

Evaluation, knowledge creation and professional development in the ALC

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Innovator of learning Project Future Learning Spaces

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"How can we support" and strengthen Utrecht's educational vision with the physical learning environment?"



Active Learning works!

- Prince, M. (2004). Does active learning work? A review of the research. *Journal of engineering education*, *93*(3), 223-231.
- Michael, J. (2006). Where's the evidence that active learning works?. *Advances in physiology education*, *30*(4), 159-167.
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415.

CrossMark Active learning increases student performance in science, engineering, and mathematics Anthen Scott Freeman^{4,1}, Sarah L. F oh*. Michelle K. Smith and Mary Pat War Does Active Learning Work? A Review Adv Physical Educ: 30: 159-167, 2006; doi:10.1152/advan.00053.2006; A, and approved April 15, 2014 (r ing and 225 studies in the sported learning inter-Where's the evidence that active learning works? fudent tion, and include 18612 problem solving. of the Research use of personal r and studio or we best practice in and evaluated How We Learn Department of Melecular Biophysics and Physiology, Real Medical College, Chicago, Bioteci (1) sarres on ide inventories, o measured as r or withdrawie The analysi re learning h desails. / 30: 159-167, 2006; doi:10.1152/advas.00053 Calls for reference in the ways we track science of all levels. he ownall calent o that is used in most colleges and universities," Apparently, not P cc ness of student It would seem that we need to do sor 6 84 way that science is taught, and we need to do it now At the same time that reforms are being og that have been adopted. These data are sevie wing call to base educational do applicability to physical high-quality educar 1. At the K-12 level, this is now tion is documed. Some of the inherstarch about traching and intensing are also Jacoury, At the N-12 never, this is never a manner or nanonal Regulation. The No Child Left Behind (NCLB) Act of 2001 wed, and their staching: science education; physiology education if you want to read all 670 pages of this at federally funded programs he bar real access of "A Nation of Risk: Reform" by the National Commiss /index hand Reports by the reasonal community on finderman in the cation in 1983 (75) was only the first of many recent calls for acation Sciences Reform Act of 2002 (38) describes what constit cannot an error every new energy the target on many recent entry of the reference of K-12 science education in the United States. The ons in education. Eisenhart and Towne (21) have published ne reners or n-ray science entranson in my concersional rise following year, the Association of American Medical Colleges very useful discussion of the implications these to (e) cannot for significant changes in the tracing of nance sciences to medical students. In 1990, the National Research In the sphere of medical education, Van der mans and Shephier (106), and Marray (74) have p Council (76) identified problems with biology educat the need for a research base for reform in medical remain (82) has raised some cautions about the producerns about the way in which under and, more recently ing this research but clearly supports the r tion in biology is carried out. All of these criin to adopt approaches to teaching that more actively in National Research Council # in 2003 (77) sation (78) is an in-depth disc data about teaching and is ses have urged As scientists, we have been trai sting, meaningful learning (see Refs. 6) and 70 for discuss sions of educational reforms in the life sciences) evidence, and it is appropriate Among an emergence of the state of science of the scie that these proposed new education was articulated by Volpe in 1984 (107). which we all learned and from which (the evidence in are as relevant today as they were more than 20 7 learning. The short answer is that there IS evi No. 111 | no. 21 has being data At and learning weaches from and his reform. The support the claimy erces to be mp. 23 | 8411 surpose of this article is (ince and discuss its applicabil Aence out these will first present some of the relevant mic to education (cr psychology, and the learning sciences of the evidence that comes from some / will also try to provide a road map to And I relevant hierature and some pudels Condent 100.04 Like any of the scientific fields with which More recently, Halpern and Hakel (32) observed that aroug recently, stappent and states to consider the states of the states of the difficult to design an educational model that is more structure to the states of the state lata base, and it is b renor to instrume to unappear or transmission instant time to instant at odds with current research on human cognition that the one with the laterature. It is not feasible to review was the increase, it is not passing to review every topic relevant to physiology fraching and learning, and the reclassion of any topics (authpaters, or the importance of animal use is the student In reprint supports and other consequences of a Machael Arps of Replyrate and Physiology, Ruds Moderal College, Cherges, R. ratory) does not mean that they are at everything could be included here. the memory cars are a section cieria being the accessi-scienciae, with one of the selection cieria being the accessi-1043-454506 St.00 Copyright 0 7 portant, Nor merces cited (for example, no confest

Active Learning Classrooms help facilitate Active Learning

Teaching & Learning Lab





Hybrid Active Learning Classroom





Sub project Evaluation & Knowledge Creation & Professional Development



Evaluation questions

• How can a **mentoring trajectory** for teachers be developed and implemented to support teachers in designing interactive learning activities in the FLS?

• How can the **interactive learning activities** be carried out in the relevant FLS?

• Which **points of attention** are relevant when (re)designing the current and future FLS in order to be able to carry out the relevant interactive learning activities?



PREVIE

Curious? Join me!



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What did we do?

- A. Developed a mentoring trajectory
- B. Collected and analyzed data
- C. Wrote a report
- 5 teachers joined 2 different ALCs



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Meeting 1 Support teachers in educational design Meeting 2 Instruction of and practice with (technical) possibilities in FLS LESSON Meeting 3 Evaluation of observed lesson Meeting 4 Reflection on lesson, FLS and trajectory.

B.+ C. Collected and analyzed data

- meetings
- lesson plans
- lesson observations
- teacher and student surveys



D. Wrote a report

End phase Finish half/end november



What do you do?

Job
 Learning spaces
 Teacher development



Deliverables

• A **mentoring trajectory** for teachers to support them in designing and implementing interactive learning activities in the current and future FLS.

• A **checklist** of points for attention to optimize the design of the current and future FLS in order to be able to carry out the interactive learning activities.

• **Recommendations** on how to shape interactive learning activities in the FLS.

Why teachers recommandated FLS

• *If you want interaction within groups, this is the setting to go for.*

• Ideal for group work requiring teacher assistance.

• Better interaction, better sense of what your students are doing.

Provides connection and interaction, easy to split into groups and at the same time easy to attend plenary.
Flexibility; easy to change the room depending on the needs.

• It is a great place for collaboration and gives students an active voice.

• The spacious stimulates interactivity and play, that's what it's all about.



Why students recommandated FLS



- It stimulates group and teacher interaction.
- It makes lessons very interactive and makes it easier to stay focused.
- It's the best workgroup room I've ever been in. All workgroup rooms should be like this.
- Great for working in groups and if needed you can use the webcam to connect with students who are not there.
- Nice to have your own screen to share findings with your own or other group. More comfortable, easier to connect.
- Nice that it's more of a circle instead of teacher versus students.
- It's fun and it gives you autonomy to facilitate your own projects.

Recommandations 1

• **Developing a lesson plan** can help to make conscious choices in shaping learning activities in relation to the learning objectives.

• It is valuable to shape teaching in the FLS **together with colleagues** and to reflect on this.

• Make a conscious choice to use hybrid education or not. Provide extra support for the online participants in case of hybrid education.

• Have teachers who have taught in the rooms **share their experiences and lesson plans** as **examples and good practice** for other teachers.

• As a teacher, regularly walk around the groups to monitor the learning process.

Recommandations 2

• Indicate **for which activities** the space is or is less suitable.

• Make a visual overview of which set-ups are possible in the room and explain for which work forms you can use which set-up.

• In addition to a manual, teachers find a short meeting in the room very useful.

• Ensure **sufficient availability** of the FLS. There is a particular need for spaces that are suitable for **interactive, activating teaching methods**, such as the Active Learning Classroom.



What recommandations do you have?