

7. Comprehensive Study on the Development of School Curriculum to Cultivate Citizenship in the Science and Technology Era

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(1) Purpose and Aim of Study

Japan's aim to be a world leader in science and technology has generated an expectation that science and mathematics education be improved to support the development of science and technology, and calls for the cultivation of citizens capable of building new relationships between civil society and science and technology. On the basis of these social needs, the field of school education must now address the task of using science and mathematics study to nurture future aspirations and to cultivate a desire to contribute to society. Furthermore, in terms of moral education, Western nations in particular have begun to find a place in their school curricula for "citizenship education," a program for cultivating citizens with the qualities and abilities needed for autonomous and active engagement with a diversity of advances in science and technology. In school education today, the areas of science/mathematics and morals, traditionally treated as separate educational issues, are being required to work in concert in order to cultivate citizens for the science and technology era.

Informed by the social agenda described above, this study addressed "citizenship education" as a curriculum for fostering new moral outlooks for the science and technology era. It focused on linkage between education in subject areas such as science, mathematics and information technology, and learning outside the standard subject areas in forms such as morals, special activities, and the Period of Integrated Study. Instructional materials and teaching methods in these fields were examined with the aim of formulating approaches to the development of a school curriculum that cultivates citizenship in the science and technology era.

(2) Outline of Research Results

- Responded to the public interest in science and technology literacy and communication by using the outcomes of international surveys of academic ability and research conducted in advanced schools to identify issues in the

area of citizenship education to cultivate ethical outlooks on science and technology.

- Explored concrete curricular proposals for linking science and mathematics education with morals education by utilizing the direction of science and mathematics education reforms laid out in the New Courses of Study.
- Collected and analyzed cases of advanced practice, and reviewed and proposed instructional materials, teaching methods, and class formats to cultivate ethical outlooks on science and technology.

Based on the above, formulated a curricular scheme for morals education around the pillars of “capacity for critical thinking” and “capacity for consensus-building through communication.”