

Education and training in radiation protection in a virtual setting - challenges and opportunities brought by the COVID-19 pandemic

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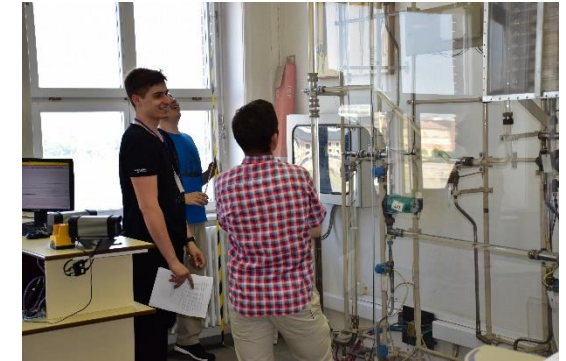


- Competency-based learning or competency-based education is our framework for teaching and assessment of learning.
- According to this method, education is based on predetermined "competencies" that need to be developed.



Teachers can...

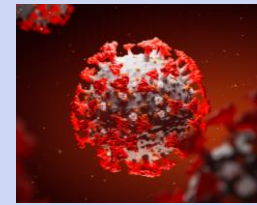
- communicate with students and participants
- monitor their reactions
- facilitate their learning
- try to constantly explore the shortcomings
- answer questions
- help them to solve the different tasks in person
- assess students in a controlled way



Students/participants can...

- ask and answer questions
- conduct independent laboratory work
- make calculations technically more easily
- ask for help if necessary





- Last spring our carefully established system collapsed entirely due to the pandemic
- Plans, arranged programs became irrelevant and unaccomplishable
- The world around us stopped...
...but education had to continue.



- *Google is your friend* 😊
- The biggest challenge was to find a way to continue the education of students online, in an effective way, which could be managed both by the teachers and their students

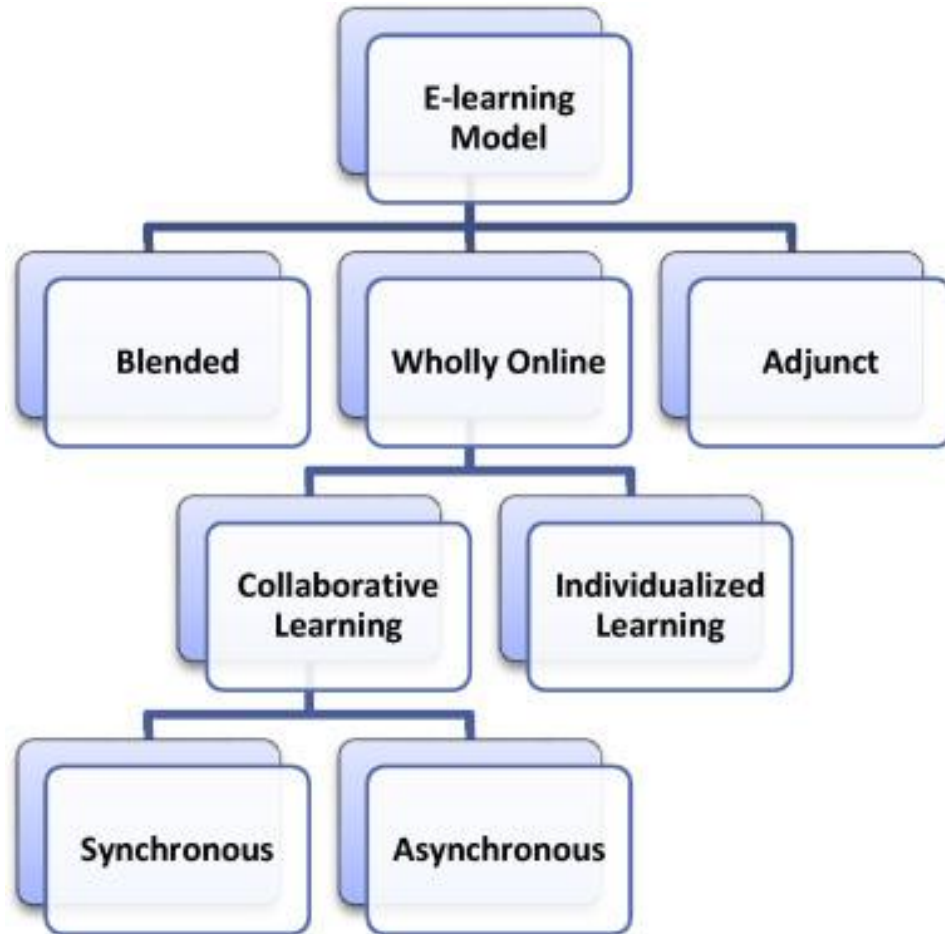


🔍 online education



01 Sep 2020

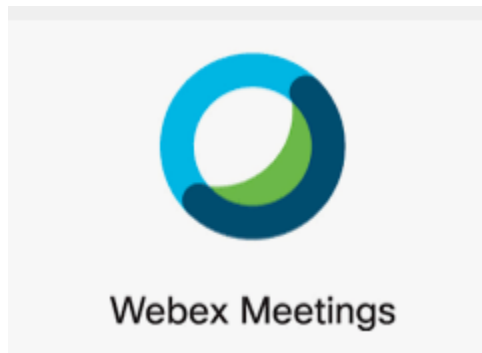
Online Learning - What Is It And How Does It Work?



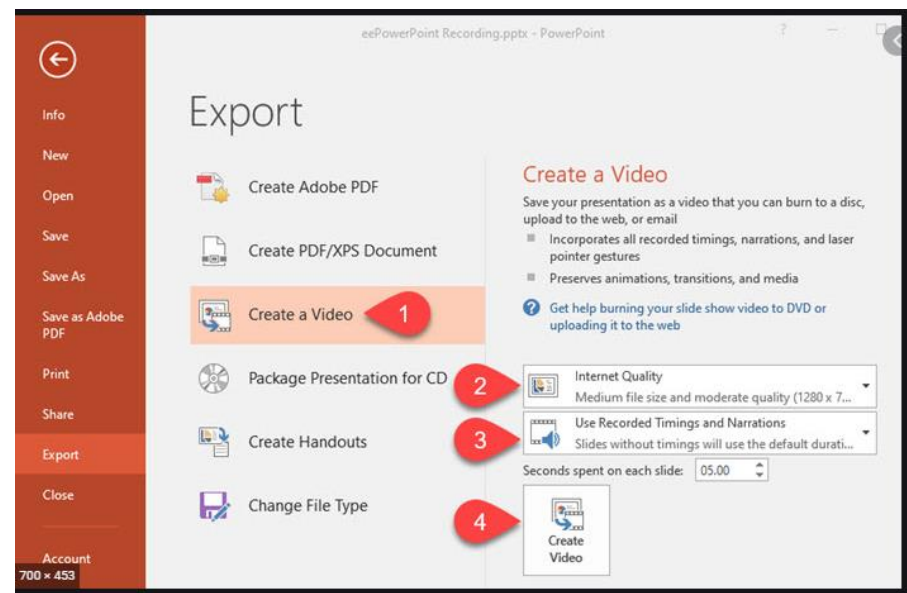
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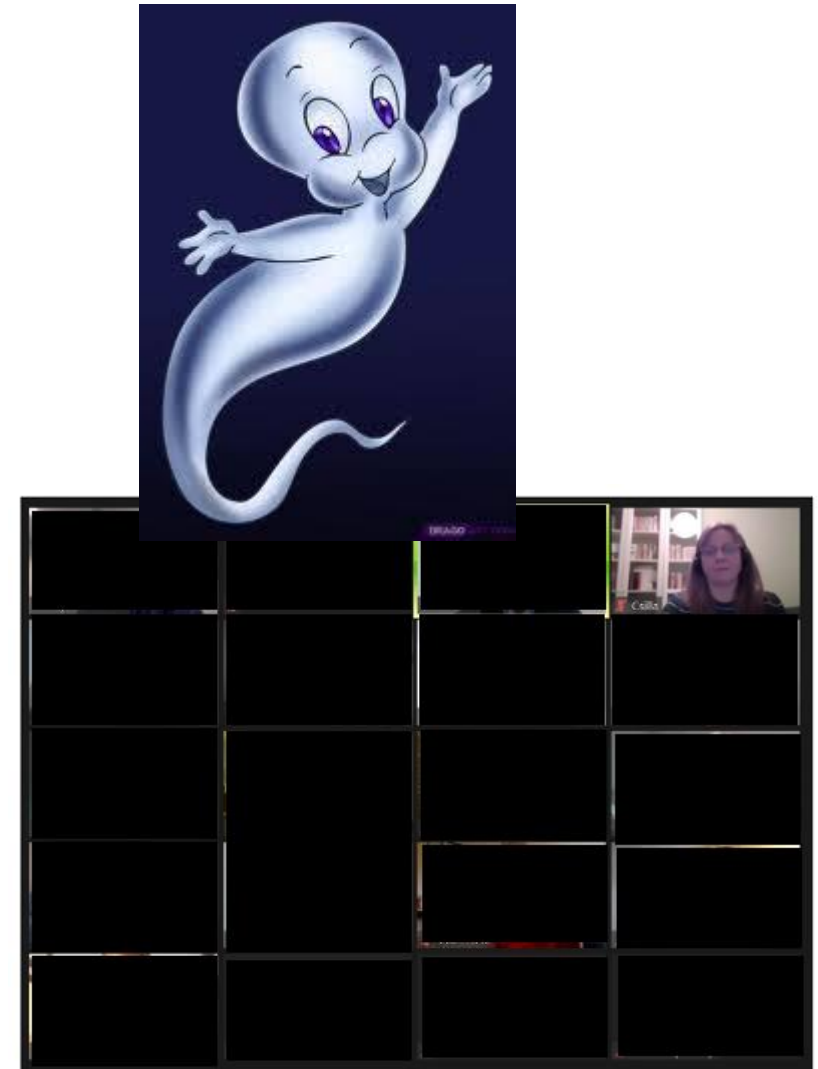
<https://openteach.ie/wp-content/uploads/2019/11/Teaching-online-is-different.pdf>



- Ideally, it takes a few months to put together an online course – in reality, we usually only had a week or two in every country, even to start several courses.
- My first 45-minute online asynchronous lecture in mp4 video format took two days to create – at that time I couldn't edit a video yet.
- PowerPoint – the text could be recorded on the slides one by one.



1. Finding the ideal file size: the resolution of the presented material has to be of good quality, but the file size should not be very large.
2. If the internet bandwidth is low, the audio and video will not be in sync, the presentation will be incomprehensible (in this case students have to be asked to turn off their cameras).
3. The lecturer has the feeling that she/he is giving a presentation to ghosts.
4. Reaction time of students: lecturer has to wait for reactions insecurely.



ENEN PhD Events 2018



ENEN PhD Events 2020

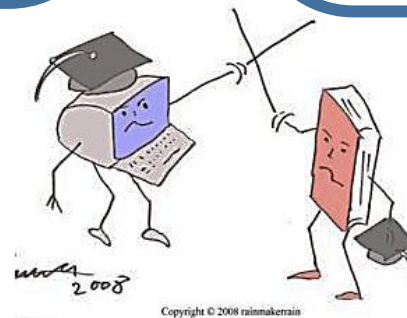


Advantages

- There is no need to come up with new solutions, teachers and students can take part in education as usual.
- Personal contact and direct communication.
- Cooperation between students can improve, interpersonal skills can develop.
- Immediate reactions and feedback.

Disadvantages

- Regular teaching and learning methods, no challenges.
- More expensive (equipment, materials, books).
- Time and location constraints: has to have an arranged time and place.
- Number of students has to be limited.



<https://evancarr95.wordpress.com/2015/03/18/disadvantages-of-online-education/>

Advantages

- Students and teachers can participate in education from the comfort of their homes
- Gives an opportunity for all participants to learn and develop their IT skills
- Students can become more independent and learn how to self-motivate
- New, interesting methods, endless possibilities
- Flexibility (no need to arrange place and time)
- More environmentally friendly (no need for paper, waste or cars)

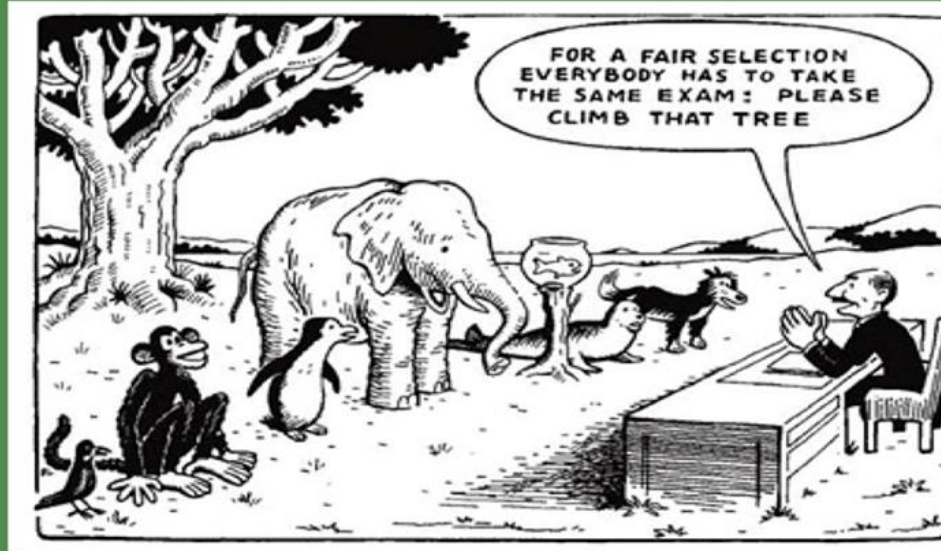
Disadvantages

- Experimental and laboratory work is extremely difficult and time-consuming to realise in online education
- Theoretical lectures are easier to implement in an online learning environment which can lead to teaching more theoretical knowledge and less practical skills
- It is difficult to involve students to actively participate
- Minimal supervision, lack of discipline and hard to prevent students from cheating during tests
- Students cannot cooperate, they mostly work individually
- Dependence on modern technology and Internet connection

- Blended education which proportionally utilizes the conclusions of the pandemic period while providing the students and the instructors with the opportunities of being an active participant of their learning and teaching experience can be considered a feasible long-term solution for future trainings in radiation protection.
- Both digital and traditional education have their own set of benefits and limitations. These are a supplement to each other and both have their own importance and unimportant.



<https://www.digitallylearning.com/digital-vs-traditional-learning/>



"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid"

Albert Einstein