CZ – Štěpán Vimr, student teacher

Report on teaching visit – Sucy-en-Brie, France – 15.12.-19.12.2008

Contacts with the hosting teacher

The preliminary (e-mail) contacts were established with the same teaching staff, which made my stay much easier (I was the second person to visit the above institution).

Before the visit
I was in touch with the French party via e-mail and I also contacted the Czech teacher Jiří Bureš who gave me a lot of invaluable information. I knew about the timetable, about the students and the teaching style.

During the visit
The French colleagues also helped me very much during my stay, they took me from the airport, and they helped find accommodation and transport to and from the school. They were extremely helpful as regards all my questions about the teaching experience.

Comments on my teaching

As I am less experienced than my Czech colleague, I will not summarize the whole experience but I will rather describe each lesson.
All in all, I taught 3 + 1 lessons in the same school as my Czech colleague. They were in the following classes: 5eA and 4eA. The topic was fractions (the notion of fraction, comparing fractions and their reducing. I wrote all my lesson plans in French in order to avoid problems with the foreign language later.
I used the following textbooks and resources:

(1) *Mathematiques 5e*, collection phare, Hachette éducation, programme 2006.
(2) *Matematika s Betkou 2*, Novotná J., Kubínová M., Sciencia, Praha 1997.
(3) *Pracovní sešit k učebnici matematika 5*, Novotná J., Kubínová M., Sciencia, Praha 1995.
(4) *Dvacet pět kapitol z didaktiky matematiky*, Hejný M., kap. 20 Zlomky, díl 1, Praha 2004.

Plan for Lesson 1
Preparation: Paper tray, cut-outs of coloured transparencies
Procedure: I will introduce the lesson in this way: The Egyptians used fractions when dividing bread among their people.
I will distribute paper trays (with a marked centre) to pairs of pupils. I will say: "The tray represents bread." Half of the pairs will divide one bread in between two, four, eight, sixteen people; the other half of the pairs in between three, six, twelve people. Pupils will be asked to determine (cut out) which part should be given to one person in each case.

The next task will be to compare individual pieces of bread received and record the results.

Next, the pupils will be asked to compare their results with the pair from the other group and record results which will be presented on the board later.

I plan to support the presentation by using the OHP and the coloured cut-outs (transparencies).

An option for faster pupils: Draw a triangle and the coloured triangle constructed by means of its mid lines.

Next, colour the triangle created by mid lines of one non-coloured small triangle.

Pupils will be asked to continue towards creating smaller and smaller triangles and also to determine each of their new coloured part by means of a fraction.

Discussion for presentation: How many pieces of bread (in individual cases) are necessary for one person to get the whole bread? What would happen if we had 2, 3, 4, 5, ... loaves of bread for two people? Compare with one and deduce a common rule.

Resources: (4), (3)

Plan for Lesson 2
Preparation: Copies of grid for each student (see picture below), cards with fractions.
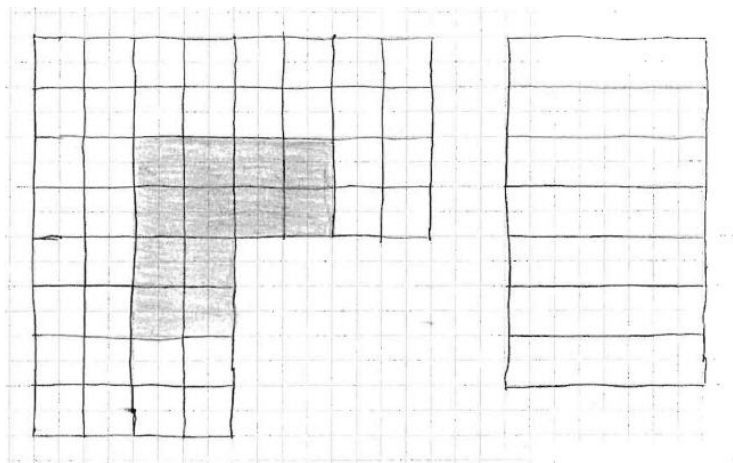
Procedure: First we will work with the rectangle 4x7 divided into seven stripes. Students will colour five stripes. They will say and write down which part of the rectangle it represents.

Next, they will divide the rectangle in halves by means of a line in such a way that each stripe is divided in half. They will say which part of the whole is represented by the colour now.

Later, they will divide the newly created little rectangles by means of two lines in such a way that they make 4x7 squares; again, they will be asked about the part. Everything is to be written in fractions and together we will look for relationships.

Next we will work with the second shape. The same procedure as before; now we will not deal with expanding of fractions but with their reducing. This means that the little squares are to be grouped together, first 4x4 squares and then four times the coloured shape.

In the next part of the lesson each student will receive a card with a fraction. His/her task is to look for and find all the classmates with a fraction which equals his/hers. There will be 24 students and they will make four groups of six. Series of fractions will be written on the board. Later we will discuss the irreducible fraction.
Resources: (1)

Plan for Lesson 3
Procedure: Draw a line segment 12 cm long and mark "points" 0, ¼, 1/3, ½, 2/3, ¾, 1. On this line, students will later mark the following fractions: 3/12, 4/12, 6/12, 9/12, 12/12; 2/6, 3/6, 4/6, 6/6; 2/4, 4/4. The stress is put on the notion of fractions with the same denominator and on comparing fractions.
Homework: Find five different fractions that will be represented by the same point on the line segment: 2/3.

In the next part of the lesson, we will deal with the transformation of a decimal number into a fraction. Students will recollect that half a litre can be also written down as 0,5 l and also ½ l. In pairs they will consider how this could be explained mathematically. As a hint, they will use the fact that 0,5 l = 500 ml. Those students who finish earlier will be given a new task. These will be: 0,25 l, 0,2 l.

The last task is rewrite 1 l in a formal way and present the results.
Concluding discussion: Possibility of transformation (fraction/decimal number and vice versa).
Resources: (2)

Description of Lesson 1 (Tuesday 16.12.)
I was happy with the procedure. I think that together we managed to achieve the set objectives. Even though I knew the students' names (I was given their photographs with names) I did not have to nominate anybody. All the students were very active. So active that they would not even let me finish when I was explaining what they should achieve, they were real eager beavers. I explained the activity once using the instructions that I prepared beforehand. Hardly did I finish speaking and the groups already started to work. The trouble was that they did not understand and instead of dividing the bread in halves again and again they cut everything in eights. They learnt from their mistake soon and realized what they were asked to do. The students who did what they were asked to were given the task of the second half of the class. Those students who were asked to divide the bread in thirds were in trouble how to start. I monitored students' work, of course, and (not too willingly) I gave them a verbal hint – two possibilities of dividing. One group was more problematic but later they came up with the method of rosettes (hexagon0 which they learned before. Later I noticed they did not even know how to divide an angle in halves and they kept folding the parts of bread. I am not experienced enough to know which is better: Let the students discover the procedure on their own or to show the way by telling them and as a result have more time to do the rest. My next task for them was to compare parts of bread and I helped them by comparing two, three, four, ..., sixteen with the use of the signs >, < (on the board). Again, I presented the prepared explanation and to make it clearer, I wrote ½ under 2. One of the boys understood immediately. He took a note of it and waited staring what will happen next. I assigned the task for the faster ones.

The others still compared or finished cutting. I let them dictate the results to me and then I presented my own results on the OHP. I regretted thinking I should have asked them to present their results themselves. I also realized that it would have been better if all of them were doing the same cutting (the simpler task of halving etc.) and those finished would have to do the more difficult task. I wrote the fraction comparison in line but I am sure it would have been better to write them two by two and then complete adding other fractions. There was little time left for discussion. The stage of explaining the activity was a problem because it was necessary to add additional explanation. The discussion itself with groups was fruitful and during the individual approach, the students were really attentive.

Description of Lesson 2 (Thursday 18.12.)

My plan was changed: In order to return to the discussion from the previous lesson I now asked the students to work out the grid 8x8 where the number of breads will be given in lines and the number of people in columns (numerator, denominator). This was meant to broaden the last issues of discussion. That was not sufficient in the first lesson.

Together with students we first talked about how to divide e.g. 6 breads in between 4 people in two different ways 1 + ½ and 3/2. Then I wrote the grid on the board. I set the assignment. The students said that this was easy and filled everything in from 1/1 to 8/8. Those who realized that on the diagonal, there will be all ones, wrote other fractions (e.g. 2/6) in a mechanical way. Only then did I fill in two randomly selected slots on the board. I let the students work in pairs and I only helped when asked. The time was up soon. I did not count with the task completion but I was interested in how far they can get. Two or three pairs came up with very good ideas. There was not much time left and so together we filled in one quarter of the grid 1 to 4 on the board. I think I should have done this right at the beginning instead of asking them to expand the tables. Next thing I asked them was to colour the lozenges: using the blue colour where one person gets less than one bread, using red where he gets more than one, using no colour or yellow where he gets exactly one bread. Overall I think that the lesson plan was too demanding. The anticipated aim seemed to be nice but since the path to achieve it did not have any shortcuts it was difficult to achieve it in an effective way in such a short time. It would be possible to expand the grid gradually depending on the students' pace. I did not get to the original plan of the second lesson at all! During the break, before the next, third lesson, one of the girls came up to me with the grip properly filled (I set it as an optional homework). She admitted that her mother helped her do it and the mother said that it concerns cancellation of fractions and that she, when she was a schoolgirl, did not do anything like that. The grid was coloured, unfortunately in a wrong way.

Description of Lesson 3 (Friday 19.12.)

This lesson was video-recorded. In this lesson I managed to fulfil all the aims. Its topic was the original lesson plan for Lesson 2. By now, the students got used to me and cooperated in the same way like in the previous two lessons. I think that it was an active lesson. And I think they showed a good tolerance and understanding correcting some of mine let us say minor mistakes in French. And even though there were some

who repeated my mistake, there was always someone else who corrected us. This was apparent, in a limited amount, in previous lessons. I find this as a kind of boundary for a non-native teacher. I was happy with this lesson in spite of some small "slips of the tongue" or formal problems. I am sure I would try to do my best to avoid them in future.

Friday 19.12., I conducted a lesson which was also videoed and was placed immediately before the third lesson with my own class.

For lesson plan see the attachment. The students were unknown for me. First I set only the first task – I had a copy for each student. I appreciated the students' activity during the stage of discovery. I feared that they would be virtually "frozen" seeing an unknown teacher speaking to the microphone with two cameras in the class, the technician and their own teacher. What is more, the headmaster of the school came to monitor. Fortunately, there were a couple of active students in the class who might not be as active other times. Again, I received the students' names and photographs but I did not need it either. I have to admit that the relationship between me and students was not too personal. Just after the lesson I was happy with the lesson and I hope that such an experiment serves the good purpose. I learned, also after the lesson, that the headmaster was in a hurry but that he, as a person with the interest in literature, "finally understood the equations with one unknown". That is what he told me in person when he came to say good bye after my last lesson I taught.

In conclusion ...

I would like to remark that this experience was very enriching. Thanks to the training provided by the Faculty of education in Prague it was easier for me to find my role in the pilot project. It was also easier to prepare the teaching units. I did not miss anything in the preparatory stage for teaching fractions. I would also like to express my thanks to J. Novotna, M. Hofmannova, Y. Alvez and Y. Renaud for their help.

During my teaching I noticed that it is not vital to know the class and the students' names in order to talk to them. I also observed that during the first three lessons with a non-native teacher, the students are fairly lenient to the mistakes he makes in their mother tongue and focus rather on the lesson itself. I faced minor problems when I had to provide additional explanations in French. I believe that they would disappear after some time. The only thing that was really difficult for me was to reformulate instructions for the activities in order to make them clearer or to explain results. You will see from the video-recording that even a young girl student is able to explain in a fluent and understandable way something that I did not dare.