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Effect of SIMPESA Career Application on Student Self-Efficacy in Selecting majors

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Abstract: This research aims to examine the effect of the use of Android-based career application on the self-efficacy of students in the selection of majors in high school. This research is a pre-experiment research on high school students in Makassar city, South Sulawesi. This research begins with development research and has been produced in previous research an Android-based career application named SIMPESA (high school student interest) that has been tested the validity and acceptance by psychologists and ICT experts and counseling counselor (counselor) to assist students in choosing majors in senior high school. The population in this research was all students of State Senior High School 5 Makassar-South Sulawesi class X. The sampling technique was using proportional random sampling involving 30 students of class X. The research design used is the use of pre-experimental design. The research instrument was using career decision making self-efficacy scale and focus group discussion. While the data analysis technique used t test. The results showed that there was a significant increase in pre-test and post-test averages in the trial group, where the post-test average score was higher than the pre-test average score. The conclusion of this research is SIMPESA android based career application have positive influence to self-efficacy students in selecting majors in senior high school.

1. Introduction

The facts on the ground show that many junior high school students are confused in the selection of majors in high school. The results show that many students are wrong in choosing the schools and departments of interest, and not all of them based on the interests and potential of students [1]. Whereas wrong in choosing an advanced school and wrong in choosing a department can be fatal in the life of children in the future. The results show that many teenagers and students have difficulty and mistake in the choosing majors and decision-making careers in the future that affect their self-efficacy [2]. This is characterized by student failure in the academic process because they feel unsure about the choice, which is caused by parental coercion or follow-friends.

The results of research on 50 student respondents La Trobe University Australia, found, more than 50% admitted wrong choosing majors in college [3]. Respondents felt that the department was not suited to their interests and talents so that it did not develop and it was difficult to follow the lesson. It



can also lead to a lack of learning motivation or less pleasure in learning. Mistakes in choosing courses in advanced education and higher education can have fatal consequences for one's life. Interest becomes a powerful source of motivation to learn and contribute to personal uniqueness, being considered as something chosen to show their existence [4]. Interests will also give the satisfaction and happiness for someone when they can express it to the field of majors they do.

In high school during this time many counselors are difficult in determining majors for students. The results of focus group discussions with 15 counselors from 15 High Schools in Makassar showed 80% of counselors in high school difficult to determine the majors for students. During this time, majors conducted using a relatively long time, a lot of data that must be filled by students, and require a high cost. [5]. The results of this study obtained an image that an alternative service is needed that can assist counselors in the selection of majors in high school students effectively and efficiently.

During this time in the activities of guidance and counseling services in schools conducted conventionally, and consequently counselors often have difficulty in collecting student data [6]. School counselors in providing services that encourage students are required not only to have academic and professional competence in the field of guidance and counseling, but more specifically able to use and develop media guidance and counseling, especially based on ICT (Information and Communication Technology) and master the theoretical repertoire and procedural including technology in guidance and counseling [7]. It is also mandated in Indonesian Counselor Competency Standards (ICCS) that school counselors are expected to master the technology and information for the smoothness of Guidance and Counseling services at schools. That is, a counselor should be able to utilize technology and information in carrying out guidance and counseling services in schools [8,9].

This career application named SIMPESA (student interest system) using android 4.0 application which refers to Aryani & Rais development model [10] by using waterfall method. Waterfall is a model developed for the development and manufacture of software. Models evolve systematically from one stage to another in models such as waterfalls. This model proposes an approach to systematic and sequential software development that starts from the system advance level throughout the analysis, design, code, testing and maintenance. This model includes the following activities: engineering and modeling of information systems, needs analysis, design, coding, testing and maintenance. This linear development model from the early stages of system development is the stage of planning until the final stage of system development is the maintenance phase. The next stage will not be implemented before the previous stage is completed and cannot go back or repeat to the previous stage [11]. This app has been accessible in Android play store (simpta ver 2). User Account This app is accessed through <http://simpesasulsel.com/>

The SIMPESA android career application that have been developed include (1) user manuals, (2) introductory pages, (3) students' profile pages, (4) entry data of student majors interest, (5) questionnaire of subjects of students interests, (6) student academic achievement (grades and national exam results), (7) non-academic achievement of students, (8) recommendation of selection of students majors from junior counselor, (9) the data of parent's choice about which majors the child should choose, (10) interests inventory from Holland [12], and (11) the student's recommendation page. All these data are then analyzed by following the Pressman model and next is the decision stage and recommendation about the student's majors, whether the students are placed in the majors of Science, Social, or Language.

2. Method

This is a pre-experimental study with one group pretest-posttest design [13]. Population in this research is all student of class X at State Senior High School 5 Makassar. While the sampling technique used is proportional random sampling which amounted to 30 students. The research instrument used in this research is adapting career decision-making self-efficacy scale (CDMSE) [14]. There are four dimensions in self-efficacy career according to Bandura, namely the self-assessment dimension (self-appraisal, gathering occupational information, planning for the future), and the dimension of making decisions from career problems faced (decision-making). The scale consists of

19 items. In addition, focus group discussion is also used in this study to see students' responses in working on SIMPESA career application that students do whether easy or difficult to understand by students. The data analysis used in this study used the t-test to observe the average difference between the experimental group and the control group.

3. Result and Discussion

Previous research results have been developed and generated SIMPESA career applications that have been tested for validity and acceptability by experts (psychologists and ICT experts) and practitioners (counselors in high school) for use in the majors of students at Senior High School 5 Makassar. In this study, the experiment was conducted on a limited group of 30 high school students in Makassar. Before the trial was limited to the students, validation of the test instrument was performed. Prior to the trial of the instrument, there were 30 items, but after the statistical tests obtained 19 valid and reliable items and 11 items were failed for use in the study. Based on the results of statistical tests then the value of Cronbach's Alpha is 0.758 so it can be said that the reliability of these questions is suitable for use in high school students. Furthermore, to determine the presence or absence of the influence of career applications SIMPESA, then conducted trials on a group of experiments that amounted to 30 students (pre-experimental design). The results are:

Table 1. Descriptive Test Results

		Mean	N	Std.	Std. Error
				Deviation	Mean
Pair 1	pretest	46,43	30	4,360	,796
	posttest	69,73	30	2,651	,484

In table 1. descriptive statistical test the average sample pretest result 46.43 with deviation standard at 4,360, whereas the posttest result have result 69,73 with deviation standard at 2,651. The number of respondents or students who used as a sample of research as many as 30 students.

Table 2. T-Test Paired Sample Statistics Pretest - Posttest in the Experimental Group

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest-posttest	-23,30	5,29	,965	-25,27	-21,3	-24,14	29	< 0,001

Based on the results of table 2. t-test, known t count 24,14 then df 29 and Sig. (2-tailed), $000 < 0.05$. Because of the value of Sig. (2-tailed) is equal to, 000 less than 0.05 it can be concluded that the use of SIMPESA based android based career application has a positive effect on student self-efficacy in the selection of majors at High School 5 Makassar. The result of Focus group discussion (FGD) with 30 students of Makassar High School 5 students who are the try subjects to show that they feel confident about the choice of majors chosen and with the use of this SIMPESA career application. According to them SIMPESA android based career application is very easy to be filled because it can be anywhere and anytime, fast and accurate because it uses many aspects in analyzing majors ranging from interest majors, subjects interests, academic and non-academic achievement, parental attention and recommendation of junior high school counselors, as well as interest inventory. So the result can improve the self-efficacy of students in the majors of high school students 5 in the city of Makassar. They feel confident with the chosen majors by the help of SIMPESA application.

Based on the results of the research is clear that SIMPESA career application is needed to help students in improving their self-efficacy in assisting the majors in high school. According to Bandura, self-efficacy is indispensable for adolescents, including in terms of selection of majors [15]. Bandura divides the four dimensions in the self-efficacy of a career in adolescence, namely: (1) self-assessment

dimension in the form of how students judge themselves against beliefs about career or vocation to be chosen, (2) career information dimension is teenagers' beliefs about career information they choose, (3) dimensions of planning relating to adolescent beliefs on the goals and career planning (majors) to be selected, and (4) decision-making related to adolescent beliefs in solving problems of selection of majors and decision-making. Based on the above explanation can be concluded that many high school students who do not have self-efficacy in choosing a major in high school, and SIMPESA career application proved able to improve student self-efficacy in the selection of majors in high school. Similarly, self-efficacy could help individuals manage their career problems and succeed in their studies and their future [16].

This developed application can assist counselors in counseling guidance activities in schools, especially in career guidance services. This career counseling service is intended to provide students with the widest possible opportunity to develop their potential, talents, interests by principled on individual differences. The results showed that interest is closely related to learning achievement [17]. This means that the more a student has a high interest in a particular subject, it will increase their achievement motivation and will certainly affect their future success [18]. Therefore, with this career application could assist counselor role in High School in major services and could assist students to succeed in their studies and reach for their future.

4. Conclusion

The conclusion of this research is that the application of android based career SIMPESA (High School Student System) has a positive influence on student self-efficacy in High School 5 Makassar. That is, SIMPESA android based career applications can improve students' self-efficacy. Suggestion proposed in this research is better this SIMPESA career application can be tested try to the bigger population to know its effectivity at high school student in Makassar city and its surroundings.

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