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STRUCTURES OF SCHOOL SYSTEMS WORLDWIDE: A COMPARATIVE STUDY

Abstract

In the past 20 years I have been examining the structures of school systems worldwide. This ongoing research has been enriched by the findings obtained from the lecture course on Comparative Education I have been delivering to students in the Bachelor and Master's Education Programs at Sofia University, Bulgaria.

This paper presents some results of my comparative study on the structures of national school systems. The paper starts with an introduction to the reasons for concentrating on the structures of school systems, and then describes the study details, shows the main structural models and concrete structures and countries where each structure is used, and finally proposes to develop a world comparative structural research approach.

Introduction

The study focuses on the structures of school systems because of the following four reasons:

Firstly, the structure is the central aspect of each national school system. It is the foundation on which the school system is built. The structure defines some of the most important school characteristics, like school entrance age, compulsory education, duration of different school levels, system subordination and internal correlations. Curricula, syllabi, and even textbook contents depend on the structure.

Secondly, the structure is the most conservative aspect. Structural reforms are rarely done, and when they do happen, policy makers usually act after long debates, considerations and experiments have been undertaken. The structure depends much more on national traditions than on other circumstances. After all, the school structures remain much more traditional than other school aspects as education goals, finance mechanisms, curricula, textbooks, standards, teaching innovations, etc. This notwithstanding, it can be said that the past 20 years have seen reforms of school structures in many countries, mostly in East and Central Europe, and Eurasia, but also in some countries in West Europe, Latin America and sub-Saharan Africa.

Thirdly, the structure is visible, easy to understand by students, and, this is a very important moment from both a comparativist's and teaching point of view: the structures are fruitful for comparative analyses and generalizations, and for developing students' comparative thinking as well.

Fourthly, there have been very active discussions on the need for structural reforms in the Bulgarian school system in the past six years or so. In 2006, a strategy program entitled *National Program for Development of School and Preschool Education (2006–2015)* was adopted by Parliament of Bulgaria. In 2011, the Ministry of Education, Youth and Science of Bulgaria launched a project of a new *National Education Act*. Reforming the structure of the school system is one of the main points of both documents. No structural reform has been done so far, but it is obvious that such a reform will start soon. Everything is best understood in

comparative perspective and, in this light, a comparative study on the structures of school systems worldwide would be of benefit to policy makers, student teachers, practitioners, researchers, and to everybody who is interested in schooling in other countries.

Description of the Study

Research Aims

The general aim of the study is to permanently examine the components of the current structures of national school systems worldwide.

The specific aims, through which the general aim is actualized, are to:

- describe the structures of school systems worldwide;
- analyze the national structural characteristics;
- explain the factors that determine the structures;
- compare the structures;
- show the common features, similarities, and differences;
- group the structures into main structural models; and
- predict the future structural development in national, regional and global perspective.

Teaching Utilization

The study results are incorporated into the training process (lecture course, group seminars, exam preparation) of Comparative Education. The study aims at assisting students to:

- widen their knowledge on school structures worldwide;
- develop their comparative structural thinking;
- improve their possibilities to compare comparisons;
- better understand the essence of the school structure; and
- learn how to make qualitative analyses using quantitative data.

Methods

The following research methods are used: data collection, description, national education policy analysis, comparative structural analysis, factor analysis, generalization, future development prognosis.

Data Sources

The CD-ROM editions of *World Data on Education* published by the International Bureau of Education (UNESCO – IBE, 1996, 1998, 1999, 2001, 2003, 2006/2007) and the latest on-line version (UNESCO – IBE, 2010/2011) are the sources of the study.

Geography

The study comprises nearly 100 countries of all continents. They are selected taking into consideration their country profiles: geographical location, country size, population, economy, religion, and specific details of school system.

Clarifications

The 'structural model' is formed by the ratio between primary (or basic) education and secondary education. Each model includes a couple of structures.

Generally viewed, the structure may consist of two or three levels:

- a 3-level structure, consisting of primary education + secondary education lower level + secondary education upper level; an expression of such a structure for instance is 6 + 3 + 3 / 4 that means 6 years primary education + 3 years secondary education lower level + 3 or 4 years secondary education upper level;
- a 2-level structure, consisting of basic education (primary education and secondary education lower level) + secondary education upper level; a sample expression of such a structure can be 8 + 4 / 5 that means 8 years basic education + 4 or 5 years secondary education upper level;
- a 2-level structure, consisting of primary education + combined secondary education (lower and upper level); a sample of this structure is 6 + 6 that means 6 years primary education + 6 years combined secondary education.

Using the International Standard Classification of Education (ISCED revised 2011)[1] the above mentioned structures can be defined with the following formulas:

- a 3-level structure, comprising ISCED levels 1 + 2 + 3;
- a 2-level structure, comprising ISCED levels (1 + 2) + 3;
- a 2-level structure, comprising ISCED levels 1 + (2 + 3).

Most countries have one structure of their school systems. It is certainly well known that at the secondary education upper level the duration of general education and vocational education very often differs by a year or so but this fact does not mean that different parallel structures exist.

In some countries, mostly in Eastern and Central Europe, there are specialized schools of fine arts, music, dancing, and sports that have their own specific structures different from the structures of general and vocational education. Due to the very insufficient percentage these specialized schools have in the national school systems, their structures are not included in the study.

Some countries apply two, three or more parallel structures in their school systems**.** This case is mostly seen in countries that consist of decentralized administrative units (states, provinces, territories, prefectures, cantons, communities). Such countries are USA, Canada, Australia, the United Kingdom, Germany, Switzerland, Belgium, etc. However, there are some countries like Hungary and the Czech Republic that are not federations, but implement a couple of structures in their school systems.

The number of structures used in a country may vary from one to five at the most.

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[1] ISCED levels, revised 2011, are:
0 – Early childhood education; 1 – Primary; 2 – Lower secondary; 3 – Upper secondary;
4 – Post-secondary non-tertiary; 5 – Short-cycle tertiary; 6 – Bachelor or equivalent;
7 – Master or equivalent; 8 – Doctoral or equivalent.
(UNESCO – Institute for Statistics, 2011)

Permanency

It is an ongoing study. Data on school structures are checked and updated every year. Corresponding comparisons and generalizations are continuously done.

Printed Product

A teaching application containing research results by forms of tables, graphs and figures, was published in 2010 (Popov, 2010). An updated edition is planned to appear in 2013.

Results

The study covers a wide range of details of the school structures, such as: availability of compulsory preschool education; school entrance age; definition by low and practical implementation of compulsory education; structural models; transition between the school levels; school level leaving and entrance examinations; recent structural reforms. Here, only the results of the main structural models will be presented.

Structural Models

After examining, comparing and grouping the structures of school systems in 100 countries, it can be said that the following six main structural models are used worldwide.

Model 1
6 years primary education + 5, 6 or 7 years secondary education

It may be called *the British-American model*. The structures belonging to this model and countries, where they are applied, are:

6 + 3 + 3 / 4: Belgium, Ireland, Luxembourg, Poland, Switzerland (in 20 cantons), Cyprus, Georgia, Greece, Canada (in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Alberta, Northwest Territories, Yukon), Cuba, Mexico, Nicaragua, USA, Ecuador, Uruguay, Cambodia, China (this structure is predominant in most areas), Japan, Korea, Iraq, Israel (6 + 3 + 3 is the main structure, in some very rare cases, the structure is 8 + 4), Saudi Arabia, Syria, United Arab Emirates, Nigeria.

6 + 6: Netherlands (the structure is 8 + 6 beginning at the age of 4, if we consider the structure from the age of 6, it is 6 + 6), Hungary, USA, Australia (in New South Wales, Victoria, Tasmania, Australian Capital Territory).

9 + 3 / 4:[2] Denmark, Finland, Portugal, Sweden, Czech Republic, Estonia, Latvia, Slovakia, Slovenia, Bosnia & Herzegovina, Macedonia, Argentina, Paraguay, Venezuela, China, Libya, Yemen.

6 + 2 + 4 / 5: Belgium.

[2] It seems like that the 9 + 3 / 4 structure is a different one from Model 1. However, it is included in Model 1 because it has originated from the 6 + 3 + 3 structure by connecting the 6-year primary education and the 3-year secondary education – lower level into a 9-year basic education.

6 + 4 + 2 / 3: Germany (in Berlin and Brandenburg), Spain, the Philippines, Singapore, Chad, Congo.

6 + 5: Canada (in Quebec), Peru.

6 + 2 + 5 (or 6 + 7): New Zealand.

6 + 5 + 2: England, Wales, Malta, Jamaica.

Model 2

5 years primary education + 6, 7 or 8 years secondary education

It may be called "*the French model*". The following structures and countries are grouped to this model:

5 + 3 + 3 / 4 / 5: Italy, Turkey, Pakistan, Iran.

5 + 7: Canada (in Saskatchewan).

5 + 4 + 3 / 4: France, Switzerland (in 4 cantons), Colombia, China, Viet Nam, Madagascar.

5 + 8: Czech Republic.

Model 3

4 years primary education + 8 or 9 years secondary education

It may be called "*the German model*". It has the following structures:

4 + 6 + 2 / 3: Germany (in 14 of the 16 provinces), Belarus, Lithuania.

4 + 5 + 2 / 3 / 4: Switzerland (in 2 cantons), Russia, Ukraine.

4 + 4 + 4 / 5: Austria, Lithuania, USA, Kuwait.

4 + 8: Hungary.

Model 4

7 years primary/basic education + 5 or 6 years secondary education

It may be called "*the 7 plus model*". It includes the following structures:

7 + 5: Bulgaria (according to the school reform plan, 7 + 5 will replace the current 8 + 4 structure)[3], Canada (in British Columbia), Australia (in South Australia, Northern Territory, Queensland, Western Australia), Mozambique.

7 + 6: Czech Republic.

7 + 3 + 2: Namibia.

7 + 2 + 3: Zambia.

7 + 4 + 2: Scotland, Zimbabwe.

Model 5

8 years basic education + 2, 3, 4 or 5 years secondary education

It may be called "*the 8 plus model*". The structures and countries belonging to this model are:

8 + 4 / 5: Albania, Bulgaria (8 + 4 is the current structure), Croatia, Hungary, Serbia, Monte Negro, Romania, Canada (in Ontario and Manitoba), USA, Brazil, Chile, India, New Zealand, Angola, Ethiopia, Kenya, Sudan.

8 + 3: Albania, Egypt, Angola.

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[3] The new school structure in Bulgaria will consist of 7 years basic education (divided into a 4-year primary phase and a 3-year so called pro-gymnasium phase) + 5 years secondary education (divided into a 3-year lower phase and a 2-year upper phase).

8 + 2: Armenia, Mongolia.

Model 6
10 years basic education + 2, 3 or 4 years secondary education

It may be called "*the 10 plus model*". The structures are:
10 + 2: Jordan.
10 + 3: Norway.
10 + 4: Iceland.

Here it should be mentioned that during the Socialist era, two former socialist countries – East Germany (German Democratic Republic) and Bulgaria used the 10 plus model in their school systems. The 10 + 2 structure was implemented in East Germany in the 1970s and 1980s, while Bulgaria applied it from 1979 to 1991.

Distribution of the Structural Models

Model 1 is the most popular. It is used in 51% of countries studied. Model 5 is at the second place – 21% of countries apply it. Model 2 is used in 11% of countries while Model 4 can be seen in 9% of countries. Model 3 (6%) and model 6 (2%) are the most seldom used.

Regarding the specific structures, it can be definitely said that 6 + 3 + 3 / 4 is the most popular structure. It is used in 26% of countries. Two other structures are very popular too: 8 + 4 / 5 (18%) and 9 + 3 / 4 (16%). Other structures, each of them implemented in 6% of countries, are: 5 + 4 + 3 / 4; 6 + 4 + 2 / 3; and 7 + 5.

It should be underlined that this statistics is open. As it has already been mentioned the study is ongoing and country data and generalizations are regularly updated.

Other Results

It should be highlighted that the study shows the following main trends in the structural reforms that have been performed worldwide in the past 15 to 20 years:

- decreasing school entrance age;
- increasing the total duration of school education;
- increasing compulsory preschool education;
- increasing compulsory education;
- increasing the duration of primary education and at the same time neglecting primary education as a separate school level and putting it as part of basic education;
- forming cycles that consist of two or more school years; and
- establishing a large variety of school structures.

The latter trend breaks the myth of any tendency towards harmonization of school structures. All these main trends will be discussed in a further publication.

Conclusion

In the comparative study, some results of which are presented in this paper, the structures of school systems are examined in their functional dynamics, in their relations with other aspects of school systems, in their external rigidity and internal flexibility. The study has the idea of developing and using in practice a

methodological instrumentation that can be titled 'World comparative structural research approach'.

Comparative Education (no matter how it is considered – a field, university discipline, policy decision making tool, or whatever else) is what comparativists do. Such a methodological approach can be used for better mapping of national education systems worldwide, which is one of the main activities in Comparative Education, for the enrichment of research technology, and for helping students to create their own global comparative structural view of education phenomena.

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References

Ministry of Education, Youth and Science. (2006): *National Program for Development of School and Preschool Education (2006–2015)*. (In Bulgarian) http://www.mon.bg/opencms/export/sites/mon/left_menu/documents/strategies/programa_obrazovanie.pdf

Ministry of Education, Youth and Science. (2011): *Conception of a New National Education Act Project*. (In Bulgarian) http://www.mon.bg/opencms/export/sites/mon/news-home/2009/kontseptsia-22-03-2011.pdf

Popov, N. (2010): *Structures of School Systems: A World Review*. Teaching appliance to the lecture course on Comparative Education. Sofia, Bureau for Educational Services. (In Bulgarian)

UNESCO – IBE. (1996): *World Data on Education*, 1st Ed. (CD-ROM)

UNESCO – IBE. (1998): *World Data on Education*, 2nd Ed. (CD-ROM)

UNESCO – IBE. (1999): *World Data on Education*, 3rd Ed. (CD-ROM)

UNESCO – IBE. (2001): *World Data on Education*, 4th Ed. (CD-ROM)

UNESCO – IBE. (2003): *World Data on Education*, 5th Ed. (CD-ROM)

UNESCO – IBE. (2006/2007): *World Data on Education*, 6th Ed. (CD-ROM)

UNESCO – IBE. (2010/2011): *World Data on Education*, 7th Ed. http://www.ibe.unesco.org/en/services/online-materials/world-data-on-education/seventh-edition-2010-11.html

UNESCO – Institute for Statistics. (2011): International Standard Classification of Education. http://www.uis.unesco.org/Education/Documents/UNESCO_GC_36C-19_ISCED_EN.pdf

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