

Development of teaching materials for geosciences in schools based on the next Japanese standard curriculum

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The Japanese standard curriculum of elementary and lower secondary schools in Japan for the next term were notified by the Ministry of Education, Culture, Sports, Science, and Technology in Japan on the 28th of March, 2008. Moreover, the draft of the Japanese standard curriculum of upper secondary schools in Japan for the next term was shown by the Ministry on the 21st of December, 2008. These new standard curriculum of elementary and lower secondary schools will be applied completely in and after the 2011 and 2012 school year, respectively. These new standard curriculum becomes better than the old ones such as increasing learning time of the RIKA (natural science) class. On the other hand, these new standard curriculum have still kept several matter of contents in a point of view from geosciences teaching and learning in schools. Therefore, many academic societies related with school subject 'RIKA (natural science)' including in Japan Geoscience Union submitted respective opinions for the Ministry using the Public Comments System by the Japanese government. For instance, anyone can show the opinions by Japan Geoscience Union as shown next URL; <http://www.jpгу.org/education/index.html>.

Awaiting solution in the field of science education between elementary and secondary schools can be found not only the new and the present standard curriculums but also among textbooks now in use approved by the Ministry which are published by several publishers. There are 6 and 5 RIKA's textbooks for elementary and lower secondary schools, respectively. The textbooks of CHIGAKU I, fundamental geosciences, and CHIGAKU II, advanced geosciences, for upper secondary schools are existed 5 and 2, respectively. At first, we analyzed each present textbook compared with same unit. Results indicate that contents and/or the degree of difficulty on same unit are very different among textbooks. Especially, the huge difference in contents among textbooks on the same grade exist on the unit of the field of the earth and planetary sciences. This means that there is no common awareness in the field of earth and planetary sciences, which is our community, what we need to teach about the earth and planets for elementary and secondary school students. Therefore, we should progress the development of teaching materials in the field of the earth and planetary sciences for them as soon as possible. This is because the new standard curriculum will be enforced in a little while.

In this study, we have progressed the development of teaching materials based on the next standard curriculum while we consider the growth stage of the physical and mental development of pupils, and relationship among the units related with the earth and planetary sciences, the units related with other fields, and other subjects. The first and second targets of this study are shown new teaching materials of RIKA for elementary and lower secondary school teachers and/or students by 2011 and 2012, respectively. In this presentation, we will focus on the current status of this study and try to report clarified problems to be solved in future.