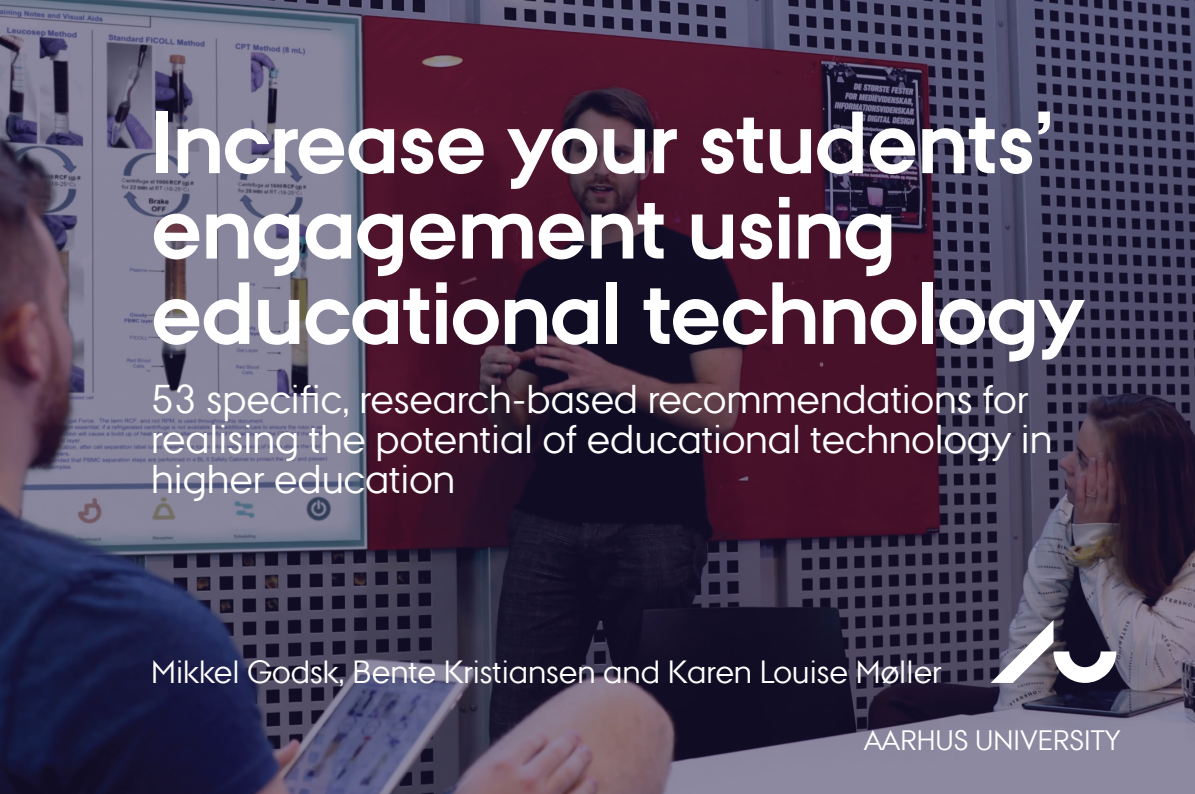

Increase your students' engagement using educational technology

53 specific, research-based recommendations for realising the potential of educational technology in higher education

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The purpose of this booklet is to provide educators, educational developers and management working in higher education with specific and research-based recommendations on how educational technology can support student engagement.

The booklet is based on a large-scale literature review of 2,154 studies. More details about the literature review are available in the e-book (in Danish) 'Digital læringsteknologis potentiale for studerendes engagement' (see the back).

Overall, the studies show that educational technology offers various ways to support students' behavioural, affective and cognitive engagement. The studies also show that different technologies have different engagement potential and suggest how it can be realised.

On the following double pages, you will find descriptions of how each educational technology can be used in an engaging way. The pages can be torn out and used as design cards in connection with learning design and other educational workshops.

E-learning platforms

E-learning platforms, which are also referred to as learning management systems (LMS) or virtual learning environments (VLE), is an umbrella term for web-based learning platforms for the development, distribution, delivery and administration of online teaching materials and activities. The most common institutional e-learning platforms are Canvas, Blackboard, Brightspace and Moodle. Ninety-nine per cent of all higher education institutions have access to at least one e-learning platform.

E-learning platforms

Recommendations

- Introduce the course page and its activities on the e-learning platform
- Use the functions offered by the e-learning platform to create a course page with a clear structure while limiting the number of tools to the most relevant ones
- Support a flexible use of the tools so that the students can adjust and/or choose the tools according to their preferences and needs
- Use the tools to support the students' collaboration and communication
- Follow the individual students' online activities and support their learning by providing targeted feedback and/or adjusted teaching (face-to-face or online)
- Remind the students about online activities, materials and relevant tools
- Use continuous summative assessment, peer assessment and/or peer feedback to maintain engagement and thereby give the students insight into their own progression

(Godsk, Kristiansen & Møller, 2021)

Discussion forums

In discussion forums, students and educators can discuss and develop thoughts and ideas related to the course syllabus and format by means of threaded discussions, texts and multimedia. Most e-learning platforms have a built-in discussion forum tool. Discussion forums are typically used for asynchronous activities where the students and educator can post questions and answers without being limited by time and place.

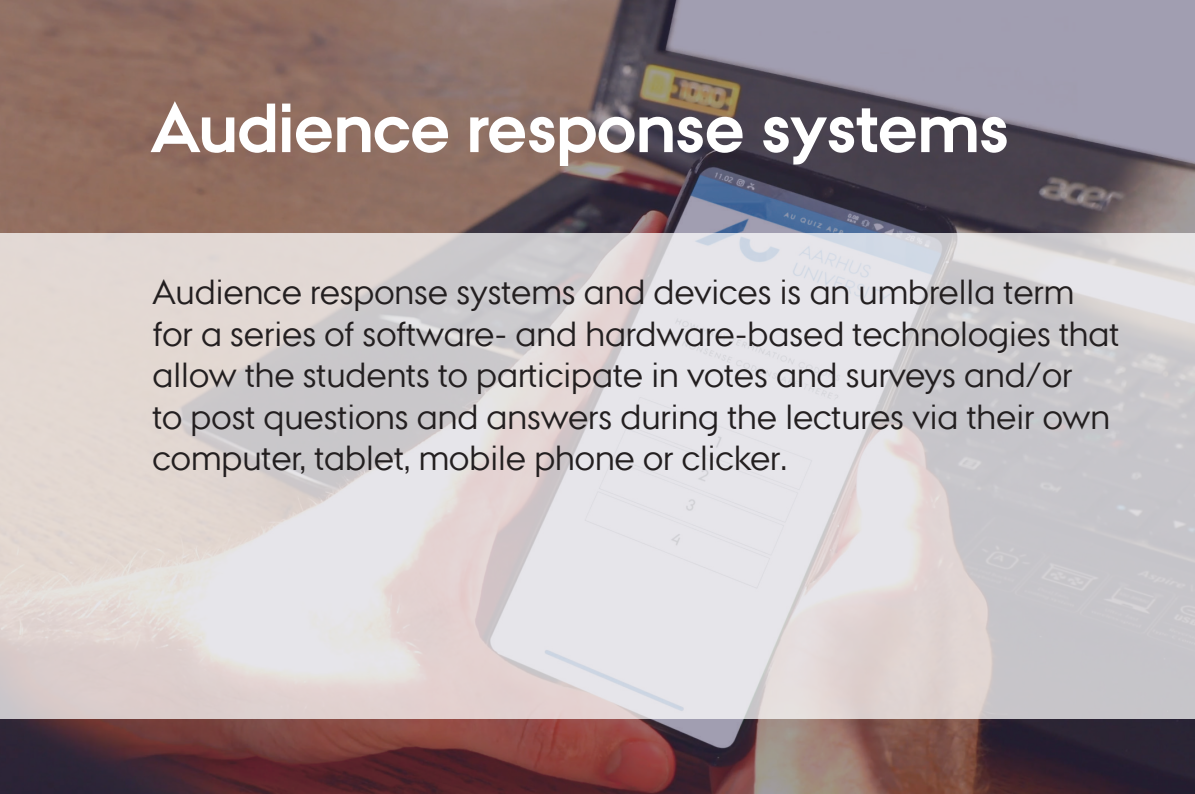
Discussion forums

Recommendations

- Provide short and precise instructions
- Choose questions, topics and cases that the students find relevant
- Use open-ended trigger questions that can be answered on various taxonomic levels so that all students can join in, and avoid using forums for discussing questions and topics at the lowest taxonomic levels
- Assign well-defined roles to the students and ensure that they participate visibly (are not lurking)
- Be visible as the educator, but avoid being dominating
- Make use of the written communication format to improve the students' writing skills and their ability to present arguments in writing
- Make use of the opportunity for peer feedback and social constructivist learning
- Avoid discussions with many participants and lengthy postings
- Sum up in a joint reflection

(Godsk, Kristiansen & Møller, 2021)

Audience response systems



Audience response systems and devices is an umbrella term for a series of software- and hardware-based technologies that allow the students to participate in votes and surveys and/or to post questions and answers during the lectures via their own computer, tablet, mobile phone or clicker.

Audience response systems

Recommendations

- Use challenging questions that give rise to a subject-specific discussion
- Combine votes with group activities in which the students elaborate on their answers
- Make use of the class being gathered, and include a joint reflection with room for arguments and discussion
- Ask questions and, if relevant, give individual assignments that allow for anonymous responses, followed by a general discussion to include the entire class
- Ensure visible facilitation of the activities and systematic use of the technology
- Make use of the opportunity to provide immediate feedback on the students' responses
- Use the insights provided by the students' (aggregated) responses to adjust the level of the teaching according to the students' needs and preferences
- Consider using student-generated questions (Godsk, Kristiansen & Møller, 2021)

Online quizzes

In online quizzes, students can answer questions related to the subject matter. Online quizzes differ from audience response systems by being fully online and, typically, asynchronous so that they can be used and reused regardless of time and place.

Online quizzes

Recommendations

- Make use of the flexibility of the technology so that the students can participate regardless of time, place and pace, including revisiting quizzes
- Use various types of questions, including more complex questions and/or questions similar to what you would ask in the final exam
- Use quiz results as a starting point for group activities and joint reflection
- Make sure that the students receive specific feedback on their answers, allowing them to monitor their own learning process and development
- Make use of the available tools for providing automated feedback

(Godsk, Kristiansen & Møller, 2021)

Social media

Social media is an umbrella term for web-based social networks where users can socialise, communicate and share files and other information. Social media are typically not formal, institutionalised learning technologies but often form part of students' social interactions and, to some extent, their informal, personal digital learning environment.

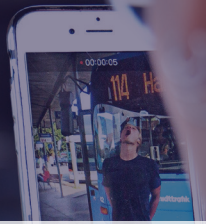
Social media

Recommendations

- Make sure that the students support the use of the social media platform in question
- Create the relevant forums and groups for the students
- Introduce the social media platform and integrate it into the teaching by being clear about its purpose and use, including what belongs on the institutional e-learning platform
- Preferably use social media for collaboration, communication and process
- Be explicit about the expectations regarding student participation and the role of the educator
- Consider supplementing the social media with discussion forums, wikis or other tools on the institutional e-learning platform for summing up the activity
- Consider whether social media can serve a useful purpose for the students after the course has ended or be one of the aims of the course, and take this into account
- Provide technical and ethical guidance, in particular in relation to non-widespread social media and securing privacy (incl. GDPR), and, if necessary, check the possibility of anonymous participation and deletion of content after the course has ended
- Take into account any existing student networks on the specific social media platform
- Participate frequently and visibly in relevant discussions (see also the recommendations for discussion forums)

(Godsk, Kristiansen & Møller, 2021)

Video and audio



Video and audio is a broad term for synchronous and asynchronous, audio-visual, digital media and technologies. Video and audio can include, for example, video recordings from study trips, video submissions, presentations of the syllabus and feedback on assignments. Video and audio can be produced by the educator, students or external suppliers.

Video and audio

Recommendations

- Produce your own audio and video files, as the personal aspect is important to the students, and consider using audio and video for asynchronous feedback
- Produce short video lectures and instructional videos so that the students can easily find and reuse the relevant material as needed
- Make the videos available asynchronously to provide the students with the flexibility to use and reuse the videos (e.g., for repetition)
- Make sure that video is integrated with other course activities, for example quizzes, small assignments, group work and feedback
- Make sure that video conference activities are well structured and relevant while also, for example, allowing for collaboration
- If relevant, support and use audio and video materials produced by students for collaboration and as assignments

(Godsk, Kristiansen & Møller, 2021)

Games and gamification

Games and gamification as an educational technology refer to digital games and activities that contain game elements for learning. Game elements can be, for example, leaderboards, points, badges or other forms of ‘rewards’ or competition. Games and gamification differ from online quizzes by using entertainment and competition elements to motivate students to participate and learn.

Games and gamification

Recommendations

- Create authentic situations with a clear relation to real phenomena
- Be aware that students who are not already gamers may be less motivated to participate
- Make sure that the game activity includes interaction and collaboration between the students
- Use points, badges and other types of rewards to motivate the students

(Godsk, Kristiansen & Møller, 2021)

Virtual reality and simulation

Virtual reality (VR) and simulation refer to a computer-generated simulation of an environment that educators and students can interact with via computers or dedicated headsets.

Virtual reality and simulation

Recommendations

- Consider the business case for the use of VR and simulation, including the complexity of their use and the possibilities for providing teaching activities that could otherwise not be provided for practical, financial or safety reasons
- Base the use on realistic situations and issues that are relevant to the students, either in their future practice or in relation to the course syllabus
- Include activities where students can use the technology to explore and try out different types of action
- Do not expect all students to have the necessary skills to use the technology, so make sure to provide technical guidance and support active participation

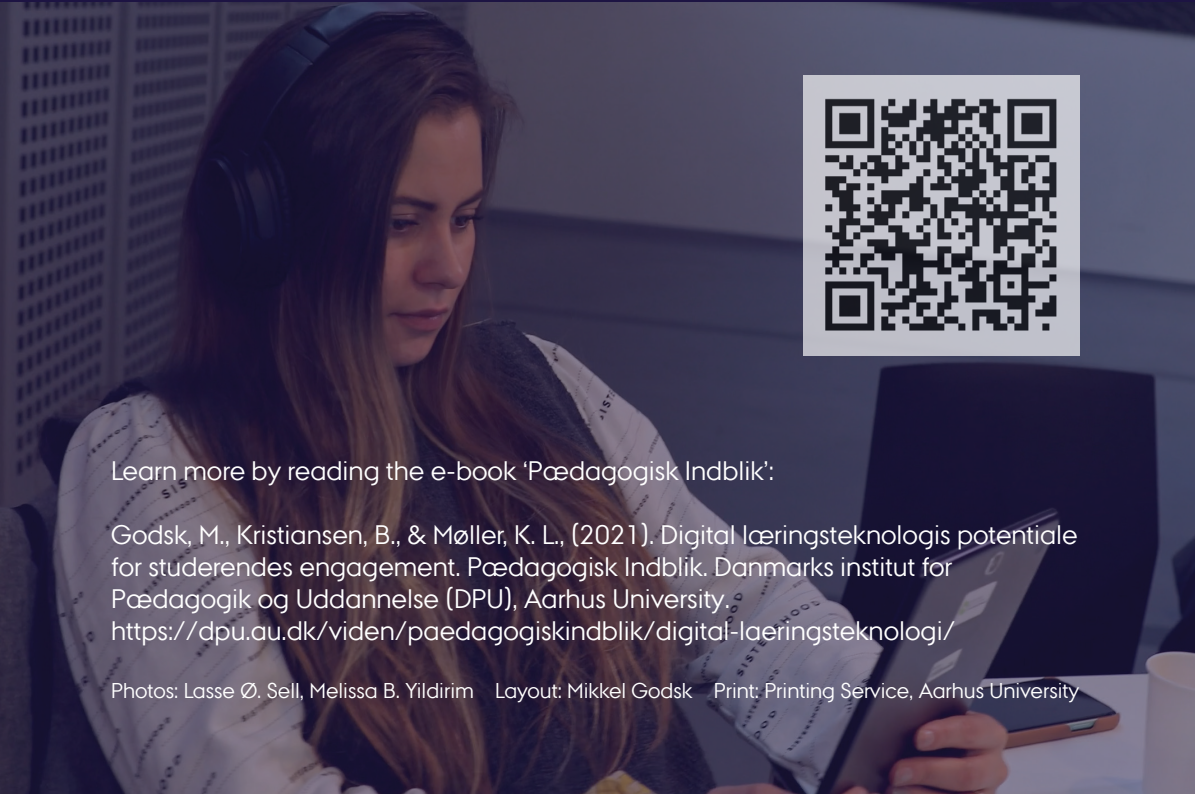
(Godsk, Kristiansen & Møller, 2021)

How to support students' engagement using educational technology – in brief:

- Behavioural engagement can, in particular, be supported by technologies that are suitable for conveying the curriculum, creating structure and supporting active learning and interaction

- Affective engagement can, in particular, be supported by technologies that support rich communication and interaction between the educator and students as well as between the students

- Cognitive engagement can, in particular, be supported by technologies that promote active and flexible involvement of the students in activities at the highest taxonomic levels, such as discussions, problem-solving, collaboration, authentic exploration and testing of hypotheses as well as reflection on learning



Learn more by reading the e-book 'Pædagogisk Indblik':

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