

<p>12. Video Analysis of Outstanding Science Classes in Elementary and Lower Secondary Schools and its Use in Training Teachers Leader: OGURA Yasushi, Senior Researcher, Department for Curriculum Research, Curriculum Research Center</p>
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(1) Purpose and Aim of Study

There is concern over the tendency for children to eschew science through elementary and lower secondary school. We need to consider what kinds of science teaching practices will arouse children's motivation to learn and equip them with solid academic abilities in science. Our research team decided that there is a shortage of information concerning the kinds of teaching methods that are effective for improving everyday science classes in elementary and lower secondary schools. Thus, in order to aid improvements in everyday science classes in elementary and lower secondary schools nationwide, we set out to record video footage of science classes with outstanding and distinctive features across a broad range of content under the Courses of Study, and to identify exactly what it is that makes these classes exceptional. We aimed thereby to produce a reference for all teachers responsible for science classes that could be used in teacher training and professional development.

(2) Outline of Research Results

- We organized research groups of elementary and lower secondary school teachers earnestly engaged in improving science teaching in eight different regions across the country, discussed outstanding science classes, and collected video footage of classes in elementary and lower secondary schools in each of the regions.
- Footage of a total of 89 science classes from third-year elementary school through to third-year lower secondary school was collected over a period of four years. Almost all classes were conducted in line with the Courses of Study used on a daily basis across Japan, and can thus be used with a focus on the teaching techniques used.

- We formulated a concrete conception of excellent teaching practice by engaging six experienced science teachers to evaluate each class and identify what they considered to be distinctive features.
- A CD-R containing teaching plans and related resources for all the classes was published.
- Class study methods and multimedia teaching materials were developed to enable the class videos to be used under certain conditions as part of teacher training and professional development.
- We introduced the results of an international comparison of science classes at second-year lower secondary school level recorded in five different countries including Japan as part of research on science teaching for TIMSS 1999, and presented the results from analysis of the 20 hours of published footage of science classes in countries other than Japan.