



METHODOLOGY FOUR

→ USING AR+VR

This methodology allows for the comprehensive use of all components of the Gulag XR project. Students can develop historical knowledge through educational videos, comparing the perspective of great history with personal stories of witnesses from different countries. A very important component is research work using a research diary and augmented reality (AR) on tablets. The experience of simulating the gulag environment using virtual reality (VR) is unique. Although it may seem to be a technologically demanding project, with good organisation everything can be done in 4 class periods. This methodology, tested in Czech schools, will show you how to do it.

FAQ on using VR:

Q: What is the main benefit of using VR in this lesson?

A: The main benefit of using VR is that students can experience the visual and audio environment of the gulag firsthand. Thanks to the strong sense of presence in the virtual simulation, they are able to better feel the atmosphere, the confinement and the harshness of the environment. This leads to a much more emotional experience than if they were just analysing facts from texts or videos. Thus, a VR experience can bring the subject of the Gulag much closer.

Q: How to connect the VR experience with other parts of the learning experience (videos, AR, discussions)?

A: To ensure that VR does not remain a superficial attraction, it needs to be well integrated with other parts of the learning experience. It is best to let students first acquire the necessary historical knowledge through the study of sources and stories. Only then should VR be included where they can compare the experience with what they have learned. But discussion and reflection is always important. This is where your role as a teacher is irreplaceable, and no unrealistic reality or artificial intelligence can replace it.

Q: How much VR gear do I need to have to make it work in time?

A: The ideal scenario is to have 1 device for approximately 5 pupils. But we'll also show you ways to do it with just one headset per class.

Q: What space is needed for VR? What if we don't have it at school?

A: Our direct experience in schools clearly shows that the VR experience can be seamlessly delivered in regular school buildings. You need approximately 2.5x2.5 metres of space per device. And if you don't have it in a classroom or gym, you can use the space in the hallway.

Q: I'm afraid VR can be mentally challenging for some students.

A: It is true that the experience in the virtual gulag simulation can be more challenging for students than other parts of the class. But working with videos or learning facts about the lives of prisoners can be similarly emotional.

It is important to create a safe environment in the classroom, actively listen to the students and leave space for sharing impressions. The VR simulation does not depict explicit violence; instead, it allows students to experience the atmosphere of the environment and stimulate thinking.

Even so, the topic needs to be sensitively handled and ethical issues need to be reflected. We will show you how to do it.

Particular attention should be paid to students who have specific problems (e.g. long-term treatment for mental health problems, negative experiences of being in enclosed spaces, claustrophobia, etc.). Speak individually in advance with students you know have psychological difficulties, traumas or phobias. Explain the topic of virtual reality sensitively and make sure they understand what they may experience.

Ask them whether they might find the experience stressful or a trigger for anxiety or other difficulties. If so, agree that they would rather skip the virtual reality experience and remain observers. There is an option to view VR as a video only.

Reassure them that it's okay to refuse the experience and that you won't judge them worse for it. Emphasise that their mental health and feeling safe at school are more important than completing the assignment.

If they still decide to try virtual reality, arrange to supervise them during the experience and remind them to take off the goggles if necessary.

After the activity, discuss their feelings with them and reassure them that it is just a simulation of the past. Offer them the opportunity to discuss the experience individually after the lesson.

Monitor their behaviour in the following days and ask if the experience had any negative effects on them. If necessary, recommend that they seek professional help.

Q: I'm scared of the technology. What if something doesn't work?

A: It's understandable that the combination of multiple technologies (VR, AR, tablets) can seem complex at first glance. But don't panic. The lesson is designed to be mastered by any teacher. However:

- Study this methodology and the technology guides well in advance.
- Test everything at home beforehand.
- Prepare a plan B in case of technical difficulties and activate the basic tool of the teacher's craft: the art of improvisation :-)
- Feel free to communicate your concerns about things not going smoothly to your students. Feel free to ask them for their cooperation. This will show them that even a teacher sometimes faces uncertainty and technical problems. Don't be afraid to ask more savvy students for advice on technology. They often have valuable knowledge and are happy to help. Even if something goes wrong, take it as an opportunity to discuss what it's like when things don't go to plan. Students will appreciate this more than a perfectly smooth process. Enjoy the lesson despite the minor complications. Your enthusiasm for the subject is the greatest motivation for the students!





Q: We don't have stable internet.

A: It doesn't matter at all. All apps are designed to work completely independent of your internet connection.

Q: Can I do it in a class by myself?

A: You can do it. However, if you have the opportunity to work in tandem, it's better. Students will work in groups at their own pace, and there will be situations where, for example, Group 1 will need

help solving problems in augmented reality and Group 2 will need help in virtual reality. At that point, the help of a colleague will be very useful. If you decide to do tandem learning, it is essential that your colleague has also been trained and knows how to use the technology and what to do. Otherwise, in addition to the student groups, you will also have to take care of your colleague. And you don't want that :-)

WHEN IS THIS LESSON USEFUL?



THIS METHOD IS USEFUL IF...

- I want students to experience the work of a real researcher - formulating hypotheses, collecting and analyzing data, and critically evaluating it.
- At school we have tablets/students are allowed to use their mobiles.
- I want the students to work together, communicate and share roles.
- I don't mind the noise in class.
- I welcome it when students ask interesting questions, including those to which I don't currently know the answer.
- I think I can handle the eventual failure of the device.
- I don't mind taking a back seat as a teacher.
- The school allows me to use spaces other than just our classroom.
- I can delegate part of the VR activity to the students.



THIS METHOD IS NOT USEFUL IF...

- I want to convey as many facts as possible in as little time as possible.
- I have no tablets and students are not allowed to use mobile phones.
- My students are not yet able to organise their work independently and need the guidance of a teacher.
- The noise in the classroom bothers me.
- I don't feel comfortable when students ask me questions I don't know the answer to.
- I'm afraid something will break or will not work.
- I'm comfortable with me running the class completely.
- The school won't let me use the hallway or the gym, for example.
- I have to supervise the students all the time, I must not leave them alone to work with the technique.

Objectives:



Students will learn the basic facts about the period of Soviet repression. They will compare the individual story of a witness with the wider historical context. They will identify different perspectives of small and big history. They will collaboratively formulate a research question on a given topic, establish a hypothesis and attempt to verify it using sources in a research diary. They will present the results of their investigation to their classmates, including their attitudes towards totalitarian regimes and human rights abuses. They will experience the emotion of being in a Gulag environment through virtual reality, reflect on it and deepen their understanding of the values of freedom and human dignity.

Aids:



Computer, projector, speakers, tablets, printed research journals – at least 1 per group, papers and stationery, VR headset.

Time:



4 or more lessons (project day)

Method of work:



The students will watch a video, discuss it, work with a research diary in groups and move around in a virtual simulation of the Gulag camp.



PHASE 1 / 10 min.

Evocation



Description

See separate methodology “Evocation” – select 1 or more activities.

The evocation phase is particularly important in teaching about Soviet repression. Pupils often do not have sufficient knowledge of the topic (unlike, for example, popular topics from the Middle Ages or World War II). Therefore, they may not consider it important and may not be willing to be interested in it at all. Evocation allows them to activate their existing knowledge and ideas and link them to new learning. This will stimulate their curiosity and motivation to learn more about the subject. At the same time, you will find out what ideas or myths students enter the lesson with. You can then build on these in the awareness phase and set them straight.

During the evocation phase, make sure to mention that you will be working with digital technologies in class and that this implies that we will have to follow rules for handling them. It is best to let the students define what those rules should be, including the consequences of any non-compliance. Pupils can certainly name rules similar to these in their own words:

- We handle the equipment carefully and gently.
- We do not use it for activities that are not part of the learning process (e.g. surfing the net, playing games).
- We respect the teacher’s instructions when handing over the equipment.
- We report any technical problems.
- We help our classmates if they are having trouble with controlling the equipment.
- When the activities are over, we return the equipment in good order to the teacher.

You can mention the fact that we will be working with VR, but in our experience it is better to leave it as a surprise (e.g. if you don’t work with VR regularly at school). Alternatively, you can say that you will be using VR in class, but don’t say anything more about it. Why? Virtual reality is still not a common part of the home environment (like mobile phones are). Therefore, it will be a new and unfamiliar experience for most students. If you give away details beforehand, it may not only arouse curiosity and fear of the unknown, but also lead to an unwanted focus on the technical aspects of VR. Pupils may then ask questions about a particular type of headset, compare it with other types, etc. This can unnecessarily distract from the main topic of the lesson.

At the same time, situations where a child from a wealthier family knows VR and feels the need to show it need to be addressed. This could deepen social differences in the classroom. We therefore recommend keeping the element of surprise and not revealing details.



Comments and tips

Select one of the methods listed separately in the Evocation Methodology according to your time availability.

Tip: In the evocation phase, don’t focus on how to work with VR. In our experience, learners won’t pay attention to it, they won’t remember it, and you’re wasting your time because you’ll then have to repeat it again.



Comments and tips

Here are perhaps lesser-known words and possible definitions:

repression – harsh suppression of resistance or dissent to the regime

empire – a large state controlling many countries

chaos – utter confusion, disorder

terror – violence inflicted on a population to intimidate

agitation – spreading ideas and thoughts to influence people

archive – collection of historical documents

persecution – persecution of people because of their views or identity

Soviet – relating to the Soviet Union

sabotage – deliberately damaging or obstructing an activity

espionage – secretly obtaining information for a foreign power

standard – an established rule, measure or requirement

amnesty – pardon, remission of offences

camp – Gulag camp

PHASE 2 / 5–10 min.

We specify the meaning of the words



Description

Before you play an instructional video or work with the memories of a witness, it is a good idea to review with your students any concepts that may be unclear. Here we have selected some of the terms that appear in the video that are unfamiliar, especially to younger students. Below are also some ways in which the meanings of the terms can be learned.

Option 1 SIMPLE EXPLANATION

State a concept that you think might be unfamiliar to the students and discuss its meaning with them. The idea is not to find the exact definition, but to make the meaning of the words clear to the students in a way that is age-appropriate. Feel free to give examples from other backgrounds. “The concept of A is as if...”



Option 2 BINGO

Preparation:

- Prepare 12 cards with word definitions.
- Give each student a random selection of 9 definitions in a 3x3 square grid.

The course of the game:

- Read the words from the list to the students one by one.
- The students' task is to mark the definition of the word on their card.
- The first person to mark 3 words in a row (vertically, horizontally or diagonally) and shout "Bingo!" wins.

Option 3 HOT CHAIR

The student sits with their back to the board while the teacher writes the word on the board. The other students must then explain the word to the student who sits with his back to the board without saying it him directly. The pupil in the hot seat then has to guess what the word is. This game can be played quickly with several different words and students.

Option 4 SEARCHING FOR A DEFINITION

For this activity, you need to prepare pieces of paper in advance with the expressions and, separately, with the corresponding definitions. Hand out the pieces of paper randomly and ask the students to find their "partners" with the corresponding expression or definition. This is a quick and interactive activity that forces students to communicate and discuss the meanings of words, put definitions into context, and think critically.

Option 5 LIVE IMAGES

Students stand in a circle, eyes closed, the teacher reads the term and pupils have to try to express its meaning with their bodies. Then they open their eyes and comment. Interestingly, students often spontaneously create a corresponding living sculpture without being aware that they know the term.



Comments and tips

Here are the questions that can be answered after watching the video:

1. When and for what reason were the first labour camps established in the Soviet Union?
2. How many people were imprisoned in the camps during the existence of the Gulags and how many died in them?
3. What were the typical working conditions and daily routine of prisoners in the gulags?
4. Who all might have been victims of imprisonment in a labour camp and for what reasons?
5. What was the fate of the people after their release from the gulags and when were the camps officially closed?
6. Why should we deal with the subject of the Gulag in our country?

PHASE 3 / 10–15 min.

Video WHAT WAS GULAG



Description

This educational video clearly summarises key facts about Soviet repression. It provides a comprehensive macro view of the historical development of repression, focusing on the Stalin era and the European context of the Gulags.

The video can be used for a brief introduction to the subject at the beginning of the lesson.

Simply play the video and invite students to focus on answering their existing questions about the topic or identifying key information.

Here is the link to the video: www.gulagxr.eu/video-a-pribehy

After watching the video, be sure to ask what was new for the students. For example, it was new to many students in the pilot lessons that the Gulag was not just one camp, but a whole system of camps. Others did not realise the scale of the system and the number of victims. Most pupils were then unaware of the European dimension of repression.

This is also related to the question of why we should deal with the topic of the Gulag in our country.

Before the next stage, you can also ask what students need to know next to deepen their understanding of Soviet repression and tailor the teaching accordingly.

In our experience, the students mostly wanted to know the story of a real-life witness from our country. We offer this as a possible next step.

Tip: Instead of playing the full film at once, you can also play the video in parts and let students guess what happens next. They can guess other facts or events before the video finishes the story. This can activate their existing knowledge (e.g. about World War II, the impact of Stalin's death, etc.).

Tip: If you are short on time and have already covered the topic of Soviet repression in a previous lesson, you can skip this section. Alternatively, replace it by drawing a timeline and recording the significant events in the history of Soviet repression together with the students.

PHASE 4 / 10 min.

The story of a memorialist



Description

Select a witness's story from the story archive.

The memories of the witness bring a dimension of so-called small history into the teaching and thus appropriately complement the information from the previous video. They allow us to see Soviet repression through the prism of the suffering of a particular person. All the videos are quite emotionally demanding, so remind pupils of the rules for the situations when watching the story is too mentally demanding for someone.

Here are a few variations of how you can work with the video of a memorialist.

1. Have students record the main points of the memoirist's story as they listen. Then, in pairs, compare their notes and create a timeline of his or her life.
2. Divide the video into 3 parts. After each part, stop and have students discuss in groups what they have just learned and how the story affects them.
3. Instruct students to note down 3 emotionally powerful moments from the story as they listen. Then have them analyse these moments in pairs – why they are emotional, what they say about the conditions in the Gulag, etc.
4. Pass out the papers and have each student draw a scene from the story that struck them. Then display and discuss the creations.
5. Finally, ask the students questions such as: What did you find most interesting about the story? What did you find most surprising? What emotions did it evoke in you? What event in his life led to the repression? Did the memoirist have the opportunity to avoid repression?



Comments and tips

Tip: Witnesses can sometimes be difficult to understand (weak voice, accent). It is therefore always a good idea to have subtitles running at the same time.

Tip: If you don't have tablets at school but can use phones, you can ask students to use their own phones to follow the stories of your chosen witnesses. All the stories are easily accessible via our project page on [Vimeo](#).

Tip: Check that students have understood the story. Just ask a few verification questions during or at the end of the video. Who was the victim of repression? Why did she go to the gulag? etc.

Tip: If you have known your students for a long time, you can try an experiment. Ask the pupils to recall an important event in the life of the school that they are all likely to remember (e.g. the first day of school, an important field trip, etc.) and then ask them questions such as "What was the headmaster wearing that day?", "What colour was the bus?", "Who was sitting in the front row?" etc. Again, the pupils can write their answers on slips of paper and show or say them directly. Most likely they will vary slightly. This demonstration can be used to show that a person does not have to lie, but his or her recollection may differ in detail from how someone else remembers the event. This is due to the way human memory works. Therefore, it is a good idea to verify or supplement the witness's account with information from other sources. In short, a witness can serve as one source of knowledge about the past, but they should not be the only one.

Tip: In addition to following the stories of a single witness, you can also choose to divide the class into groups and assign a different witness to each group. See the methodology **BASIC FACTS AND COMPARISON OF STORIES OF SEVERAL WITNESSES**. However, allow for the need to increase the time.

PHASE 5 / 45–60 min.



Research diary

Description:

What to do before class:

- Print out the research diaries. We recommend 1 journal per 2–3 students.
- Take a look at the research diary, check out the individual pages marked with the AR icon. Do you understand them? Is everything clear to you? If not, watch the instruction video.
- Install the Gulag XR app available from the Google Play Store on all tablets.
- If as a school you allow pupils to work on their own mobiles, ensure pupil access to the school wifi in advance and do not force pupils to use their own tariff for downloading data.
- Here are the basic rules for using the Bring Your Own Device (BYOD) method:
 1. Establish clear rules for the use of the equipment during lessons. For example, when they can use it and for what. Make sure the rules are followed.
 2. Ensure equal access to education. Not all students have their own modern devices. Prepare an alternative for these students. Alternatively, depending on the social situation in your school, do not use this method!
 3. Think about security. Teach students about safe device use and data sharing. Be mindful of protecting students' privacy. Pupils are expected to share devices. Can student A access student B's sensitive messages?
- Prepare a backup plan in case of technical problems with the operation of the equipment.

TEACHING PROCEDURE

1. Explain to the students the aim and the flow of the activity. For example: you will try out the work of a real researcher. This activity is based on the real events and experiences of the Gulag XR researchers when they actually went to Russia to explore the remnants of the former camps. You can follow the researcher's story on the left side of the diary, where the story of a real person – Štěpán and his friends - is described in comic shorthand. On the right side are entries from his diary. This page also acts as an augmented reality trigger. Simply open the Gulag XR app on your tablet or mobile phone, point your device's camera at the page, and it will trigger augmented reality to help you answer the research questions on that page. You can write notes in your journal or on paper. You will be divided into groups and each group works independently at their own pace. Each group will choose one spokesperson to present the research findings to the other groups at the end of the class. Each group is assigned page numbers of the journal to research. Some pages are common to all groups, some are only for one group.
2. Before dividing the students into groups and handing out the devices, show everyone clearly how the app works and the page numbers for the group to follow.
3. Divide the students into six groups. Ideally the group should be no smaller than 2 and no larger than 5 students. If there are too few students, it is possible, for example, to divide them into only 5 groups and omit one topic from the research diary.
4. Distribute the equipment to the students and make sure all groups understand the assignment and the equipment works.
5. Group work – students work according to the assignment in the research journal, develop hypotheses and find answers. The teacher supervises, helping to solve the problems, but does not answer the research questions instead of the pupils - that is their job and the point of the whole activity.
6. Keep track of the time and keep students informed of how much time they have left. They should have at least 5 minutes to discuss together who will present the research findings and what the group wants to communicate to others.



Comments and tips

Tip: The Gulag XR app takes less than 200 Mb to install. You will need to have enough space on your tablet or mobile and download the app only if you are connected to wifi and have no limit on the amount of data you can transfer. Why is the app so bulky? Because it contains all the videos, sounds, photos, etc., i.e. you don't have to use the internet in class. This will be especially appreciated when the students are busy working and will not be limited by the fact that the network has just crashed and the school connection is not working.

Tip: We currently only support Android devices: www.gulagxr.eu/komiks-a-rozsirena-realita. We are working to make the app available on the Apple store, but unfortunately we cannot currently use the iPad.

Tip: If you intend to use the tablets in a room other than a regular classroom, make sure the tablets work well in the lighting in that location (in heavy gloom or darkness, the tablet may not trigger augmented reality properly – e.g. if you were working in a basement, outdoors in the evening, etc.).



7. Presentation – each group will briefly summarise the process and results of their investigation. If your class is not used to this way of working, it is a good idea to establish the rules of what you want to happen during the presentation beforehand. A few basic rules will suffice, for example:

- The speaker introduces themselves and says which group they will be presenting for.
- The speaker briefly summarises the topic, goal and process of their group's work.
- The presentation should last no more than 5 minutes to allow for all groups to take turns.
- Others listen attentively, let the speaker finish and do not comment on the presentation prematurely.
- After the presentation there is space for 1–2 additional questions to clarify or deepen the topic. Questions must be factual.
- The presentation is followed by a short summary and thanks to the speaker.
- Everyone respects the different opinions and ways of working of the other groups. We do not evaluate who was “the best”.
- The teacher moderates the presentations and ensures that the rules are followed. They appreciate the quality work of the groups.

However, it is always better if the class makes the rules than if you as a teacher set them authoritatively.

Tip: In class you will work with technology. Technology can break down and tends not to work when you need it most. But don't despair! Even students understand that breakdowns are a normal part of working with technology.

It's best to prepare. Have spare activities on hand in case of a breakdown. These can be texts on our website, videos with witness memories or discussion topics. But don't just rely on digital content. Prepare “analogue” options too - text work, group tasks, debates.

It is essential to remain calm. Do not treat technical problems as a failure, but as an opportunity to show students how to deal with an unexpected situation. After all, flexibility and improvisation are important teaching skills.

Also, keep in mind that the active involvement of students can help overcome technical difficulties. Let students suggest solutions to work around the failure or share working equipment with each other. This will reinforce their responsibility.

We keep our fingers crossed for you to technology lesson. If they fail, take it easy. The important thing is that students take away new knowledge and experience. This will happen even if everything doesn't work 100% perfectly.

Tip: You can leave it up to the pupils to split into groups, though random groups are cited as an example of good practice in educational literature. This allows pupils who might not normally work together to work together. For example, you could let the students count themselves on a scale from one to six and form teams by the same numbers. However, always explain to pupils what this is good for.

Tip: The traditional school desk layout (sitting in pairs with aisles between desks) is not very suitable. It is better to create 6 nests where pupils sit opposite each other and can interact undisturbed. Ideally, if classroom space allows, place the nests further apart so that the groups do not interrupt each other - they will be listening to videos.

Tip: Make sure the students understand the term ‘hypothesis’. They get to work with the term in the research diary.

PHASE 5 / 45–60 min.



VR

Description

This part of the lesson can be the most technically and organisationally challenging at first. However, the apparent difficulty can only be related to our own expectations and perfectionism. It is therefore important to approach this activity with an open mind and patience. Everything may not go completely smoothly. Even minor technical complications can be opportunities for learning and collaboration in the classroom. Don't be afraid to improvise and involve students in problem solving. This will show them that even the teacher can adapt to unexpected situations, and you are actually teaching them how to solve problems.

What to do before class:

If you don't already have experience with the Meta Oculus Quest II, you can watch an [instructional video first](#).

You will then need to install the Gulag XR app on each VR device (headset).

Fully charge all headsets and have your chargers ready within the hour as well.

If you can use the internet in class, connect all headsets to the classroom wifi network. [Instructions are here.](#)

Try the Gulag XR app for yourself. If you teach in tandem, your colleague should do the same.

Arrange spaces at school that you can use beyond the classroom (e.g. hallway, gym).

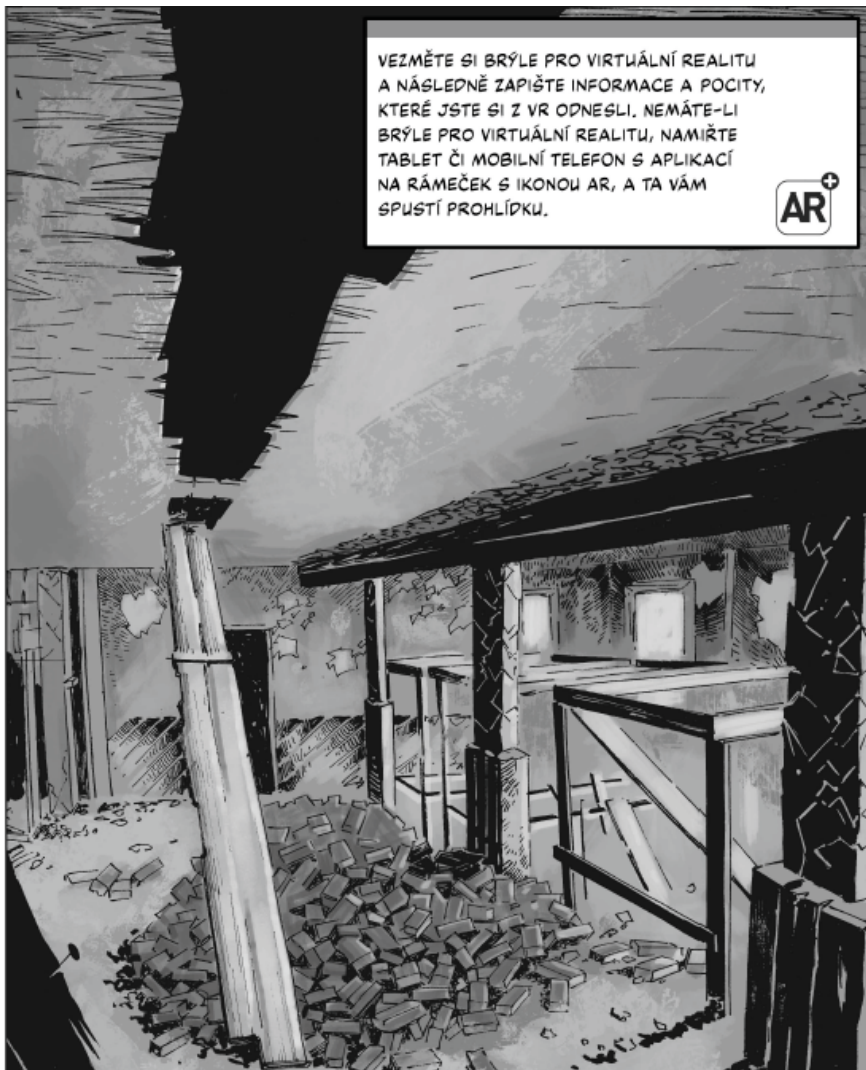
TEACHING PROCEDURE

Option 1

Students are still working at their own pace in groups on a research journal.

When students get to this page in the comic, they will probably ask you what to do.

Now is the time to start the tour with them in VR. How to do it:



1. Invite the group to follow you to one of the places you have reserved for VR work, e.g. in the corridor.
2. Briefly explain to the students that they will be viewing several scenes of life in the Gulag in VR. The goal is to clarify or supplement their research from the comic book. They will see a reconstruction of the camp that matches the archaeological findings from the Dead Line and the state of the camp circa 1950s. Individual scenes are timed and will automatically switch to the next one after time has elapsed. The students' task is simply to observe (they can move, look around, bend down) and listen to the accompanying commentary. The commentary is based on the memories of real prisoners.
3. Explain to students that in rare cases VR can cause nausea, dizziness or other problems. In this case, just take the headset off your head, stay still in one place and look into the distance.



Comments and tips

Tip: Teaching with VR requires a place where students can move freely in a space of at least 2x2 metres (preferably larger). Ideally, it should be a space where the student will not be the centre of the action (e.g. next to the teacher's desk), where they cannot fall (stairs), trip, bump into objects (briefcases) or be threatened by passers-by. For teaching in a regular classroom, it is necessary to have several such stations (one station per headset). For example, a place behind the desks (i.e. the farthest position from the teacher) or the school corridors are suitable. These are often wide enough and separated from the classroom. This is important so that the group that is currently in VR can have quiet time for their tour and not be under the scrutiny of the class. At the same time, it is good for the work of the class if its attention is not diverted by the sight of students who are currently "in the gulag".

Tip: We have found in practice (even with adults) that this is a common reaction when we see someone in VR. People try to "boo" and touch the person who can't see or hear what is going on around them. Work with the students to come up with rules to prevent this.

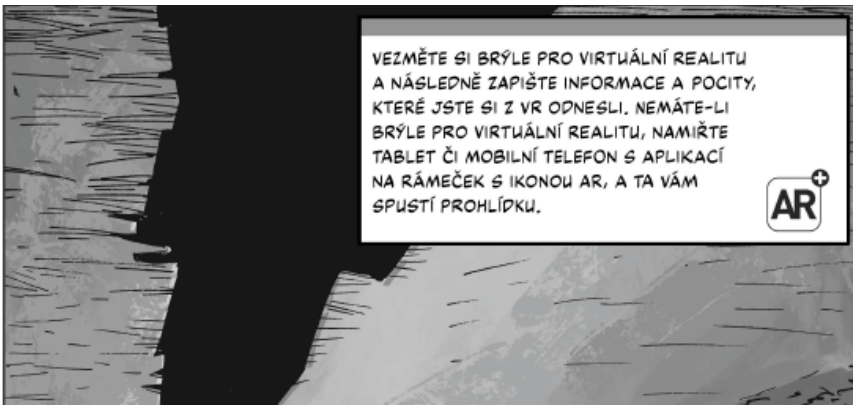




4. Explain to students that those who are not wearing the headset are helping the student who is in VR. They keep them safe, checking that the student in VR cannot bump into anything, and they avoid entering the VR zone.
5. Explain the basic principles of VR control (we hold controllers in our hands, we can use the buttons on the right controller to teleport and pick up objects).
6. After the first student has gone through the experience, tell them that it is now their job to explain the principles of control and movement in VR to the rest of the group. At this point, you can leave the group to attend to other groups.
7. After the whole group has been through the experience, they report back to the teacher and go back to work on the research journal.

Option 2

The moment the first group (or multiple groups) reaches this place in the research log:



1. Draw one or more students (group) to be guides through the Gulag. Ideally, the group should include representatives from all groups.
2. Explain to this group how to in VR according to Option 1. Their task is then to present the tour to all the other students. Give them space to take the tour on their own.
3. The moment the drawn group has completed the tour, interrupt the other groups and say that it is time for all students to take a joint tour of the virtual reconstruction of the Gulag camp. They will be guided by the group that was drawn.
4. Prepare the headset for broadcasting according to [this instructions](#).
5. Tell the pupils in the draw group that it is now their job to guide everyone else through the VR experience. With the headset connected to your computer, you can project what the pupils are doing in virtual reality through the projector.

Tip: The VR zone is the space you create before handing over the headset to your students. It demarcates an area where students can safely move around. Should they move beyond this space, the camera in the headset will activate and the learner will see the real space around them. It is important for students to hold both controllers in their hands while in the VR zone and that no one enters the space. Otherwise, the visual grid or camera in the headset will be activated and the learner will not see what they should see in VR.

Tip: You can watch the VR passage [here](#).

Tip: How to handle a situation where students work in groups, some work with a research journal and some are in VR? It has worked well for us to explain the process of working in VR only to the first student in the group and then delegate them to share their experience with the next student. This creates quite independent groups working in VR that do not need to be managed. They help each other and pass on their experience. Your input is only necessary if, for example, something doesn't work, or if there are disagreements within the group ("You've been there too long, I want too!").

Tip: It's a good idea to instruct the group that after everyone in the group has been through the VR experience, one of the group is dedicated to the next group

Tip: What to do when two groups arrive simultaneously at a page in a comic that mentions VR?

Continuously monitor the groups at the VR sites, ensure that they do not stay in the VR for unnecessarily long periods of time (e.g. repeat visits) and continuously send other groups to VR. If a group has reached a VR site in the comic, but there is not a VR station available, the group can continue working, and start the VR tour when it is free.

Tip: What to do if VR fails? If for any reason a VR tour is not possible (headset fails, lack of time), it is always possible to replace the VR tour with a virtual walkthrough in the form of a video in AR and continue working. Although students will be deprived of the experience, the main objectives of the lesson can still be achieved.

Tip: If you use the headset for streaming into the computer, then depending on the quality of the wifi, you may experience delays in transmission or dropouts. If you want to take advantage of the broadcast, it is a good idea to try this option before class.

Tip: If you only allow one group to go through VR, you need to justify this to the other students. In our experience, it is enough to openly mention e.g. time constraints and at the same time draw the pupils at random.

PHASE 5 / 5–20 min.



Reflection

Description

Reflection at the end of the lesson on Soviet repression is important because it helps students to better structure and experience the knowledge they have gained about the workings of the totalitarian system. It forces them to summarise the main facts and the fate of specific people. At the same time, it forces them to think about the impact of the existence of the gulags on individuals and society as a whole and to relate these events to the present. In this way, pupils can realise the value of human rights and freedoms. They have the opportunity to express their own views on the topic and to ask additional questions. You, as the teacher, get feedback on their understanding of the material.

Here are tips on how to reflect:

- If you worked with a mind map in the evocation phase, use it. Have the pupils fill in the mind map in a different colour with the 5 key words that stuck with them from the lesson. Then discuss why they chose these words and how their understanding of Soviet repression has deepened compared to 40 minutes ago.
- If you have worked with the question “Why should we learn about Soviet repression at all?” in the evocation phase, then ask it again and ask a few students to reflect on their shift.
- Ask 3 open-ended questions: what new things did you learn? How did the memoirist’s story affect you? What information did you find in the research diary? What questions did the topic raise? Have them reflect briefly orally or on paper.
- On the board, write “Key takeaways” and “Questions to think about”. Invite students to add ideas freely. Finally, summarise and comment on the contributions.
- Ask about 1–2 things that most interested the students and 1–2 questions that came to mind. Leave space for sharing.
- Anonymous reflection on a piece of paper – 1 thing that interested me + 1 question on the topic. Those who want to can share, those who don’t can stick it on a flipchart or whiteboard.
- In pairs or small groups, ask students to work together to draft a short text on Soviet repression that could appear in a new history textbook.

If you have the time and are used to it, you can ask questions such as:

- *What did this class give me?*
- *What would I like to commend anyone in this room (including myself) for?*
- *What do I think caused such evil?*
- *Is the topic of the Gulag still relevant today?*
- *What could be done to commemorate the victims of repression?*
- *What can I do to prevent something like this from happening again?*

Invite the students to sit comfortably in a circle. Wait until they are quiet and take a “talking stone”. A talking stone means that only the person holding the object can speak. Have them speak briefly and only to the point. Let them briefly recap each part of today’s lesson. Ask the pupils (whoever wants to) to comment on the questions or tell others anything they think is important and relevant to the topic. Anyone who does not want to speak will pass the pebble on and will not be forced to speak.

In our experience, the authenticity of the teacher is important. If a teacher acknowledges what went wrong in a lesson or that they are less experienced with something, it usually does not cause them to lose the students’ respect. In fact, it can strengthen trust and mutual respect in the classroom. It shows that the teacher is also constantly learning and developing. Being open to reflecting on one’s own work sets a good example for students. You don’t have to be afraid to admit that something didn’t go quite as planned.



Comments and tips

Tip: If you have chosen V-CH-D (I-know-I-want-to-know-I-learned) as your evocation activity, it is a good idea to use it here to formulate the “I learned” column.

Tip: Collaboration and communication is an important part of this lesson. During the lesson, pay attention to what is happening in the groups. In the reflection stage, you can also ask questions about cooperation and communication, or appreciate moments that you noticed. For example, it may be that a group was not very successful in their own historical research, but perhaps they communicated well, collaborated, helped you solve technical problems, were able to divide up their work well, made great progress from their initial state of knowledge, etc. These are all crucial aspects of teaching, perhaps even more important than the historical material itself.

Tip: For many students, this will be their first experience with AR and VR learning. This is a great opportunity to reflect on this way of teaching as well.

You can ask the students:

- How did the use of modern technology in teaching affect you?*
- Were you surprised or have you had a similar experience?*
- Did it help you understand the topic better? Why yes/no?*
- What did you like/dislike about this form of teaching and why?*
- Do you imagine that other subjects/topics could be taught in this way? Which ones and why?*
- Do you realise that the work of many people over several years has gone into the creation of these AR and VR components? Is it realistic for a teacher to create this for every lesson?*
- What are the main principles of this teaching and why?*
- Which of these do you think a teacher could use in regular teaching without special technologies?*

Reflection can provide valuable feedback for both you and the students. Don’t be afraid to ask questions and work together to find answers to questions around new forms of learning.

RATING



Criterion-based assessment of students' progress is important in teaching (not only) about Soviet repression because it allows the teacher to better diagnose the level of their understanding of key facts, the development of their historical thinking and attitudes towards ethical values. Reflection on the fulfilment of the criteria also provides feedback for further teaching. We believe that you have set up your own assessment system appropriate to your objectives. Here is an example of how an assessment system can be set up, including possible examples of student responses. Assume three levels of mastery of the topic.

BASIC LEVEL

Description of the criteria:

The student can give only basic facts about the functioning of the Gulag. They can only very roughly place it in the historical period of the existence of the USSR. They can retell a brief story of a particular prisoner. They perceive the relationship between causes and effects superficially. They do not show any significant interest in the issue of human rights violations and democratic values. They cannot formulate a research question (e.g. why prisoners did not escape) or can do so only very vaguely. When working with questions in a research diary, they are unable to bring their hypotheses. Effort towards verification is minimal; the pupil waits to see what the teacher or others in the group say.

Example of a student's speech:

"The gulags were in Russia because Stalin was there and made people work hard. Mr. Novak was imprisoned there."

MEDIUM LEVEL

Description of the criteria:

Students can describe the functioning of the Gulag, place it in the Stalinist period and distinguish between several types of repression. They can analyse a specific prisoner's story. They can describe several causes and consequences of repression. They can discuss the issues and asks questions. They demonstrate partial understanding of the values of democracy and human rights. They can formulate a research question (e.g. What were the main reasons why prisoners hardly escaped from the gulags?), albeit not accurately. When working through the questions in the research diary, they attempt to come up with their own hypotheses, but need guidance in doing so. Verification of hypotheses is more superficial, relying on general assumptions rather than available sources.

Example of a student's speech:

"Prisoners in the Gulag worked in inhumane conditions. It was the worst under Stalin. Mr. Novak was imprisoned on trumped-up charges. I think it was unjust. Isn't that a violation of human rights?"

HIGH LEVEL

Description of the criteria:

The student can describe in detail the functioning of the Gulag and distinguish between different types of repression. They can explain the historical context of their origin and development, including the causes and consequences. They can describe how repression changed over time. They can analyse the specific fates of prisoners and reflect on them from an ethical perspective. They actively discuss the issues of democracy, freedom, and human rights. The student can formulate a clear, specific, and well-defined research question related to the topic (e.g., What specific factors caused prisoner escapes from the gulags to be rare?) They actively develop their own hypotheses while working with a research diary. When verifying hypotheses, they try to rely on available sources, not just their own assumptions. Alternatively, they offer ways in which the hypotheses could be verified. The student demonstrates the ability for deeper analysis and critical thinking.

Example of a student's speech:

"The Gulags were camps in the Soviet Union where people were sent for forced labour. They started after the revolution, when the communists came to power. At first it was mainly their opponents, but then under Stalin it became widespread and anyone who didn't like or agree with them could end up there. They imprisoned a lot of people when they were collectivizing and building factories in the 1930s. They had to do hard and dangerous labour, often somewhere in Siberia or building factories. A lot of people died there.

One of the prisoners was Mr. Novák, an ordinary worker and even a communist. They arrested him and accused him of being a spy, although this was not true. He spent five years in a labour camp in Siberia, where he contracted tuberculosis. When he was released, he was no longer able to work normally and supported himself as best he could. His story shows how the whole regime violated human rights and destroyed people's lives. From a moral point of view, it is terrible. That is why it is important to defend democracy and freedom so that such things do not happen again."



Basic level

They are minimally involved in team work. They can only state some of the findings of their group when presenting. When working with VR technology, they need more support from the teacher in following the rules (e.g. repeated reminders to be gentle with the technology, time keeping). They do not show solidarity in sharing limited time with VR technology. They do not help others.

Medium level

They actively cooperate in the group. They can summarise the main findings and workflow during the presentation. They mostly followed the set rules when using VR technology with minor comments from the teacher. They allow others to try working with VR technology. They help others when prompted by the teacher.

High level

They are an active member of the group, helping others. They present the results of work clearly and concisely. They ask follow-up questions. They follow all established rules independently when working with VR technology without the need for teacher intervention. They ensure equal participation of all group members in working with VR technology. They help others without teacher direction.

