Syrian Arab Republic

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Ministry of Education

Introduction

Overview of the Education System

Education in the Syrian Arab Republic is centralized, and the Ministry of Education is responsible for supervising and setting the curriculum as well as the goals of teaching, including the interaction and integration of active teaching elements (i.e., teachers, students, and curricula).[1] The ministry also is responsible for providing educational services to its 14 directorates in the provinces. Each education directorate is responsible for the schools in its province. The ministry produces new curricular support materials that provide information about various teaching methods.[2] Participation of students' families is an important educational element emphasized in the curriculum.

According to the 2006–07 censuses, 98 percent of schools in Syria are public, 1.8 percent are private, and 0.2 percent are United Nations Relief and Works Agency schools for children who are refugees. Preschool is offered to children ages 3–5, but is not compulsory. The Ministry of Education has built, and is still building, new kindergartens, and it encourages the private sector to build kindergartens.

Since 2002, the constitution of the Syrian Arab Republic has emphasized the right of each child to a free and compulsory education from Grades 1–9. By making education available to all citizens without exception according to their will, abilities, and tendencies, the constitution emphasizes the principles of democratization of education and equality of opportunity.[3] The Compulsory Education Law No. 35 of 1981 made education compulsory for all Syrian children and their peers (e.g., Palestinians living in Syria) from Grades 1–6.[4] As of 2002, Basic Education Law No. 32 has combined elementary and primary education into one basic stage, making it compulsory from Grades 1–9. This stage ends in a government examination, after which successful students are granted a Certificate of Basic Education. The bylaws of Basic Education Law No. 32 specify both the organization and the specific properties of the basic education stage. At the same time, they specify the terms of basic education and help to overcome any obstacles that may hinder application of the law. The

philosophy, while students scoring approximately 60 percent can study athletics or any other major.

Languages of Instruction

According to the latest census in 2010, the population of Syria was about 23 million. In 2005, 18.7 percent of the population could not read or write. According to the constitution, Arabic is the official language in the Syrian Arab Republic, with education being provided mainly in Arabic. English is taught as the primary second language from the first grade of the basic learning stage, and French is taught in addition to English in Grades 7–12.

Mathematics Curriculum in Primary and Lower Secondary Grades

Developing and revising the pre-university mathematics curriculum, based on fieldwork by teachers and educational supervisors who consult with curriculum specialists in foreign countries, is an ongoing process for the Ministry of Education. Fundamental change in the mathematics curriculum began in 1997 with Grade 1 and by 2006 was extended to Grade 12. In 2005, mathematics and pedagogy experts from schools and universities in Syria established curriculum standards based on international standards for mathematics.

The mathematics curriculum at the First Cycle (Grades 1–4) of basic education aims to develop skills in mathematics. The curriculum also aims to develop and encourage mathematical skills and knowledge by focusing on the following content domains:

- Types of numbers (ordinals, cardinals, and fractions) and how to use them in arithmetic problems;
- The relationship among numbers (including fractions), comparisons of numbers, the spatial value of counting, and number forms (but not ordinal counting);
- The interpretation of numbers, including interpreting the meaning of numbers and fractions in different contexts, such as measurements and quotients;
- Mental arithmetic and evaluation;
- Arithmetic processes, including the meaning of the process (when to add and when to subtract), and the relationship between arithmetic processes (multiplication and addition, multiplication and division, and addition and subtraction);

- Apply numerical facts related to everyday life;
- Apply proofs by contradiction to solve everyday problems;
- Perform mathematical operations and express results accurately;
- Employ arithmetic operations; and
- Master mathematical skills to succeed in the workplace.

Science Curriculum in Primary and Lower Secondary Grades

Developing the science curriculum in the basic and pre-secondary stage has been an ongoing process, and one of the main goals of the Ministry of Education. In the late 1980s, the ministry began to write and compile science textbooks. However, these efforts lacked a clear vision. Since 1994, the initiative has become a priority, and a new science curriculum was developed and evaluated in the 2003–04 school year. The new curriculum concentrated on developing scientific thinking skills and was considered effective.

The curriculum standards established in 2005 describe the skills and basic principles of science that should be taught and learned at school through the eighth grade. These standards outline educational objectives regarding content, methodology, evaluation, and the educational environment. The ministry aims for students to learn and become proficient in the following:

- Scientific knowledge, including scientific facts and principles and basic scientific concepts;
- Basic scientific processes or skills; and
- Understanding of the real world.

With regard to scientific knowledge, students learn to understand the different types of functional scientific knowledge. Concepts and facts presented in biology, geology, physics, and chemistry enable students to understand the relationship among these areas of science, to deal with science in a comprehensive way, and to recognize different phenomena. Basic scientific concepts are taught in two overarching subject areas—biology and geology, and physics and chemistry. Biology and geology topics include the following: species of animals from the local environment; differences and similarities between animals and plants and between vertebrates and invertebrates; and land and the environment, including an understanding of environmental balance, fossils, the

Instruction for Mathematics and Science in Primary and Lower Secondary Grades

The Ministry of Education sets the instructional plan for each subject. For example, science and health are allotted three teaching periods per week in Grades 1–7 and four teaching periods per week in Grades 8 and 9. There are four teaching periods per week for mathematics in Grades 1–8.

Instructional Materials, Equipment, and Laboratories

Recently, the most important educational development in Syria was the Ministry of Education's efforts in 2005 to adopt measurable, high-quality, international standards regarding the teaching and learning process. The ministry has emphasized quality in pre-secondary education by defining target goals that are parallel to international views about what students should know and be able to do in all learning stages, so that students will have learning skills equal to those of students in developed countries. In order to choose the most suitable textbooks for students in the fields of science and mathematics, the Ministry of Education asked for offers from different publishers and then formed an evaluation committee to study the textbooks and choose the best among them. However, this experience was not successful enough, so the Ministry of Education, using international standards as models, created its own national standards and textbooks edited by science and mathematics specialists working in the ministry.

In the Syrian Arab Republic, teaching materials include all equipment, tools, and techniques used by teachers to convey educational knowledge to students in the classroom and develop teaching processes that fulfill the goals of teaching. Within the Ministry of Education, directorates are responsible for development and dissemination of educational techniques as well as the design and production of teaching methods that comply with the curriculum. The directorate in charge of teaching methods holds professional development courses for teachers, tutors, supervisors, technicians, laboratory workers, and librarians in the following areas:

- Using teaching methods;
- Developing teaching methods for science and mathematics that make use of simple, readily available materials; and
- Using and maintaining advanced laboratory equipment.

Teachers and Teacher Education

Teacher Education Specific to Mathematics and Science

In order to become qualified as a mathematics or science teacher, teacher candidates must complete a teacher education program consisting of three main modules:

- Module One—Academic preparation within their field of scientific specialization.
- Module Two—Professional preparation, including educational and psychological studies that enable the teacher to organize curricular strands and create learning experiences for students that facilitate the process of learning science.
- Module Three—General education preparation.

In order to work as a teacher of mathematics and science, a degree from a teacher education college or certificate verifying that one is a teacher is required. Teachers also may have a university degree in mathematics and science, together with a diploma in pedagogy. Candidates for public school positions are chosen based on their graduation grades and a merit-based competition, which includes testing and a personal interview.

Requirements for Ongoing Professional Development

New teachers must attend professional development courses throughout the academic year and during summer vacations. These are ongoing courses, covering scientific content as well as effective teaching methods in science and mathematics.

The Ministry of Education also has created a committee of head teachers and supervisors. These individuals receive training in methodology as well as structural evaluation and diagnosis in order to provide specialization in these fields and to improve their performance. The specialized supervisors also provide teachers with training on contemporary, active methodologies and on recent scientific and mathematical discoveries.

The ministry is revising a professional development program for teachers in accordance with recent trends in virtual and remote teaching. The program is associated with training used for similar programs that have been successful in other countries.

The ministry has a project that promotes and prepares teachers to teach the new curriculum and integrate the use of technology in education through a system of open learning within the Ministry of Higher Education. The training

- The collective final grade for all subjects is at least 50 percent;
- Final grades in each subject are not less than 40 percent; and
- The final grade in Arabic language is not less than 50 percent.

At the end of ninth grade, students take a general test to earn the Basic Learning Certificate. This is a comprehensive state examination administered at the national level. For tenth grade, the required score to advance is higher than in ninth grade and determined by the ministry. At the end of twelfth grade, students take a general state examination at the country level to gain entry to a university. Each university individually determines the score required to enter that university. Therefore, the score that a student earns on the state examination is important and determines whether the student may continue to university.

Impact and Use of TIMSS

Participation in TIMSS has improved methods of teaching, learning, and testing in the Syrian Arab Republic and continues to inspire further development. Syria's participation in TIMSS has had a positive influence on educational policies and reforms. Previously, tests included traditional questions dependent on memorization. Currently, however, test questions require students to apply, analyze, and synthesize information. The new curricula in general, and the mathematics, physics, biology, and chemistry curricula in particular, are based on current teaching and learning methods as well as new ways of testing, requiring higher-order cognitive skills (analyzing, synthesizing, and evaluating).

References

1 Zeyton, A. (2001). *Methods of teaching science.* Amman, Jordan.

2 Ministry of Education, Supervision, and Curricula Department. (2007). *National curricula for general pre-university education in the Syrian Arab Republic* (Volume 3). Damascus: Ministry of Education.

3 Ministry of Education. (2007). *Mid-term evaluation: Education for all in the Syrian Arab Republic.* Damascus: Author.

4 Decision No. 443/3053, 01/07/1425 (2004, August 16).