A Practice of Map Education Using ALOS Data and Ino Maps

Takahito Kuroki[1]

[1] Social Studies, Education, Fukuoka Univ. of Edu.

http://www.fukuoka-edu.ac.jp/~kuroki0/

1. Introduction

Three kinds of teaching materials on map for the education using ALOS data and Ino maps of large scale on Kyushu Island were developed. The first, it is a DVD that we can reference many kinds of maps. The second, it is a set of maps laminated by vinyl sheet whose scale is 1 to approximately 400 thousands. The third, it is a set of paper maps whose scale is 1 to approximately 100 thousands. In a lecture of Fukuoka Univ. of Edu., I practiced a map education using these teaching materials.

2. Development of teaching materials and a lecture

I used the image data of the Ino map with much geographic information before 200 years lent by GSI whose scale is 1 to approximately 36 thousands, GeoTiff data taken by ALOS AVNIR-2 on 4th and 5th, Nov., 2006 covering all Kyushu Island and the map images in Digital Map 25000 published by GSI in 2002 covering all Kyushu Island. I applied ArcView and Photoshop software to compile maps from each data. After a presentation on the maps using the DVD in a lecture room, I lectured about the three kinds of geographic information on Kyushu Island using the sets of maps whose scales are 1 to 100 thousands and 1 to approximately 400 thousands in a gymnasium. In the maps compiled from ALOS data, I made students confirm 17 areas related with water, 11 areas on landform and 13 areas on reclaimed land. In the Ino maps, I made them confirm 10 areas where remarkably changed the shore lines during this 200 years. I made them confirm each area of their interests and report about it. Three objects for their understanding in the lecture are the difference of views between the false color images and true color images, necessity on considering about understanding scale of area, and many kinds of landform changes and its setting.

3. Effectiveness of the lecture

In order of abundance, they are the Onga River, the Naka River in Fukuoka pref. and Hokuzan-dam in Saga pref. in the cases related with water. In the cases on landform, they are the Chikushi Mountains, the Sefuri Mountains, Miyakonojo basin, Jo-yama, Fukuoka plain and Abura-yama. In the cases on reclaimed lands, they are the Space World, the Fukuoka Airport, the port of Hakata, the area of Dazaifu and the area of Hakata-no-mori. These are all located in Fukuoka pref. without Miyakonojo basin. The students, who comes this Univ. from all Kyushu area, are liable to confirm the areas in Fukuoka pref. and not to confirm the area in all Kyushu Island. I think students become to have many points of view and broad views, if we evenly distribute objective areas to all Kyushu Island and make students observe them with appropriate objects.

The areas which many students confirmed in the Ino maps are Sakurajima volcano and Kagoshima city, the Oyodo River, Hakata bay and Dokai bay in order of abundance. I added up the number of areas which students confirmed with their interests. The areas which many students confirmed are the Ariake Sea, the Space World, Kitakyushu city and Beppu bay in order of abundance. These are not all located in Fukuoka pref. I think the result is caused by that there are not always more data about Fukuoka pref. than that about other prefectures in the Ino maps, so students make efforts to search data out of Fukuoka area positively. I think it becomes easy for students to educate themselves in their ability of searching data in maps when they use the maps having fewer data as the Ino maps.

4. Conclusion

I made three types of teaching materials on maps and used them in the lectures. It became clear that we need appropriate inductions for study when students educate themselves in points of view and broad views for areal observation, and in ability of searching data in maps. The concepts that students expected to teach using these teaching materials on maps are not only map education but history, science and general education.