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## INVITATION TO THE ASAHIKAWA ENVIRONMENTAL MAP CONTEST

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**Abstract:** The Asahikawa Environmental Map Contest, which is the largest and the only nationwide educational map contest in Japan, has been developing since its birth in 1991, with remarkable achievements. The primary objectives of this educational event are to enhance environmental awareness of school children, improving their skills of on-site observation and mapping, map-making and map-reading. This paper reviews its achievements, especially in environmental education, map education and comprehensive science education, and discusses the significance and prospect of this unique educational challenge.

**Keywords:** environmental map, environmental education, map education, geography education, science education, synthetic study, environmental problem, lifelong learning, multi-scale

### Introduction

A contest of environmental maps made by school children started in 1991 at Asahikawa City, Japan, as an outreach event of **International Symposium on Environmental Change and GIS (INSEG'91)**. The map contest has been held annually since then with the aim of enhancing environmental awareness of school children, and improving their skills of on-site observation and mapping, map-making and map-reading. Application to the contest is open to all school children of primary and secondary school levels (6 to 18 years old) throughout the world. The map works of the participating children are evaluated by specialists of geography and environmental and map education, as well as experienced school teachers. Distinguished works are commended and displayed in the exhibition. Some 1,800 or so maps are submitted to the contest each year, and about one-tenth of them come from outside Japan. Many of the award-winning children, some of whom from abroad, come to Asahikawa to attend the prize-award ceremony and some side-events. Every year some of the award-winning maps are presented in various educational books, journals and posters, and are distributed nationwide in large numbers. The map contest is now the largest and the most famed in Japan, and is becoming increasingly more international. It has yielded a lot academically and socially, as well as educationally. It is intended here to review its achievements, and to discuss the significance and prospect of this unique educational challenge.

### Significance in Environmental Education

Environment is everywhere around human being, whether it is natural or artificial. Young children start observing their environment from their neighbourhood, then gradually extend their territories to school district and beyond. It is extremely important for the children trying to make an environmental map to carefully observe the out-door environment with their own eyes and other senses. In her map entitled "Discover the Wonder of the Ohno River!", Mihoshi Matsushita (10 years old) used her eyes, nose and fingers, as well as thermometer, water examination kit and a hand-made water purity measure in order to check water quality at as many as nine locations along the river, and found that the lower stream is not necessarily dirtier than the upper stream (Fig. 1). The map shows not only the river but also the surrounding environment, so that one can investigate in the causes of various pollution of the river water.

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Fig. 1 Mihoshi Matsushita (10 years old) in front of her map entitled "Discover the Wonder of the Ohno River!"

The children will find something new to them at first in the field, and later in the process of map-making. Discrimination of natural and artificial environments is not so important. Posts and traffic signs, for instance, are important environmental elements on the street, and they have been popular subjects of environmental maps. The out-door environment, which may look boring in daily life, would turn into a treasure box, if the children start observing, recording and thinking there.

The teachers should be aware of the fact that the environment the children are observing is different from theirs, even if they are standing at the same spot. The children are generally less biased, more curious and more tireless, and usually physically smaller than the adults, with their eye lines at lower levels than those of the adults. Environmental awareness starts from observation of one's own surroundings. Mapping has a power of turning aimless seeing to aim-full observation, and boring environment to a meaningful box. It is also noted that the mapping children often learn about their locality, e.g. the people, the society and the history.

Learning about the environment is semi-compulsory in all subjects in primary and secondary education in Japan. It means that a wide range of items can be a theme of environmental map, and that the children may be able to assume some professional advice from different teachers with different disciplinary backgrounds.

### Significance in Map Education

On-site observation and mapping is the first step of enhancing environmental awareness, and the same skill can be applied to larger environments. However, the environments observed at different scales may not be easily related, or integrated to organized knowledge if there is no proper map or if one lacks the skill of reading maps. Himiyama (2001) showed how various maps can be used when the environment is dealt with at multi scales. The production and presentation of one's own environmental map is an ideal process of gaining various map skills. The children can actually practice them not only on the desk, but also in the field, and not in the abstract, but in the concrete, and not by being forced, but by their own motivation. This is an effective way of acquiring

multi-scale environmental literacy. In the case of Mihoshi Matsushita, who demonstrates outstanding faculty for her age because of her involvement in environmental mapping for some years, a considerably large study area is taken while very detailed observation and measurement are practiced.

“Think globally, act locally” is a famous phrase coined by Rene Dubos in the United Nations Conference on the Human Environment in 1972. It drew people’s attention to the importance of linking global environmental concern with grass-root action. In fact, what is needed is a multi-scale view and action, which includes the followings:

- a) Think globally, act locally.
- b) Think globally, act globally.
- c) Think locally, act globally.
- d) Think locally, act locally.

These are all important if we are to cope with environmental problems, and we often need “regional” and “national” in between local and global. Map using skill is fundamental for multi-scale thinking ability as well as for spatial and regional thinking faculty. The environmental map contest puts emphasis on on-site observation, i.e. focus on locality, as well as on map skills. They together can pave the way to the multi-scale view. Some of the map works of the children clearly demonstrate how such ability is achieved by them in the process of making an environmental map.

Maps are often an indispensable tool which shows regional or spatial context of local or micro-level observations. For rational understanding and actions towards better environment, it is desired to have multi-scale views including micro and macro ones linked with each other. It is argued that the environmental map contest helps young people to attain map-making and map-using skills including multi-scale views of their various environments, as well as improved general scientific skills, which all help understanding the serious environmental problems we are now facing.

### **Significance in Comprehensive Science Education**

In order to make and present environmental maps, the children will generally follow the process set below:

#### **Project planning**

In order to start with an environmental map project, one has to decide the theme of the map, and draw an outline image of the map. It may be a good idea to go outside and walk around, looking for an attractive theme. The environment is full of interesting items. One may use measuring instruments, camera or other tools, if necessary. Once the theme is fixed, then a detailed plan of the survey will have to be made. It might contain the study area, what information to collect and record on the site, when and how it should be done, etc.

#### **Preparation for field survey**

Basic items to be prepared before the survey includes a paper holder or a board as well as papers and blank maps for recording, measuring or other tools if necessary, rain gear etc. depending on the situation.

#### **Field survey and observation**

It is desirable to walk on one’s foot and use one’s own senses to observe, and get on-site information of one’s own. Interviewing and measuring with tools can also be important means of survey for certain themes. As we are surrounded by indirect information in our daily life, this is a rare chance of getting one’s ‘original’ information. On-site experience is very important and pleasant.

#### **Mapping/recording**

One should never forget to record and map the information and what is thought and felt on-site. Do not rely on one’s memory, but write on papers or blank maps, or use camera, recorder or other means to record.

### **Map making**

The information recorded in the field is taken back home or to school, and put on a blank map or made into a map in other ways. This work requires various skills, such as cartographic, artistic, dexterous or photographic skills. One will have to think carefully about expression of the map (colour, map symbols, layout, accent, etc.), what message to convey to the others and how, etc.

### **Map reading and explanation**

The produced maps may be an end product in a way. But even if so, the maps would be brightened if being accompanied by proper guidance, explanations and background information provided by the producers. In fact, the organizer of the environmental map contest encourages the children to read and explain their own maps, though it may not be an easy task for younger children of the age below eight.

### **Presentation**

In many schools participating in the environmental map contest, the children have an opportunity to present their own maps, which are full of original information and ideas. The presentation of their own maps and listening to the other presentations are very effective means of learning how to make good maps, how to read and explain maps, and how to communicate with other people by using maps. The prize-winning children are normally given a chance to present their own maps during the exhibition. They also have a chance to meet with each other and make friends (Fig. 2).



Fig. 2 Prize-winners from all over Japan and China at the entrance of the exhibition hall

The teachers who wish to let their school children challenge environmental mapping are advised to observe the above process. Although it is primarily designed for environmental mapping, it is generally applicable to a scientific research without much modification. It is in fact a very effective means of improving the children's comprehensive scientific skills. In Japan, field survey and observation and mapping/recording have been particularly weak in the primary and secondary education, and it is hoped that environmental mapping is used to fill such a gap. For more detail of how environmental mapping can enhance scholastic attainments, see Onodera and Himiyama (2006).

## **Significance in Synthetic Study and Lifelong Education**

The Ministry of Education, Science and Culture (MESC), Japan, started to introduce a “synthetic study time” to the primary and secondary education in 2002. As the comprehensive learning related with the environmental mapping shares many aspects with the new synthetic study, and the former started a decade earlier than the latter, the people involved in the map contest made important contribution to the new educational initiative. Himiyama and Suzuki (1998) showed how environmental mapping can be introduced to the senior high school curriculum and how it can motivate the students’ learning if guided properly by the teacher. Yamada and Himiyama (1999) outlined the challenge for the improvement of social science education in a junior high school, based on the “environmental map education”, and discussed the significance and pending issues of the “synthetic study time” and the new roles of “environmental map education” in its promotion. Motomatsu and Himiyama (2000) dealt with the same issue in the case of elementary schools.

It is noted that the above three papers are the product of cooperation between university and senior high school, university and junior high school, and university and elementary school, respectively. One reason of the remarkable success of the environmental map contest is that it has been supported by a powerful network of the teachers of elementary schools, junior high schools, senior high schools, universities, and others. Another reason of the success is that this initiative has been closely related with lifelong education, and that it has been supported by the Center for Lifelong Learning, Hokkaido University of Education. Lifelong education is particularly important in old but reformed subjects, e.g. map education, as well as in new subjects, e.g. environmental education. It is noted that the network of teachers and specialists is a useful means of promoting not only school-level, but adult level, environmental and map education.

## **The Asahikawa Environmental Map Contest of 2008**

### **Organiser**

The Society for Environmental Map Education (SEME).

### **Sponsors**

Geographical Survey Institute of Japan, National Institute for Environmental Studies (NIES), International Geographical Union Commission on Land Use/Cover Change (IGU-LUCC), Association of Japanese Geographers (AJG), Hokkaido Geographical Society, Japan Cartographers Association, Japan Map Centre, Hokkaido Prefectural Government, Hokkaido Education Board, Asahikawa City Government, Asahikawa Education Board, Hokkaido University of Education, Japan International Cooperation Agency (JICA).

### **Application**

- The maps must be based on the applicants’ observations of their environments. The applicants can choose either “free theme” or “specified theme”. This year, the specified theme is “beauty” in one’s environment.
- The maximum size of the map is 1091 mm × 788 mm.
- The following information should be clearly stated on a separate sheet:
  - Student’s name & age, teacher’s name, school name, school address, tel. & fax. number, e-mail address (if any), title of work, short note about the work.
- The works should be received by the organizer no later than 22 September 2008.

### **Exhibition**

The exhibition of distinguished works is held at Asahikawa Taisetsu Crystal Hall during 25-26 October 2008. The ceremony of awarding an honour is held on 26 October 2007, and there will be some side events for the participants.

### **Contact (Submission of maps & inquiries)**

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## Conclusions

The Asahikawa Environmental Map Contest has been evolving with unique achievements in environmental education, map education, comprehensive science education, and lifelong learning. It has influenced not only the participating children themselves, but also the university students and the others involved in the event and the general public, in enhancing comprehensive scientific skills, regional and spatial views and knowledge, graphicacy, and promotion of interest in the region, environment and maps. It is hoped that this event is recognized more widely in the world, and a truly international network of the people concerned with the environment, map and education is established with the aim of promoting it worldwide for our sustainable future.

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## R e s u m é

### Pozvánka na environmentálnu mapovú súťaž Asahikawa

Environmentálna mapová súťaž Asahikawa, ktorá je najväčšia a zároveň jediná vzdelávacia súťaž takéhoto druhu v Japonsku, bola založená v roku 1991. Za doterajšie obdobie existencie dosiahla pozoruhodné úspechy. Primárnymi cieľmi tejto vzdelávacej súťaže je zvýšiť environmentálne vedomie školákov (vo veku od 6 do 18 rokov), ďalej zlepšiť ich zručnosť v pozorovaní a v mapovaní a tiež v tvorbe aj čítaní mapy. Do súťaže je predložených každoročne takmer 1800 máp, z toho je jedna desatina mimojaponských. Štúdiá poskytujú prehľad o tejto súťaži, jej úspechoch v environmentálnom a kartografickom vzdelávaní, ako aj v prírodných vedách vo všeobecnosti. Diskutuje o význame a výhľade do budúcnosti tejto unikátnej vzdelávacej výzvy. Pripojená je aj informácia o podmienkach súťaže na rok 2008. Termín dodania máp do súťaže je 22. september 2008. Kontaktná adresa a zároveň adresa na ktorú treba mapy poslať:

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Obr. 1 Mihoshi Matsushita (desaťročná) pred jej mapou s názvom „Objav zázrak rieky Ohno!“  
Obr. 2 Víťazi z celého Japonska a Číny pred vstupom do výstavnej haly

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