Chapter 4

Science Teacher Preparation in Lebanon

Reality and Future Directions

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Abstract: The purpose of this study was to answer the following questions: (a) What are the theoretical perspectives driving science teacher preparation programs in Lebanon? (b) What are the requirements of Lebanese science teacher preparation programs? and (c) What are the similarities and differences among the variety of science teacher preparation programs offered in Lebanon? Data sources for this study included: official governmental documents and mandates related to teacher preparation; institutional catalogues and syllabi of courses; and interviews with science education professors. Results of the study showed that teacher preparation programs in Lebanon are characterized by: (a) post-graduate programs that prepare secondary teachers with significant amount of science background; (b) three and 4-year programs that prepare elementary classroom teachers or science/mathematics teachers; (c) the absence of university level programs for the preparation of intermediate school science teachers; (d) the requirement of a thesis in many of the programs; (e) a lack of emphasis on field work; and (f) the adoption of an orientation that has some characteristics of the academic and technological orientations to teacher preparation.

Education in Lebanon has a special flavor. The freedom of education guaranteed by the Lebanese constitution has allowed private schools, universities, and colleges to flourish. These institutions are affiliated with international and national religious, independent non-profit, and independent for-profit organizations. Presently, at the tertiary level, there are 19 private universities or colleges, nine of which offer science teacher education programs. Also, several 2-year private colleges are involved in science teacher preparation. Likewise, the Lebanese government is involved in science teacher preparation through the Lebanese University, the Center for Educational Research and Development (CERD), and the Ministry of Technical and Vocational Education.

S.K. Abell (ed.), Science Teacher Education, 45–74.

Colleges and universities in Lebanon can be classified into four categories based on the higher education model they follow: American, French, Arab, or Lebanese. The only university following an Arab model of higher education (The Arab University) does not offer science teacher education programs as of yet. The universities that follow an American model or a French model have programs patterned after similar ones in universities in the US or in France (Freiha, 1997).

The French model is different from the American model in that it is organized by years rather than by courses. In addition, programs in institutions that follow the French model are characterized by early specialization, absence of a liberal arts core, and lack of electives. The Lebanese model, however, has its own distinct character with ideas derived from more than one of the other models.

The preparation of science teachers at the elementary, middle school, and high school levels is integral to the missions of private as well as public Lebanese institutions of higher education. Competition among the institutions has created a wide variety of science teacher preparation programs, each with its own theoretical perspective, set of requirements, and characteristics, but each preparing science teachers for Lebanese schools and in some cases for schools in the Arab region. These institutions prepare science teachers in a variety of programs and institutional structural units and offer different types of degrees. Table 1 presents the names of Lebanese colleges and universities that offer education programs along with the degrees they offer.

To understand the variety of teacher preparation programs offered by universities in Lebanon requires an understanding of the Lebanese pre-college educational ladder. In 1967, Lebanese Law Number 9099 instituted four stages in the pre-college educational system: preschool, elementary, intermediate, and secondary. Law Number 10227 (1997) maintained these four stages but refined the number of years required at each. The preschool stage consists of two years, the elementary stage consists of six years divided into two 3-year cycles, and the intermediate and secondary levels consist of three years each, for a total of 14 years.

Lebanese students are required to follow the Lebanese curriculum. As Figure 1 demonstrates, this curriculum is common for all students until Grade 10. In Grade 11 students may choose to follow the humanities stream or the science stream. Those who choose the humanities stream may choose to continue with the humanities and literature stream or follow the social sciences and economics stream in Grade 12. The students who choose the science stream in Grade 11 level may choose the general sciences stream or the life sciences stream in Grade 12. Each stream consists of a fixed number of subjects that all students who choose the stream are required to follow.

Table 1. Lebanese Colleges and Universities that Prepare Science Teachers, Degrees They Offer, and Number of Years of Study

Institution	Degree*	Duration
American University of Beirut	BA	3 years
	Teaching Diploma	1 year
Haigazian University	BA	3 years
	Normal Diploma	1 year
Higher College for Teacher Preparation	Education License	4 years
Lebanese University	Education License	4 years
	Diploma of Higher Studies	2 years
	Certificate of Qualification	2 years
Lebanese American University	BA	3 years
	Teaching Diploma	1 year
Middle East College	BA	3 years
Notre Dame University	Teaching Diploma	1 year
University of Saint Joseph	Education License	4 years
University of Balamand	Education License	1 year
	Teaching Diploma	4 years
University of the Holy Spirit in Kaslik	Education License	4 years
	University License	3 years

*The Teaching Diploma, Normal Diploma, Diploma in Higher Studies, and Certificate of Qualification require an undergraduate science degree. Admission to universities requires the Lebanese Baccalaureate. Lebanese students holding the Baccalaureate are admitted as sophomores in universities that follow an American model.

There is no possibility of elective courses within the stream. All students take science at all levels. However, the number of periods per week varies with the level and stream the student selects. Table 2 presents the number of periods of science at each grade level and in each stream. The "General Science" designation refers to courses that include life, physical, and Earth science. The "Science" designation at the Grade 11 level refers to the name

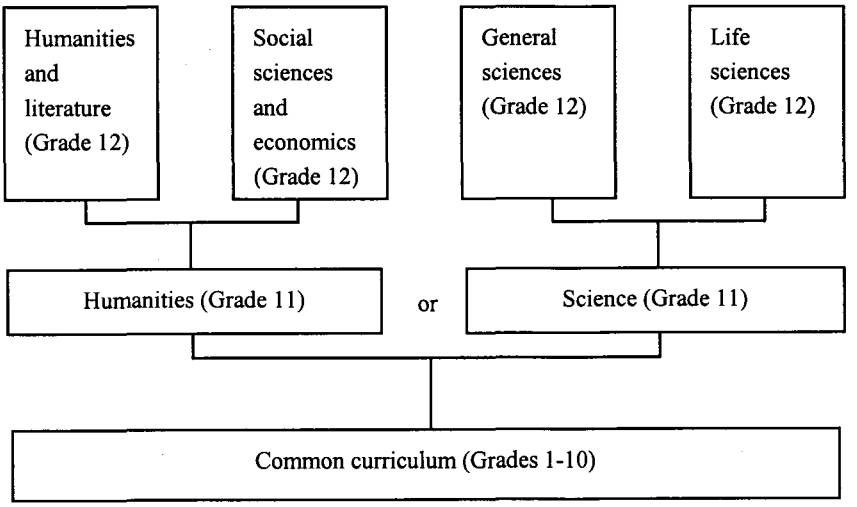

Figure 1. Structure of the Lebanese Educational Ladder

of the stream, as described above. Note that the 1.5 periods of chemistry and physics at Grade 7 represents a bureaucratic compromise, typically solved by having the same teacher for both subjects; the teacher then devotes the required time to each course.

Table 2. Number of Periods per Week of General Science, Biology, Chemistry, and Biology Taught at Each Grade Level of the Lebanese Educational System

Grade	1	2	3	4	5	6	7	8	9	10	11		12			
											S	H	GS	L	SS	H
General Science	2	2	3	4	4	5										
Biology							3	2	2	2	2			6		
Chemistry							1.5	2	2	2	3		4	5		
Physics							1.5	2	2	3	5		7	5		
Science Literacy												3			4	3
Total	2	2	3	4	4	5	6	6	6	7	10	3	11	16	4	3

S = Science, H = Humanities, GS = General Sciences, L = Life Sciences,
SS = Social Sciences and Economics

Lebanese students sit for official national examinations at the end of the intermediate and the secondary stages. The official examination taken at the end of the intermediate stage is common to all students in the general

education[1] system. However, the examination taken at the end of the secondary education stage, called the Lebanese Baccalaureate and required for admission to universities, is divided into four different sections: humanities and literature, social sciences and economics, general sciences, life sciences.

Lebanon is presently in the midst of educational reform. The Lebanese Government has enacted a new educational ladder and CERD is preoccupied with developing new curricula for all subject areas at all pre-college levels (CERD, 1995; Public Law Number 10227, 1997). As a result, it is essential to understand the current status of science teacher preparation. Additionally, sharing ideas about the status and future directions of science teacher preparation in Lebanon with an international audience may help create a dialogue about teacher preparation worldwide. Consequently, the purpose of this study was to answer the following questions:

1. What are the theoretical perspectives driving science teacher preparation in Lebanon?
2. What are the requirements of Lebanese science teacher preparation programs?
3. What are the similarities and differences among the Lebanese science teacher preparation programs?
4. What policies drive Lebanese science teacher preparation programs?
5. What are the future directions of science teacher preparation in Lebanon?

LITERATURE REVIEW

Research studies have focused on the structural components of Lebanese teacher education programs without neglecting conceptual components. Most of these studies investigated teacher education in general with only a few focusing on science teacher education. The most recent studies by Farah-Sarkis (1997) and Freiha (1997) found that most programs emphasize theoretical rather than practical issues. Moreover, Freiha found that the nature of these programs was influenced by the model of higher education espoused at the institution in which they were offered. Consequently, programs at American style institutions were similar to programs offered at American universities while those at French style institutions were patterned after similar ones in French universities. Farah-Sarkis, on the other hand, found that there was no balance between theoretical and practical components of the Lebanese teacher education programs, with the percentage of time dedicated to practical work ranging from 5.2% to 25%.

[1] There are two parallel systems of education in Lebanon: General and Technical.

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