

Implementation of Radioactivity Workshop in Science Center and its Improvements During the First Year in Action Research Design

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Abstract. This contribution is a glimpse of processes connected to preparation, implementation and self-evaluation of a workshop. The chosen workshop, for this research, is aimed to teach some basics of radioactivity to high school students (ISCED 3) or students in the last years of a lower secondary school (ISCED 2). The research sticks to the basic principles of action research (e.g. [1]). Therefore, it is based on cycle of observation, evaluation, implementing some improvements and repetition of the cycle again.

The discussed activity is a workshop at one of the largest Science Centers in the Czech Republic. Science Centers, as intended here, are the most interactive science and technology museums. They are usually more based on joy and fun rather than precise scientific knowledge. But the best of them tries to combine what could seem impossible – scientific accuracy and entertainment. Science Centers are not only scientific and technique exhibitions but they have also other programme – e.g. workshops, science shows, planetarium programs and other such activities. Some of these activities are generally for public and some of them are specially for pupils and students of different age. This workshop is activity for school groups of 15 ~ 24 students.

The workshop Radioactivity was prepared by one of the Science Center workers at the beginning of the school year 2016/17 and it was chosen to be part of this research. My research started just before the workshop

was introduced to other instructors and cooperated since then.

The workshop takes about 90 minutes. Workshops generally starts with brief introduction to problematics and then the participants (students/pupils) make groups of two or three students and cycle among sites with different tasks. At every station, they use methodological list and solve tasks according to it. This workshop is made of 8 different sites, some of them are actually measurement places (distance, kind of material inserted and its thickness), some of them are other activities related to radioactivity (trying of a protective suit, ordering of years and pictures...)

To try to measure whether the participants learned something, short five-minute test was introduced. Participants solve it before the introductory speech and then solve the same test at the end of the workshop. It is written on paper but we are preparing and want to change the form to table questionnaire.

I was present at several (and most) of the workshops and I could observe the work of students. I also critically went through the texts. That already lead to some improvements, also the discussions of the main lecturer who prepared it with some other assistants lead to some improvements – like other texting of lists, change of some tasks.

But there is still much work to be done. The test, for example, indicate that many participants think that radioactivity is always dangerous. Maybe that this activity should show that this is not the case.

This contribution will bring more insight to this activities and our efforts to improve the education in Science Centers.

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Keywords. informal education, radioactivity workshop, Science Center

References

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