

REPORT ON CLASSROOM WORK

Two kinds of teaching material under the working titles »Chicken Fence Problem« (Appendix 1) and »Box Problem« (Appendix 1) were tested in the classroom. The program GeoGebra was used for the applets. The worksheet »Chicken Fence Problem« varies according to the grade and because of the improvements made from one trial to another.

Dates:»Chicken Fence Problem« (Worksheet No.1):

- 18.5., 3.g, 24 students, Cvetkovič
- 20.5., 2.c, 32 students, Palčič
- 17.6., 3.c, 21 students, Špegel
- 17.9., 4.a, 25 students, Palčič
- 1. 10., 4.f, 22 students, Špegel

»Box Problem« (Worksheet No. 2):

- 7.10. , 4.g razred, 25 dijakov, Cvetkovič

Time: 45 – 90 min

Previous knowledge:

Grade 2: Students know the quadratic function and its graph, they can find out its vertex; they can calculate areas of geometrical shapes. They are familiar with Geogebra program (on a very basic level). They have no idea of derivation.

Grade 3 and 4: Students can plot a polynomial function (without calculating extremal points), they know trigonometrical functions and extremal points of $\sin(x)$ and $\cos(x)$. They don't know derivation. They are not familiar with GeoGebra program.

Observations:

From the beginning, strong guidance from the teacher is necessary, especially in the classes where the students are not used to Geogebra. In such a group step by step instructions are needed, otherwise the students will focus on GeoGebra commands instead on the problem they should solve. In those classes where students were used to the computer, the work was done smoothly and more quickly. The help of the second teacher or assistant is welcome in big classes (30 students or more).

During the classwork we compared the solving of the problem without and with technology.

The results were evaluated according to the method. We observed that the students were bad at estimating the result (»Box Problem«). They favored the calculation (although wrong) to simple logics.

The problem was extended in different ways according to the class and time on disposal.

Students worked in pairs or individually (16 computers for one class). They wrote in their working-sheets, which they finished later (Appendix No.2).

The attitude of the students was mostly positive with few exceptions. They liked the problem wrapped in a funny story. At the Box Problem they said that the applet helped them to visualize the box. The assesment hasn't been possible because of the end of the schoolyear.

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Appendices:

Appendix 1: Work-sheet No.1 for different classes, Work-sheet No.2

Appendix 2: Students` Work-sheets

Appendix3: Video