

## Problems of Link-Up in Structured Study

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**ABSTRACT:** *the contribution deals with the problems of two-cycle study from the viewpoint of branch study relation between Bachelor program (first stage) and matching Master study (second stage) on one hand and relation between matching Master study and Doctorate study on the other hand. These study branches can be identical/similar or quite different. There are presented the advantages and disadvantages of both situations. Branches variety promotes the students mobility, study branches similarity enables the Bachelor program understanding as a prerequisite of matching Master program. Criteria of relationship evaluation are Bologna declaration principles and accreditation commission requirements. There are presented the experience and conclusions of Faculty of Mining and Geology of VSB – Technical University of Ostrava.*

### 1 INTRODUCTION

The educational process has been always an integral part of human society development, however, its role has been changing together with development of this society. The university education meant the development from preparation of closed section of population educated nearly exclusively for significant functions towards providing qualification for wider circle of inhabitants. The assertion of these graduates included not only the managing function but also a whole number of executive ones, and namely both for the reason of higher number of universities graduates and due to increased demands on single activities execution from the viewpoint of qualification level as well.

One of the basic problems which drags along the whole educational process development is the solution of basic orientation of university preparation – one of the possibilities is the education of narrow specialists, the second one then the preparation of people educated more generally who will complement their qualification with the respect of their position in working process.

The first possibility leads to education of experts with more detailed knowledge of the problems studied who are capable of quicker orientation in given sphere in practice with the possibility of quicker development of their creative capacities. Their assertion, however, presupposes relatively very accurate estimations of the graduates need for single branches in practice, res. directive locating of graduates for their qualification utilization according to the practice needs. The experience from development in the past showed that the reaching of these accurate estimations is very complicated and application of this system in conditions of market economy is absolutely imaginary.

The second possibility presupposes that the university graduate will continue further in increasing of his/her qualification and will be prepared for re-qualification according to situation on labor market. So the necessity of accurate determination of graduates number of single types of schools can be omitted and the sphere of education is getting under the market conditions where the relative balance is the resultant of the offer and demand encounter. It would be possible to discuss whether any regulation from the side of state can be removed because substantial part of costs for universities activity is financed from the state budget. It is necessary, under this situation, to create conditions for the process of life-long education and qualification changes. On the other hand, it is necessary to harmonize the requirements on qualification from the viewpoint of the working activity being executed and to ensure the realization of the knowledge that people with the highest qualification can find their place best on labor market.

It can be presupposed that these requirements are met best by the system of structured study. In its preparation in Faculty of Mining and Geology of VŠB – Technical University of Ostrava we were forced to solve which consisted in basic philosophy of structured study – link-up of bachelor's, master's and doctor's study. It can be still remarked to this that if we use the term „master's study“ in the framework of structured study we have in our mind the „following master's study“.

## 2 RELATION OF BACHELOR'S AND FOLLOWING MASTER'S STUDY

Interconnection of the bachelor's and master's study must be solved with the respect of two points of view:

- Bologna declaration presupposes maximum mobility between the first and second study level in various universities, res. faculties
- The accreditation commission declares its requirements on the subjects structure in the framework of single branches accredited

The existing understanding of the bachelor's study student can be summed up in such a sense that they are persons being prepared rather for executive functions and for lower management levels. That's why, their detailed specialization is not presupposed, their orientation should be rather practical one. It means that a whole number of disciplines of the existing "long" master's programs must be divided for the bachelor's level and master's level which links-up on the former. It does not mean, however, that the branch of structured study will arise by mechanical division of „long“ master's branches. With the division of single subjects on the part for bachelors and part for masters the logic of structured study will be supported when the bachelor's level, in fact, is the prerequisite of the master's degree.

In this aspect we have reached the compliance in Faculty of Mining and Geology and the prerequisites have been created in curricula of structured study so that the bachelor's study of given branch would be followed by the master's study. The curricula have been drafted in such a way so that the bachelor's as well as master's degree of corresponding branch would meet the requirements of accreditation commission as to the branch structure in technical university. This has been especially a question of share of mathematics, physics and bases of computer disciplines on both study levels.

The problem occurred in the moment when the graduates of other bachelor's branches than the faculty ones started to apply for linked-up master's study. Sometimes the link-up of these study levels could be without problems – e.g. if the bachelor studied in other technical university. However, it can be expected that the graduates of bachelor's non-technical branches will be interested in following master's study. The rejection of their applications would be in variance with principles of Bologna declaration, the acceptance of their applications will impair the logic of structured study as to the understanding of bachelor's degree as the prerequisite of following master's is concerned. It means that the student in following master's study is to be made acquainted with higher level of the subject where the bases are missing.

On the first sight, the simplest solution is implementation of equalization course for graduates of bachelor's branches from other universities (faculties). However, in analyzing the concrete faculty branches the fact has come to light that in a whole number of cases this equalizing course would contain a small number of subjects so the student would be forced to study one year longer with incomplete study load what would decrease the competitiveness of given branch on the education market.

After a whole series of discussions the idea of equalizing course was rejected and we have come to the opinion that with the respect of difference of single cases we will not aim at universal solution for the whole faculty but the responsibility will be transferred on the branches guarantors who can make use of the following possibilities:

- in case of applications of the bachelor's study branches graduates from other universities (faculties) which, already according to their name, differ from the linked-up branch of master's study in Faculty of Mining and Geology, the guarantor of the branch will require from the applicant the confirmed structured of the bachelor's study subjects with annotations res. curricula of corresponding branch passed through. On this basis the branch guarantor will decide whether the applicant has to pass the entrance proceeding or not.
- in case that the branch has the following master's study accredited in variants for bachelors of faculty branch and bachelor of other branches the applicant from other university will be included into the "non-faculty" variant. In case of Faculty of Mining and Geology this case concerns the branch Geo-information Engineering.
- the bachelors of faculty branches will enter the following master's study of faculty branches without entrance proceeding in case that the capacity of master's study corresponds with the number of applicants. If the applicants' number is higher than presupposed number of master's

study students (its capacity would be exceeded) the applicant have to pass the entrance proceeding and will be selected according to its results up to the capacity filling in.

- the graduates of non-faculty bachelor's branches, in case of the branch guarantor's decision, will pass the entrance procedure which will verify their knowledge level from mathematics, physics and bases of computer technique, so, in a substance, the fulfilling of prerequisites for following master's study in technical faculty will be verified. The students of the first year of the faculty who would like to study other branch of following master's study where the condition of prerequisites in the framework of bachelor's study would not be met will be warned of this fact.

The given systems seems to be rather complicated, however, it can be presupposed that its application is in compliance with the principles of Bologna declaration but it accepts also the requirements of accreditation commission and ensures the relevant level of graduates of following master's study of the faculty.

### **3 RELATION OF MASTER'S AND DOCTOR'S STUDY**

The similar problem of branch link-up can be found also between the master's and doctor's study. On one hand, the doctor's study is an integral part of structured study, so the principles of Bologna declaration as to the "permeability" between single universities is concerned, is valid also here. On the other hand, the doctor's study presupposes higher share of the own creative work of the student having the reflection in level of the doctor's dissertation work. So, the question arises whether the doctor's study should be the completion of given branch study in the line „bachelor – master – doctor“ or whether this unified branch line is not important.

Only one relatively simple solution is accessible – the study part of the doctor's study can be set in such a way so that it would equalize the handicap of other branch on lower study levels. It can be objectionable that this system extends the study part and so the whole doctor's study too and the problem of keeping the standard duration especially of presence form of doctor's study can arise. In addition, the question occurs whether several subjects of doctor's study can replace the lower levels of the branch study taking several years. The problem of students' selection for doctor's study is individual, in a substance, so it can be solved by entrance procedure, however, it is necessary to agree the principles of solution.

In the framework of Faculty of Mining and Geology the unified procedure for the whole faculty has not been accepted, the responsibility has been transferred on branch councils of doctor's study. The discussion in the faculty has led to concord that the branch difference between the preceding study levels and the doctor's study is fully acceptable in case of mathematical, physical and information engineering branches, the students can apply their knowledge of these branches in concrete scientific branches of Faculty of Mining and Geology. In other cases the competency remains on branch councils as to:

- consideration of affinity of the master's and doctor's study branch
- calling of topics for doctor's dissertation works

The competency of branch councils, however, is connected with their responsibility for quality of the doctor's study graduates.

### **4 CONCLUSION**

The above mentioned experience of Faculty of Mining and Geology has followed from preparation for accreditation of structured study in the faculty, from previous realization of some branches of the bachelor's study and from the first knowledge from realization of accredited branches of following master's study in Faculty of Mining and Geology. It is evident that as to the relation of bachelor's and following master's study the consensus has been reached in the framework of faculty without greater problems, as to the link-up of the master's and doctor's study the consensus has been only partial and the problem solution has been transferred on branch councils of the doctor's study.

In both cases the conclusions presupposed are not unchangeable and it will be necessary to collect and analyze the experience from the course of structured study in VSB-TU Ostrava as well as in other universities with the aim to consider the correctness of presuppositions of Faculty of Mining and Geology

and respectively to revise the solutions proposed. The discussion of these question in scientific council of Faculty of Mining and Geology from the viewpoint of confrontation of academic opinions with the practical experience can be of substantial contribution to these problems solution.