

InnovationLab's Ed-Tech-Tools

An overview of useful tools for teaching



In the InnovationLab, we sift through and analyze new findings in teaching and learning research as well as technological, political and structural developments, experiment with new technologies and new teaching scenarios, and carry out innovative pilot projects.

IN THIS EDITION

LEARNER CENTERED
ENGAGEMENT TOOLS

VIRTUAL
ENVIRONMENTS &
MEETING TOOLS

Learner centered Engagement Tools

As Educators we are looking for highly motivated students that are well engaged during the entire semester. In order to strengthen such a commitment, you are welcome to try the tools presented in this overview.

Theoretical Background

Constructivism

Constructivism is **the theory that says learners construct knowledge rather than just passively take in information**. As people experience the world and reflect upon those experiences, they build their own representations and incorporate new information into their pre-existing knowledge. Therefore, we tested a great range of educational tools for your teaching.

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ANCHOR



Introduction

Anchor is an online podcast creation tool. It is owned by Spotify and comes for free. You could let your students create small summaries as podcasts. Anchor lets their users create, edit and host podcasts for free. Thru podcasts your students can develop educational content informally through storytelling. As an educator, you could create a class podcast station or have your students collaboratively design a podcast series.

Scenario

Split your group of students in groups of two. Let each Team summarize an topic within the semester. They have one week to upload a 10 min podcast. at the end of the semester there is a summary in small chunks and the students can repeat the contents in a targeted manner.

Pros

- Free
- Students approximately listen longer as they watch or read
- Up to 5 users can collaboratively record a podcast

Cons

- None so far

Cognii



Introduction

Cognii is an AI based virtual learning assistant tool which helps students to form open-format responses, learn faster through conversational technology and therefore, improve their critical thinking skills. Cognii also provides one on one tutoring and real time feedback which is customized for each student and his/her curricula.

Scenario

Suppose a student has 2 courses/subjects at the same time so he/she cannot attend both the classes but has the lecture materials and content to be learned for both the courses. In this case, Cognii can help the student learn on his/her own with the help of the questions put up by the virtual learning assistant and also make the student think and understand where he/she went wrong with the help of the feedbacks provided.

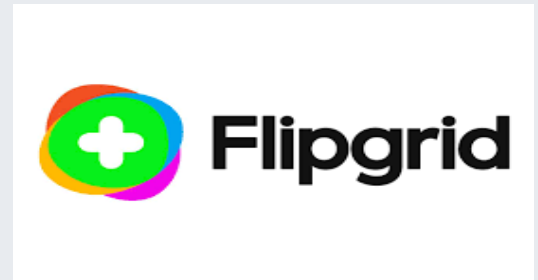
Pros

- Open response questions to measure critical thinking & problem-solving skills
- One-on-one tutoring
- Adaptive Personalization
- Immediate personalised feedback
- Integrable with Moodle

Cons

- Not suitable for all types of courses e.g., programming courses

Flipgrid



Introduction

Flipgrid is a great tool to get your students involved. Flipgrid is a video discussion app, free from Microsoft, where curious minds connect in safe, small groups to share videos, build community, and learn together.

Scenario

You are a research assistant with a teaching assignment. In your course, the seminars are going well. But it always takes a while until you activate your students. So that you can get into the topics more quickly in the future, you would like to have more exchange among the students outside of the seminars. Therefore, you can create a video-based discussion forum with Flipgrid.

Pros

- For free
- Intuitive usage
- Highly engaging

Cons

- Issues with some older devices
- Students might hesitate

duolingo



Introduction

Duolingo is an AI based language learning platform tool which helps the users to learn as many different languages as they want. The application is personalized and therefore it gives unique response to each, based on the user context.

Scenario

The students can use this application easily just by downloading on phone or going to their website on laptop. There is no fixed timing as in university classrooms rather the students can learn as many different languages they want in their free time and in a more interactive & fun way.

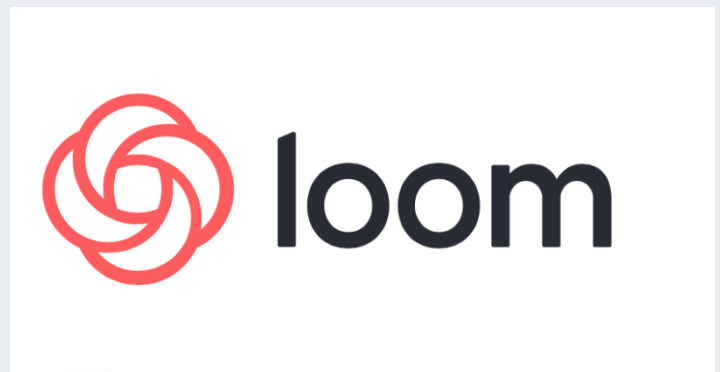
Pros

- 41 language courses
- Gamified Tests
- Free Learning
- Public competitions
- Personalized & self paced
- Vocabulary & Grammar Learning

Cons

- Robotic sounding
- No videos
- Not for advanced learners
- Too many repetitions
- Not for moodle

loom



Introduction

Loom is a tool for screencasting and messaging. It allows you to record your screen and add a recording of your webcam at the same time. Use Looms Servers to communicate and discuss the videos. For Mac and Windows.

Scenario

As Educator you could engage your students when you let them discuss weekly via loom. You could give your students a task to discuss within a week through loom. This type of engagement might remind your students of social media tools, through the creation of little recordings they can practise to communicate online with a group of people.

Pros

- Highly Empowering
- Students can learn from each other
- Corresponds with the "zeitgeist"

Cons

- Pro Version costs 4\$ monthly

buncee



Introduction

With over two thousand templates to choose from, you can unleash your creativity in no time. Ranging from education to business to personal use. *Buncee Templates* gives you a jump start on any creation, but with the freedom to add your personal touch.

Scenario

Your students could create a storytelling to an specific topic by using the slide designing toolkit of buncee. They can integrate animations, 360 Images, chat functions and much more. Buncee gives your students the chance to recreate and share their knowledge through creativity.

Pros

- collaborative
- easy to use
- great toolkit to create multimedia slides

Cons

- Pro Version costs

2. Virtual Environments & Meeting Tools

Breaking boundaries throughout digital Rooms. The pandemic has shown us that physical meetings are not always possible. With digitally created spaces and platforms you can motivate your students to stay in contact with each other.

Theoretical Background

Connectivism is a relatively new learning theory that suggests students should combine thoughts, theories, and general information in a useful manner. It accepts that technology is a major part of the learning process and that our constant connectedness gives us opportunities to make choices about our learning. It also promotes group collaboration and discussion, allowing for different viewpoints and perspectives when it comes to decision-making, problem-solving, and making sense of information. Connectivism promotes learning that happens outside of an individual, such as through social media, online networks, blogs, or information databases.

Mozilla Hubs



Introduction

Meet, share and collaborate together in private 3D virtual spaces. With Mozilla Hubs you can create virtual facilities and use those a meeting platform.

Scenario

You can replicate your facilities and meet as avatars. We at InnovationLab use our digital twin of the ProLehre building for meetings. During the pandemic, Mozilla Hubs was a pleasant alternative to the well-known platforms. But even beyond the pandemic, it's a great way to engage your virtual community

Pros

- High engagement
- Easy to use
- recreation of the own facilities
- for free

Cons

- possibly small attention span during lectures due to high interactivity

Spatial



Introduction

Spatial is a highly realistic virtual environment. It is designed as XR tool. That means you can use it with AR and VR Glasses or with your laptop. Spatial understands itself as a metaverse for culture. They offer a beautiful and accessible platform, where creators, collectors, and brands can host an immersive experience for members of their community.

Scenario

Your students can create a realistic avatar of themselves and interact with each other in the metaverse. The nice thing about spatial is that it doesn't matter if the students have AR - Glasses or want to participate with a laptop. In addition to a modern virtual learning environment, students can get to grips with the metaverse.

Pros

- High engagement
- Easy to use
- Super realistic graphics
- For free for creators looking to host exhibitions, meetups, and live events

Cons

- Safety, because you will host from an external platform

Topia



Introduction

Topia is a playful online networking platform where you can explore different worlds, build your own and interact with other users. In your own world, you can hold all kinds of public or private events at any time.

Scenario

You can create a virtual world for an online event. Your students can create their own areas and offer workshops on the event day. It is easy to integrate other social services like discord, slack or

Pros

- Good overview
- Easy to use
- For free

Cons

- None so far

Slack



Introduction

Slack is a communication and task management tool. Users can create specialized messaging groups or "channels" for different projects, teams and organizations. What makes it different from other communication tools is that it is specifically designed for work and collaboration. Files up to 1 GB in size can be sent and browsed within a channel, simplifying file management.

Scenario

Create a Slack channel for your communication with your students throughout the semester. It is easy to communicate via laptop or smartphone and with slack, a wide variety of applications can be integrated

Pros

- Creative Communicator
- Great central hub

Cons

- advanced features cost

3. 3D – Scanning Tools

If you want to use 3D models in your course to give your students the opportunity to explore scans at home. Or do you want your students to interact with objects in your course to transform them into the digital world? Then take a look at our 3D – Scanning Tools overview.

Theoretical Background Constructivism

There are numerous ways to use 3D models to enhance instruction. Especially the playful handling of objects can be helpful for the students' understanding

in3D



Introduction

With in3D, you can replicate yourself into a photorealistic 3D avatar with your phone camera within 1 minute. Export your 3D model as FBX, GLB or USDZ. With in3D you have a mobile character creator. Instantly avatar yourself and your friends and start customizing, animating and sharing your avatars. Create photorealistic 3D avatars easily. No coding or 3D design experience necessary, just your phone camera.

Scenario

Creating your own avatar is the best way to represent yourself in the online environment. While users are spinning around themselves, in 3D takes pictures with the front camera and then merges them very quickly. After a few minutes, your avatar will be done. The users can export their avatars into different file formats with a few clicks.

Pros

- easy to create avatars
- great feedback while scanning
- AR capable
- Easy to edit in Blender

Cons

- Only 2 Avatars with the demo version
- With pro version only 5 avatars a month
- Does not use lidar function

Polycam



Introduction

Polycam is the leading 3D capture application for iPhone and iPad! Create high-quality 3D models from photos with any iPhone or iPad, and rapidly generate scans of spaces with the LiDAR sensor. Edit your 3D captures directly on device (limited editing options) and export them in over a dozen file formats (Needs a pro account). Share your captures with friends and the Polycam community with Polycam Web and explore captures from around the globe on Poly World!

Scenario

Modelling your own items is always painful. Usually, you will need expensive equipment. With Polycam you will have a “easy to use” scanning option. With the help of Lidar, Polycam scans your items very quickly. Even rendering is fast. You can examine your scans on an iPad or edit them on your laptop. You could scan your lab with your students and transfer your workplace into a virtual environment.

Pros

- Easy to scan areas
- Storing your scans in albums
- Mesh Scans
- Measurement in app
- Unscanned areas are indicated blue on your screen

Cons

- Not easy to use
- Pro account necessary to export files
- Arduous with bigger devices (e.g., tablets)

Room



Introduction

Room helps the people from the different sectors with different expectations and applications of AR. For example, arranging virtual events or visiting real estate are just two options you can do in Room.

Scenario

Room is a 3D Environment creation tool that helps people who want to transfer and show their real rooms/buildings into artificial environments, in the easiest way. The users can create their own spaces, then by deciding between its wide object lists to put in their spaces, and adjusting their feature and texture with a just one click design their buildings inside in virtual environment as if they were an interior architect, in Room very quickly. By taking pictures of an object, they want to see in their virtual building, could be transferred into a virtual room. Also, the participants can visit other virtual environments, which are created by other users, and walk around buildings in different view modes.

Pros

- Easy to add some objects into virtual rooms and adjust their features
- Visiting different environment
- Arranging meetings in real-based

Cons

- Pricing
- The free version does not permit you to create your own space (Just can be chosen from the given options)