Course analysis – LT1053 vt22

Course responsible
Ernest Amapdu ernesta@kth.se

Course teachers
Ernest Ampadu & Jenny Ivarsson

Examiner
Ernest Amapdu ernesta@kth.se

Courses are given (approximately 4 months of 8 meetings)
30 August 2022– 12 February 2023

Course material

Barton, C. (2018). The brain in mathematics education: Experience, science, classroom practice. Nature & Culture.

Nordlund, M. & Pettersson, A. (eds) (2019). *Assessment in mathematics - in the service of learning and teaching. Didactic texts in mathematics, part 7.* Stockholm: The Department for the didactics of mathematics and science subjects. University of Stockholm.

School Board. (2012). *Systematic quality work - for the school system* (Skolverket's general advice with comments).

School Board. (2020). *To plan, assess and give feedback. Support for teaching.*

School Board. (2022). *Rating and examination. Comments to the National Board of Education's general advice on grades and assessment.*

School Board. (2021). *Leading and organizing entrepreneurship in school* [web page].

The School Inspectorate. (2019). *Digital tools in teaching - mathematics and technology in grades 7-9.*

Sjödahl, A. (2021). *Have you had time to analyze your teaching? On the importance of starting from the didactic questions what, why and how* [web page updated 2020-11-01]. National Teachers' Association.

Skott, J., Jess, K., Hansen, HC & Lundin, S. (2010). *Mathematics for teachers. Delta, Didactics.* Malmö: Gleerup's Education.

Course structure

During the autumn 2022 term, the course LT1053 was run via only face-to-face meetings with a total of 8 meetings. During these meetings, students discussed their experiences from their school placement (VFU) and how their teaching philosophies have changed over the period. Continuous assessment is achieved through a series of classroom interactions, presentations, individual written assignments, group work, planning and designing of lessons, and planning of assessment tools.

The course is designed to provide students with 21st-century skills needed to support students learning mathematics in lower secondary schools. The course is divided into four blocks;

- Mathematics didactic aspects of the didactic triangle (subject/students/teacher).
- The mathematics teaching process: How to plan - implement - evaluate mathematics teaching that promotes student learning.
    - Assessment of student learning in mathematics.
    - How the mission of democracy, equality, gender equality, sustainable development, digitization and ethics (interdisciplinary perspectives) can be integrated into practice in mathematics teaching

Among other topics, students were introduced to and discussed the didactic triangle, exposure, activation and common misconception in the learning of mathematics, teaching process- planning and implementation, evaluating of teaching practices, assessing students learning, and interdisciplinary perspective of mathematics teaching and learning. The course has been designed with a student-centred approach to teaching and learning and the integration of technology in the teaching and learning of mathematics. During the period, students actively worked on their projects and group discussions where they discussed some of the challenges and opportunities from different contexts especially those that they experienced during their VFU.

The main course material is Mathematics for teachers by Skott et al. (2020) as well as other policy documents from Skolverket and other relevant book chapters and journal articles. During the course, students worked and submitted 5 different assignments; my mathematics didactic approach (2hp), own planning guide (1hp), self-evaluation guide (2hp), self-assessment guide (2 hp) and interdisciplinary perspective (1hp).

LEQ course evaluation (survey)
Two out of the four students completed and submitted the LEQ. However, I cannot access the report as the system says that "the report will not be shown until at least three respondents have answered the survey. This is to ensure the anonymity of the respondents".

The 12-question LEQ has been used.

Students' workload
This section of the analysis could not be completed since I did not have access to the student's responses.

Overall results
Eight (8) students were admitted into the programme for the first time and four (4) students completed the course successfully. The other 4 students stopped the programme along the way.

Overall impression of the learning environment
This section of the analysis could not be completed since I did not have access to the students' LEQ responses.

Analysis of the learning environment

As highlighted above this course has 8 meeting sessions and a brief description of each of the sessions is provided below;

Class Meeting 1 (The didactic triangle)

During this session, students were asked to develop their perspectives about their mathematics didactic approach and share them with their peers. Students were encouraged to critically examine what contextual factors could shape their perspective and how they think why context is critical in shaping their mathematics didactic approaches.

Class Meeting 2 (Exposure, activation and common misconceptions)

The second meeting was dedicated to the application of the different perspectives and how understanding the concepts of exposure, activation, and common misconceptions could help in planning and delivering effective mathematics lessons.

Class Meeting 3 (Teaching Process- Planning):

Different planning strategies were discussed during this session and students started planning their lessons by examining the different perspectives in the literature and what was happening in their practising schools during the VFU. This session was designed to provide students with practical examples of different planning strategies and a critical review of their respective VFU school situations.

Class Meeting 4 (Teaching Process- Implementation)

The purpose of class meeting 4 was to provide students with the opportunity to implement their planned lessons both in class and in respective VFU schools.

Class Meeting 5 (Teaching Process- Evaluation)

One of the underlining principles of this course is to train teachers who are reflective practitioners. In class meetings, 5 students were introduced to different ways that they evaluate their practice. Students discussed some of these approaches as highlighted in the literature and also from their VFU practices.

Class Meetings 6 &7 (Assessing Students Learning)

Assessing students' learning is one of the critical components of the teaching-learning process. During class meetings, 6 and 7 students discussed different assessment procedures in both the national curriculum and the literature. The concepts of formative and summative assessment were discussed from the perspectives of both the national curriculum and what current research says. Students developed different assessment instruments to test students' ability levels with particular emphasis on developing students' problem-solving skills.

Class Meetings 8 (Interdisciplinary Perspectives)

During the last session/meeting for this course, students discussed the interdisciplinary perspectives of mathematics to help students see the subject as part of a whole and not just an isolated subject. Students examined the different ways that the subject has or could be integrated into other disciplines.

Course development

Improvements suggestions for the autumn term 2023:

- The current course plan has no plan for how to assess late submissions hence there is a need to look at this and make the necessary changes to provide explicit information regarding how late-submitted assignments should be assessed.