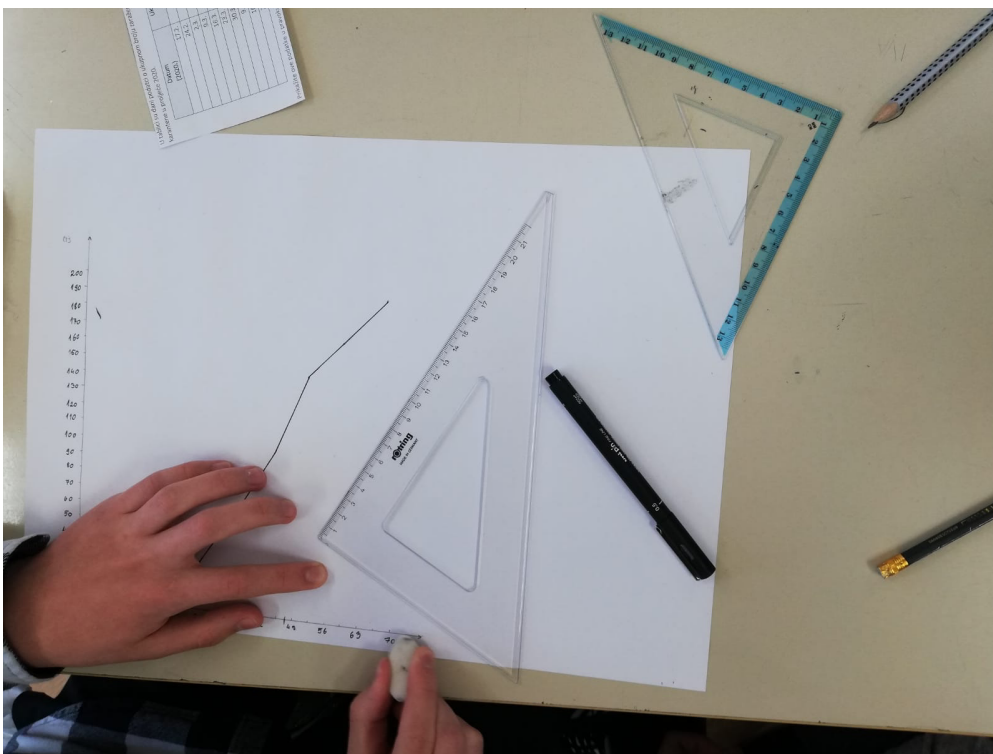


Example of Lesson Study in Croatia

During September and November 2020 one of the Croatian teams did their first lesson study cycle. The topic was logarithmic scale, or more precisely the application of logarithmic function in real life examples and importance of understanding various graphical representation of the same data.

Students were working in groups and had to represent given data graphically in a coordinate system. Each group got data from different areas where logarithmic functions are usually used: earthquakes magnitude, Covid-19 spread, kefir fermentation and noise levels.

Students struggled to fit all the data on y-axis but in the end came up with some interesting conclusions with no help from their teachers. They had to represent their solutions to the rest of the class and explain how did they draw the graph and what were the difficulties they ran into.



In the second phase, each group got a worksheet with two different graphical representations of the data they were working on. One graph was presented in linear, and other in logarithmic scale and they had to answer three questions only by observing given graphs and decide which one is better.

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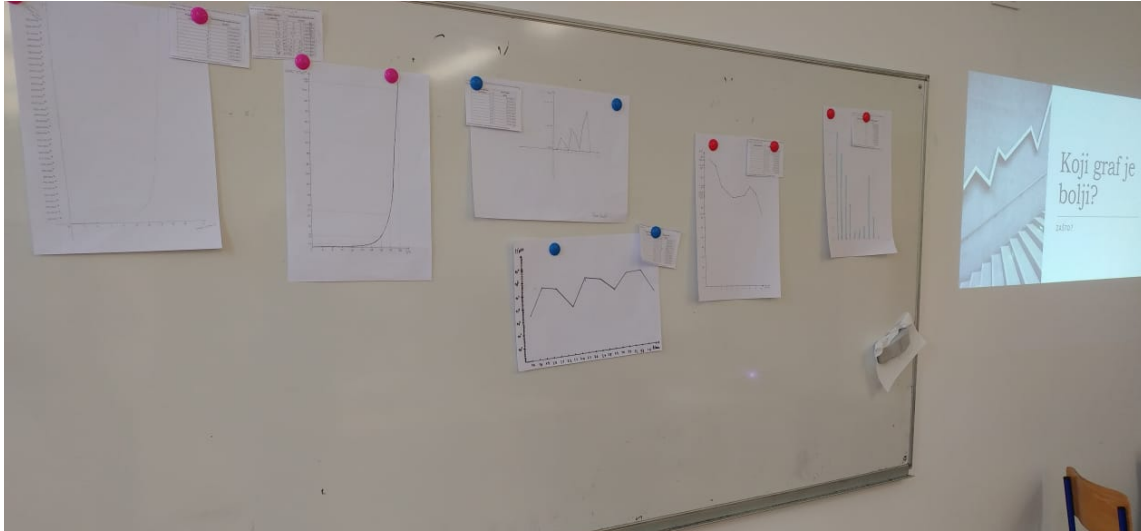
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Teachers' Inquiry in Mathematics Education

Groups prepared a short oral presentation and explained what they concluded from each graph and which one gave them better information for the set of questions they were asked to answer.



All the groups concluded that both representations were good, it only depends on the information they read from each graph. They are used to linear scale and it gives them a much clearer picture of the actual data but they all realized the benefits of logarithmic scale when representing the data in a wide range, although it can be misleading. The overall conclusion was that they need to pay more attention to what is written on the axes in order to understand the graph.

In the last part of the lesson, the teacher pointed out that we do think linearly, but our senses are on a logarithmic scale and showed students formulas for pH levels (taste), sound level (hearing) and earthquake magnitude (movement) in which logarithmic functions are used. It gave them a clearer picture on the application of the logarithmic scale and motivated them for learning more about logarithmic functions.

The lesson was performed successfully three times. The team members were pleased to see their plan worked as they hoped and learned a lot from this cycle and later discussions. The results were presented at the TIME project meeting, together with students' feedbacks and ideas on how to improve the lesson for the next time.

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