PROFESSIONAL EDUCATION

P.D. Sarkisov
D.I. Mendeleev University of Chemical Technology of Russia, Moscow, Russia

Keywords: System of education, fields of education, structure of education, levels of education, scientific degrees, establishment of professional education, curriculum

Contents

Summary

Every country has its own system of professional education, each differing in the types of universities and professional schools, the duration of teaching, the degrees offered, and the possibility of continuing education at the next level. However, the diverse systems of professional education can be reduced to two main types: that of the USA and that of Germany. Many countries have adopted the features of these systems of professional education. The main characteristics of the American system are: many levels of education, a diversity of universities and other institutions of higher education, and a large number of elective subjects. The German system differs in essence from that of the USA: there is only one academic degree in higher schools, all universities are of equal status and there is no grading of universities, education is conducted on the basis of a university curriculum and students cannot change their courses, and higher professional education is strictly oriented to a specific activity, which is determined by the type of institution. In Germany, there is no special level of secondary professional education. Every country is also characterized by its own educational structure. The structure of education defines the distribution of students and graduates in the various fields. The distribution of students and graduates across these fields depends on the role professional education plays in that country. In countries where education has to satisfy the educational demands of the individual, there is a large proportion of graduates in the humanities, law, and the social sciences. In countries where the educational system is an element of the system of material production, there is a greater proportion of graduates in the natural and technical sciences.

UNESCO – EOLSS SAMPLE CHAPTERS

1. The Main Purposes of the Education System

Professional education played a very important role worldwide in the last decades of the twentieth century. The scientific and technical revolution of the 1970s created new demands for scientists and engineers, and noticeably increased the quantity of information that students of universities had to study. The rapid development of

technology led to differentiation of knowledge and made professional training more specialized. Once differentiated by this training, graduates were not able to study new fields of science and use the achievements of allied sciences. The system of professional education started to conflict with the demands of economic and technical development. This led to significant changes in the system of professional education in a number of industrialized countries in the 1970s.

The other reason for changes in professional education in the 1990s was changes in the social and political systems of a number of countries. Political changes brought changing viewpoints on education and its role in society. For a long time in many countries, education had been viewed as an instrument of state for forming a specific type of person for society. The role of education was reduced to training personnel for science, industry, and agriculture and the everyday activities of a country. This point of view saw the development principally of technical specialties in higher education and a rapid increase in professional secondary school at the expense of general secondary school. In recent years, the symbiosis between education and culture has become clear. The understanding of this interdependence has seen a change in the system of professional education, with a reduction in technical education at all levels and a rapid increase in humanities fields of professional education.

However, this has led to substantial differences in the content of professional training and variations in different countries.

Professional education can be defined in different ways. It can be defined by the goal of education. In this definition, professional education would be the education of different levels by means of which people qualify for a certain profession or specialty. On the other hand, professional education can be defined by the type of educational institution: this would be the education obtained in professional secondary schools, and in universities and institutes. The type of professional education that is established, the duration of training, and the degrees obtained depend on the system of education in each country. The systems of education of different countries are quite different, but they can be reduced to some main types. The professions (or specialties) they qualify graduates for are defined by the structure of education, which is also different in each country. The structure of education defines the distribution of students and graduates in the various fields. The International Standard Classification of Education (ISCE) defines the following fields of education:

- Education: pedagogical sciences and training of teachers.
- Humanities: arts; religion.
- Law and social sciences: law and social sciences; commercial and business management; communication and documentation; services and domestic science.
- Natural, technical, and agricultural sciences: natural sciences; technical sciences; mathematics and informatics; architecture and civil construction; transport and communication; industry; trade and handicraft; agriculture, forest industry and fishing.
- Medical sciences: medicine and public health sciences.

The distribution of students and graduates across these fields depends on the role

UNESCO – EOLSS SAMPLE CHAPTERS

professional education plays in the particular country. In those countries where education has to satisfy the educational demands of individuals, there is a large proportion of graduates in the humanities, law, and the social sciences. In countries where the educational system is part of the system of material production, there is a greater proportion of graduates in natural and technical sciences. This is illustrated in Table 1.

Country	Education (%)	Humanities (%)	Law and social sciences (%)	Natural, technical, and agricultural sciences (%)	Medicine (%)
USA	10	9	41	19	9
Canada	12	12	40	20	11
Japan	10	21	37	22	6
Germany	5	6	25	37	21
Czech Republic	19	3	17	53	7
Russia	21	17	9	46	7

Source: UNESCO, *World Education Report 1998* (Paris: UNESCO, 1998)

Table 1. Distribution of high school graduates in fields of education in different countries, 1995

Altering the structure of professional education takes a long time and cannot be done quickly.

2. Professional Education

Every country has its own system of professional education, differing in the types of universities and professional schools, the duration of teaching, the degrees obtained, and the possibility of continuing education at the next level. However, the diverse systems of professional education can be reduced to two main types: that of the USA and that of Germany. Since many countries have adopted the features of these systems of professional education, they are described below.

-
-
-

TO ACCESS ALL THE **7 PAGES** OF THIS CHAPTER,
Visit: http://www.eolss.net/Eolss-sampleAllChapter.aspx

UNESCO – EOLSS SAMPLE CHAPTERS

Bibliography

Smirnov A.G., ed. (1991). The System of Higher Education in Western Countries, Vols 1 and 2. Moscow: University of People's Friendship Press. [in Russian.] [This presents a detailed description of the system of education in different countries, including the best known universities, the levels of education, and degrees.]

Tikhonov A.N., ed. (1996). Higher and secondary professional education in Russia. Moscow: Scientific Research Institute of Higher Education Press. [in Russian.] [This book contains extensive statistical data about the Russian system of professional education.]
UNESCO (1993). World Education Report 1993. Paris: UNESCO. [These UNESCO reports present and review extensive statistical data on education throughout the world.]

UNESCO (1998). World Education Report 1998. Paris: UNESCO.

Biographical Sketch

P.D. Sarkisov, born in 1932, graduated from the faculty of Chemical Technology of Silicates of D.I. Mendeleyev University of Chemical Technology of Russia in 1956. He was awarded a D.Sc. in 1979, and in 1990 was appointed to a professorship. He is a correspondent member of the Russian Academy of Sciences (since 1997), and an Academician of the Russian Academy of Sciences (since 1984). He currently holds the post of rector of D.I. Mendeleyev University. He is a leading scientists and a specialist in the field of physical chemistry and the technology of silicate and hard melted materials. He has published more than 300 scientific works, inventions, and patents. A major focus of his research has been improving the higher education system.

UNESCO – EOLSS SAMPLE CHAPTERS