

Surveyors at the Faculty of Geo-informatics before and after the introduction of the credit system

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1. Introduction, short history

At the Faculty of Geoinformatics, University of West Hungary, the professionals are mainly educated in the field of land surveying and management, GIS and mapping. In the 50's there was more and more demand for specialists at the existing organizations of the National Survey, at the surveying firms and at the big designing institutions. To meet this demand, with the aim of providing an up-to-date university education for experts the precursor of the college was established in 1962 under the name of Land Surveying Technical High School.

The next considerable change was in 1972, when the development of educational and scientific activity reached that level, where the technical training was replaced by the academic training of production engineers, later on general engineers. Within the meaning of the decision land surveying and land management education began in 1972 and 1975 resp. in Szekesfehervar in the College of Land Surveying and Land Management, Sopron University.

The new college-form of organization created favourable conditions for solving practical geodetic tasks. The relative self-independence of the College ensured the continuous enforcement of the claims of the land surveying branch, while taking over the useful educational and researching experiences of the ancient parent establishment.

2. The educational system and the effecting marketing issues [Engler 2008]

In the last period our name was changed to Faculty of Geoinformatics. Our faculty successfully kept the dominant role in the land management and surveying education. In 2005 because of the structural changes in the higher education we introduced the BSc education in land management and surveying. After the 7 semester education the graduated engineers will be capable to deal with the new technologies in geoinformatics, land development, land and property management, land valuation and qualification. The diploma gives also authority to work in the field of photogrammetry, remote sensing and spatial informatics.

To deal with tasks in property and land mainly juridical knowledge is necessary. To offer well educated professional in this field we founded in 2000 the land registry management, and in 2006 the public administration management courses.

We believe that from marketing point of view it is very important to follow up the improvements and changes in the technology. The curricula have been renewed and revised continuously. Our direct highest authority was the Ministry of Agriculture until 1993. In terms of the law about university education LXXX, 1993, all Hungarian universities and colleges are directed by the Educational Ministry, but for us the Ministry of Agriculture and Rural Development remained the professional director.

In the Hungarian higher education besides the marks the main measuring unit is the credit which indicates the fulfilment of the curricula subjects. The introduction of the credit system was ordered by a governmental decree in 2000. This system especially uses the ECTS (European Credit Transfer System) as a tool. Our faculty introduced this system in the 2002/2003 academic year and designated credits to the subjects, where the total amount of credits is 210 at the BSc level. In our curricula the subjects are sorted in three groups: compulsory subjects (A), compulsory optional subjects (B) and optional subjects (C).

The credit system has many advantages, but – we should admit – disadvantages as well. The advantages are formulated in a nice way in those materials, which propagate them. That's fine. The problem is that the practical introduction often doesn't prove the theoretical expectations or the fulfilment of the conditions is difficult.

The credit system makes easier the earlier rigorous conditions. It gives possibility to the student to choose subjects in different ways. Practically it means that the student can plan his academic years in flexible way considering of course the curricula requirements, especially the

pre-requisites. The students don't have to repeat the full-semester if they fail in one or more subjects. They can choose other subjects and they can continue their studies. The new system gave a tool to continue the studies in other institutions, admitting some certain subjects carried from the previous schools, etc. .

This methodology requires more caution and punctuality from the students when they plan their semester. Many students are not prepared for that. They receive of course advice and aid from the tutors and the students learning in higher courses, but despite of this there are many repeated subjects, the pre-requisites are not fulfilled, etc.. We consider as an advantage that that one subject can be repeated three times, but on the other hand it makes the students irresponsible.

Also it is considered as an advantage that the completed subjects from other institutions can be accepted. This tool was available before the credit system with similar conditions as well. This possibility is very useful at those professions which are educated in some different institutions, but there are many professions which are taught only in one institution. Our faculty belongs to this category, which means that we are not able to accept many subjects, especially the core subjects, which are very special and accredited only at our faculty. This fact decreases the student mobility.

The introduction of the credit system didn't affect the entry system. It can be proved by the statistics. At our faculty usually the number of applicants is twice more than the available capacity. Among the earlier recruiting methods (open day, carrier choosing exhibitions, EDUCATIO exhibition, visits at the middle professional schools) we had to introduce new "tools" in the marketing process. Besides of the television and radio ads, we published ads in those newspapers, periodicals which are popular amongst the younger. The impact of the Internet facilities has grown largely. Last year as a trial, we organized a series of road shows in eight different cities, but the surveying statistics showed us that most people use the Internet to get more knowledge about a certain institution.

The main reason for the intensive propaganda is that the number of entry students is less and less, and the financing is based on the number of students. So, (more or less) the constant number of students is a crucial issue at the universities. The other reason is that in 2007 the entry application system was changed. It means that there is no certain amount of students designated to a certain university, instead a contingent is determined for one professional field. In their entry application the students indicate the institutions in an order of importance, and it means that the large universities can gain more profit from it, since mostly the students indicate them at the first place. In 2007 except of two-three big universities, most of the higher education institutions found themselves in a disadvantageous situation. In 2008 this system was fixed considering those special institutions where the given profession is educated only there. Also an important marketing issue is that our faculty can provide an MSc course from the next academic year and two years ago we started our PhD program in Geoinformatics.

3. Financial issues

The education is financed basically by the government. It was regulated earlier with the tool of the „base budget", which meant that each year the budget was increased with a multiplier factor calculated by centralized principles at the beginning of each year. The governmental budget principles have been changed radically and it has brought big changes in the financing of the higher education sector. Recently the institutional budget is composed from two sources: governmental subsidy and own incomes.

The subsidy contains a fixed and a variable part. The calculation of the fixed part is depending basically on the number of students, the educational staff and on the ratio of the tutors having academic degrees (PhD, professors, etc.), also the fixed part contains expenses for the maintenance of the infrastructure. Since 2007 the variable part has been based on quality improvement pledges planned by central regulation principles. Hereafter the amount of the variable part depends on the fulfilment of the undertaken quality improvement pledges.

Besides of this subsidy the important issue is the own income. The governmental subsidy is calculated only by the centrally regulated quantity of the students. It means that the educational staff is financed by the government only partly with some ratio considering the number of students financed by the government. The expenses of the remaining staff should be financed, covered by own incomes.

The sources of income can be different. In the first place there is the income coming from the tuition fee of BSc courses. The tuition fee should cover all the expenses related to these BSc

courses. To achieve this goal the first condition is that the tuition fee should reach the level of the governmental student subsidy. At our faculty this condition is not met yet. The tuition fee should be calculated according to marketing principles, mainly by the student market demands and needs. Important factor is the parental salary. Examining the composition of students, if we expect that the parents are not able to pay the desired tuition fee, then the consideration is a difficult issue. If we remain at a lower tuition fee we can expect higher number of students. On the other hand if we raise the tuition fee then the number of students can be decreased largely with the same educational staff. This problem needs an optimization. Recently we consider that the number of students is appropriate thanks to our successful education, the reputation and the good chances of the graduated students to get job on the market.

The student hostel plays an important role in our expenditure and income. We receive governmental subsidy to this facility, but it's not enough for the maintenance. To get more income we offer the empty rooms on the market. Recently it shows a raising tendency at our faculty.

4. Role of the postgraduate courses [Markus, Szepes, Engler 2007]

A special part in our educational program is the palette of the postgraduate courses. We take care of it from the beginning. We have a multilayer postgraduate system. Before describing them in detail, here are some thoughts about the role of the postgraduate courses.

The engineers of our profession have inner and outer challenges to gain an updated or new knowledge. Several institutions are capable to educate them, but for us as the Alma Mater it is very important that our graduated engineers return for further studies. We organized an ALUMNI movement. Belonging to it is a honour. The alumni support their Alma Mater morally and financially. The alumni bring new students to the BSc and postgraduate courses. The alumni are proud of the togetherness, and he/she becomes one of the most effective advertisement booster. If he/she says that this faculty is a good institute then it carries an authority. If he/she suggests changes among the subjects, than it carries an authority. He/she has goodwill, because he/she as an employer wants to have engineers with up-to-date knowledge.

Our first task was to give engineering diploma to the technicians graduated from our school. This education lasted many years, hundreds of technicians become engineers.

After this period there was a demand to the professional postgraduate courses. In Hungary we call it the "education of professional engineers". The topics of these courses always fit the market needs, the actual professional tasks, he new technologies. The topics of data processing, engineering geodesy, photogrammetry covered the first 15 years of the operation period

In the 1990s in our profession we encountered deep changes. The Spatial Informatics grasped more areas and it directed us to other paths. From the Data Processing a new course was developed. In the same time we joined the UNIGIS initiative. We received learning material and methodology. Our task was the adaptation. Now we are a Distance Education Centre in our field of profession.

We just began this new way of teaching, when we started a TEMPUS project together with English, Belgian and Austrian partners and as a result we prepared learning materials and methodology for Land Offices. The project was called as OLLO (Open Learning for Land Offices). Later on we founded a few postgraduate course. Recently our offer is: Geoinformatics, Engineering Geodesy, Real Estate and Land Developer and Soil Mapper and Qualifier.

All these courses are organized by Distance Learning, only an introductory 2-days workshop is held at the beginning and then the students start to work with the teaching material at home. We have a special educational portal to maintain the courses (www.vgeo.hu). The portal was developed by the Moodle system (www.moodle.org).

The important part in our postgraduate course are the so called "short courses". By these courses we try to react on the new challenges, technologies and needs.

5. International issues

To have more effective training in educational, cooperational and financial aspects our faculty has the following possibilities:

1. Join international professional networks; The faculty is member of the following professional network organizations: FIG, AGILE, UNIGIS, EuroPACE, EDEN.

2. Development of teaching materials in international co-operation.
3. Join student and teacher mobility networks, initiatives; Our faculty is part of the ERASMUS and CEEPUS network.
4. Sign contracts for scientific-research and educational co-operation.
5. Co-operate with foreign universities in organization of common courses.
6. Submit jointly EU and other international applications.
7. Offer the PhD schools for the international partners.

All these activities play an important role in the utilization of international experiences, but from the listing the educational projects have bigger emphasis in the faculty's life. To give an impression about these projects here is a short list of some typical projects:

a) Open Learning for Land Offices (OLLO) TEMPUS Joint European Project (1995-98):

The main objective of the OLLO project was the development of open learning materials and course infrastructure in Land Information Management within CSLM at professional and postgraduate level. The short term development of short cycle professional and practically oriented courses in Land Information Management.

b) Distance Learning in GIS – MULTY-COUNTRY PHARE Project (1996-97):

Aims of the DLG project were the following the development of a distance learning professional degree course in Geoinformatics at CSLM. The wide target group consists of professionals in the Geoinformation and related industries (national mapping organizations, application oriented organizations – cadastre, local authorities, utilities companies or private Geoinformation production companies).

c) SDiLA – Staff Development in Land Administration – a TEMPUS project (1999-2001):

There are three SDiLA project objectives. First, the creation of a program of education for continuing professional development for Land Administration in Hungary based on existing programs developed under the OLLO TEMPUS Project and other projects in Hungary and the EU. In seeking to achieve these objectives, the project will develop a core base of knowledge in land administration matters, the Knowledge Pool, which can be used in a flexible manner as a part of staff development program tailored to individual's requirements. Second, the creation of a delivery system for continuing professional development based on a management system and education technology, both CD and Web, with a comprehensive credit system. Third, the creation of a network of EU centers and education providers with the objective of participating fully in EU activities in Land Administration and the EU professional community.

d) LIME – Land Information Management for Executives – a LEONARDO project (1999-2001):

One successful EU founded project (Land Information Management for Executives – LIME) proposal was prepared in co-operation with other UNIGIS sites and GISIG on Issues of EU harmonization and Knowledge pool developments. The project was started in December 1999. The 18-month project will produce a new course for a new profession called Assistant in Land Information Management.

e) GI-INDEED – Geo-Information in the Implementation of Net-based Distance Education for Environmental Decision-making (2006-2007):

GI-INDEED is a EU training project that aims at improving life-long learning and continuous training in the field of geo- and environmental information, to tune data according in particular to the proposed new INSPIRE Directive. In such a context, the realisation of modules of pilot training are foreseen on:

1. environmental web services
2. tuning of data and Spatial Data Infrastructures (SDI)
3. use of SDI for protected areas
4. use of SDI for coastal areas

f) eduGI – Reuse and sharing of e-Learning courses in GI Science education (2006-2007) [Jancso, Markus 2008]:

Many European GI institutes have digital teaching material available. Some already have introduced e-Learning. The project idea is to (re)use existing resources by the exchange of e-Learning courses via the internet. Our faculty has developed the "Data Acquisition and Integration" learning module.

5. Summary, conclusions

In Hungary the Faculty of Geoinformatics started to educate Surveyors in 1972 as a College for Surveyors and Land Managers. Gradually in the last five years the attraction and enrolment of new students has become more end more important. The faculty should be involved deeply in the marketing including the advertisement in different media, organization of road shows throughout the country. The atmosphere and the goals of usual educational exhibitions have changed as well. With the introduction of the credit system the budget planning and the economy with the human resources and infrastructure require a new philosophy and approach. The other important marketing issue is that – besides the BSc level education – the faculty understood the importance of other forms including the MSc, PhD and postgraduate courses. For these courses the main source of students is coming from the alumni. To attract them for the continuation of their studies is an important task. The credit system brought the necessity of the credit transfer between the European universities. The faculty is member of several associations and mobility networks. Although there are some obstacles because of the specific Hungarian accreditation system.

References

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