

Integrating Psychology Approach into Course Advisory System Framework for Higher Education Institution

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Abstract – The advisory system is used to guide and support decision-making in such circumstances where more than one decision is viable. High school students are having difficulties in making the right decision in choosing a course while considering their personality. Hence, this study is aiming at proposing a framework that integrates the course advisory system with psychological elements, this integration is expected to penetrate both intelligent elements (advisory system) in advising the best course suits with student's qualification, and psychology elements (student's personality). The framework is then used to develop a prototype system and tested in a case study. Based on gathered data, the proposed advisory system framework gives a positive impact to most of the respondents.

Keywords—advisory system, course advisory system, decision making, psychology, education

I. INTRODUCTION

Choosing the right course in Higher Education Institutions is the most critical decision to be done by every student in Malaysian high schools. This is because it would determine the future direction of the student's life. Therefore, it should be very important to select a course that suits their personality and interests.

Students prefer to assimilate themselves into their educational environments [1], and a student's life is greatly influenced by the Higher Education Institution's environment [2]. Students typically decide on their career based on their own preferences without considering their abilities [3]. Personality is likely a factor of human decision-making and judgements [4]. To choose a course, a student will normally be guided and advised by their high school counsellor [5].

In Malaysia, a school counsellor is an essential figure in guiding and preparing students transitioning to the next level of their education or career path [6]. Counsellors are appointed to educate students on the need for effective career choice [7]. The counsellor uses a guiding program to assess the student's personality through a career planning program based on theory of personality [5]. However, this advising process is time-consuming and repetitive [8]. The former advising process by high school counsellors is conducted manually and face-to-face. Counsellors need to repeat the same process with each student, which burdens the counsellor. There are also many factors to be considered when coming up with suitable decisions, which prolong the advising process such as financial status, student's interests, etc.

Technology can improve the advising process by assisting counsellors in making recommendations [9]; and the delivery method is different for each section [10] as the approach of

advising face-to-face differs from using tools to advice. The advisory system exists to provide advice, help solve existing problems usually undertaken by human experts, and to support decision-making. Advisory systems support decisions that can be classified as either intelligent or unstructured, and are characterised by novelty, complexity, and open-endedness [8]. The advisory system is built by eliciting knowledge from experts in specialised areas and transforming it for the computer to use in evaluating the solution in the area of expertise [11].

In this study, the advisory system will be used as a medium in advising students, where students no longer cling onto their school counsellor in recommending a suitable course in Higher Education Institutions.

II. ADVISORY SYSTEM

The advisory process usually involves two participants: an advisor and a client. The client seeks help from an advisor to make a decision by sharing information related to the problem. An advisor uses their knowledge and information given by the client to offer solutions or decisions. However, the final decision depends on the client, as the advisor only gives recommendations and makes an appropriate response according to the information given.

The advisory system imitates a human expert in solving problems in a specific field. This system works by evoking knowledge from the expert and making it into a form that can be used by computers such as coding as an alternative solution within domain experts. Besides, advisory system guides the decision maker to make the final decision and assess different solutions for unclear decisions [12].

By using the advisory system, it gives advantages to the user in the decision-making process as the user has confidence in using the system and realises the advantages of the advisory system [13]. The advantages of using the advisory system are that it decreases decision-making time for the user and it improves the decision-making process as advisory systems consistently monitor all the details and do not overlook relevant information [12]. Furthermore, counsellors or experts are not always available, but a system is theoretically available at all times [14]. The student-guiding process can also be convenient as students can use the advisory system without guidance from their counsellor, and they can still consult their counsellor if they are not satisfied with the result given by the advisory system.

The advisory system in education acts as a supporting tool for the advisor or counsellor to advise their fellow students efficiently. Nowadays, there are many advisory systems that have been developed to help and support the advisory process.