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Traineeships as a form of improvement of Geoinformation students' professional competences on the labour market

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Abstract

The today's labour market poses serious challenges to be faced by higher education graduates. Job applicants' specialised substantial knowledge, well-developed interpersonal competencies and - not rarely - professional experience are the essential features which are mostly appreciated by employers. Inexperienced 'fresh' higher education graduates often lack these requisite abilities and skills, which makes them hard to find their way in the labour market and get their dream job.

In 2015 at the Adam Mickiewicz University - thanks to the initiative of two faculties - the "Bridge to the labour market" traineeship program was launched, which was attended by last-year students. The project was funded under the 'Human Capital' Operational Program, Priority IV Higher education and science. The article shows the key assumptions and results of the project.

Graduate versus and the labour market

One of the most important goals to be reached by students upon their graduation is to get an attractive, well-paid job at which they will be able to pursue not only their passions, but also systematically improve their professional skills. Unfortunately, this goal can be achieved by a few of them and mostly by outstanding individuals only, which causes that it becomes discouraging for the rest to find the dream job and may lead to frustration in the long run.

A graduate student and his/her attractiveness in the labour market is undoubtedly conditioned by such personal preferences as: intelligence, brightness, ability to make decisions in difficult situations, teamwork or personal manners as well as abilities and skills acquired during the course of studies: specialised substantial knowledge, professional experience. A range of knowledge which a diligent student has upon graduation derived from a program of studies (curriculum) designed for a particular field of study. Unfortunately, a high level of heterogeneity of the labour market leads to that it often occurs that such a

program of studies is not able to meet all requirements set by employers (Filipowicz 2004; Mills 2004; Dubois, Rothwell 2008; Cichoń, Piotrowska 2012). An excellent way to improve students' professional skills is to create opportunities to let them take part in attractive professional traineeships.

Bridge to the labour market

In order to improve students' skills and professional experience as well as raise the didactic potential of the Adam Mickiewicz University, the "Bridge to the labour market" traineeship program was launched in February 2015. This initiative, which is a joint venture of the Faculty of Political Sciences and Journalism together with the Faculty of Geographical and Geological Sciences at the Adam Mickiewicz University, was implemented within the period from 1 February to 30 September 2015. The project was funded under the 'Human Capital' Operational Program, Priority IV Higher education and science, Measure 4.1. *Strengthening and development of the didactic potential of higher education institutions and increase in the number of graduates from major faculties to the knowledge-based economy*, Sub-measure 4.1.1 *Strengthening and development of the didactic potential of higher education institutions*. The National Centre for Research and Development played the role of an intermediary institution. The key goal of the project implemented at the Faculty of Geographical and Geological Sciences was to eliminate competence deficiencies among Geoinformation students which hinder their smooth operation on the labour market (Winowski, Makowska 2015). These deficiencies can be identified at three levels:

- professional competences,
- interpersonal competences,
- adequate understanding the gist of a business entity and its operation on the market.

In order to properly adapt students to the specificities of the labour market, every traineeship project was based on three major tasks:

- paid traineeships aimed to develop professional and interpersonal competences,
- study visits designed to improve professional competences and raise their knowledge on enterprises and their business,
- extracurricular classes in the form of lectures and workshops raising their competence in the use of GIS tools and programming languages.

Such outlined program was addressed to the adequate target group made of last-year students specialised in Geoinformation, i.e. of 3rd year of first-level studies (bachelor's degree studies) and of 2nd year of second-level studies (master's degree studies). In order to join a traineeship, an applicant had to hold a status of an active student and may not be employed on the basis of a contract of employment, commission contract, contract to perform a specified task or be engaged into his/her business in the course of the project implementation. In total, 57 students joined this traineeship program. Study visits and lectures could be attended by people who did not participate in traineeships while every qualified person had to attend at least 3 study visits and 1 extracurricular class.

Units authorised to run traineeships included state-owned institutions as well as private enterprises conducting business in the field of broadly-comprehended geoinformation, i.e. acquisition, storage and processing of spatial data. Students had not much problem to select their place of traineeship because there have been lots of business entities on the market which make use of GIS solutions. A total of 12 units participated in the program, including both budgetary entities and private enterprises (Table 1). In order to complete a traineeship, a trainees had to work over 160 hours from the beginning of April to the end of August 2015. A character of conducted work depended mainly on an individual employer's program. It usually covered running commissioned projects in the form of GIS tasks. In a few cases, works were also done outdoors. The traineeship offered by Geocartis can be put here as a good example -

at the start it included a two-day trip to the Wolin Island in order to map the cliff coast using laser scanning (*TLS*) (Fig. 1). The set of points acquired outdoors was - at the further stage of this traineeship - developed in accordance with customer's requirements.



Fig. 1 Laser scanning workshops on the Wolin Island cliffs.

Study visits were planned to be held in 9 companies located in Poznań and 5 off-site units located in Kraków, Tarnów, Kielce, Lublin and Łódź (Table 2). During these visits, students had a chance to get acquainted with the specifics of these companies and their business, find out how their product is created at the following stages: from customer acquisition, through project implementation up to final solutions. Their participants could also find out what problems they face and how they deal with them. Workshops and lectures were another step taken under the program implementation. In this case there were four thematic blocks planned, each of which lasted 30 hours (Table 3):

- Infrastructure of spatial information in the environmental protection,
- Python programming for GIS (in English),
- Metadata in the National Environmental Monitoring system,
- Application of the digital terrain model in the 'Country's Protection against extreme hazards' IT System (*pol. ISOK*)

Table 1. List of institutions where traineeships were held

Traineeships			
No.	Company name	No. of participants	Duration
1	Geocartis Sp. z o. o. Poznań	8	160 h
2	Regional Office of the Wielkopolski Province in Poznań	4	160 h
3	Regional Directorate of the Environmental Protection in Poznań	2	160 h
4	Trail.pl Sp. z o o. Poznań	8	160 h
5	ProGea Consulting Kraków	1	160 h
6	PPHU Gepol Sp. z o. o. Poznań	10	160 h
7	GIS Support Sp. z o.o. Lublin	4	160 h
8	Regional Centre for Geodetic and Cartographic Documentation in Poznań	2	160 h
9	GEOMAT Sp. z o. o. Poznań	4	160 h
10	IQ Solution Sp. z o.o. Poznań	11	160 h
11	Systherm Info Poznań	2	160 h
12	Nat-Geo Poznań	1	160 h

Table 2. List of institutions where study visits were held

Study visits			
No.	Company name	No. of participants	Duration
1	Geocartis Sp. z o. o. Poznań	20	4 h
2	Trail.pl Sp. z o o. Poznań	20	4 h
3	PPHU Gepol Sp. z o. o. Poznań	20	4 h
4	GEOMAT Sp. z o. o. Poznań	20	4 h
5	Systherm Info Poznań	20	4 h
6	IQ Solution Sp. z o.o. Poznań	20	4 h
7	GIS Support Sp. z o.o. Poznań	20	4 h
8	Regional Centre for Geodetic and Cartographic Documentation in Poznań	20	4 h
9	GEOPOZ Poznań	20	4 h
10	TomTom Łódź	10	4 h
11	GIS Support Sp. z o.o. Lublin	10	4 h
12	ProGea Consulting Kraków	10	4 h
13	MGGP Aero Sp. z o.o. Tarnów	10	4 h
14	Municipal Office in Kielce	10	4 h

Table 3. List of lectures and workshops to be attended by trainees (TLS) (Figure 1).

Lectures and workshops			
No.	Subject area	No. of participants	Duration
1	Infrastructure of spatial information in the environmental protection	19	30 h
2	Python programming for GIS	19	30 h
3	Metadata in the National Environmental Monitoring system	19	30 h
4	Application of the digital terrain model in the 'Country's Protection against extreme hazards' IT System (<i>pol. ISOK</i>)	19	30 h

Effects and prospects for the future

Based on interviews with trainees it can be figured out that the implemented "Bridge to the labour market" project proved to be very useful for most of them. In particular, the students appreciated the opportunity to gain practical skills in using different GIS tools and learning new programming languages. The traineeship program turned out to be the most beneficial for people who made themselves known to employers as competent, diligent and honest persons. Upon the completion of the traineeship they were employed in their companies. There were 7 such cases, which made about 12% of all the project participants. Also the study visits turned out to be very attractive; they often let trainees to discover the secrets of companies and their business as well as gain knowledge on the requirements set by employers to be fulfilled by today's job applicants (Winowski, Makowska 2015).

The above analysis makes it possible to draw very positive conclusions for the future - the participation in the project and its resultant benefits create more opportunities at the early students' career. It should be noted that the precise adaptation of such traineeship and study-visit program lets to educate graduates to be able to meet the labour market requirements as well as to increase the didactic attractiveness of the faculties. Taking the above into consideration, it is relevant to emphasize that it is needed to continue this kind of traineeships in the future.

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