

New Subject to Improve the Educational System: Through a Communication Channel between Educational Institution-Company

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Abstract—At the time students' finish their academic educational level within a current educational system, a big gap appears to exist between the acquired knowledge and the needed knowledge to enter the job world. This situation provokes certain disconcert about the necessity for adaptation period to be properly integrated in the working environment. For this reason, the inclusion of a new subject into the educational system is proposed serving as a nexus and a channel between the academic institution and the company. This subject focuses on the company employees' educational level required to be hired and that of the students needed to enter the working field. Thus, based on the specific job characteristics, the educational institutions as well as companies collaborate to establish a plan to follow. A company actually proposes the basic milestones a student must have to become a worker with the required skills. In this way, we, as university teachers, support students who, at the end of their academic educational stage have the needed knowledge, skills and competencies to begin their working life without the problems related to ignorance about the work to do.

Keywords—Subject; Educational System; Educational Institution-Company Relation; Work; University.

I. INTRODUCTION

IN THE current educational system, and in conjunction to the subsequent studies on the secondary education level, a problem appears to exist related to the students' preparation when starting their working life. To be more specific, the student needs an adaptation period so to work in any position of a specific company when s/he finishes high schools and universities (not as much at the vocational education). This situation provokes a feeling of insecurity to a student due to not getting the acquired knowledge and skills that are required and appropriate so to immediately perform at work. On the other hand, the students do not only suffer the consequences but also, the contracting companies have to estimate a time of adaptation for the new workers, which is costly in both time and money.

As a result, this paper describes a solution consisting of including a new subject at the last phase of the academic studies focusing on the company's work. The subject serves

as a bridge and communication channel and collaboration between the educational institutions and companies; in this way, at the end of the student academic education, students can be incorporated in the working field without the need of any type of adaptation period or with a minimum one, which, in turn, does not cost to the contracting company as much. Thus, students, educational institutions, and companies take advantage of such subject, and also, the country's overall economy is improved as a response and consequence of a drastic diminution of the young people's unemployed rate. This is because companies do not require dedicating human and financial resources for the adaptation period and consequently, hiring is dramatically more effective.

There is increased importance in the aforementioned as nowadays, there are numerous and diverse factors that badly affect a country's economical growth. Among these facts, the unemployed rate is called the brain drain or the capable people's unhappiness caused by the low salary. One of the consequences is loss of interest towards completing their education to a university degree. This is probably because they know from the beginning that they will spend a great amount of money they possibly do not have and/or have to acquire support from their families or a loan from the banks. Moreover, for the time needed to study, the student will not have monetary benefits but problems with, for example, housing. Last but not least, in case of acquiring the degree, such certificate does not guarantee a job, which is rather a disappointing concept in regard to higher educational levels.

For these reasons, we propose the inclusion of this new subject to increase students' interest on higher educational levels, in order to becoming more familiar with the working life and with the job they have been studying for. This generates expectations and hope for the students and if hiring is more probable then there will be added value benefits.

The following sections are presented as follows: the current educational system situation, a global vision of how the subject can be included into the academic plan, the

channels of communication between institutions and companies, the evaluation criteria for the students in that subject, and finally, and the work that we are doing to improve this proposal.

II. STATE OF ART

With respect to university academic education, a solution exists to reduce the problem previously highlighted; this is the gap between the finishing the academic education and starting the working life. This solution is called “company practices”. It consists of a student working in a company, who asks for this kind of practice. This type of work is remunerated, in some cases, and it is a bridge between the student, as a worker, and the company, which helps the student. On the other hand, in many occasions, the work done by the students inside a company does not reflect students’ expectations. In other words, students think that they are going to learn about the working conditions and skills needed in a company within the field that they have been studying, however, they usually acquire a job unrelated to their academic education. Definitely, in some cases, companies use this kind of opportunities to hire people at low salary or no salary to perform very low-level tasks or tasks that nobody of the current workers wants to do.

With respect to the vocational education, the gap is not as wide as with university academic education. It is rather more focused on supporting the students entering the work world and for this reason; a closer relation with the local companies exists. In addition, there are studies to prepare the students who would like to enter the working life as soon as possible. Those studies are called “Programas de Cualificación Profesional Inicial” (PCPI), in English, Initial Professional Qualification Programs; and previously called “Programas de Garantía Social” (PGS), in English, Social Guarantee Programs [1].

Despite the aforementioned problems, any help that the educational system could provide to improve the integration of the students in the working life would be well received by the society. For that, we are going to explain our proposed idea to ease this process.

III. GLOBAL VISION

The proposed subject is included in the last course of the corresponding studies plan. Thus, the students have the academic concepts as fresh as possible and the companies can identify a person to cover a vacant in short notice. This subject is optional, as it occurs within the company practices, and prepares the student with the needed knowledge to start working in a specific job. For that, the student identifies the kind of position he wants to occupy, when he finishes his studies, his spurring tutor and mentor etc. as the support provided by the university has to be as

realistic as possible. After that, it will be clearer for the student to have a list of themes related to the desired job. This list of themes is established in a base shared between the institution and the company in order to know the essential milestones the student has to achieve to obtain the desired job.

As this is a subject in constant evolution, the companies will not be always the same and for this reason, the required essential milestones have to change occasionally. For example, two companies establish an agreement with the university where the needed criteria are established for a student to work in a vacant job as a Computer Science Engineer. One of the companies’ jobs requires good knowledge of the CMS¹ Joomla!² and the other .NET³ Technology. Both vacancies require a Computer Science Engineer to develop the work. However, it is highly likely that the student at the end of his/her studies does not have enough knowledge and skills on any of the previous technologies. In addition, those technologies are different, so it is impossible to establish a common list of themes for both because the student will not be specialised to the required degree.

Taking into account the previous concepts, we are creating two different types of lists of themes associated with the current company necessities, which can be selected by the students who would choose the subject. One of the lists of themes is focused on the work on Joomla! where the student must study themes related with PHP⁴, free software licenses, databases with MySQL⁵, managing of a Apache server, etc. The other list of themes focuses, differently, on the programming language C#, the study of the .NET Framework, the architecture in layers, the client side programming language JavaScript⁶, the SQL Server⁷ database, etc.

Once we know the different lists of themes available for a specific course, the academic institution passes the information to the students so they can choose the closest to their necessities. If there is not enough number of students, more academic load will be dedicated to a subject with one

1 CMS. Content Management System.

2 Joomla!. Open code CMS, developed on PHP and under GPL license.

3 .NET. Microsoft Framework for developing applications.

4 PHP. Server side programming language usually used for web development.

5 MySQL. Relational database management system of Oracle.

6 JavaScript. Client side programming language used to improve the performance and the interface visualization.

7 SQL Server. Relational database management system of Microsoft.

list of themes, and another list of themes will be rejected as non-viable (as occurs at the current educational system).

At the end of the academic stage, the students will have the required skills for the current working life for a set of companies that focus on specific technologies. In addition, the companies collaborating with the university can provide the bases for future workers to have at their availability qualified personnel so to work on the moment as they enter the company; this increases the students' or ex-students hiring rate by the specific institution. Such targets combination avoids the existing gap between the student and the company due to the lack of information and/or resources.

IV. EDUCATIONAL INSTITUTION-COMPANY COMMUNICATION

Finally, a communication channel is needed to bridge educational institutions and companies. This communication channel is of great importance because the successful collaboration between them determines the success or the failure of the whole project. So, if we establish the correct methods and level of understanding, the results obtained will be beneficial for all, the students, the institution, and the companies.

Therefore, different meetings between the interested parties can provide, as a result, the bases to establish the knowledge and capacities that students have to acquire to reach a determined job in a specific company. Moreover, we obtain real work-related profiles of qualified personnel to occupy a vacant job when finishing his/her education, which is nowadays not offered by the university.

This type of relationship is beneficial for everyone involved and even for not explicit parts, as for example, the employment system. Below we detail the resulting possibilities:

- For the students. The proposition improves the student self-esteem and attitude towards a future job. The student knows that the subject will be really useful for his/her working future. In addition, due to the fact that the company is already continuously immersed in this process, it increases the possibilities of hiring a student by that company or another, which works with the specific kind of technologies and/or methodologies.
- For the university. Improving students' attitude results on choosing the subject that will open the working world, and increase the number of students deciding to register for that subject, which in turn, directly affects the university's strongbox. Moreover, if there are a lot of companies that present their technologies and methodologies and due to this several plans created, an increase in the number of job vacancies can be established. Thus, this increases

the number of subjects to teach, which would be great for teachers with problems appeared as lack of opportunities. Lastly, however, not less important, is the increase in possibilities of hiring students, therefore, the university's prestige would grow, raising the "graduated student-hired student" rate.

- For the company. As a consequence of this relationship, the company needing specific employees does not overspend on human and financial resources searching for suitable candidates who fit the job requirements; this is because the potential future employees have already studied the subject that is in accordance with the company plan. In addition, the adaptation period for a new worker is removed or drastically reduced. This increases the initial productivity and, consequently, the profits.
- For the employment system. The employment system is indirectly related to the communication channel between the educational institution and the company. This is due to different reasons; for example, and as aforementioned, is the number of plans about the subject increases, the number of vacancies for teachers needed also increases, which in turn decreases the number of unemployed people. Another factor is related to the direct relation between a company, the university and the subject with the specific list of themes for a job in that company and this is due to the communication channel; as the number of hired students recently graduated increases, the unemployed young people rate decreases.

To conclude, if we establish an effective, organized and structured communication channel between the educational institutions and the companies, more global benefits are obtained. These benefits are applied to every part and improve the educational and working system as such.

V. EVALUATION

Finally, evaluation of this proposition is needed to assess that the studied concepts by the students are rooted enough and they have been useful to them. For this, and as a result of the conversations between the university and the company, evaluation criteria are needed to impart the subject and to obtain qualitative conclusions referred to the capacities of each student.

The evaluation need to be composed of theoretical parts as well as practical parts, depending on where the company assigns weight to the most important parts; these are the parts which have more weight at the time the teacher evaluates the work presented by the student. As for the degrees, for instance, in engineering or architecture, the evaluation criteria can be related to practices. However, for the rest of the degrees, if for example related to Arts, practical applications appear to be better and more positive

for the student because as they refer to real cases; these can be found and implemented inside the company, related with the study plan for the subject or other similar competences.

To increase the students' interest, we can establish agreements; companies are obliged to hire a specific and minimum number of students (if the students have finished the subject with appropriate qualification). Thus, at the end of students' studies, there will be interviews between the company and the selected students.

VI. CONCLUSIONS AND FUTURE WORK

Nowadays, serious problems exist with respect to the rate of unemployed young people and the difficulty of the recently graduated people related to getting a job based on their studies inside of the frontier. For that reason, in this paper we proposed the inclusion of a new subject to the study plan of the educational institutions. This subject foment the communication channel between companies and educational institutions to achieve beneficial goals for everyone. Thus, the result is efficient and effective for all, students, company, educational institution and the public employment system. This is due to the creation of new work vacancies that help companies to find adequate people fitting with the company profile. Furthermore, students' efforts are rewarded with the possibility of being hired by the company, which manages the plan for the subject, or by companies with methodologies and/or technologies similar to that plan.

It is also necessary to mention that we are working towards managing different generated plans for adapting the conversations and agreements between educational institution and companies having a big part of their contents common to others. Thus, not only do the students achieve the goals of a particular company and their own but also within many companies, and thus, increasing the possibilities of hiring them. Getting more prepared students whose skills are open to a wider number working possibilities. Therefore, the improvement of the studies

model plan of a subject for higher studies have to be considered, and also, aspects on studies of a lesser grade. For this, we are studying different forms for the students who do not want to follow higher studies; however, they can acquire a good career opportunity following the same paradigm of bridging subjects and communication between educational institutions and companies.

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