International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

http://ijpsat.ijsht-journals.org
Vol. 17 No. 2 November 2019, pp. 204-207

Synergetic and Science School

M.Mamojanova[1], K. Tulenova[2] and E. Rasulev[3]

[1]Senior teacher Tashkent State Pedagogical University named after Nizami,
[2]Professor Doctor of Philosophy Tashkent State Pedagogical University named after Nizami,
[3]Ph.D. Associate Professor of TCTI Tashkent, Uzbekistan

Abstract - The article discusses the nature of development and problems of modern science, the role of a scientific school in the formation of a professional culture of a scientist, its importance in becoming a scientist both as an individual and as a member of the scientific community with specific examples.

Keywords - History of Science, Individuality, Scientific Community, Scientific School, Leader, Professional Culture, Style of Thinking.

The face of modern science is represented not only by individual scientist personalities, but to a large extent by large scientific schools, led very often by these personalities. Modern science is largely determined by a large team, the use of sophisticated technology and a powerful experimental base. In addition, in any branch of knowledge, scientists always face a very wide range of choices of scientific problems. Therefore, the task always is to choose the most promising area of research, that is, it is necessary to decide which of the research areas to give preference to, which of the scientific problems to choose as the most acceptable, based on existing knowledge, methods and material resources. In such conditions, the development of academic and university science is largely determined by the strengthening of the material and technical base of science and the comprehensive support of academicians. A survey of researchers in such cases makes it impossible to make an unambiguous choice. Each scientist, researcher has his own predilections, his own assessment of the problems facing science.

Research in science, the organization of these studies, the definition of further prospects of science today is the object of interest not so much of a particular person as a scientist, but of the scientific community and the most optimal form is a scientific school. So, in the recent past, such schools as the functional analysis school of academician T.A. Sarymsakov or the school in the field of probability theory and mathematical statistics of academician S.Kh. Sirazhiddinov were heard in Uzbekistan. In the field of physics, everyone knows such schools as the School of High Energy Nuclear Physics and Cosmic Ray Physics, Academician S.A. Azimov, and the School of Emission Electronics, Academician A.A. Arifov. In the field of chemical science, everyone knows the successes achieved in the study of alkaloids by the scientific schools of academicians A.S. Sadykov and S.Yu. Yunusov. The field of development of social sciences is, first of all, connected with the names of such scientists and leaders of a scientific school as academician I.M. Muminov in the field of research of rich philosophical heritage and the school of academician Ya.G. Gulyamov, which made an invaluable

Corresponding Author: K. Tulenova

contribution to the development of historical science, in particular archeology.

The process of finding an effective optimal way of becoming a novice scientist makes many specialists take a new approach to the problem of “scientific school”. It is known that the scientist’s productivity depends on the place where he works. In other words, it is clear that for a successful scientific activity, any person needs to feel like a scientist, navigate scientific values and norms, and follow certain scientific traditions. The analysis of the scientist's capabilities in the conditions of the research team, in which he most often works, becomes an essential part of the problem of the scientific creativity of modern big science. But the scientific school remains the most reliable and productive basis of the scientific tradition as the initial stage in the formation of the scientist - the individual. The scientist’s self-awareness is an important component of his activity, which significantly affects his scientific activity. A partial change in the scientist’s self-consciousness in connection with the establishment of new social conventions in modern science caused a collision of scientific and technological value systems. This led to a decline in scientific activity, increased conformism and a focus on short-term studies, where the importance of traditions fades into the background, and they are considered as something outdated and unnecessary. So, we can say about the clash of two traditions in science: scientific, professional and technological. And the role of the scientific school in this regard has increased significantly.

We can say that modern theory of a scientific school is lagging behind life. That is, if we can safely assert the existence of various scientific schools, directions, styles, programs, paradigms corresponding to them, then very little can we note about these schools themselves in science, their origin, purpose, difference from each other, and most importantly, their role in the development of modern scientific thought, the formation of a researcher, scientist, leader.

The history of science is not only the history of the generational change of scientists, scientific styles, scientific schools, scientific problems, objects of research, but also the history of scientific schools. So, what is such a phenomenon of science as a school?

If we take the ancient East, then there existed such schools as the Baghdad “Bayt al-Hikma” - “House of Wisdom”. This is a kind of the first Academy of the East. Further, it should be noted such ancient schools of science and education of the East as the "Academy of Mamun", "Academy of Ulugbek." So, if we stop at the Ulugbek school as the most famous and studied, it was opened in 1420 under the auspices of Ulugbek and the leadership of ar-Rumi, al-Kashi and al-Kushchi in Samarkand. At the beginning, the school was tasked with translating and commenting on the mathematical and astronomical works of outstanding scientists from ancient Greece, India, China and Central Asia such as Euclid, Archimedes, Ptolmey, Ibn Sina, al-Beruni, Omar Khayyam, al-Sajawandi, al-Samarkandi, at Tusi and others. Subsequently, a number of scientific papers were written in the field of mathematics and astronomy. But especially the Samarkand scientific school was glorified by its observatory. The observations and calculations carried out at this observatory were much more accurate than all the works of scientists of that time. Ulugbek's school lasted about 30 years. During this time, Samarkand scientists obtained a number of fundamental results in the field of mathematics and astronomy, and a number of fundamental works were written. “The activities of the Samarkand scientific school combined theoretical development of problems and an experimental-observation method. Therefore, the Samarkand school of science has become the main base for the development of mathematical and astronomical sciences and education in the Middle and Middle East in the XV - XVIII centuries,”noted academician T. Kary-Niyazov. Among the scientists of the Samarkand scientific school, it is worth distinguishing such distinctive scientists as Ulugbek, Kazi-zade ar-Rumi, Giyaseddin al-Kashi and Ali al-Kashchi.

Modern science has crossed the line when its self-knowledge could only be realized at the level and thanks to the enthusiasm of individual outstanding scientists who were able to systematize the holistic image of their discipline and through this created their own schools and entire areas of science. But on the other hand, the relevance of the modern scientific school takes on a new sound and meaning.

So the increasing prevalence of the "collective sector" of science over the "private" (individual) makes the problem of the psychology of the scientist as a leader especially acute. Sometimes even the small changes that managers make to the organization of scientific activity are enough to improve or worsen the performance of scientific groups with the same human and material resources. So, in relation to young scientists, a scientific school

promotes the development of professional knowledge, the development of the productivity of his work, its return, the formation of business qualities. A scientific school acts as a model of a professional and organizer in one person. The school promotes the development of young scientists organizational skills, the ability to work with people, organize a team to achieve the goal. A scientific school is a team where everyone takes their rightful place and role, that is, each member of the school contributes, shows his own personality. Therefore, a scientific school is a small team, where the thematic type of structural organization of activity is the basis.

A scientific school is formed according to the target principle and each member of this school must comply with the norms adopted in it, learn the necessary knowledge and skills that he needs as a member of the school, personal qualities are formed in accordance with the environment in this school.

The increase in the intensity of scientific research, the involvement of more and more specialists of different profiles in one direction of science poses the tasks of conscious, focused formation of scientists. In solving this problem, the presence of a scientific school also makes a significant contribution. It is known that we bring up scientific talent, as well as artistic talent. A scientific school, directly influencing young people who have devoted themselves to science, develops their spiritual capabilities and needs, enhances their ability to be creative in their approach to scientific problems. This is extremely important for the present and future science of Uzbekistan, for the correct assessment of the role and importance of the older generation of scientists. Now in our national science, youth makes up half of all scientific workers.

Of particular importance in the formation of novice scientists are scientific schools, i.e. such laboratories, research groups that bring people together around original concepts, new directions in science and have the quality of an invisible college. Involving novice researchers in joint creative activities, a scientific school under the guidance of experienced, venerable scientists - authorities of science in Uzbekistan frees their consciousness from many technological details. Research work figuratively requires a certain minimum critical velocity, a certain amount of “critical mass”. Efficiency in scientific work is not always proportional to the effort expended. The scientist is constantly experiencing a lack of time, but if he has gained sufficient speed, a "critical mass", he will quickly find himself in uncharted territory. And one of the best ways to get a powerful impetus for scientific research is to work in a creative group. Collective skill, experience and help - this is the main thing that gives a scientific school to a novice scientist. This basis further gives an impetus for the full and rapid formation of individuality in a scientist. Thus, schools are the catalyst that significantly accelerates the formation of a scientist both as an individual and as a colleague in science. Scientific schools actively contribute to a thorough and profound assimilation of the creative experience of generations, an experience that is similar to a compass that helps guide a ship of curiosity through reefs and pitfalls to new ideas, to new generalizations.

Helmholtz, a famous scientist of the past, loved to repeat such a thought - already one communication with a great man changes the spiritual world of a student forever. “Whoever has encountered one or more of the most advanced people, his mental scale changes throughout his life. However, this clash is the most interesting thing that life can imagine. ”

One of the features of modern scientific research is that they constantly have to face new problems and tasks that require effort and participation in the context of their solution to permanent research schools. All this requires thorough preparation, reliance on rigid and established traditions, possession of the necessary arsenal of methodological knowledge and skills that provide a specific orientation in a scientific search.

The listed qualities, presented as a whole, form the content of the professional mentality, professional culture of a representative of a particular scientific school. These qualities are acquired and improved by researchers in the process of improving the professional level, joint daily scientific activity of scientists around a particular scientific school. So this, in particular, can be expressed by such a well-known concept as the thinking style of a particular school of scientists, specialists. As modern studies show, each scientific school is sometimes characterized by completely different approaches to organizing the creative process, educating scientific personnel, and choosing the directions of scientific work, but at the same time, one decisive role of the head of a scientific school in its organization and activity remains unchanged. So, the consideration of a scientific school as a necessary

component of modern big science requires closer attention and determination of its place.

REFERENCE

[1] Kary-Niyazov T.N. Astronomical school of Ulugbek. Tashkent. 1950. S. 36.

[2] Helmholtz G. On the academic freedom of German universities. - M. 1879.S. 20-21.

[3] Andryukhina L.M. Style of science: cultural-historical nature. - Ekaterinburg. 1992.S. 52.