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Niels Abel: ‘So many Ideas ...’. Bringing episodes in the history of mathematics to life in the classroom by means of theatre

Abstract

This workshop, including a tribute to Niels Henrik Abel (1802-1829), the Norwegian mathematician who made ground-breaking contributions in algebra and analysis, will explore the creative evocation, in theatrical form, of historical people and events, as a means of communicating the human context and drama of mathematics-making and enriching the teaching of mathematical ideas. Following a brief introduction to the idea and the potential power of dramatizing the history of mathematics, participants will be invited to cooperatively produce, stage and enact a 30-minute pre-scripted play, ‘*So Many Ideas ...*’ celebrating the life and work of Abel. The play includes commentary, cameo appearances and conversations featuring Abel and some of his contemporaries. While including some indication of Abel’s mathematical work, this play seeks to motivate interest in learning mathematics at any level, by focusing on the personal context of his work. Poignant speeches are drawn from his correspondence, to give insight into his hopes and fears, publication challenges, and the intellectual excitement of creating new mathematics. The dialogue attempts to bring out his courage and audacity, as well as the frustrations and pathos of his brief life.

Following the play, participants will be invited to critique concept, script and staging, and share ideas on how it might be improved or adapted for use in various classroom settings. They will also be invited to describe previous experiences of using or observing theatrical presentations with mathematical content.

Next, participants will be given some time to look over biographical material on Abel and primary source excerpts (in English translation) from his writing and correspondence. They will be requested to highlight events and passages of particular charm, relevance and dramatic impact, for communicating the drama of Abel’s life and work to learners of a particular age. They will then discuss in groups how they might go about weaving some highlights into dialogue form, thus creating alternative forms of theatrical presentation for classroom use. Finally, participants will be given the opportunity to share the ideas and conclusions of their group.

The goal of the workshop is to inspire and challenge participants to construct their own dialogues drawn from primary sources and biographical materials, and to encourage use of theatre in the classroom, to contextualize and enliven the teaching of mathematics, thus engaging learners in the excitement of mathematics-making and celebration of the people and stories behind the terms, concepts and theorems.
