

Algorithm for determining the matching of educational qualification levels on the different accreditation levels

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The relevance and the necessity to improve the quality level of education determines the acquisition of new educational and qualification levels of education. Heads of educational institutions, which are producing professionals at different levels of education, are interested in improving the transition system. Since this problem is not a one-time in the education process, it is necessary to optimize and automate the transition within the task.

As a rule, in the Ukraine during the transition from associate's degree to a higher level of learning potential student is interested in the transition to the program ISCED level 6, or "bachelor or equivalent" [1]. Typically, for admission to the program at this level requires the successful completion of programs at ISCED levels 3 or ISCED 4, giving access to tertiary education. Admission may depend on the choice of subjects and / or marks obtained at ISCED levels 3 and/or ISCED 4 [2].

Levels of education are the concept based on the assumption that educational programs can be grouped into an ordered set of categories. In view of the complexity of the educational context, these categories represent stages in the large-scale movement on the educational route.

The matching of curriculum at various levels, or as close to a decrease in academic differences will optimize the time of education for this category of persons, as well as to increase the amount of the contingent who wants to improve education [3]. Method of determining the possibility of raising the level of educational qualification should include several steps. Lets formalize the way to solve this problem.

The first step is to analyze and study the content of the received document of the educational qualification level. The second step is to create an algorithm for mapping the submitted document to the curriculum of organization and to determine the matching the amount of disciplines [3]. The third step is to determine the percentage ratio of covered disciplines in the received educational level to desired level, which will help to make a decision on the possibility of raising the level of education not from the first year, but from later stages (corresponding the number of hours of study subjects, obtained at the earlier stage to the future level). Or alternatively there is an individual approach of universities to solve this problem. And finally, the last step is to use the universal technology of determination in order to match educational levels which includes a comparison of a number of documents in various fields.

Creating the algorithm of matching the document on graduation the 1-3 levels of accreditation educational institution to curriculum of the future direction of education is a task that requires the collection of large amounts of statistical data. This problem is non-specific and can be solved by semantic selection, through verbal way, searching by keyword way or by an expert method. Data for the problem can be obtained by questionnaires, researches of second and

third levels of accreditation institutions' curriculums and transformed to a unified form of submission. During the survey experts can be presented only by specialists of subject areas (eg, Higher Mathematics or Ukrainian language), as well as by those who carry out the work with the curriculum and documentation, regulating the learning process.

The matching algorithm is based on two main factors: the concurrence of the discipline, ie including the group which is read at the highest levels of education, and the total amount of discipline study hours (step 2). The look through the disciplines is required for classification into groups. At the next step it will be possible to determine how many subjects of the received education cover future curriculum. Subsequently, there is a determination of the total received time load obtained at ISCED levels 3 and / or 4 of ISCED in the disciplines included in a particular subject group by the opinion of experts.

The analysis of disciplines divided in the groups for each enrollee is done by using - α^k boolean variable in a k -th group. Further action on matching the amount of discipline hours obtained from education, and taught at a higher level of education will be reflected on the appropriate i -th discipline of the diploma and the curriculum disciplines:

$$T^k \cdot \alpha^k \geq Y^k,$$

where T^k - the number of hours for a group;

Y^k - the number of hours of curriculum.

However, if the variable α^k satisfies the given conditions, and T^k does not match the Y^k variable, then the situation needs to be addressed on an individual basis, thereby forming the conditions of admission the student to the course.

The presented technique which based on previously obtained data will allow future students of ISCED level 6 re-elect another specialty of the university, if the match of ISCED 3/ ISCED 4 disciplines was not sufficient for admission to the desired course, and is relevant to educational institutions at various levels of accreditation.

References

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