

SUMMARY

Mgr. Danuše Součková: Analytical chemistry in secondary grammar school. Summary of Ph.D. Thesis
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At the end of my thesis about the importance of chemical experiments in chemical education and especially about the importance of analytic chemistry in secondary grammar schools I'd like to summarize the most important ideas from particular chapters. I think that the objects I have determined at the beginning, have been filled and my work will help to perceive analytic chemistry as an integral part of chemistry education in secondary grammar schools.

I have emphasized importance of chemical experiment and its use in analytical chemistry education. I have pointed a possibility of working relation among school subjects and a possibility of putting several cross-sectional topics into analytic chemistry education. Other object was to check students' knowledge. I have also intent on particular experiments and I have divided them into several groups and I have prepared them to be put just into lessons by teachers and some notices and solutions are added.

I have described the work during the experimental lessons, the equipment for them, specific matter of analytical chemistry. When we understand the function and importance of chemical experiment in acquiring subject, in forming and advancement of pupils, we consider this kind of education very important. Chemical experiments and practical lessons are the most effective especially in analytical chemistry to gain a piece of knowledge. It is used to be recommended to add other educational methods and sometimes use some project activities. When students have during their studies two-year-practical lessons (in our school they have), they are better in their exam tests and they can remember subject better.

At the end of two-year-practical chemistry lessons, students usually write special test of analytical chemistry. I can say that it is still problem for our students to solve the topics based on mathematics or chemical reactions. On the other hand students are good at topics based on chemical experiments and colourful reactions.

I tried to check a lot of textbooks used for teaching chemistry and only two of them had special (but little) part focused on analytic chemistry. Teachers can use three other books, which are acceptable for teaching practical lessons. There are several books written for special secondary schools which can be used as well.

I have worked out 114 experiments and divided them into eleven groups. Several experimental topics concern water, food, plant, polymer analyses. Some experiments have to do with agriculture, human health. In some experiments is used simple physical equipment and microscopes. I try not to use traditional branches as organic, anorganic chemistry, qualitative and quantitative analysis, but in some chapters I had to use it, because it is important for explanation some process or technology.

All parts of my thesis are written using obligatory scholar documents, special and pedagogical literature and mainly my own experience gained during many years teaching chemistry and biology at secondary grammar school.

I wish my thesis helped to move perceiving analytic chemistry and chemical experiment in secondary grammar schools by teachers as well as by students.