TOPIC 11

BUILDING OUR MASCOT

VleaRning

We learn to apply augmented and virtual reality in our technology class.

2018-1-ES01-KA201-050550

Co-funded by the Erasmus+ Programme of the European Union

aiju Technological Institute for children's products & leisure

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ACTIVITY SUMMARY FORM

Title	**Uniforming our mascot**
Abstract	This activity has the goal to make an animation of our mascot dressed in our school uniform.
Topic	Topic 11 - Activity 11.1: Our Mascot
Author/s	Paidos School - Chelo Quince Blay

DIDACTIC OBJECTIVES

- Learning about different 2D and 3D image formats:.fbx, .jpg, .psd,
- Understanding how textures and materials are applied to 3D objects using the mapping technique.
- Understanding how image editing programs work, such as Photoshop or Gimp
- Practicing with basic Photoshop tools.
- Using layers in Photoshop or Gimp.

Education Level **12-14 years** [X] **Others** [ ]

AR Technology [X] **VR Technology** [X] **_____ Technology** [ ]

ACTIVITY SCOPE

This activity is integrated into the area of Artistic Visual Education and IT.

ACTIVITY STATEMENT

Create the .jpg image that serves as a texture to map our mascot with the Paidos school uniform.

ACTIVITY DESCRIPTION

Students will learn to work with layers to modify images in order that they can be used as textures to map the mascot. Students work in groups to make an image to dress our mascot. When finished, they will save the file in .fbx format to be able to upload it to any virtual reality software like Sketchfab, Mixamo, Cospace ....

RESOURCES

Files and tutorials: https://drive.google.com/drive/folders/1tVLxJ0fEjTFDK9BYtXnOGU-9NgwL8TH

- Internet
- Computers
- CoSpaces
- Mobile devices
- Gimp or Photoshop
- Paint 3D
- Aumentaty.

STUDENTS' EVALUATION

Co-assessment.
To evaluate the students:
When the students have finished, they will send an e-mail with the url project (Scketchfab) to the teacher who will check that it work.

BIBLIOGRAPHY

- Pain3D Windows 10
- Photoshop o Gimp http://www.gimp.org.es/descargar-gimp.html
- Mixamo https://www.mixamo.com/
- Sketchfab https://sketchfab.com/

SCALABILITY

The activity to be developed is designed for 3 ESO students who create the animation.
At other levels, they only check the animation which has been presented by the creator students who explain briefly how it works and how it was built and used by importing it into other programs.

MORE INFORMATION

The 3D model resulting from this activity can be used in different activities on other platforms such as CoSpace, Augment, and so on.

FLOW IMPLEMENTATION

1. In the first sessions the basic principles of the following programs will be explained: Gimp, Photoshop (Layers , and basic edition tools).
2. Work using Photoshop, with layers to create the image tEXTURA.jpg.
3. Open in PAINT3D the file Logo3D.fbx selecting the folder when is saved the image tEXTURA.jpg.
4. Save as a 3D object with skin the file with another name as .Fbx format.
5. Import the file on Mixamo and animate it with a dance chosen.
6. Upload the 3D model on Sketchfab

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ACTIVITY SUMMARY FORM

Title	**Materialising ideas. 3D printing our mascot.**
Abstract	In this activity, we show our students the technology of 3D printing which enables us to bring into reality almost anything we can imagine. During several lessons, our students will know the different 3D inks, the main parts of a 3D printer and they will learn to set up the printing parameters through the app Cura.
Topic	Topic 11 - Activity 11.2: Mascot model
Author/s	Paidos School - Miguel Villalta

DIDACTIC OBJECTIVES

The objectives are:

- To know the basic elements and basic working of a 3D printer.
- To learn how to configure the 3D printing parameters using a specific app.
- To analyse the problems that might arise during the printing, find their origin and resolve them.

Education Level **14-15 years** [X] **Others** [ ]

AR Technology [ ] **VR Technology** [ ] **3D Printing Technology** [X]

ACTIVITY SCOPE

Mechanisms, plastic materials and printing parameters.
Correlation between the design phase, cost and printing problems.

ACTIVITY STATEMENT

We want the students to know a new technology and explore the possible benefits, both economic and social, that it can bring.

ACTIVITY DESCRIPTION

Theoretical stage: Short introduction to the working of a Cartesian 3D printer, the PLA filaments and the control apps Cura and Repetier Host.
Design stage: Working with the VLearning Mascot model. Pose the possibility to separate into pieces and articulate the head and the limbs.
Printing stage: Configuration of the printing parameters, and actual printing. Outcome analysis.

RESOURCES

- 3D printer
- App Cura
- App Repetier Host
- Bibliography and "web-graphy"

STUDENTS' EVALUATION

The evaluation will be positive if we manage to impress the mascot, or alternatives to them, in case we encounter any difficulty.

BIBLIOGRAPHY

- https://ultimaker.com/es/software/ultimaker-cura
- https://www.repetier.com/
- https://all3dp.com/es/1/filamento-3d-filamento-impresora-3d/

SCALABILITY

TAlthough at first it seemed difficult to apply this activity at lower levels, we have carried out a test that has been successful. Third grade students have made a presentation about the 3D printer to classmates in elementary school.

MORE INFORMATION

We consider the need to introduce this activity in the Vlearning project since 3D printing can be related and can be very useful for almost any topic covered throughout the project.

FLOW IMPLEMENTATION

- Introducing some videos and activities with Tinkercad and Cura. (Motivational activity)
- Giving the instructions.
- Working in the computer room designing and making some changes to the model.
- Configuring the printing in our technology workshop .
- Analysing the results and the problems we have found.

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ACTIVITY SUMMARY FORM

Title	**Building a robot using recycled materials**
Abstract	5th graders made the project robot using recycled materials. The robots were marked with the project logo and the students got to know how to view a marker using the application. The own made robots were used later as AR material.
Topic	Topic 11 - Activity 11.3: Building our mascot
Author/s	Säynätsalo - Päivi Vuolle-Apiala

DIDACTIC OBJECTIVES

- Learn how to find suitable recycled material for use.
- Learn how to make a real robot from a VR-model.
- Get to know what an AR-marker is.
- Improve photoshop skills.
- Improve group-working skills.

Education Level **11-12 years** [X] **Others** [ ]

AR Technology [X] **VR Technology** [ ] **_____ Technology** [ ]

ACTIVITY SCOPE

Students learn that a waste can be reused as a material of artistic work. They learn what an AR-marker is.

ACTIVITY STATEMENT

Make a robot from a VR-model using recycled materia. Label it with an AR-marker and test the application.

ACTIVITY DESCRIPTION

- Tell students what the aim of group work is. (robot +logo).
- Give instructions for finding recycled materials and ask students to do that at home.
- Divide students into smaller groups.
- Let students plan the robot and make a group-plan how they share the tasks and material production.
- Print the logo markers.
- Built the robot and clue the logo into robot.
- Upload the AR app and use it, take screenshots.
- Let students take shots from their robots and save them on Google Drive.

RESOURCES

- Recycled materials such as carton milk boxes , pieces of textile, and so on.
- Kit for crafts.
- Printed markers
- Mobile phones with vLearning application

STUDENTS' EVALUATION

- Self-evaluation
- Teachers' feedback

BIBLIOGRAPHY

https://apkpure.com/vlearning/com.AIJU.vlearning

SCALABILITY

Easily scaled for younger students.

MORE INFORMATION

Photos can be processed by app and used for other purposes.

FLOW IMPLEMENTATION

- Tell students what the aim of the group work is. (robot +logo)
- Give instructions for finding recycled materials and ask students to do that at home.
- Divide students into smaller groups

- Let students plan the robot and make a group-plan how they share the tasks and material production.
- Print the logo markers.
- Build the robot and clue the logo into robot.
- Upload the AR app and use it, take screenshots.
- Let students take shots from their photos.

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ACTIVITY SUMMARY FORM

Title	**Making a cardboard robot, Mascott of the project VleaRning, using recycled materials.**
Abstract	7 graders made a cardboard robot, Mascott of the project VleaRning, using recycled materials. They decided to use the robot as a carrier of a QR code which will tell a story. The title of the story is "School problems of a sportsman". This is a comic book that addresses moral dilemmas. (The comic in the form of ppt is attached in the folder). The students registered into QR Code Generator Pro and connected QR codes with this comic book. They printed out the QR codes and they used their mobile phones to read the book (the slides of the ppt).
Topic	Topic 11 - Activity 11.4: Building our mascot
Author/s	OŠ Vižmarje Brod - Blaž Andrejka

DIDACTIC OBJECTIVES

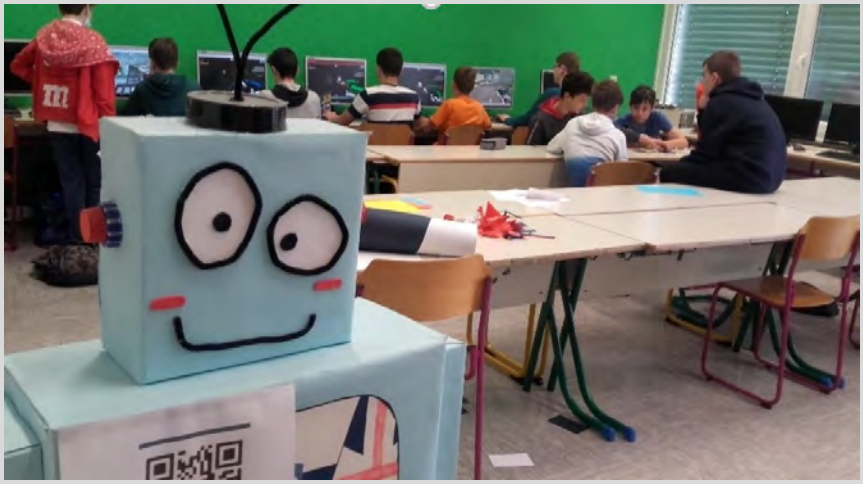
- Learn how to find suitable recycled material for use
- Learn how to make a real robot from a VR-model
- Students get familiar with AR technologies.
- Students learn how to do a comic book (ppt presentation)
- Students learn how to register into QR Code Generator Pro platform and they learn how to use QR codes.
- Students are creative and learn how to create in teams.

Education Level	**11-12 years**	X	**Others**	

AR Technology [X] **VR Technology** [ ] **_____ Technology** [ ]

ACTIVITY SCOPE

The students learned how to make a robot out of recycled materials. The students learned how to do a moral dilemma book. They also get familiar/ learn how to do a ppt presentation. The main goal of this task is that the students get familiar with AR technologies and they learn how to use QR codes. They understand that learning can be easy and innovative in this way.



ACTIVITY STATEMENT

In what way is classical learning different to learning with AR technology? Do you understand topics easier? Is this approach more interesting to you?

ACTIVITY DESCRIPTION

- Students first create a cardboard mascot (robot) of our project out of recycled materials.
- Students make a comic book / moral dilemma book.
- Students learn about AR technology.
- They talk about their previous experience with AR technology.
- Get instructions how to register into QR Code Generator Pro.
- Then they were divided in small groups and each group was in charge of several slides of the ppt.
- Students connect QR codes with ppt presentation.
- They used cardboard robot Mascott.
- Students print out QR codes and stick them onto the cardboard robot.
- They can see the whole moral dilemma book through QR codes.
- Together we discussed what they think about these new technologies.

RESOURCES

You need:

- Recycled materials
- Robot Mascott.
- Computers, tablets, mobile phones.

STUDENTS' EVALUATION

We evaluated the activity through discussion.
Students were excited to use new technologies and their mobile phones. Students were active throughout the whole learning process. Not only they were discovering new things "on their own" but they were also active all the time.
When evaluating the day, none of the activities were left out as not interesting.

BIBLIOGRAPHY

www page: https://www.qr-code-generator.com/

SCALABILITY

This activity can be used with other grades as well. If the grades are lower then we would use a shorter and simpler comic book.

MORE INFORMATION

Once students are familiar with how to use AR technologies and QR codes they can use it with a wide range of topics and classes.
The teacher presents the topic and QR codes, then, the students hopefully will explore themselves further and upgrade their knowledge and , of course, use it practically.

FLOW IMPLEMENTATION

1. Instructions, time schedule
2. Making of the robot.
3. Presentation and discussion about new technologies.
4. Instructions how to make a comic book.
5. Register into QR Code Generator Pro platform and learn how to use QR codes.
6. Print out QR codes and read the comic book.
7. Evaluation.

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ACTIVITY SUMMARY FORM

Title	**Presentation about VleaRning project**
Abstract	8 graders gathered all necessary information about VleaRning project through QR codes. They used computers, their phones and the Mascott of the VleaRning project (the cardboard robot). The students produced ppt with all the info and activities about VleaRning project. They registered into QR Code Generator Pro and connected QR codes with this presentation ppt. They printed out the QR codes and they used their mobile phones to read the slides of the power point presentation. The ppt presentation that they used is attached in the folder.
Topic	Topic 11 - Activity 11.5: Ppt presentation of the VleaRning project
Author/s	OŠ Vižmarje Brod - Blaž Andrejka

DIDACTIC OBJECTIVES

The objectives are:

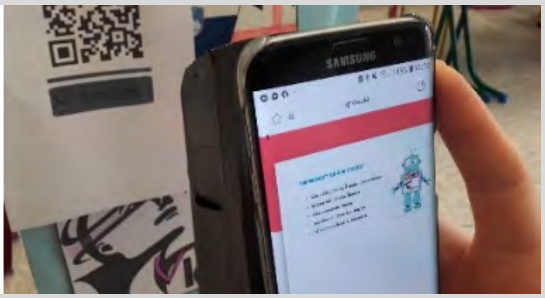
- Students get familiar with AR technologies.
- Students learn how to do a ppt presentation.
- Students learn how to register into QR Code Generator Pro platform and they learn how to use QR codes.
- Students are creative and learn how to create in teams.

Education Level **12-14 years** [X] **Others** [ ]

AR Technology [X] **VR Technology** [ ] **_____ Technology** [ ]

ACTIVITY SCOPE

The main goal of this task is that the students get familiar with AR technologies and they learn how to use QR codes. They understand that learning can be easy and innovative in this way.
They also get familiar/ learn how to do a ppt presentation.



ACTIVITY STATEMENT

In what way is classical learning different to learning with AR technology? Do you understand topics easier? Is this approach more interesting to you?

ACTIVITY DESCRIPTION

- Students first do a ppt presentation about VleaRning project.
- Students learn about AR technology.
- They talk about their previous experience with AR technology.
- Get instructions how to register into QR Code Generator Pro.
- Then they were divided in small groups and each group was in charge of several slides of the ppt.
- Students connect QR codes with ppt presentation.
- They used cardboard robot Mascott.
- Students print out QR codes and stick them onto the cardboard robot.
- They can see the whole ppt presentation through QR codes.
- Together we discussed what they think about these new technologies.

RESOURCES

You need:

- Folder about VleaRning project information.
- Robot Mascott.
- Computers, tablets, mobile phones.

STUDENTS' EVALUATION

Students were excited to use new technologies and their mobile phones. Students were active throughout the whole learning process. Not only they were discovering new things "on their own" but they were also active all the time.
When evaluating the day, none of the activities were left out as not interesting. We evaluated the activity through discussion.

BIBLIOGRAPHY

- Project coordinator's folder with info about the VleaRning project.
- www page: https://www.qr-code-generator.com/

SCALABILITY

This activity can be used with other grades as well. If the grades are lower then we would use a shorter and simpler ppt presentation.

MORE INFORMATION

We will use our robot Mascott of the project when presenting our VleaRning project (in September 2021) at an event open for public and local community. The main idea of the event will be to present our international projects of the past 20 years. The robot will be put at the entrance, with QR codes the visitors will be able to get familiar with our VleaRning project.
Once students are familiar with how to use AR technologies and QR codes they can use it with a wide range of topics and classes.

FLOW IMPLEMENTATION

1. Instructions, time schedule
2. Presentation and discussion about new technologies.
3. Instructions how to produce ppt about VleaRning project.
4. Register into QR Code Generator Pro platform and learn how to use QR codes.
5. Print out QR codes and read the ppt.
6. Evaluation.

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ACTIVITY SUMMARY FORM

Title	**The project Mascott – in Cospaces program**
Abstract	In this activity students took a ready made robot – Mascott of the project. They entered the Cospaces programme and put the image of the robot into the program and made it move. The objective was to get familiar with Cospaces program and learn how to work with it. The viewing of the robot with 3D glasses would allow us to see the robot rising/moving in the picture.
Topic	Topic 11 - Activity 11.6: The Mascott.
Author/s	OŠ Vižmarje Brod - Mojca Firbas

DIDACTIC OBJECTIVES

- Learn new technologies, using VR technology.
- Learning to present their project to classmates.
- Students are creative and learn how to work in teams.

Education Level **13-14 years** [X] **Others** [ ]

AR Technology [ ] **VR Technology** [X] **_____ Technology** [ ]

ACTIVITY SCOPE

The main activity scope was to learn to work with new technologies. Another scope was to see how new technologies can be useful in everyday life.

ACTIVITY STATEMENT

How would you approach a seemingly dull topic, something that seems forgotten to primary school students using VR technology?

ACTIVITY DESCRIPTION

The primary relevance in dealing with such topics is the fact that it is first necessary to present the current topic in a consistent and sufficiently comprehensible manner to pupils. As a result, the teacher initially made a short theoretical introduction about virtual reality. First, he asked the students what they already knew about the subject, how familiar they were with virtual reality, what it contained, what the purpose of its operation was, and how we see it in real life. Furthermore, the teacher presented the use of virtual reality in two different spheres of everyday life. In the next step the students were taught how to use platform CoSpaces. They were divided into groups and took the image of the Mascott and uploaded it into Cospaces environment. They made the robot move. They used VR glasses at the end of the activity.
They found it interactive and they all tried viewing numerous times.

RESOURCES

- The ready made robot – the Mascott of the project.
- Functioning computer with internet.
- VR glasses/cardboards to view the project in CoSpaces.

STUDENTS' EVALUATION

The students learned a lot. They are very familiar with the modern technology and digital world, so they really enjoyed working on the project. The feedbacks were given, mostly positive. There is always room for improvement and with practice and more time, the project could be perfected. The project was a success and the students are eager to work on similar projects in the future.

BIBLIOGRAPHY

https://cospaces.io/edu/

SCALABILITY

his activity is intended for 8th grade elementary school students, but it can be used with different ages.

MORE INFORMATION

This activity could be done with younger students as well. New technologies enable limitless possibilities of learning and creating. New technologies bring something new, which is very interesting for the students.

MORE INFORMATION

We will use our robot Mascott of the project when presenting our VleaRning project (in September 2021) at an event open for public and local community. The main idea of the event will be to present our international projects of the past 20 years. The robot will be put at the entrance, with QR codes the visitors will be able to get familiar with our VleaRning project.
Once students are familiar with how to use AR technologies and QR codes they can use it with a wide range of topics and classes.

FLOW IMPLEMENTATION

1. Instructions, time schedule
2. Presentation and discussion about new technologies.
3. Instructions how to produce ppt about VleaRning project.
4. Register into QR Code Generator Pro platform and learn how to use QR codes.
5. Print out QR codes and read the ppt.
6. Evaluation.

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