EDUCATION OF CARTOGRAPHERS AT WARSZAW UNIVERISTY

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Abstract

The author, actual head of Cartography Department Warsaw University, present main streams of cartographers education as specialization on Faculty of Geography and Regional Studies.

Keywords: education of cartographers, study programs of Warsaw University

History

Cartography has always been linked to geography. In 1918, after Poland regained its independence, Warsaw University was founded. Russian Imperial University was its predecessor. Between 1918–1939 there existed a Geography Section, led by Professor Stanisław Lencewicz (1889–1944), the author of an extensive handbook titled „Kurs geografii Polski” (A course in geography of Poland 1922). Professor Lencewicz valued the role of map in geographer’s work. He devoted the beginning chapters of his handbook to the history of Polish cartography and contemporary topographical and general maps. The Section’s curriculum included a one year cartography course: lectures, map exercises and topography classes. Among the assistants who used to teach there was Stanisław Pietkiewicz (1894–1986). He took up cartography lectures after presenting a qualifying thesis „O sposobach przedstawiania terenu na mapach” (On the methods of presentation of terrain on maps 1930). Apart from M.A. theses on physical geography and anthropogeography also cartographic presentations were prepared and the head of the Section participated in the discussion on the state and development of Polish cartography.

Modern time

The university resumed its activities in 1945, after the end of WWII. In 1950 The Institute of Geography was founded. At first it consisted of three Departments: Physical Geography, Economic Geography and Cartography.

Foundation of the Department of Cartography was linked to the introduction of cartographic specialization into the curriculum and with cartography classes becoming obligatory for all the first year students of geography. This is the role that the Department of Cartography has been playing until today, gradually extending the range of offered subjects to other specializations.

It should be noted that the 1950s were the time, when cartography emerged as a scientific discipline and when institutional cartography developed (Kuhn, 1996). Although a skill to prepare and execute spatial presentations called “mappae” and later “karte” has been known since the beginning of mankind, a discipline called cartography was created much later.
Wolter, 1975). University cartography units appear in the middle of the twentieth century. Specialist journals, so important for the development of any scientific discipline also start to be published at that time. “Kartographische Nachrichten”, a magazine of German-speaking countries was founded in 1952, “Cartographic Journal” in 1963, “Polski Przegląd Kartograficzny” (Polish Cartographic Review) in 1969 and in 1975 – “American Cartographer” the magazine, which adapted to expanding range of cartographic research by changing its title, volume and frequency of publication two times. Foundation of the International Cartographic Association in 1961 (Poland joined in 1964) was a milestone in the development of our discipline.

Professor Stanisław Pietkiewicz, a cartographer who used to work in Wojskowy Instytut Geograficzny (Military Geographic Institute) before the Second World War became the Head of the Department of Cartography, which was founded in 1950. In his cartographic specialization courses he stressed the ability to edit chorographic maps, both reference and school. His scientific interests focused on two subjects: history of Polish cartography and the concept of a general reference map. In the fifties and sixties several tens of theses on the old maps of Polish territories were prepared at the Department; Professor used them for his synthetic studies. The second issue is the contents and graphic form of general reference maps, school wall maps in particular. More than ten theses were prepared on this topic. The task was to calculate the projection, collect cartographic and descriptive material and edit the map, which at the time used to be done in ink and crayons. The experience gathered that way made it possible to edit seven wall maps of Poland’s regions in 1:250 000, which were published by Państwowe Przedsiębiorstwa Wydawnictw Kartograficznych (PPWK) (State Cartographic Publishing House) in 1960–1965 (Fig. 1). Students achieved practical skills of map editing and were later employed mainly in PPWK or military topographic service.

In 1966 Professor S. Pietkiewicz retired. Professor L. Ratajski (1922–1977), a geographer specializing in regional geography of Africa and socio-economic cartography, became the new Head of the Department. His main interests were the theory of cartography and socio-economic maps. He is the author of the notion of cartology understood as a theoretical superstructure of practical cartography and of the handbook “Methodology of socio-economic cartography” (1973,1989) (Fig. 2), which is still used today. As a result of his artistic talents he paid special attention to the graphic design of thematic maps within cartographic specialization. He introduced hand drawing into the specialization curriculum. For theses’ topics he suggested various thematic maps, in search for multi-component map solutions, both wall and reference (Bonatowski, Horodyski 1984). Research on cartographic forms of presentation also started at that time.

For seventeen years (1980–1997) the Department was headed by Wiktor Grygorenko, who had a background of a military topographer and who was interested in computerization of cartography, which at the time was only beginning. At the Conference of the International Cartographic Association in Warsaw in 1982 he presented a paper on the cybernetic model of information transmission (Fig. 3). Introduction of computer technology marked a transitory period for our discipline, because many cartographers, fascinated by the technological capacity, although still rather limited at the time, gave up their previous research in order to solve technical problems. Temporary inclusion of teledetection workshop into the Department (now it operates independently) brought on umpteen theses on interpretation of satellite and air photography and a significantly extended range of specialization courses. The subjects of theses were varied, which is illustrated on Fig. 4. Traditional theses on map editing and presentation methods were prepared, but there were also attempts to use the contemporary computer equipment to e.g. generalize river networks, coastlines and settlement on chorographic maps.
Fig. 1. Wall maps of Mazury and Warmia region (Scale 1:250 000).
Didactic profile of the department has been influenced by its consecutive principals, but the changes they introduced were not revolutionary. Rather they extended the range of studies by introducing new subjects, while other were slowly disappearing from the curriculum. The length of studies also changed, following ministerial recommendations. At first it was a two-year specialization within four-year geographic studies. Later, when studies were extended to five years, cartography took two, two and a half and finally three years.

**Structure of study programs**

At present Warsaw University applies a two-stage program of studies. The first stage finishes with a bachelor’s degree. During the third year students attend a one-year seminar of their choice – one of ten seminars available at the Faculty of Geography and Regional Studies is a seminar in cartography. During the seminar students, supervised by their tutors, write their bachelor’s theses, on subjects of geography and partly cartography.

The second stage of studies are two year, and in the case of cartography – two and a half year MA studies. Their aim is to prepare map editors to professional activity.

The curriculum includes 510 hours of lectures and 810 hours of classes within two and a half years, in two fifteen week semesters in an academic year. Additionally, field practice: after the first year of specialization – 6 days of geodesy and 6 days of photo interpretation practice, and after the second year – a 20 days practice in a cartographic publishing house. Every semester each student can obtain 30 ECTS (European Credit Transfer System), which amounts to 150 ECTS.
Fig. 3. The cybernetic model of information transmission.
Fig. 4. Specialization courses of cartography study program.
Among the subjects, which introduce students to cartography are the following: general map knowledge, thematic mapping, mathematic cartography, cartographic methodology and methodology of map use, including cartographic method of research. Edition of press maps is also useful.

The main practical subject is edition of maps and atlases. During the classes, lectures and workshops students learn the rules of editing; one of the prepared maps they use during later classes, and finally print it on an offset machine in a reproduction section. One semester earlier they start classes in cartographic drawing, and later in graphic design of maps. During technical editing they prepare the map for reproduction, and then they print it themselves in cartographic reproduction classes. The subjects are arranged in such an order, that the students can get familiar with particular stages of map production and learn how to prepare a map themselves.

Dynamic development of systems of cartographic information, their features and capabilities are presented in the following courses: introduction to computer cartography, foundations of geographic information systems and summarized in geographic information systems. Additional courses present the issue of use of teledetection in cartography, foundations of geodesy and photogrametry. Every other year there are courses in law of geodesy and cartography and selected issues of history of cartography.

Throughout the five semesters there is a seminar, and the students have to get credits for their choice of lectures, which amount to 12 ECTS points. During the seminar the participants prepare papers basing on articles from foreign cartographic journals and the materials of International Cartographic Association conferences. It is an opportunity for a presentation of particular problems as well as for scientific discussion in a wider group – department members also participate. At the seminars subjects such as present problems of cartography and its theoretical foundations: main currents of theoretical cartography such as theory of cartography communication are discussed. According to the rules of studies at Warsaw University each student can choose and get credit for lectures from any other department. Students of cartography are recommended to attend lectures on regional geography, because such knowledge helps to create reference and thematic maps properly.

Subjects of M.A. theses distributed at the end of the first semester are connected to the research of the department. At present they include preparation to the atlas of Mazowieckie voivodship, which is elaborated in the basic scale of 1:1 000 000. Theses on cartographic methodology and map (e.g. press) edition are prepared. The M.A. thesis includes map edition with a commentary. Works are presented in paper and digital form.

Every year of studies consists of 7–10 students, therefore some 350 students have graduated since the foundation of the Department in 1950. Among them (some of them are already retired) there is a slight majority of women (54%). One can estimate that almost half of the graduates work in cartography, mainly as map editors, but also as owners of publishing houses. A survey conducted on the fiftieth anniversary of the Department showed that also those working in other professions consider their studies of Cartography to be useful in their career.

References


