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Correlations between reality and modelling. “Dirk Nowitzki playing for Dallas in the NBA (U.S.A.)”.

Maasz, Jürgen (ed.) et al., Real-world problems for secondary school mathematics students. Case studies. Rotterdam: Sense Publishers (ISBN 978-94-6091-541-3/pbk; 978-94-6091-542-0/hbk; 978-94-6091-543-7/ebook). 137-153 (2011).

Summary: Mathematical modelling can greatly enrich math lessons in school. Like every other didactical method, too, it may not be the only way of teaching. It is a reasonable addition to many other didactical methods. Besides, it has to be introduced slowly and with caution e.g. just like team work. Students do not learn how to work together gainfully overnight – as well as they cannot construct a mathematical model ad hoc. The greatest benefit of this type of setting a task is being able to adjust the task to the interests of the class and single students respectively. If students are not interested in sports this particular example should not be used because the intrinsic motivation will not be raised. In addition this particular example shows that mathematical modelling can be introduced early. It is the teacher’s task to single out aspects going along with relevant considerations and evaluations: to range from converting units to dealing with trigonometrical functions in combination with a second order equation. It is an instrument to enrich lessons at every single class level.

Classification: M90 M50 F90 I40

Keywords: mathematical model building; mathematical applications; real-life mathematics; sport; student activities; levels of modelling competence; physics; mechanics; practical arithmetic; percentages; probability; unit conversion; drawing sketches; quadratic functions; quadratic equations; length of a trajectory; differential calculus; integral calculus