In Poland, schools were closed from 11 March to 30 June 2020, and then again in the new school year from October 2020 to the end of April 2021.
To learn more about the situational review in Poland, please go to:
https://www.ibe.edu.pl/images/KEEP_Systemic_Review-compressed.pdf

Co-funded by the European Union

Keeping Physics engaging during lockdown

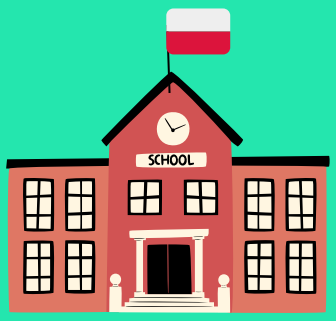
I teach Physics and natural science in a private high school in a large city in the south of Poland.

16 age of pupils on average

145 pupils

13 pupils per class on average

11 classes

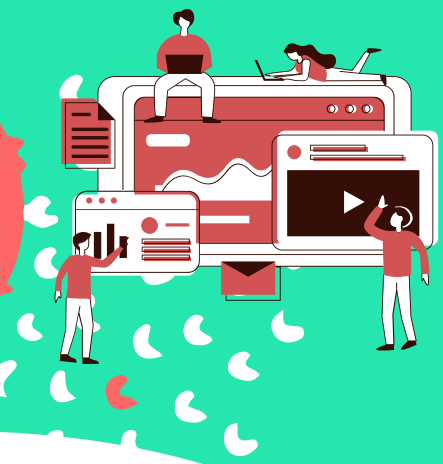


Teaching environment

Most of our students have a good background. Some students have disabilities, often autism spectrum disorders (ASD). They can also have vision or hearing impairments. About **4% of our students** have been diagnosed with special educational needs.

Digital tools

From September 2019, our school has been using the **Google platform.** Each student and teacher had their own account before lockdown hit. Teachers in our school received **iPads** or **graphic tablets** for their laptops. **Every student also received an iPad.**



Experience with digital tools before Covid-19

I had the opportunity to teach and send material to students using **Google Classroom.** I already knew a few digital tools, and I knew how to share online materials but **I had never taught online** before. I had no experience with a platform like Zoom.

Animated Physics with YouTube

Needs for this new teaching practice

I needed to **write on a blackboard** during lessons. To solve problems, I needed to talk with my students, and sometimes **draw a graph.**
I wanted them to be engaged and active.

Needs solved

The first technical obstacle was quickly overcome thanks to my graphic tablet. My students also had equipment, so they were able to **exchange digital notes.** The videos I found showed a lot of content in an attractive way.

Audience targeted

I used the **flipped lesson** method combined with YouTube videos to plan meetings with the whole class. But my students also **used the film materials individually** at home.

Organisation

During my Physics classes, I used both **synchronous and asynchronous teaching** - synchronous, when I conducted a lesson, and asynchronous, when I sent students some material to watch and analyse. Sometimes I also sent them a video to watch before a test.

The flipped classroom method allowed an initial preparation of students for the implementation of subsequent issues in the course curriculum. Therefore, it **does not require any special preparation** or skills before starting classes. Students only had to watch the video material sent by their teacher before the lesson.

The aim of showing and sharing thematic films is to present issues in **an engaging, vivid way** that appeals to both the imagination and everyday experience.

Practice activity

Starting a lesson introducing the principles of dynamics, for example, I decided not to do a lecture so that it would not be very monotonous and one-sided. I chose videos in English and taught Physics using English words and expressions, which thus became more familiar to my students.

First, I **engaged students in a brainstorming,** I tried to guide them, and help them draw conclusions on their own.
Then, I showed them the video I had already chosen. And at this point, everyone was looking at their screen and watching this video with curiosity during the online meeting.

At the end of the lesson, **I still had the attention of the students,** most of them were listening, and they were not distracted. If there was time, **I prepare some notes on the tablet** and make them available for everyone to have and modify.

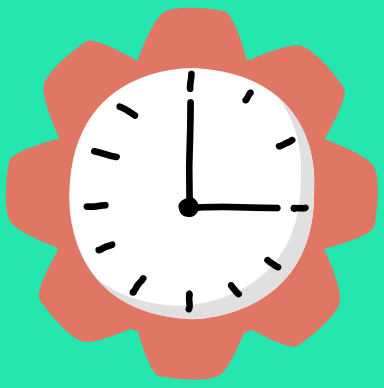
Impact of the practice

An innovation

Students **memorise faster** with videos. They not only learned Physics, but also expanded their English vocabulary.

Students found Physics more **attractive.**

An efficient practice



- My students are **very eager** to take part in lessons when new technologies are used.
- Lessons are **accessible** and interesting.
- The biggest innovation is **equalising the opportunities for students** and teachers. Now tha everyone in our school has an iPad, every student can do online exercises for each lesson.

Keys to success

Have **patience** when you learn to use a new tool.

Be **persistent** in pursuing your goals.

Learn to **ask for help.**

Benefits

Students can work **at their own pace** with videos.

They now find **Physics easier.** The subject has become **less theoretical** and they can apply their knowlegde **in everyday life.**

The videos, combined with other applications, allow teachers to **adapt** to each student's needs.

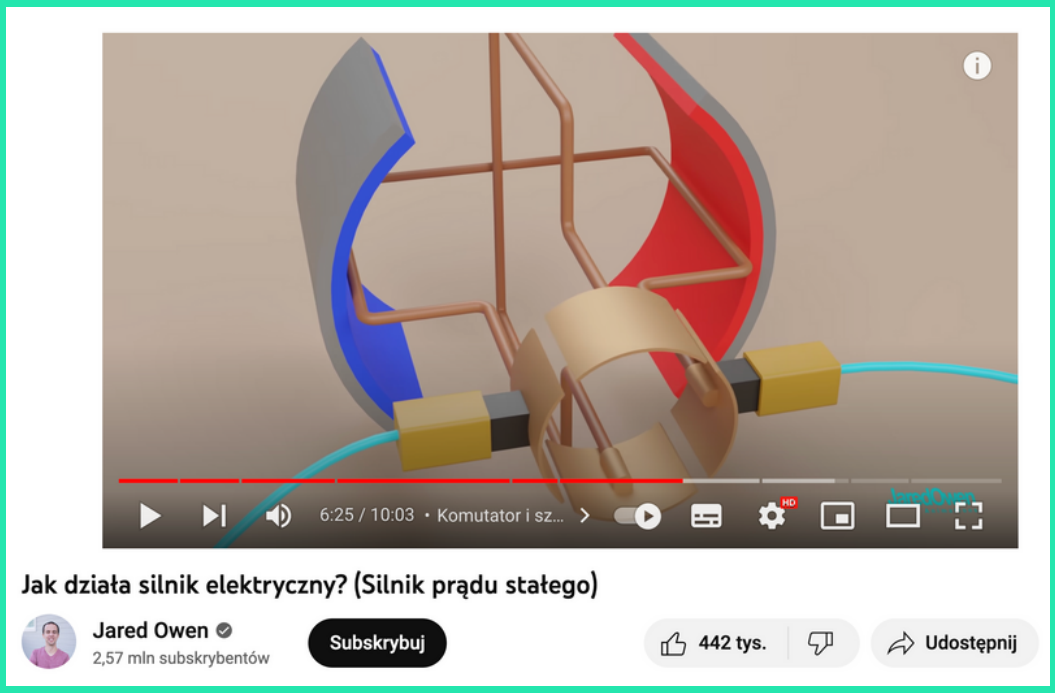
Ready ?

Ask for help whenever it is needed! You cannot improve your practice if you say: "I can't do it".

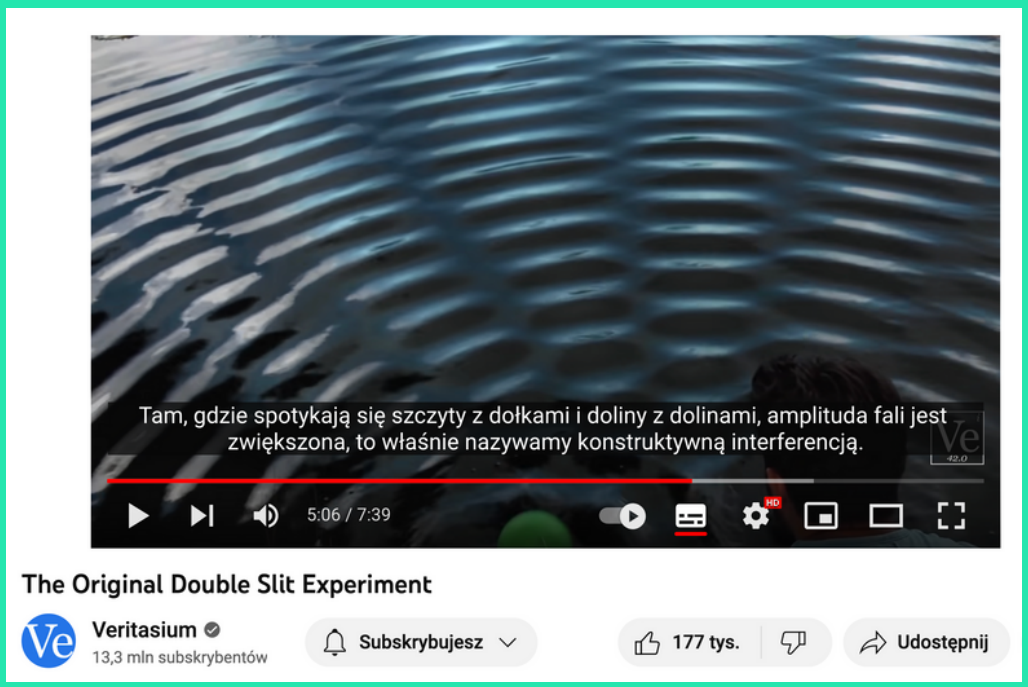
Resources

Screenshots

Example of a video in Polish explaining how an engine works



Example of a video explaining the double slit experiment in English with Polish subtitles



This portrait gives a representation of the teacher's choices which are not our own.
The statements in this portrait are not direct quotations but have been adapted from an interview which took place in 2022.