Scenario-Based Career Path Decision Support Services in Human Capital Development

Tokuro Matsuo, Yamagata University, Japan
Yoshihito Saito, Yamagata University, Japan
Takanori Terashima, Miyagi University, Japan
Takayuki Fujimoto, Toyo University, Japan

ABSTRACT

This paper proposes a new career support system for students’ decision-making using past student information in a university. Past students information contains a lot of useful information such as trend of taken classes, getting jobs, and their correlations. The authors explain a method to clarify the correlation of lectures and jobs. The system provides career services to students. The system shows pattern and scenario to take lecture based on student’s goal and job family in which they want to get. And also, the system realizes to support the student by providing appropriate candidates of job families from students’ career, pattern, and order of taking classes.

Keywords: Campus Information Reuse, Career Support Systems, Decision Support Systems, Human Capital Development, Past Information

INTRODUCTION

Universities and colleges have huge amount of information and such information can be used to enhance rationality of educational activities (Cox & Emmott, 2007; Hsu, Hamilton, & Wang, 2010; Matsuo & Fujimoto, 2010). Campus information includes faculty information, lecture information, student information, career information, facility and equipment information, and several others. In this paper, we focus on a decision support system for students to choose lecture and job based on their profile and history. Student information is one of the most frequently updated data in campus information because it should be updated every semester. And also, Students who newly entered university and students graduate the university after earning required credits. These individual history data are preserved in student section and career section in the university. Thus, university preserves a lot of cumulative students’ information for years and years.

Student information is normally managed in a student section and is referred by students, faculties and staffs (Glatthorn, 1994;
Negnevitsky, 1998). Since students belong the university over a protracted period of time, their information are preserved in a lot of sections. For example, student individual information is preserved in student section and student credit information is preserved in an education section. However, students’ information is not always reused to make effective instructions and tutoring. Universities cumulatively preserve multiple information of former student (alumnae and alumni). The information includes student career history of taking classes, place of employment of job family after their graduation. From a point of collective intelligence research view, collective information provides averagely rational activities of the students (Pentland, 2006; Jung & Nguyen, 2008). If these former students’ information can be reused and analyzed, university can help current students to learn and understand something (Couros, 2009; Miller, 1976). The information can be used in decision making for students regarding getting jobs and finding appropriate classes for their purposes and intentions.

In this paper, we propose a new career support method by collected information. Generally, mentoring programs are provided to enhance student’s understanding and keep his/her motivations in universities (Casado-Lumbreras, 2009; Chao, 1992). Also, there are some researches to monitor students learning in professional education viewpoints (Garcia-Crespo, 2009a, 2009b; Martin, 1998; Soto-Acosta, 2010). On the other hands, in this paper, apart from subject learning, we focus on career understanding for students. The system provides useful information for students about pattern and scenario to take lecture based on student’s goal. And also, job family in which he/she wants to be based on computational analysis are retrieved. Further, our proposed method realizes to support the student providing appropriate candidates of job families from students’ career, and history and order of taking classes.

Our proposed system provides a service to students to choose appropriate lectures if he/she already determined the job family he/she wants. There are a lot of paths of scenario to take classes according to the job families. The system uses a lot of preserved former students data, opinions from companies and other factors. Some students have determined job families they want before their entrances to the university, but others start to find and know about jobs after admission. Students may know them through guidance provided by the university, experiences, and other activities. If student eagerly wants to get a certain job, the system finds and detects relationships between the scenario of lecture and job family. Then, the system computes the advantages of lecture families for each job family. The former students’ data are employed in this process. Additional data include what each former student feels useful knowledge for his/her job in which he/she had studied in the university. Namely, students groups can be classified in history information of taking lecture and current job.

Second, the system provides a service to students who hesitate to choose appropriate job for them. The system proposes some appropriate jobs and job families based on a history of taken classes and several other data. And also, to get the job, the system provides information what lecture is useful for the job. For example, there is a desirable pattern and scenario of lecture sets for a job. The system provides the job information and the lecture information in which a student can take other lectures. Thus, the system becomes a part of education support system.

Originalities of our proposed issues are as follows. (1) Our system seeks correlations between scenario of lectures and job families. In existing researches, although the systems support to learn about a certain learning issue, there are not many researches about career support. (2) We use our original analysis method because it is not easy to compute using analysis of correlation like qualification theory in order to analyze correlations.

Advantages of our proposed method and system are as follows. (1) The system detects a rule and provides useful information to help students make their decisions regarding how they choose classes and jobs. (2) Students broaden
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