



Schola Europaea

Office of the Secretary-General

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Revision of Mathematics and Sciences Syllabuses

Approved by the Board of Inspectors (Secondary) at its meeting of 6 October 2015

For information of the Board of Governors – meeting of 1, 2 and 3 December 2015

1. INTRODUCTION

The final report (from now on: Report) of the team of the Experts at the Institute of Education, London (from now on: Team) has recommended to revise urgently the sciences syllabuses up to level S5, so to “concentrate on “big ideas” of science rather than excessive detail” and at the same time they have also recommended that syllabuses should be more precise in defining and sequencing the knowledge, skills and attitudes (competences) that the pupils need to learn.

The reality of the sciences syllabuses is the following:

Subject	Levels	Last revision	Revision started on
Integrated Sciences	1-3	2004	2010
Biology	4-5	2011	--
Biology	6-7	2002	2010
Chemistry	All levels	2004	2010
Physics	4-5	1996	2011
Physics	6-7	1998	2014

The grounds for the present difficult situation for sciences might be quite easily understood. The System can quite naturally find Inspectors responsible for Language subjects: in each Country at least one of the official languages in Europe is the National Language. The Inspector coming from a Country becomes quite naturally responsible for the National Language(s) of his own Country.

The same doesn't automatically apply to scientific subjects. For many years the responsibility on all scientific subjects, at all secondary levels has been concentrated on only two Inspectors. Moreover these subjects are taught in L1: in the language of each of the existing sections which adds a relevant layer of complexity in the management of these subjects¹.

As for the Mathematics syllabuses:

Subject	Levels	Last revision	Revision started on
Mathematics	1-3	2007	--
Mathematics	4-7	2011	--

The Experts mention: “the current European Schools Mathematics curriculum involves an extensive shift in demand between S4 and S5 and potentially goes well beyond what is normally required for students aged between 15-16” and “the current mathematical demands made on all students should be reduced, in order to ensure that they correspond with later expectations of universities and colleges, and to ensure that as many students as possible achieve their potential in Mathematics rather than a large number effectively disengaging”. It is then clear that the Experts' recommendations also imply the revision of the Mathematics syllabuses.

¹ Just to mention some aspects, the number of teachers teaching each scientific subject is extremely high, teachers are not native in the same language harmonization and on top of coming from different traditions, they also teach in a different language. Already the language of communication in among teachers of the same subject in the same school can sometimes be an issue. Language used to train can again be an issue. When the exam for the Baccalaureate is prepared, it has also to be translated in all the languages used to teach the subject.

2. PROPOSAL TO THE BOARD OF INSPECTORS (SECONDARY)

In order to assure a more regular approach to syllabuses development and revision in the European School system and to adjust to current trends in education, the revision of some of the Mathematics and Science syllabuses could be outsourced to competent external specialists.

The responsible Inspectors will then have to be in contact with the syllabus specialists: provide them with the specifications and follow their work from the start to the end of the process, so as to be able to present the new syllabus to the Boards for approval.

Teachers' training and syllabus implementation would also remain the task of the responsible Inspector. The specialists could be invited as experts to the Boards meetings, for the teachers' trainings and for the meetings with coordinators in the next future (ref. 2014-01-D-44 "Framework and Organisation of In-Service Training in the European Schools").

The Board of Inspectors (Secondary) is invited to discuss and to approve this proposal.

In the event of its approval, a financial sheet of the outsourcing of the revision of some of the Mathematics and Science syllabuses will be presented to the Budgetary Committee at a later stage.

3. OPINION OF THE BOARD OF INSPECTORS (SECONDARY)

The Board of Inspectors (Secondary) approved the document on revision of certain Mathematics and Science Syllabuses. The task would be assigned to competent external specialists.

The Board of Inspectors (Secondary) emphasised the importance of firstly, involving the inspectors responsible in the process of selecting competent external specialists and secondly, of involving the inspectors throughout the process of production of the syllabuses by those specialists.

4. PROPOSAL TO THE BUDGETARY COMMITTEE

The Budgetary Committee is invited to scrutinise and take note, for its information, of this document and of the financial statement appended hereto.

5. OPINION OF THE BUDGETARY COMMITTEE

The Budgetary Committee noted the necessity, for some of them even the urgency, of updating the syllabuses of the scientific subjects for the Secondary Cycle and took note of the financial costs entailed. The Committee wished to be informed about the next steps which would be undertaken.

FINANCIAL STRATEMENT - Current maximum cost of in-house design and writing of Mathematics and Science syllabuses

In the current configuration of the structure of studies the following syllabuses are concerned:

- Mathematics (S1-S3);
- Mathematics 4 periods (S4-S5);
- Mathematics 6 periods (S4-S5);
- Mathematics 3 periods (S6-S7);
- Mathematics 5 periods (S6-S7);
- Integrated Science(S1-S3);
- Physics (S4-S5);
- Chemistry (S4-S5);
- Biology (S4-S5);
- Biology 2 periods (S6-S7);
- Physics 4 periods (S6-S7);
- Chemistry 4 periods (S6-S7);
- Biology 4 periods (S6-S7).

i.e. a total of 13 syllabuses.

In accordance with document 2014-01-D-41 'Procedure for the production, management and publication of the syllabuses of the European Schools', the maximum number of meeting **days** scheduled over a two-year period for the design and writing of a new syllabus is **8**, to which should be added a maximum of **2** meeting **days** for the definition of competences and of attainment descriptors.

According to the information in document 2015-07-D-9 'Planning and budgeting of the activities of the Inspectors of the European Schools – Review of the 2014 results', the composition of the working groups involved in the design and writing of a syllabus is as follows:

- 1 Inspector;
- 2 External Experts;
- 3 members chosen for their knowledge of EN, FR or DE (Teachers).

The average cost of an Inspector's participation is **€530/day**, whilst that of a Teacher is **€350/day**. An External Expert's participation represents the same average cost as that of an Inspector, as he/she does not receive any additional fee for his/her participation.

The following calculation is thus obtained for the cost of in-house design and writing of a syllabus:

Average cost per day		Maximum number of participants	Maximum number of meeting days	Total cost (Average cost per day x No participants x No days)
Inspector	€530.00	1	10	€ 5 300.00
External expert	€530.00	2		€10 600.00
Teacher	€350.00	3		€10 500.00
			TOTAL	€26 400.00

The total maximum cost of in-house design and writing of the 13 syllabuses is therefore **€343 200.00**.

The cost of outsourcing the design and writing of the syllabuses in question would come within this maximum budget and should even, in all probability, be lower than that amount. In addition, in the outsourcing scenario, the current costs of design and writing of the Mathematics and Science syllabuses would obviously disappear from the expenditure of the Office of the Secretary-General of the European Schools.

Consequently, outsourcing of the design and writing of the syllabuses would not give rise to any additional cost in relation to the current budget allocation earmarked for that purpose.