

The Evolution of Test Items - Visual Input with JSXGraph
Carsten Miller (speaker), Alfred Wassermann
University of Bayreuth, Germany

Static tasks with multiple choice input or with algebraic input and evaluation often form the basis of test scenarios. Feedback can be realized without much technical effort.

Tasks with randomized elements are a logical enhancement of such test scenarios. Students receive individualized tasks that are subsequently reviewed. Symbolic evaluations extend the content of test items enormously and allow specific feedback, especially in combination with randomized initial situations.

With the help of the graphics library JSXGraph, (test) items obtain a visualization component, which initially only serves to illustrate content. Students can thus explore mathematical content interactively before an answer to a particular test question is given.

In combination with tools such as STACK or Formulas, JSXGraph can also be used to create tasks that allow graphical or geometric input.

Students then submit a geometric construction or an adapted function graph. In this way, tasks can be realized that are less calculation-based and more comprehension-oriented.

In the talk, we will use practical examples from school and university to enhance simple test items and show different types of test items with graphical input and their added value.