EUROPEANA LEARNING SCENARIO

(Teachers)

Title

STEAMazing Women

Author(s)

Dalia Kager

Abstract

Through this learning scenario, students will learn about the importance and position of women in science (and in general society) in the past and today, think critically about the position of women in society and develop digital, social and communication skills, with aim to encourage young girls to pursue a career in science and promote gender equality. The results of the research will be presented by the students in the form of a mobile application based on augmented reality (AR), which they will create in the Metaverse tool.

Keywords

women, science, history, gender equality, STEM

Table of summary

Table of summary	
Subject	Civic education, Personal and social development, History, Technology
Topic	The position and influence of women in society and science
Age of students	13 - 16
Preparation time	30 – 40 min
Teaching time	250 min
Online teaching material	Mentimeter https://www.mentimeter.com/ Padlet https://padlet.com/ Historiana - Visual representations of women at work Interactive spinner wheel https://spinnerwheel.com/ (pair / group activity research II) Metaverse app (web-based app for making augmented reality based digital content) https://studio.gometa.io/ Metaverse mobile app (app for scanning and viewing the created Metaverse AR experience) – Android and iOS Metaverse Studio Overview video https://www.youtube.com/watch?v=6oJDfZB1F0A

Co-financed by the Connecting Europe Facility of the European Union

	Metaverse Teacher Professional Development Session https://www.youtube.com/watch?v=MLeZo7X5rnA Augmented reality - Wikipedia What is Augmented Reality (AR) In 60 Seconds - video
Offline teaching material	*List here all the offline tools, such as: paper, glue, etc.* *- no offline teaching materials necessary*
Europeana resources used	Queen of Arts: Christina of Sweden's Roman reign, blog 'Women, beware of bicycle face!' - Cycling, feminist and independent travel, blog The story of Monopoly - How Charles stole Lizzie's idea and made his fortune, blog Groundbreaking women in archaeology - Discover the stories of pioneering female archaeologists from across Europe, blog Pioneers - Maria Skłodowska-Curie, exhibiton Pioneers - Elisa Leonida Zamfirescu, exhibition Women writing birds - Graceanna Lewis - A self-taught scientist, exhibition Lilly Steinschneider, Hungary's first female pilot, Conquering the skies in 1912, blog

Licenses

Attribution CC BY. This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

Integration into the curriculum

Technology

- searches for information using specialized search sites such as specialized search engines, online content databases, online encyclopedias, online database of libraries or magazines, etc.
- recognizes services for publishing its digital content and analyzes the possibilities and conditions of their use.
- describes the process of publishing digital content through a network service and compares the possibilities of different services for publishing digital content online.
- creates, edits, and shares digital content with others and accesses content that others shared.
- develops, publishes, and shares its digital content that can be linked into a complex whole and includes a range of different digital media components.
- participates in the creation of common digital content or the realization of the project, where he critically reviews his work and the work of his associates.
- respects different opinions, accepts compromises and is willing to make concessions and independently performs his part of the task in the team using the possibilities of editing the content of the program for cooperation and communication.

Civic education

- promotes the right to education and the right to work
- thinks on the development of human rights
- promotes gender equality

Personal and social development

- developed an image of herself/himself.
- develops personal potentials.
- manages his educational and professional path.
- describes and respects the needs and feelings of others.
- collaboratively learns and works in a team.
- develops communication competencies and respectful relationships with others
- sees the consequences of one's own and other people's attitudes / actions / choices.
- describes how social norms and rules regulate behavior and interpersonal relationships.

History

- distinguishes the fundamental features of conservatism, liberalism, socialism, and national movements.
- compares the impact of different democratic and totalitarian systems on the lives of individuals and social groups in the period between the two world wars.
- compares different social upheavals and social movements during the second half of the 20th century.
- explores the development of technological advances that have changed everyday life in the 20th and 21st centuries.
- examines the use and misuse of science for political and war purposes.
- describes the attitude of totalitarian regimes towards art, religion, culture, and sports.

Aim of the lesson

Encourage students to reflect on the position of women in society in the past and today and compare the situation through critical thinking. To make students aware of the important role of women in many areas of human work and activity. To oblige students to work towards gender equality and to promote fundamental human values and rights, as well as encourage girls to engage in the STEM area.

Outcome of the lesson

Students will collaborate in researching available and proposed sources and will present the results of the research by creating a mobile application based on augmented reality (AR). These mobile applications will be publicly available so that the public (other school students, parents, teachers, and even the local community) has access to these educational contents.

Trends

Students as Creators: students become more active producers and publishers of educational resources.
Collaborative Learning: a strong focus on group work.

Project-Based Learning: students get fact-based tasks, problems to solve and they work in groups. This kind of learning usually transcends traditional subjects.
Peer Learning: students learn from peers and give each other feedback.
Visual Search & Learning: images and multimedia are more powerful than verbal stimuli.
Augmented Reality: by pointing devices like smartphones and tablets to objects of reality you receive extra information.

Key competences

1. Digital competence: take a critical approach to the validity, reliability and impact of information and data; using digital tools to create and share digital content.

2. Citizenship competence: knowledge of basic concepts and phenomena relating to individuals, groups, work organisations, society, economy, and culture; understanding of the European common values; knowledge of contemporary events, as well as a critical understanding of the main developments in national, European and world history; understand the role and functions of media in democratic societies; support for social and cultural diversity, gender equality and social cohesion; understand the role and functions of media in democratic societies.

3. Cultural awareness and expression competence: ethical and responsible approach to intellectual and cultural ownership; ability to express and interpret figurative and abstract ideas, experiences, and emotions with empathy; ability to engage in creative processes.

4. Personal, social and learning to learn competence: ability to learn and work both collaboratively and autonomously and to organise and persevere with one's learning, evaluate and share it, seek support when appropriate and effectively manage one's career and social interactions; respecting diversity of others and their needs and being prepared both to overcome prejudices and to compromise; desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and develop in a variety of life contexts.

Activities

Name of activity	Procedure	Time
Introduction & discussion	Students answer two questions on Mentimeter: *1. Name a scientist you've heard of.* *2. What do you think contributed more to the development of science and discoveries through history? Men or women?* The poll is teacher paced and is followed by a presentation of the results and discussion at the end. The discussion questions: *How many of you mentioned the names of women scientists compared to male scientists? What do you think is the reason for that?* *Comment with students on the results of question 2.*	15 min
Pair and explore - part 1	Students in pairs explore a collection from Historiana - Visual representations of women at work. Their task is to review the available materials and sources, to see if there are sources that show that women	30 min

Name of activity	Procedure	Time
	were engaged in "male" occupations, to select one source and place it on a common Padlet board. In the description of the publication on Padlet, write the conclusion that the couple made about the position of women in society.	
Research analysis	Students review each other's research results on the Padlet board and comment and present an opinion below some of their colleagues' posts.	15 min
Pair/group and explore - part 2	Students pair up or group (depending on the total number of students). Each pair/group explore one of the Europeana resources (teacher can decide about the resources distribution method, but it's recommendable to use interactive spinner wheel): Queen of Arts: Christina of Sweden's Roman reign, blog 'Women, beware of bicycle face!' - Cycling, feminist and independent travel, blog The story of Monopoly - How Charles stole Lizzie's idea and made his fortune, blog Groundbreaking women in archaeology - Discover the stories of pioneering female archaeologists from across Europe, blog Pioneers - Maria Skłodowska-Curie, exhibiton Pioneers - Elisa Leonida Zamfirescu, exhibition Women writing birds - Graceanna Lewis - A self-taught scientist, exhibition Lilly Steinschneider, Hungary's first female pilot, Conquering the skies in 1912, blog During the research, students should keep notes of the most important facts they find in the resources (where and when these women lived, what they did, how the society reacted etc.). They can take notes in a digital tool (for e. g. text editor such as MS Word, Writing Pad, etc.), so that in the next activity they can use them to create digital content that will present the research results to other pairs / groups.	30 min
Research results discussion	After the research, students briefly present the results orally to others. The teacher encourages discussion by allowing students to freely express their thoughts and conclusions based on the results of the research. Ask questions if necessary, to encourage discussion among students.	30 min
Making of research results presentation – Metaverse, augmented reality (AR) mobile app	Students should first be introduced to the tool for creating and presenting the content of their research - Metaverse. This tool is augmented reality (AR) based and is free to use. Teachers can learn how to create content in it and how to use it in education through a short video at this link, and students can use the video tutorial on this link. The other option is that teacher guides students through the steps of AR experience creation (if she/he feels confident enough to master this tool). It is important to note that students must first register an account in the Metaverse web application in which digital content is created, the so-called *experience*, and then need to install the free application on your smartphone so that the created content can be used and tested in AR form (Android and iOS).	90 min

Name of activity	Procedure	Time
	NOTE: if students are not familiar with the meaning of augmented reality, use the resources and introduce this topic: Augmented reality – Wikipedia resource What is Augmented Reality (AR) In 60 Seconds - video Students in pairs / group create AR experiences to represent their research results.	
Sharing QR codes of AR research results presentations	Students share QR codes of their AR research results presentations on a common Padlet board shared by the teacher.	5 min
Self-evaluation and peer evaluation	Students self-reflect about the LS activities through Self-reflection questions (online or offline form). Peer evaluation is performed by scanning the QR codes of published apps with their mobile phones and evaluate research results experiences made by other pairs / groups, by (constructive) comment / like for their work on the Padlet.	25 min
LS evaluation	Students evaluate this learning scenario. Teacher can select the evaluation method or form – Mentimeter, Padlet, or any other data collecting digital tool. Also, students can orally express their opinion or write it on a piece of paper.	10 min

Assessment

SELF-REFLECTION QUESTONS

1. I am satisfied with my own work and engagement in tasks for independent work.

(1 - completely dissatisfied, 5 - completely satisfied)

1 2 3 4 5

2. I am satisfied with my own work and engagement in practical tasks in pairs / groups.

(1 - completely dissatisfied, 5 - completely satisfied)

1 2 3 4 5

LS evaluation questions

1. I liked the tasks and activities of this teaching scenario.

(1 - completely, 5 - not at all)

1 2 3 4 5

2. I liked collaborating with other students in creating assignments.

(1 - completely, 5 - not at all)

1 2 3 4 5

3. I think the topic of the learning scenario is important.

(1 - completely, 5 - not at all)

1 2 3 4 5

4. Write suggestions for improving the learning scenario.

********** **AFTER IMPLEMENTATION** **********

Student feedback

Add here the method with which your students will be able to give you feedback and discuss the lesson.

Students evaluate this learning scenario via evaluation method or form – Mentimeter, Padlet, or any other data collecting digital tool. If teacher doesn't have access to online tools and equipment (computer / smartphone and internet connection), students can orally express their opinion or write it on a piece of paper.

Teacher's remarks

*Add here your comments and evaluation **AFTER** the implementation of this lesson. You can always use a rubric for self-assessment.*

About the Europeana DSI-4 project

Europeana is Europe's digital platform for cultural heritage, providing free online access to over 53 million digitised items drawn from Europe's museums, archives, libraries and galleries. The Europeana DSI-4 project continues the work of the previous three Europeana Digital Service Infrastructures (DSIs). It is the fourth iteration with a proven record of accomplishment in creating access, interoperability, visibility and use of European cultural heritage in the five target markets outlined: European Citizens, Education, Research, Creative Industries and Cultural Heritage Institutions.

European Schoolnet (EUN) is the network of 32 European Ministries of Education, based in Brussels. As a not-for-profit organisation, EUN aims to bring innovation in teaching and learning to its key stakeholders: Ministries of Education, schools, teachers, researchers, and industry partners. European Schoolnet's task in the Europeana DSI-4 project is to continue and expand the Europeana Education Community.

Annex