Politics in maths lessons? – Why not?

Paper recycling and demographic developments as topics

Regina Puscher and Rüdiger Vernay

Gesamtschule Mitte, Bremen, Germany

One of the major tasks of teaching is to assist young persons to develop knowledge and skills that enable them to act as concerned and reflective citizens. Teaching mathematics should contribute to that too. Two units will be presented which deal with political topics showing the idea of including mathematics into the general education of young people. At the same time the limits of mathematical argumentation will be discussed.

Paper recycling – a class 9 theme (Age 15)

An important world-wide theme is sustainable development and economic management according to the Agenda 21. Maths can help to understand some of the global questions and mathematical tools are useful when it comes to making decisions. So you should take the chance to discuss these themes in math-lessons, too.

Talking about paper consumption and waste paper usage in Germany and thinking of changes in the behaviour of using paper is a small step in the Agenda 21 process. The need to recycle paper is nearly obvious. How can we promote this? How can we reduce paper consumption? Students can think about such questions in maths lessons. For that they must have a closer look at statistics. They have to read and interpret tables. Newspaper statements can be judged, too. With the help of some mathematical tools the available data allow qualified statements about avoiding unnecessary consumption.

Paper recycling was taken up in a German textbook as framework topic. Students repeat handling percentage and become acquainted with the weighted arithmetic means as a new mathematical tool. They practise modelling and use their mathematical skills as basis for political decisions.

We are going to present this unit and report on classroom experiences.

Demographic developments – a year 10 theme (Age 16)

Often political decisions are based on prognoses. They seem to be objective means to help making decisions as well as justification for the measures taken.

Students should experience the role of prognoses. They also have to learn how they are designed. Making prognoses themselves they use functions in real life situations and practise modelling.

One possible example are demographic developments. There are enough data available for this topic. Students should learn how to get this data material and how to handle them. Different prognosis models can be tried out. By this way the procedure will be clarified, at the same time drawbacks and limits will be shown. In the same unit prognosis about raw material and environmental problems are also discussed.

This above topic is one of the chapters in the year 10 textbook "mathe live". We will present the intentions of this textbook on this occasion, too.

The background idea of this approach will be part of the discussion to which we gladly invite you.