A Decision Support System for Choosing Higher Education Studies

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Abstract

The selection of higher education (HE) studies by the lyceum graduates, and the vocational orientation of students and fresh university graduates present particular interest for the majority of each country's youngsters. Despite their prime importance, these issues, as well as linking between HE and labor market constitute research areas that have not been investigated extensively. Nevertheless, these areas present exceptional interest and practical implications because they are directly connected to the desired decrease of the unemployment rate, one of the top priorities at personal, state and European level.

Among the tools used in vocational orientation and in career planning and development are the *job profiles*; a basic or detailed description of the different professions, in a standardized way, recorded in most cases in digital databases, accessed easily through computer applications. A job profile includes any type of information that defines the inputs, process and outputs of any job, such as statements, roles & responsibilities, expected results, required skills & qualifications, experience etc. associated with the job or the person doing the job. The usefulness of job profiles is apparent: the professions of each broader specialty mirror the current situation of the corresponding labor market. In previous work, the authors presented the analysis and design of a digital guide. The proposed web-based Decision Support System (DSS) informs and assists its users for the available HE studies in Greece. The users of the DSS are classified into two categories: i) youngsters that want to choose the most appropriate for them HE studies, and ii) students and graduates searching for information about their specialty's vocational prospects. The digital guide presents the provided specializations by the Greek HE; the corresponding departments are categorized according to their specialty, their vocational prospects and HE institutions. These categories offer the opportunity to the users to search the DSS database according to their criteria.

In this work, the authors present features and functions that enhance their previous work and empower the digital guide. These include:

- The details of the user-friendly interfaces that allow the user to interact with the DSS, simply and powerfully, whatever the category (e.g. desktop PC, tablet, smartphone) of the device he/she uses.
- The SQL queries that the interaction of the user with web interface of the digital guide fires.
- Embedding in the job profile database historical data that help to answer aggregate queries (e.g. which is the current entry grade as well as its trend for entering to a department, or to departments belonging to a specific school, or to a specific geographical area).
- Embedding in the job profile database data related to the placement of graduates of each higher education specialty on the labor market.
- The design of new services to the DSS users, such as: i) Support of personalized user information, provided by the user him/herself through wizards and successive questions, and ii) Apart from "pumping out" exact information existing in the job profile database based on the criteria entered by the user, the DSS can also use criteria and information provided by the user to form recommendations for his/her choice of job/study specialty.

Based on the material presented in this work, the authors plan to develop a powerful DSS able to inform its users about the current provided HE studies in Greece, and most importantly to assist them in their selection of HE studies aiming at a smooth and prompt future entrance in the labor market, and eventually promising professional career.