

## DEVELOPMENT OF SCIENTIFIC RESEARCH ACTIVITY AS THE BASIC COMPONENT OF SCIENCE EDUCATION

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Scientific research activity (SRA) in comprehensive school is not a new phenomenon. Similar actions have been paid attention at various stages of education. Changes in the quality and quantity of the current stage of society development show a different situation: the pace of life increases, the “turbulence” of the surroundings is observed, globalization and social and economical changes in various segments of society gain more power. At the moment, the education system in Lithuania and other countries is facing different changes. As for the reorganization of Lithuanian education system within the period of the last two decades, it seems to be an intensive and ambiguous process. Lithuania had to pose two fundamental challenges: first, to proceed from the so called “soviet” system of education the one based on national identity and experience, and second, to adapt the new system to the needs for modern society fully integrating the experience of international education. The adjustment of national and international components has remained the major problem of Lithuanian education system up to now.

Without framing the concept itself, scientific research activity is the basic component of developing science education. Thus, the constant awareness of this topic is a definitely important issue. Our time requires human curiosity, continuous adaptation to the ever-changing life and active involvement in changes taking place in society. In this case, creativity, original thinking, self-sufficiency, etc. are necessary qualities.

SRA is obviously must be developed and reach an appropriate level in all comprehensive schools, including stages from the institution of pre-school education to upper-secondary school. Thus, three crucial moments must be considered:

- finding / discovering / involving students as young researchers;
- creating a system of educating students as young researchers;
- training the staff undertaking SRA for students.

Leadership for young researchers and the arrangement of SRA are rather specific process, and therefore the staff must be offered appropriate conditions for working with young researchers and developing abilities of scientific research.

Progress in acquiring the abilities of scientific research activity closely correlates with the development of critical thinking, a choice in strategies for dealing with problems and applying them in practice, the effective use of different information sources, data processing, analysis, synthesis and interpretation and proposing hypotheses and alternatives. In terms of education, an important point is that students



should not only better acknowledge natural phenomena, facts and laws but also were able to align them with everyday experience and adapt to different situations. Scientific research activity creates the right conditions for a similar type of integration. Moreover, this is not only theoretical or practical knowledge but also feelings and remarkable discoveries that, first of all, are very important to the child him/herself. In other words, such activity integrates and positively manifests an emotional component of a personality. It is worth mentioning that the process of scientific research activity fully discloses individual interests and abilities of students.

In one or another way, the abilities of scientific research activity obtained in comprehensive school are important to every student. However, it does not mean that the students will choose particularly this type of activity in the future. The developed students' need to independently research and discover, to be engaged and actively involved, to protect nature, natural resources and surroundings should be a considerable achievement. Another aspect is that such an environment is the place where bright students can usually realize their ideas. No less important is another aspect emphasized by different scientists. For instance, M. Hugerat, S. Zidani and N. Kurtam (2003) agree that there is a tremendous amount of information in variety of subjects that continues to accumulate. Thus, it must be achieved that individual scientific research activity should help students with acquiring as more knowledge and abilities as possible. It is obviously a wrong way to present information to the students as an „absolute fact“ that must be memorized.

Researchers also notice (Tamir, 1991; Din-yan Yip, 2005; Reid, Serumola, 2006) that in the majority of cases, the school curriculum integrates scientific research activity. It seems to be a necessary and self-evident element. Nevertheless, the answers to the questions whether the activity is undertaken and effective and if the established goals are achieved are frequently missed. Can such goals be accepted as the underlying ones by teachers? Finally, working towards similar goals can be rarely defined as the focus of assessment, i.e. the aims of scientific research activity frequently carry a declarative character due to various reasons.

A crucial point is that the abilities to demonstrate scientific research activity must be consistent and uninterruptedly developed. Scrupulous attention should be paid yet at primary school. The conducted research shows that this is the place where activity can be highly efficient (Lamanauskas, 2003; Coates, 2009).

Thus, the above expressed ideas allow making a conclusion that scientific research activity in comprehensive school is an integral part of the educational process. Such an action, didactically, is one of the most effective ways to increase students' cognitive activity. Scientific research activity stimulates intellectual learner's potential and develops creative abilities. It is therefore important that much the same methods for promoting social and communication abilities and skills of students should be advanced. One of the most expected outcomes of this kind of activity is a formed positive attitude to further personal professional self-determination (Lamanauskas, Augienė, 2009). Thus, an obvious and valid point is that it is constantly necessary to bring together all students engaged in scientific research activity, deepen their knowledge and organize the activity bearing in mind opportunities, experience and interests with the major aim of developing abilities, skills, initiative and creativity regarding scientific research activity. On the other hand, this is promising and purposeful help to those preparing for studying natural science and technologies at university level. Such an outlook should be accepted by both teachers and students due to the fact that any kind of activity is related to expectations and a certain prospect for the future.

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