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Mathematics in statu nascendi As a Tool for Didactics in statu nascendi

Didactics of mathematics, in its state of birth as a scientific discipline, formulates its rights and its duties. One of the main challenges is to raise the students' interest for the magnificent mixture of philosophy, natural sciences, poetry and art that is commonly called Mathematics. We teachers/educators should convey the picture of a subject open to constant change and improvement, endowed with the beauty of a living body, in contrast with 'the cold and austere beauty' of a sculpture. To achieve our goal, this talk/workshop tries to highlight 'AHA' moments in selected mathematical topics when, in a flash, a mathematical idea becomes clear for the researcher or for the student. As Freudenthal put it, 'The opposite of ready - made mathematics is mathematics in statu nascendi. This is what Socrates taught. Today we urge that it be a real birth instead of a stylized one; the pupil himself should re-invent mathematics.' We hold his statement to be true both inside and outside of mathematics. The way of teaching to follow may be more complex and time-consuming for the practising teacher than one of simply 'filling up the vessel'; but it pays the daily effort back by fostering the curiosity and creativity in our students with very diverse backgrounds regarding their ability, gender, social status or future profession.