

大学生用科目履修登録作成支援システムに関する研究

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知識社会に活躍する人材を育成するため、大学生のそれぞれの専門領域と関心を活かした科目履修登録を行うことを支援するシステムの研究開発が望まれている。大学の多様化に伴い、学生の科目履修登録の作成プロセスが複雑になっており、情報技術の利用により個別ユーザの多様なニーズを反映する科目履修登録支援システムの研究開発が望まれている。なぜなら履修計画策定プロセスは各種の制約条件（修了に必要な単位数、必修科目や選択科目の区分等）を充足し、かつ、個々人の関心ある研究領域に必要な科目の学習を優先したいと過程する。そのような大学生用科目履修登録作成支援システムを構築するには、修了に当たっての各種制約条件（必修、選択科目など）を満足し、就職支援について（職種、業種、企業名）など推薦し、学生にとっても関心の高い科目を推薦してくれるシステムの研究開発が必要である。

Research on Course Registration Support System for University Students

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This research is an education support system for university students which especially designed for suitable job hunting and academic advice purpose. Higher education environments have become increasingly competitive and institutions have to compete for students in the recruitment markets. The research was aimed to finding out the factors by which students consider important in their decision making related to courses of study. Student advising is a task that needs to be done at the beginning of every semester by all students who wish to register for courses in the upcoming semester. This is a tedious job and requires all advisors to be available during the advising period. This research is targeted to solve the problems of required number of necessary credits for graduation, this course is not appropriate or useless for the futures of student, and course or knowledge base job hunting etc. provided useful functionality to help the students to overcome the problems. Due to the enhancement of education quality, develop a planning to choose the appropriate course and job advisory system is to help university increase the student quality.

Introduction— Higher education environments have become increasingly competitive and institutions have to compete for students in the recruitment markets. The research upon which this paper was based was aimed at finding out the factors students consider important in their decision making related to choice of university and courses of study.

Mainly, this research is an education support system for university students which especially designed to support the suitable job hunting and academic advice purpose. Student advising is a task that needs to be done at the beginning of every semester by all students

who wish to register for courses in the upcoming semester. This is a tedious job and requires all advisors to be available during the advising period. Due to the enhancement of education quality, develop a planning to choose the appropriate course and job advisory system is to help university increase the student quality. Research on Course Registration Support System (CRSS) for University Students targeted to solve the problems of required number of necessary credits for graduation, this course is not appropriate or useless for the futures of student, and course or knowledge base job hunting etc. provided useful functionality to help the students to

overcome the problems. In system development, the system is developed by Microsoft Visual Studio C# programming and MySQL database as this two development tools are most common use in nowadays. The students who have been assigned as advisors will benefit from the use of this CSSUS. This system applied to experiment and evaluated by some students the department of Knowledge Science of Japan Advanced Institute of Science of Technology (Jaist).

Goal of Our Research: Research on Course Registration Support System (CRSS) for University Students main goal is to allow students to take appropriate subjects for a specific major course in a given semester which will hence allow the students learn more effectively according to their plan. This system will analyze various data from different sources like course offered by specific professor, in a given academic year, prerequisites for the class, other options or alternate subject, etc. It will also link valuable information from previous students who took the class in that past and their opinion. These sorts of analysis will allow the potential student to have all necessary information before taking the class and alternate options. Specific database will be set up for storing various pertaining information and then system will analyze the data based specific programming for student's preference.

System Structure: Future planning and academic advice is important for every student, with a good academic advice can help students enhance their personality and disciplinary. Besides that, good advising will bring student to clarify, plan, implement and monitor their progress of study which consist their values, goals, interests and abilities. Develop a "Research on Course Registration Support System (CRSS) for University Students" are brings toward e-learning environment and use it to guide students to plan in their studies and monitor their academic progress.

Database Design: JAIST follows a particular pattern for storing data about the students, faculty and all course information. Ideally I wanted to work with the existing database structures with all the tables and data fields being the same as the currently implemented database. The database design is based on our understanding of all Knowledge Science course

information based in a university database.

Job Kind of Career Centre and Knowledge Science Syllabus of JAIST

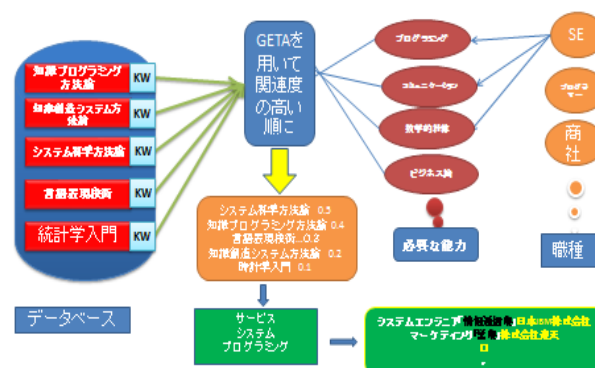


Figure:1 data flow diagram of CRSS

In this system search interface we used four different types of interact with the database. The student will primarily view different information from the system and will be able to update their personal educational records. They can further choose to be a member of clubs to their liking and perform their pre-advising by choosing courses for the next semester, and must be calculate the graduation constraints.

Another results search interface shown information will include course name, faculty, class (conditional) routine. Once a student tries to enroll into a section of a course the system will check if he meets the course requirement and if there is clash in class routine. If all conditions are meeting then the student is enrolled in the course.

Interface Design : Before designing the interface we knew that it needed to be user friendly and very easy to understand. The application is going to be fully web based and hence needs to be very fast. The main idea of replacing the current system is to ensure that students waste less time offline and that advisors take less time to complete the advising of each student. I also needed the availability of features such as grade sheet, and other background information of students available to advisors at ease.

Why we Choose The C-sharp Languages: C# is a multi-paradigm programming language encompassing imperative, functional, generic, object-oriented

(class-based), and component programming disciplines. I think, C# is one of the programming languages designed for the Common Language Infrastructure.

Interface Layout Implementation: The interface was created on a C# platform. This is ideal; because C# includes the use of all HTML tags which can be control the systems. After implementation of interface layout screen shot as below:

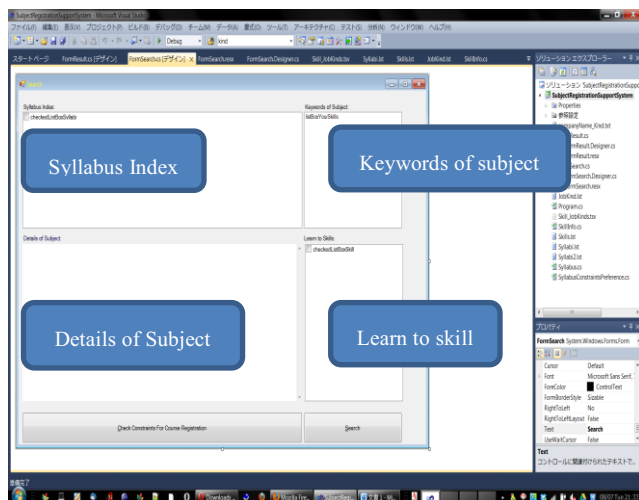


Figure 2: Interface design layout of Course Constraints

Above figure are shown the interface design layout search result screenshot of Research on Course Registration Support System (CRSS) for University Students. Above search layout shown the column of Syllabus Index, Details of Syllabus, Syllabus keyword, Learn to skills. Check Constraints for Course Registration and search buttons.

How to access the CRSS: This CRSS applied to experiment the base of syllabus and course registration terms and requirements etc. from how to build the student's career. And also, we implement various database of learn to skills keyword, subject keyword, job kind, Company Kind, Company name etc. Here we used the platform of syllabus the department of Knowledge Science of Japan Advanced Institute of Science of Technology (Jaist).

Now I explain how to access Research on Course Registration Support System (CRSS) for University students. First how check the essential subject constraints for graduation of knowledge science students. We know knowledge science essential subject "Introduction to knowledge science (course Id:228)" if you put the check mark than show the details of this

subject and essential keyword and also skills of keyword, if you check the constraints buttons than show more 4 compulsory subject (200 series) for graduations. So, if you check the more 4 essential subject than show the minimum 1 course need to registration for your major course (400 series). After, click the constraints button than show you need more 5 another subject to complete than show the complete the subject for graduation.

System Screenshot: As below

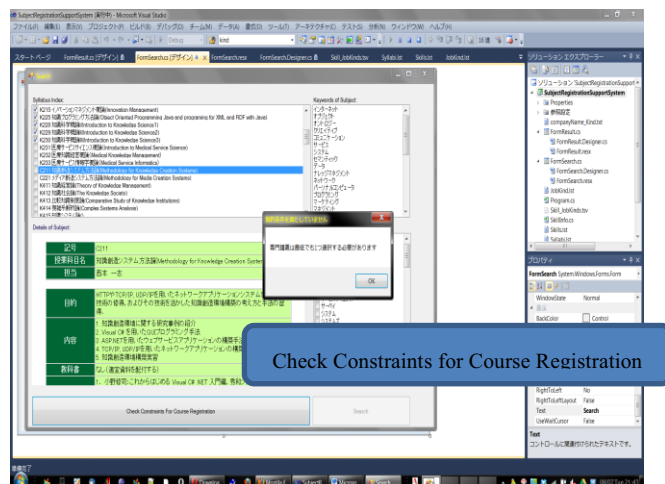


Figure 3: Interface design the search layout of Course Constraints:

Now we explain to you another part of this system. This system shown to you if you check essential subject or any subject like as finished course and check the skill buttons (to learn more about this skill for future goal) than click the search button than shown you need to learned or learned more appropriate subject by rank of GETA calculation.

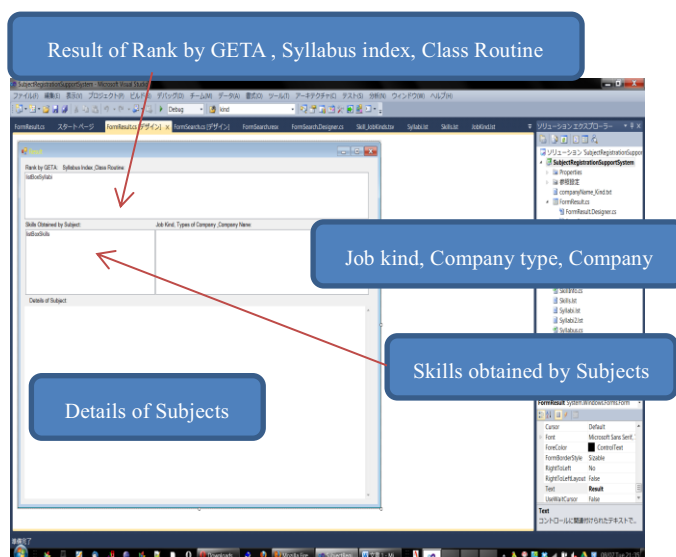


Figure 4: Interface design the search layout of job kind company by syllabus KW

Above shown as interface design layout the screenshot of Research on Course Registration Support System (CRSS) for University Students. Above the result layout shown the first graph of Rank by GETA search, Syllabus Index, Class Routine. Second graph shown as Skills obtained by Subject. Third column shown as job kind, types of company and company name. And below column shown as the details of Subjects.

Now, search layout for job kind, Company name and kind, skills of KW, Syllabus rank and detail etc. We implemented the GETA calculations. GETA (Generic Engine for Transposable Association) is a software that provides efficient generic computation for association. It enables the quantitative analysis of various proposed methods based on association, such as measuring similarity among documents or words.

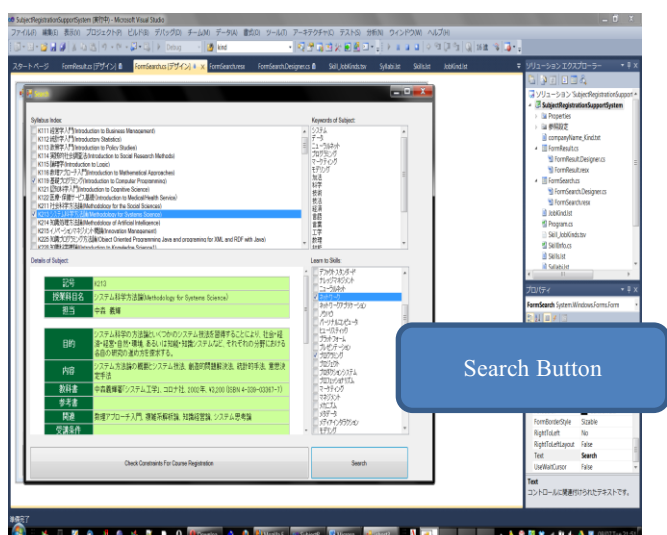


Figure 5: Interface layout on implementation

Here shown the Interface layout on implementation of Research on Course Registration Support System (CRSS) for University Students. Above search layout shown the column of Syllabus Index, if you check the index of syllabus than shown the Details of Syllabus, Syllabus keyword, Learn to skills. Check Constraints for Course Registration and search buttons as result as below:

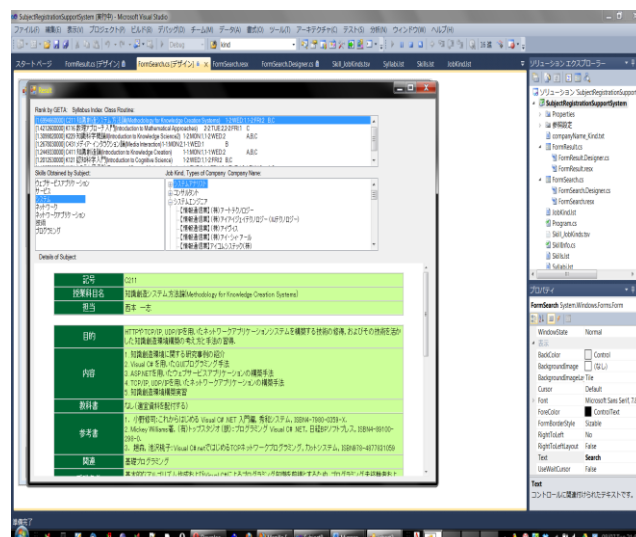


Figure 6: Result of the search layout of job kind
company by syllabus KW

Above shown as to check the completed subject and checked the any learn to skills keyword than access the search button results screen shown the GETA calculation subject than you check any of the subjects than show the detail of subject, and essential skill of this subject keyword. Than you check the keyword of this subject than show you job kind, company kind, and also company name (by Jaist carrier center Registration Company) for job hunting support by you learned or to learn your skill.

System Evaluations: The purpose of this research was to evaluate the perceived effectiveness of a course registrations support system (CRSS) to determine a perceived effectiveness of proper course registration support to achieved by future aim or goal. This system is now common practice and understanding how to choose the courses is essential to successful participation in better education. Summarize the evaluations as more than 88% percent evaluator's wrote it's well helped to check the essential course for complete the graduations. Another 12% evaluate it is good to check the course constraint. All evaluator wrote the check constraints for course registration search system are more convenient and clearly to understand which course is more essential to registration etc. Maximum students answered it was useful. Because they explain it was innovative search, matching is more appropriate and frequently searched. Most of the students that kind of searched used the first time. his course registrations support system (CRSS) is easy to access more

appropriate search result of related course, keyword basis job kind, and company name access etc. introduce at more helpful support system.

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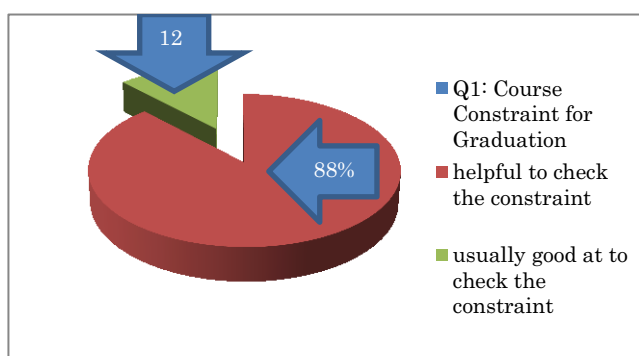


Figure7: Satisfaction of Users

Summarize the evaluations as more than 88% percent evaluator's wrote it's well helped to check the essential course for complete the graduations. Another 12% evaluate it is good to check the course constraint. Than,

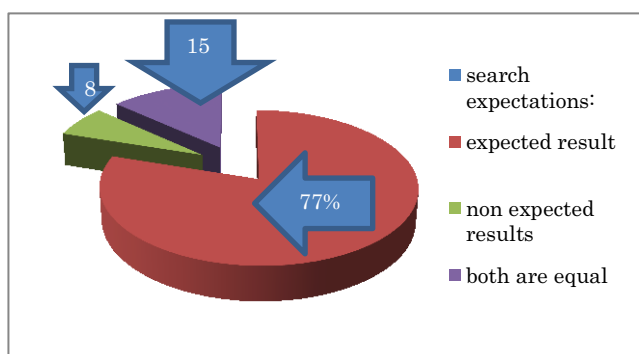


Figure8: results of expectation search

Maximum students answered it was useful. Because they explain it was innovative search, matching is more appropriate and frequently searched. Most of the students that kind of searched used the first time.

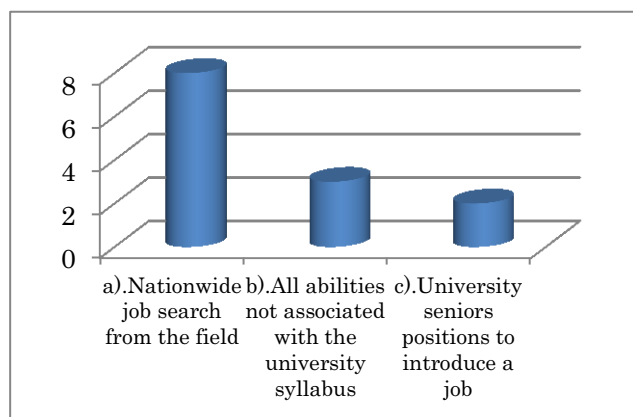


Figure9: Job hunting supports

Maximum students answered it was useful. Because they explain it was innovative search, matching is more appropriate and frequently searched. Most of the students that kind of searched used the first time. This CSSUS is easy to access more appropriate search result of related course, keyword basis job kind, and company name access etc. introduce at more helpful support system.

Conclusion: The vision is educational care. It is from our perspective that students in higher educational institutions are primarily given the opportunity to become better individuals by experiencing of CRSS thinking and support. The implication to this viewpoint is that students are provided with tools to help them better understand their strengths and weaknesses while at the same time make a genuine effort to help them succeed and attain excellent performance.

Systems are all designed with limitations. Looking at the system presented in this paper, the elements of Jaist syllabus base and recommendation facility are of utmost importance. In this case, the system assumes equal weights among all factors. This is not necessarily true. In fact it is not evident in the literature which one is more important than the other. Moreover, result of search can provide students with the rationale for the decision and a better understanding of his/her weaknesses. Higher educational institutions are not necessarily geared towards student care. Even though they may claim to be; only a few are in fact. Additionally, the academic community seems to have stagnated within the limitations of the 'no-significant-difference'.

Finally, this system to make it much easier for the

course registration and develop a planning to choose the appropriate course and job advisory system is to help university increase the student quality based of educational background.

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