

Short lecture

Dynamic visual proofs in mathematics education

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Abstract

Pictures and diagrams play an important role in the process of understanding various mathematical features. Moreover, an appropriate picture or diagram can be used as a visual proof of some quality or theorem. These non-verbal proofs are more attractive and acceptable to students than the classical proofs. Their educational potential is no doubt high, but compared to classical proofs, their weak point is in the fact that they mostly do not capture the chain of thought leading to the proof but only the result. This deficiency, which arises especially in the educational process, can be simply removed by the use of dynamic software – e.g. dynamic geometry or algebraic software. The paper will present selected examples of such dynamic visual proofs in the form of materials that we use in the teaching of secondary school mathematics and in the mathematics teacher training programs.

Some of mathematics teachers were asked to use dynamic visual proofs during their lessons. The paper also provides samples of videostudies from these lessons and some insights from these videostudies and interviews with teachers.