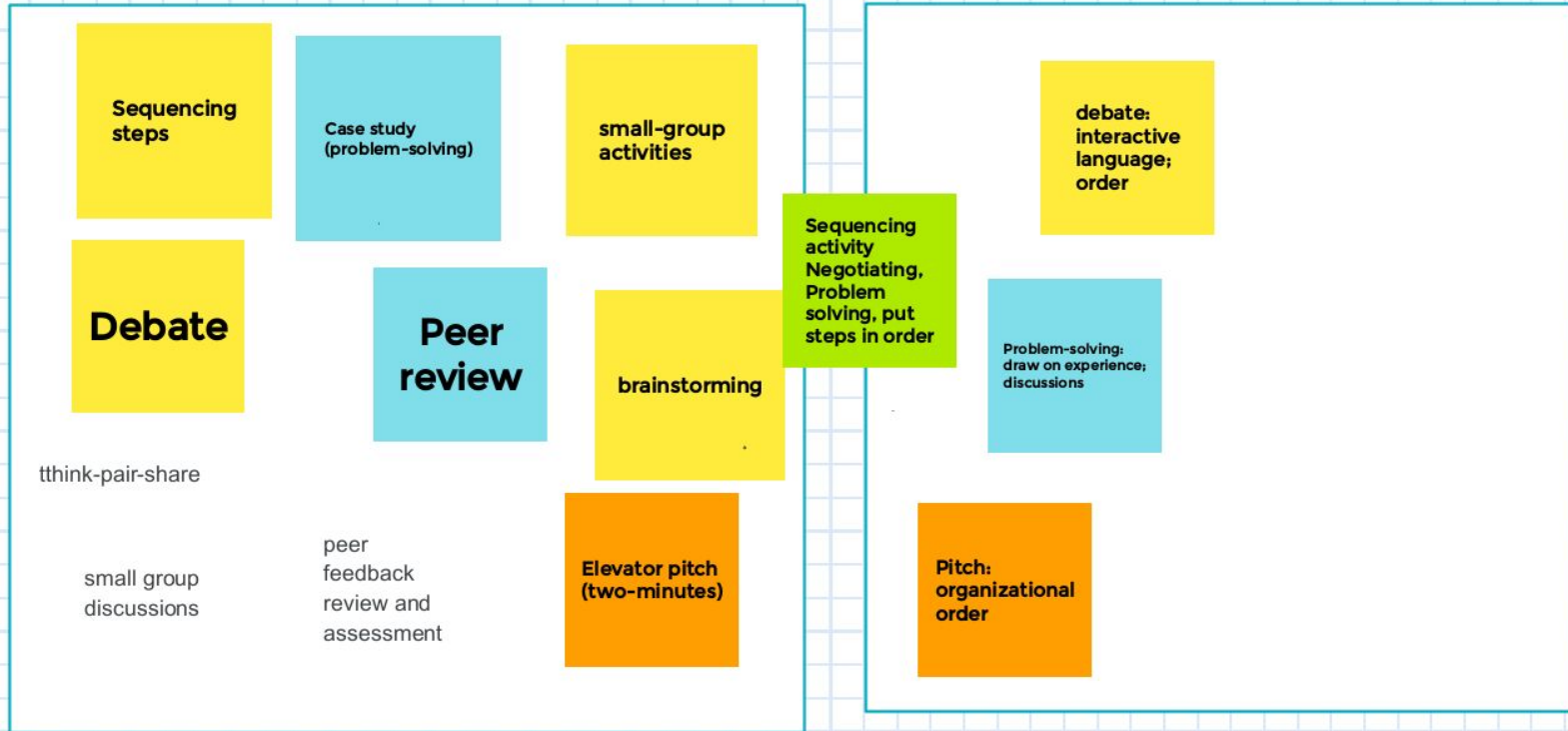
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Jamboard from group 1

Which technique(s) / activities

Why? / What kind of (didactical) benefit ?



Jamboard from group 2

Which technique(s) / activities

flipped classroom

individual test

group work/discussions

use screens

"Who am I?" (skin
disease example)

context team based learning

Why? / What kind of (didactical) benefit ?

groups can decide what topics to discuss

different perspectives

sociability

student engagement

student agency

different screens is great advantage

Jamboard from group 3

Which activities / technique(s)

**Peer
review -
Feedback
fruits**

**1-minute
paper as
exit ticket**

Buzz group -
discussing different
treatment options in
pharmacology or
ethics for example

Why? / What kind of (didactical) benefit ?

- transformation
into teacher's view; -
saves the teacher
time for edits

**reflection on
the main
take-aways;
repetition**

developing arguing
skills and critical
thinking; debating
skills; mobilize
students; change of
perspective

Does it work? Why embrace active learning (classrooms)?

Three good reasons:

1. Increase **student success** (e.g., decrease fallout rates), as studied in STEM courses by Freeman et al., 2014
2. Increase **equity** (e.g., minimize or eliminate gender or ethnic differences), as studied for STEM courses by Lorenzo et al., 2006
3. Increase **integrity** / alignment with Strategic Plan 2021-2026



But!

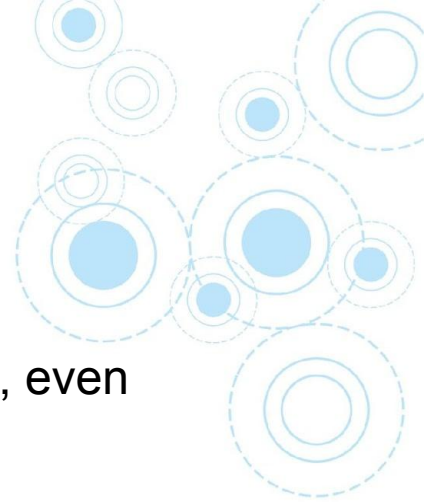
(there's always a 'but')

1. Students might feel as if they learn *less* from active learning, even though their grades are better (Deslauriers et al., 2019)
2. Students are not always acquainted with the technology used (i.e., they are not digital natives)



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Possible trajectory

Teacher is interested to implement active learning strategies

Optional: take part in MicroLab ALC

Redesigning (part of) the course with support

Organize/implement the course in an ALC

Intake with educational support (faculty/ESI):

- What will we try?
- What support is needed?

Try out possible configurations, tools and technology in the classrooms

Spread the word, share experiences and help increasing the degree of active learning all over the university



MicroLab Active Learning Classrooms

First run: June 14, 2022

Asynchronous activities: 2.5 hours

Synchronous activities: 2.5 hours

Free of charge!

Sign up before May 31st



<https://edu.nl/j9dmn>



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References

- Center for Research on Learning and Teaching, University of Michigan. *How can you incorporate active learning into your classroom?* https://crlt.umich.edu/sites/default/files/Active_Learning_Continuum_CRLT.pdf
- Deslauriers, L.S. McCarty, K. Miller, et al. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *Proceedings of the National Academy of Sciences*, 116, 19251-19257. <https://doi.org/10.1073/pnas.1821936116>
- Freeman Scott, Eddy Sarah L., et al. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410–8415. <https://doi.org/10.1073/pnas.1319030111>
- Lombardi et al. (2021). The curious construct of active learning. *Psychological Science in the Public Interest*, 22(1), 8-43. <https://doi.org/10.1177/1529100620973974>
- Lorenzo, M., Crouch, C. H., & Mazur, E. (2006). Reducing the gender gap in the physics classroom. *American Journal of Physics*, 74(2), 118-122. <https://doi.org/10.1119/1.2162549>
- Talbert, R. (2022). *Why we should embrace active learning*. <https://rtalbert.org/why-we-should-embrace-active-learning/>





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