

STANDARDIZATION OF CARTOGRAPHIC CURRICULUM IN INDONESIA

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Abstract :

Cartography is a subject in university that has spatial object study. In Indonesia there are many universities which several program studies in spatial object, but there are not uniform in their content. Nowadays there are some problems for education. Firstly, preparing alumni to global situation, mean that they should be must ready for competing in the world, beside it, Indonesia is going to implement autonomy province soon and causes every province may conduct their ownself education. Probably they have difference policy with difference capability for carrying out the education, and then they produce alumni in a various skill, knowledge and quality.

Association Cartography of Indonesia AKI gives attention to those not good situations and tries to make standardization for cartography curriculum in Indonesia, by gathering and analyzing more than 40 matters of subject from several universities. On last August 2000, a seminar dealt with curriculum cartography in Indonesia was held in Jakarta. Some government universities and private universities from several cities and from program study of Geography, Geodesy, Geology, Regional Development, Forestry, Plannology, Ecology, Oceanography and also civil engineering were present. The result concluded that education in Indonesia related to the subject above has variety curriculum and very difficult to make uniform. In fact, each program study has different target.

Finally, the seminar drew a conclusion that what ever the subject, every cartography education, should give lesson and exercise for producing alumni that have skill and knowledge in basic mapping, symbolization, lettering, also exercise and additional visualization in digital mapping.

Key word: non-uniform, curriculum, and program study

I. INTRODUCTION

Since early this century mapping in Indonesia was started. The Netherlands government produced the map. When the Second World War occurred, US AMS to finalized, mapping for all of Java in 1 : 50.000 scale exactly. The other islands in Indonesia were not completed yet. Because of that, Indonesian government prior to National Basic mapping for covering all of Island outer of Java. The National Basic Mapping were

done on first Repelita (Planning for developing country in five years) or in the year around 1970, and continued every Repelita (Suharto, 1993).

In fact, by starting National Basic Mapping, the cartographic education started to grow more specific than before. There was opened “Centre Education for Photogrammetry and Cartography” (PPFK) in ITB Bandung for senior high school level and “Center Education for Image Interpretation and Integrated Survey” (PUSPIC) in UGM Yogyakarta for doctoral level. Both institutes were joint cooperation between The Netherlands Government through ITC (International Institute for Aerial Survey and Earth Sciences) and Indonesian Government through Bakosurtanal (National Coordination Agency for Surveys and Mapping). After that the education of Cartography grew and was added with technology map making by computer and used satellite or radar data.

For knowing condition of the education, it necessary to know the curriculum. Higher Education in Indonesia (University level) depends on The National Education Department (DEPDIKNAS). The rule of curriculum are not always the same. For example when the National Curriculum 1996 had been done, Depdiknas gave subject matter of the lesson for every Program Studies. Nevertheless the National curriculum were not breakdown to cartographic curriculum, especially to answer “ what the content of cartographic lesson in several university, and the result”. Each faculty in every University makes each content. Obviously, it is very difficult to know how far the student will get the essential cartography.

In case of University program in Indonesia they are not the same in their level. We have University with much facility, good lecturers but we also have small university, little, far from the city, poor facilities and few lecturer. We have some good non-government universities (private university), but several government universities in the worst condition. Beside those, the amount of universities which give teaching Cartography increased by new comer universities. They were born from Institution Pedagogic (IKIP). IKIP teach the student who will become a teacher in high school. The main subject was

how to teach some thing not about the same thing self. So they should change their mind set now.

The social politic conditions in Indonesia after 1998 (when we changed our president), We were going to implement decentralization province as soon as possible. It was planned early in the year 2001. Probably every province has different rules, and policy. More over the educational is going to be decentralized too. Therefore, more difficult to detect quality cartographic education.

When AFTA (Asian Free Trade Association) or globalization trades come to Indonesia, everybody has opportunities for coming and working in our country. There is competition between local labour and foreigner. If local labour did not have certain quality or capability to compete with stranger, there will be many people disguise in Indonesia.

Problem:

It is very difficult to make similarity contents, tools and facilities also process learning about cartography, on this situation.

Association Cartography of Indonesia (AKI) tries to look for a solution about this problem. Their seminar about Standardization Curriculum Cartography was done on August 2000 in University of Indonesia Jakarta. The participant of seminar, come from many universities from several provinces, for example: East Java, Central Java, Yogyakarta, Bali, West Java, and South Sumatra.

II. CURRICULUM IN CARTOGRAPHY:

Curriculum as a course: specifically a regular course of study or training, as a school or university. Some curricula written in this narrow sense list particular students are to study, detailing the content of these courses, and perhaps even including courses outlines. (Paul, 1990). The university curriculum in Indonesia is divided in National Curriculum and Local Curriculum, and they used both of them complemently.

II.1. National Curriculum

The government through National Educational Department, in the year 1995 decided to give standardization curriculum for all program study, and we call as 1996 curriculum, because we started used the curriculum in the year 1996. The content of the curriculum is a list of subjects and their credits, for every program studies. In those curriculum were not explained what the purposed and how the content. It caused every program study in other university has deferent interpretation content, complete and depth of the lessons.

In the National curriculum, all the program study in earth science always have cartography as main topic, for example Geodesy, Geography and Geology with totally subject and credit are not same, but map design is always there. In program study Civil and Architecture engineering source of map data from surveying on large scale. For the program study Forestry, Agriculture, Fishery and Ecology, subject cartography is not main, but is very important because they use map for analyzing data and expose their data.

II.2. Local Curriculum.

Local curriculum is the structure subject lessons that depends on the tend of the program study, because they have deferent goal and expectation, and they don't have same facilities and utilities. They try to adapt with their conditions. Every Program study may produce subject lesson as they need and their specification, especially to growth their program study. In local curriculum sometimes topic in cartography more than fifty percent, but in the other program study maybe one topic only. We may say that local curriculum is very flexible and open.

III. HOW CARTOGRAPHY LECTUR HAS BEEN DONE!

Cartography is science that given in program study about earth surface, each program study has choice what kind and which part of cartography learn to their students. The complete definition of cartography:

According ICA, Cartography as art and science and technology of making map together with their study as scientific document and work art, in this context may be regarded as

including all types of maps, plans, charts, and section, three dimensional models and globe representing in the earth or any celestial body and any scale. And map making is defined as “ aggregate of those individual and largely technical processes of data collection, cartographic design and construction (drafting scribing, display), reproduction et cetera “. (Dent, 1996), More than this, Bos (1997) said, Cartography include map compilation, map design, technical construction, until reproduction. But UN definition: Cartography beginning from original survey, include Photogrammetry. Both definition studies on cartography above begin to collect the data, until finishing map, and printing. Each program studies, to decides what and how many from above definition, they will take and give for their student. For example two programs study mapmaker are Geodesy Department Faculty of Engineering and Cartography Department Faculty of Geography, they choose to give the students all of processing Cartography:

Table 1. Cartographic Curriculum in Departments of Cartography and Geodesy

	Cartography Department		Geodesy Department	
No	Subject	Credits	Subject	Credits
1	Basic Cartography	2	Basic Cartography	3
2	Surveying	2	Advance Cartography	3
3	Representation of data	2	Digital Cartography	3
4	Topographic cartography and toponimi	2		
5	Thematic Cartography	2		
6	Management and Map reproduction	2		
7	Semiologi Graphs	2		
8	Map projection	2		
9	Atlas design and navigation Map	2		

10	Cartographic Automatitation	2		
11	Map Analysis	2		

Source: Curriculum Cartography Department Cartography and Geodesy
Department, August 2000

There are some subject link with mapping, for example surveying, photogrammetry, projection, printing and reproduction, but they are not include to Cartography. Curriculum

From the table above, two program studies have deferent interpretation. For Geodesy, surveying, projection and etc, out of design map is not cartography, as ICA definition. But Department of Cartography assumed that surveying included in cartographic study, as UN definition.

In the other case, we try to compare contents of the subject Cartography in several program studies that map is important with them, are: Forestry, Regional Planning study, and IKIP (ex. Pedagogic program study)

Table 2 : Lessons Weekly Cartographic Subject in Program Study Forestry, Regional Planning and Pedagogic

Weeks	Forestry	Regional Planning	Pedagogic
1	Understanding about Cartography	Introduction	Introduction
2	Map Projection	Content of Topographic Map	Map Projection
3	Map scale	Marginal Information	Cylinder Projection
4	Mapping Representation	Revision of Map	Cone Projection
5	Map Compilation	Relief Presentation	Azimuthal Projection
6	Map Generalization	Map Projection	Marginal Information I

7	Cartographic Symbol	Thematic Mapping	Marginal Information II
8	Contouring	Thematic Mapping for Planning	Scale I
9	Lettering	Surveying	Scale II
10	Marginal Information	Horizontal Frame	Type of Symbol
11	Map Lay Out	Leveling	Colour of Symbol
12	Thematic Mapping	Contouring	Function of Symbol
13	Interpretation Map	Wide Measurement	Coordinate
14	Map Reproduction	Volume Measurement	Lettering
15		Cutting and Filling	

Sources: Cartography subject from Program study Forestry-UGM, Regional Planning Unisba, Geography UPI

From the table seem that every program study has option what they want to give their student, but the essential cartography are included.

IV.CONCLUSION

There are many program studies have mapping for their subject. The purpose of their lessons some times, is deferent, so very difficult to standardize cartographic curriculum or cartographic subject. But for standardization capability alumni, need minimum requirements of the content subject for lecturer cartography.

Program study, which used map, but only for analysis, one subject of cartography lecture, is enough. Although in the map-making program studies. They need minimal exercise equal with three credits and total subject, as they want.

Basic or essential cartography should be given on all program studies, which used map, are the definition, symbolization, projection, design lay out, toponimi, and how to do the map reading.

If possible, the content of the subject, the trend of technology mapping may be added.

AKI should be agent for socialization about minimum requirement in lecture cartography and trend of technology mapping.

Reference:

AKI. 2000. *Proceeding Seminar Lokakarya Standarisasi Kurikulum Mata Kuliah Kartografi*, 30 Agustus 2000. Universitas Indonesia

Bos ES. 1977. *Thematic Cartography*, ITC Lecturer Note,

Dent, Bordent D .1996. *Cartographic Thematic Map Design*. WBC Co. London

Paul, Richard et al. 1990. *Critical Thinking Handbook*. Sonoma State University

Paul Suharto .1993. Perkembangan Pemetaan Dasar Nasional. *Geo Informatika, Vo. !, 1993*, BAKOSURNAL Indonesia,

I.Made Sandy.1995. *Esensi Kartografi*, Jur.Geografi FMIPA UI

Dirjen Dikti Departemen Pendidikan Nasional Jakarta. 1994. Peraturan Pendidikan No.056 tahun 1994

Dirjen Dikti Departemen Pendidikan Nasional Jakarta.1999. Peraturan Pendidikan No 60 tahun 1999.