

**SUMMARY REPORT ON
THE TEACHING OF
MATHEMATICS IN JAPAN**

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Summary report on the teaching of mathematics in Japan by R. Fujisawa

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R. FUJISAWA

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IN
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By R. ^{Kitarō} FUJISAWA

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1912

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PREFACE.

Following the resolution passed at the fourth International Congress of Mathematicians held at Rome in April 1908, an International Commission was formed to make a comparative study of methods and ways in the teaching of mathematics in the secondary schools of different countries and present a collective report to the next Congress to be held at Cambridge in August 1912.

The words "secondary school" have varied meanings in different countries. This, in conjunction with other considerations regarding the working detail of the enquiry, soon lead to the conviction, that such limitation is not only undesirable but even impracticable. So it was altogether dropped. It was decided that the work of the Commission should include the whole field of mathematical instruction, from the most rudimentary education to that stage of the university education, where original research begins.

Preliminary report on the organization of the Commission and the general plan of its work, which will be hereafter referred to by the name of *Rapport Préliminaire*, was published in November 1908, and very soon afterwards, national Sub-Commissions were formed and the work began energetically in most of the principal countries of the world.

It is much to be regretted that, in the case of Japan through various complex circumstances of more or less accidental nature, the invitation to join this movement could effectively brought to the official notice only so late as

towards the end of the summer of 1910. Not a little have we hesitated in accepting the invitation in view of the extreme limitation of time at our disposal. Various difficulties external to the sphere of the real work of the enquiry were also not to be lost sight of. We would have been very fortunate, if we could have begun the actual work before the close of 1910. From the start, it was evident that to have the report ready, translated into one of the official languages allowed, printed, and sent to the *Secrétariat-Général* early in 1911, as suggested in the *Rapport Préliminaire*, was altogether out of the question. However, the desire to participate in a world-wide movement of such magnitude and importance, proved itself to be a sufficient inducement for acceding to the wishes which reached us from various quarters, by accepting, though reluctantly, the invitation, notwithstanding that we were fully conscious of the difficulties which are most likely unique in the case of Japan under the present circumstances.

The invitation was accepted under the following condition: Shortness of time still remaining does not permit us, however desirable it might be, to send the printed report in one of the official languages to the *Secrétariat-Général* before the first of August 1911, as is required in the case of other countries, but we shall try our best and have it ready for distribution some time before the Cambridge meeting of 1912.

Even under the stipulation just mentioned, the whole available time did not much exceed one year, a considerable portion of which must be assigned to the work of

translation into English which is the official language adopted. Indeed greater difficulty was actually experienced in this work of translation, than was anticipated at the time of starting.

In order not to lose even a little of this precious time, the Japanese translation of the *Rapport Préliminaire* prepared by myself, together with its French original and English and German translations, was published in October 1910. Copies of this pamphlet were sent to different schools, either directly, or indirectly through the authorities under whose control such schools stand, accompanied by the request to send in written reports on various points mentioned therein, so far as they touch the teaching of mathematics in the respective schools. No less than five hundred copies were thus distributed all over the country, and, in due course of time, no less than two hundred reports, which will be briefly designated as the "local reports," were received from the following schools :

Schools under the Department of Education

- The Faculty of Agriculture of the Tôhoku Imperial University.
- The Hiroshima Higher Normal School.
- The Nara Higher Normal School for Women.
- The Second, the Third, the Fourth, the Fifth, the Sixth, and the Seventh Higher Middle School.
- The Technical Colleges of Ôsaka, Yonezawa, Sendai (since attached to the Tôhoku Imperial University), Nagoya, and Kumamoto.
- The Commercial Colleges of Kobé, Nagasaki, and Yamaguchi.
- The Agricultural Colleges of Morioka, and Kagoshima.
- The Third Temporary Institute for the Training of Teachers.

Schools under the other Government Departments.

The Nobles' School [under the Imperial Household Department].

The Naval College.

The Naval Engineering College.

The Mercantile-Marine School [Shōsen-Gakkō].

The Training School for Officials in the Department of Communications.

The Military College.

The Military Artillery and Engineering College.

The (Military) Training School for Land Surveying.

Twenty-five Elementary Schools.

Fifty-four Middle Schools.

Twenty-six Girls' High Schools.

Thirty-one Normal Schools.

Five Normal Schools for Women.

Thirteen Agricultural Schools.

Nine Commercial Schools.

Seven Technical Schools.

The Awashima Prefectural Navigation School.

Besides these, we have received some more reports directly addressed to some of the members of our Sub-Commission, of which we shall speak presently.

In the mean time, was formed the Japanese Sub-Commission consisting of the members, whose names are appended to this preface. However desirable it might have been to ask for the co-operation of those who live elsewhere, it was thought necessary, in view of the utter insufficiency of time at our disposal, to confine our choice to those who reside on the spot, where the work of the Sub-Commission was being carried out. But with all our precaution, it was not possible

to avoid that some of the members had to leave in the midst of our work, in response to the call of the newly established Faculty of Science of the Tōhoku Imperial University at Sendai. In a few cases, this was anticipated; but they had to leave for the seat of the new University sooner than was expected, and on the other hand, our work had not made such a progress as to come up to our expectation that it would be finished at least in its main structure before they should have left Tokio.

The first meeting of our Sub-Commission took place at the Department of Education on the 14th of January 1911. The members were divided into a certain number of Divisions, each of which was entrusted with the task of dealing with a certain type of schools. The local reports mentioned above, were classified as soon as they were received, and distributed among the Divisions. Each Division was to prepare a report in Japanese, to be called Divisional Report, based partly upon the local reports and partly upon investigations and discussions of its own. And then these Divisional Reports were to be translated into English. Since then, our Sub-Commission held its general meeting twice, namely, on the 20th of May 1911 and on the 29th of October of the same year.

It was desired that the principal points of the reports be presented and discussed at educational gatherings and scientific societies which interest themselves in the progress of the teaching of mathematics, so that they might, when finally submitted, reflect the sentiment of the majority of those who are most competent to judge of such affairs. In this direction,