

Career Exploration System (C-EXSYS) in Era Society 5.0 Based on Expert System

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INTISARI

Program pemerintah dalam mengurangi pengangguran masih belum optimal dan hanya mampu menyerap lulusan sebesar 12%. Permasalahan ini disebabkan oleh Aplikasi yang ada belum terintegrasi dengan program sekolah menengah kejuruan yang mendukung pemasaran lulusan dan belum mampu mendistribusikan, memetakan dan memberikan rekomendasi karir serta menghubungkan lulusan dengan mitra kerja. Artikel ini bertujuan untuk menjelaskan proses perancangan sistem pakar karir dalam job matching. Metode yang digunakan dalam penelitian ini adalah metode 4D yaitu Define, Design, Development dan Disseminate. Hasil penelitian ini adalah aplikasi sistem pakar yang mampu memberikan rekomendasi pekerjaan berdasarkan enam tipe kepribadian yang difokuskan pada vokasi. Hasil uji validasi constructs diperoleh model yang fit dimana, nilai $p = 0.26972$ dan $RMSEA = 0.029$, uji validitas pakar terhadap aspek Desain 0,88 (Valid), Pengoperasian 0,88 (Valid), dan Manfaat 0,90 (Sangat Valid), hasil uji praktikalitas 0.83 (Praktis).

Kata kunci: Sistem Eksplorasi Karir, Society 5.0, R&D, Model 4D, Sistem Pakar

ABSTRACT

The government program in reducing unemployment is still not optimal and is only able to absorb 12% of graduates. This problem is caused by the existing application that has not been integrated with the vocational high school program that supports the marketing of graduates and has not been able to distribute, map and provide career recommendations and connect graduates with partners. This article aims to explain the process of designing a career expert system in job matching. The method used in this study is the 4D method, namely Define, Design, Development and Disseminate. The result of this study is an expert system application that is able to provide job recommendations based on six personality types focused on vocational. The results of the constructs validation test obtained a fit model where, p value = 0.26972 and $RMSEA = 0.029$, expert validity test on aspects of Design 0.88 (Valid), Operational 0.88 (Valid), and Benefits 0.90 (Very Valid), practicality test results 0.83 (Practical).

Keywords: Career Exploration System, Society 5.0, R&D, 4D Model, Expert System



INTRODUCTION

The integrated Career Exploration System (C-Exsys) is an online career application based on an expert system, which is integrated with the personality test and vocational expertise spectrum, it aims to map and provide career recommendations according to personality and areas of expertise, so as to accelerate the process of absorbing graduates [1]. As we know, that Vocational High School (SMK) is a secondary school designed to produce graduates who are ready to work [2].

Vocational High Schools equip students with abilities, skills and expertise in accordance with the needs of the world of work (IDUKA), even students are also required to be able to create their own business opportunities (entrepreneurship) [3][4]. So far, many strategies have been launched by the government in increasing the marketing of graduates and reducing unemployment, some of which are the dual system education program (PSG), the Special Job Exchange Program (BKK), and the Top Career Program, but this program is only able to market 12 graduates. %, this is considered

still not optimal [5]. Besides that, each program is still separate or not integrated with other graduate marketing support programs, so that the data and information obtained are invalid, practical, and effective[6] [7].

Based on the explanation above, it can be classified the problems that occur related to graduate marketing are as follows: 1) Job matching applications are not optimally managed by Vocational High Schools, 2) Existing applications are still not integrated and integrated with SMK programs that support the marketing of SMK graduates, 3) Applications that support existing graduate distribution programs have not been able to map and provide career recommendations and connect graduates with work partners (IDUKA), 4) Existing applications so far are not valid, practical and effective in marketing vocational graduates [8].

The specific objective of this research is to obtain an integrated Career Exploration System (C-Exsys) which is integrated with the personality type and spectrum of SMK as well as partners at IDUKA, so that graduates can choose and match their personality types independently. Furthermore, the

graduates will conduct interviews after matching the needs of IDUKA with appropriate graduates and a work agreement occurs, this application is designed to be multi-platform using the PHP programming language[9], this application is able to map and provide career recommendations according to the personality and field of expertise of the vocational school and connects vocational graduates with partners IDUKA. This application can also be a job search solution during this COVID-19 pandemic, thereby reducing crowds and contact with other people.

The research method used is a research and development method with a 4D approach that includes Define, Design, Development and Disseminate [10]. This method was chosen because the output produced is in the form of an expert system application product which later needs to be tested for the level of validity, practicality, effectiveness, so that it can function properly in vocational schools in Indonesia, especially in West Sumatra[11]. So that it is expected to increase the marketing of graduates and reduce the unemployment rate of SMK graduates [12][13].

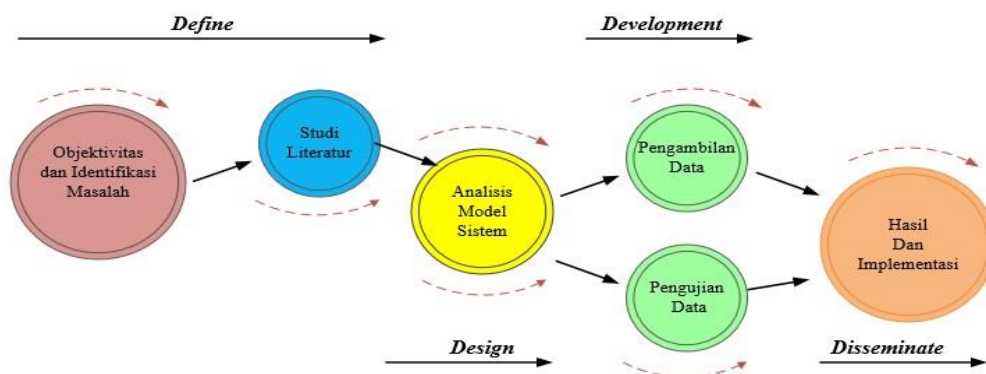


Figure 1. The research method using 4D Model

METHOD

The research method focuses on the current system as the object of research. This is the application of the define stage in the 4D method. This activity starts from objectivity and problem identification, literature study, system model analysis, data collection (graduate data, SMK spectrum data, and IDUKA partner company data), system testing, to implementation of results. These stages are illustrated in Figure 1.

2.1 Objectivity and Problem Identification

Objectivity and problem identification are the initial stages of analysis on an already running system. This stage focuses on tracking alumni data or tracer study of SMK graduates, tracking data on specializations and areas of expertise and tracking data for IDUKA Partners who have collaborated with SMKs. So far, this job matching application runs on the Special Job Exchange system in SMK, but is still separate.

2.2 Literature Study

Literature study is the stage of searching, collecting and learning references related to expert systems, job matching and personality as well as the spectrum of expertise in SMK. This literature study was obtained from sources such as articles, books, websites, and Government Regulations related to the SMK spectrum. Reference relevance related to the field of this research is data on personality types specifically for the vocational field that has been developed by Jhon L. Holland [14], data on the spectrum of expertise in vocational schools, expert systems related to career determination and type of

work, databases, system model analysis concepts and construct test techniques using path analysis of Structural Equation Modeling [15][16].

2.3 System Model Analysis

This stage is the first step of the design process on the 4D model. Where the analysis stage is carried out in terms of the concept of a system model taken from the grand design expert system for career development based on entrepreneurship personality which was developed in 2020. This model explains the relationship of personality type with several types of jobs that match the personality [17]. This can be illustrated in Figure 2.

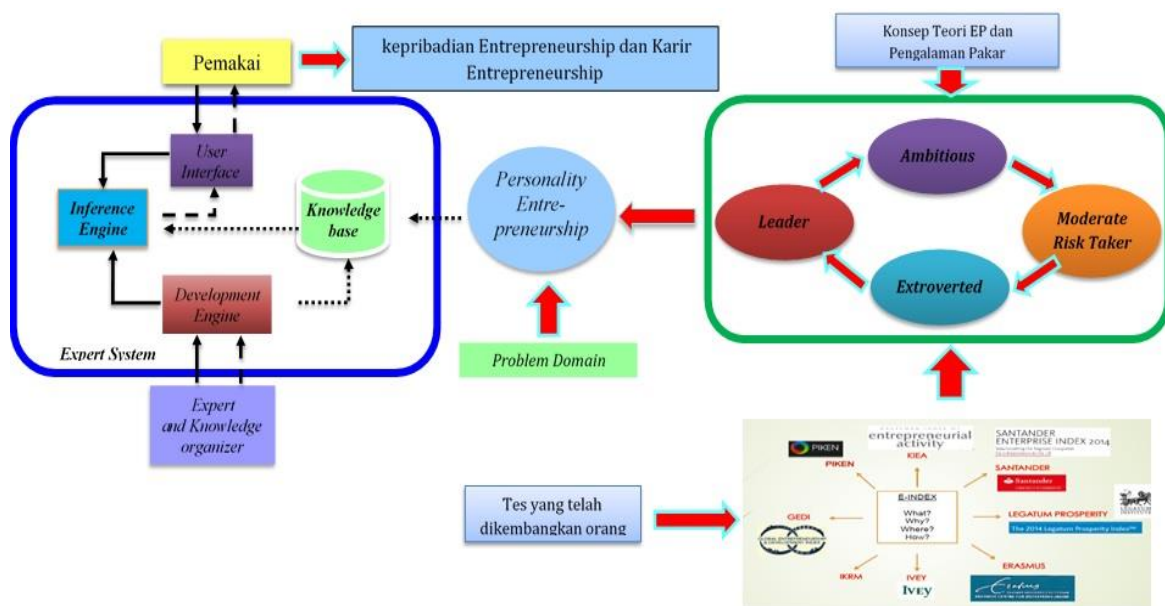


Figure 2. Expert Knowledge Transfer Process Model into the System [11]

The model that has been developed still has several shortcomings such as the type of work that is not yet specific, the type of personality that is still focused on the type of entrepreneur and there is no correlation with the field of expertise that is in accordance with the spectrum in SMK. Therefore, it is necessary to develop the above elements in this integrated career expert system as an improvement to the previous system.

2.4 Data Collection

This stage is a continuation of the 3rd 4D model, namely development. Where the data is obtained from the MySQL database as the result of the implementation of the entrepreneurship personality application which is enhanced by adding several items such as graduate data, IDUKA

partner data, and six personality types relevant to the vocational field, as well as data on the spectrum of expertise in SMK.

2.5 Product Testing

This testing stage is part of the 4D model development stage. Where this stage starts from the construct validation of the personality instrument, at this stage the correlation between the items on the instrument and the personality type will be seen, then the product validity test is carried out by involving information systems experts to test functionality, product design displays, usability or product practicality tests. The last is the effectiveness test, this test aims to see how effective this system is in marketing graduates.

2.6 Results and Implementation

This stage is the last part of the 4D model, at this stage the dissemination process or product dissemination and implementation of the results of the system testing stage and data retrieval from the MySQL database is carried out. The resulting output is a job recommendation according to the personality type and area of expertise. At this stage can be seen the achievement of research objectives by looking at the level of practicality and effectiveness of the product.

RESULTS AND DISCUSSION

The results and discussion discuss the technological schemes used in the integrated career expert system, this section describes the knowledge transfer process model of personality experts in providing job recommendations, then also reviews the personality construction process using Structural Equation Modeling (SEM). Next is the database synchronization process and the last is testing the functionality, design, usability and effectiveness of the product.

3.1 Technological Schematic

The use of technology in this system is described in a schema that is sourced from data from online personality inventory filling. Before filling out this personality inventory, users (graduates) need to fill in personal data, field of expertise and type of job to be applied for. The next step is to fill in the personality inventory. After the user presses the send button, this data will flow to the server via internet access. Furthermore, the expert system works to analyze the personality inventory that has been filled in by the graduate, then the system will analyze the suitability of the personality with the type of job being applied for. Finally, the system issues a report in the form of a recommendation for the company or industry being applied for. After this, the user completes the file according to the company's needs and performs further tests according to the company's direction. This scheme can be seen in Figure 3. Describe the results in a clear and logical order. Narration contains information that is extracted from the data, not duplicated with text.

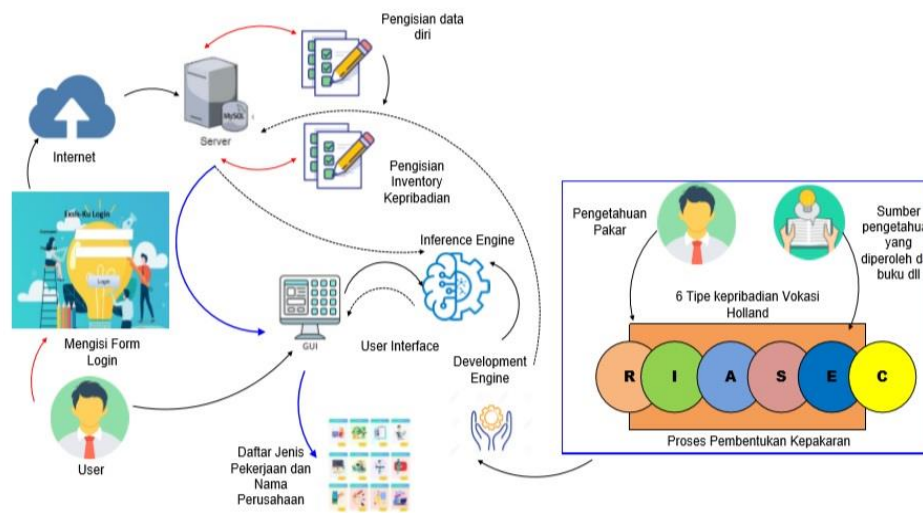


Figure 3. Schematic of Technology in Career Exploration System (C-Exsys)

3.2 Construct validation process

This stage describes validation on the Holland vocational personality instrument. An instrument is said to be valid, if the instrument can measure what is being measured, this needs to be done to minimize the error rate in the instrument measurement results. Construct validity is one type of rational internal validity of an instrument that shows the extent to which the instrument reveals a trait or theoretical construct that it wants to

measure. In this case, the construct is the framework of a concept that becomes a source of expertise in the expert system that will be developed.

The theoretical trait or construct to be validated is the 6 Holland vocational personality types that have a correlation with certain jobs, while the personality types are Realistic, Investigative, Artistic, Social, Enterprising, Conventional. This construct validation process is

carried out using factor analysis, the purpose of using this factor analysis is to define the structure of a data matrix and analyze the structure of the relationship (correlation) between a large number of the process of construct variables by defining a set of similarity variables or dimensions. With factor analysis, the dimensions of a structure can be

identified and then determine to what extent each variable can be explained by each dimension. Through this factor analysis can summarize the information contained in the original variable or the initial variable into a new set of dimensions. The factor analysis model using SEM on this personality type is shown in Figure 4.

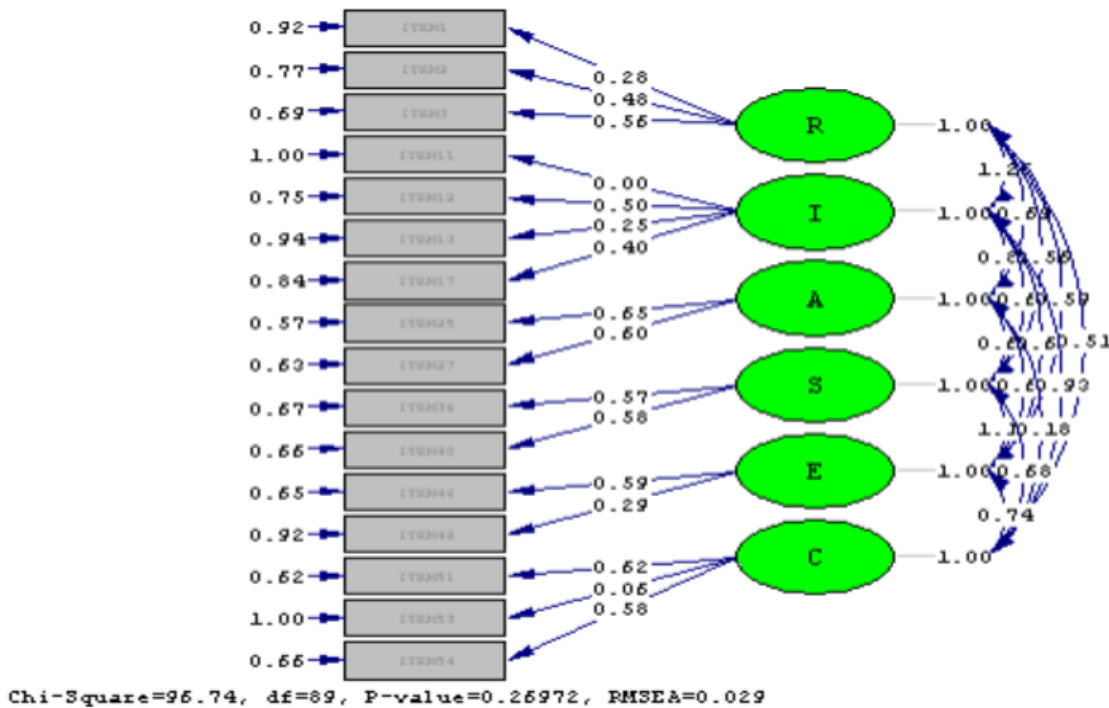


Figure 4. Factor Analysis Model Using Structural Equation Modeling

Information that can be obtained from the results of this factor analysis is $p = 0.26972$ and $RMSEA = 0.029$ which indicates this model is fit, where the model is said to be fit if the p value > 0.05 and $RMSEA < 0.05$. This indicates that the suitability of the empirical data with the RIASEC typology model used as a theoretical concept is in the valid level.

Other information also obtained from the results of this factor analysis is the magnitude of the correlation coefficient between two pairs of dimensions denoted by letters as an example of the correlation coefficient between pairs of letters R and I = 0.84 with a standard error of 0.07. This correlation coefficient can indicate the degree of conformity with the hexagonal model in the RIASEC typology developed by Holland. The personality correlation model is shown in Figure 5.

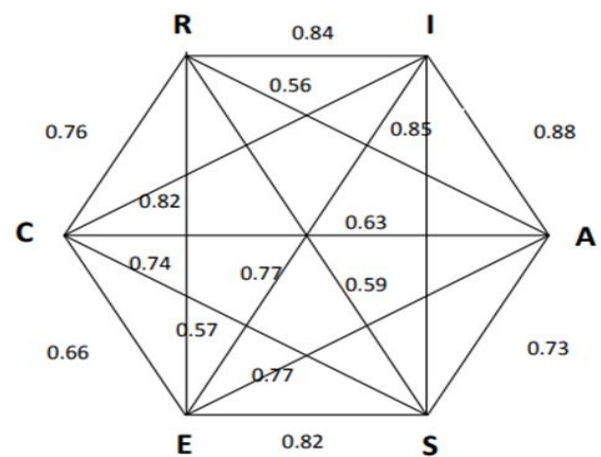


Figure 5. Correlation between RIASEC Personality Types

3.3 Expert Knowledge Transfer Process

The initial stage in this knowledge transfer process is to collect and search for information related to data on the Holland vocational personality type and the type of work that is

relevant to the Holland vocational personality, where there are 6 types of Holland personality, each personality type has been given a code to facilitate the identification process, as shown in table 1.

Table 1. Personality and Occupational

Personality Code	Personality Type	Personality Type
KP1	Realistic	Automotive industry, mapping, Mining companies
KP2	Investigative	Oil and gas industry, Pharmacy, Medical laboratory technology
KP3	Artistic	Animators, designers, musicians and dancers
KP4	Social	Nurses, Social Workers, Hospitality and Tourism Services, Culinary industry and beauty industry
KP5	Enterprising	Entrepreneurship and Business Management
KP6	Conventional	Programmer, System Analyst, IT Consultant, Software Engineer, Database Engineer, Software Developer, Web Developer, Web Designer, IT Executive

In this knowledge transfer process, the inference engine functions to track the input in the form of characteristics and then take the confidence value of the personality characteristics. After obtaining the confidence value in each personality characteristic, identification is carried out using the certainty factor method. The process of the certainty factor method functions as a conclusion from the expert, as can be seen in table 2.

Table 2. Expert Value

Code of Characteristics	Personality Characteristics	Expert Value
KR1	Loves motor skills and sports	0.8
KR2	Avoid social activities	0.4

Code of Characteristics	Personality Characteristics	Expert Value
KR3	Practical in thinking and acting	0.6
KR4	Interested in numbers or numerals	0.8
KR5	Interested in machines and vehicles	0.8
KI1	Thirsty for knowledge	0.6
KI2	Have high creativity and innovation in the field of science	0.8
KI3	Have lots of ideas/ideas	0.6
KI4	Likes things that are scientific and sharpen intellectually	0.6
KI5	Likes to be alone when looking for ideas or ideas	0.4
KA1	Individualistic in work	0.2
KA2	Likes to express his soul and personality when working.	0.8
KA3	Is a unique and independent person	0.6
KA4	Have high imagination and creativity in the field of art.	0.8
KA5	Have a high sense of feeling	0.2
KS1	Likes activities that can help many people	0.8
KS2	Have the advantage of communicating with many people	0.6
KS3	Responsive to the surrounding environment	0.4
KS4	Likes to motivate others	0.4
KS5	Always need other people to reinforce ideas or ideas	0.2
KE1	Expert in influencing and convincing others	0.8
KE2	Is a person who is full of enthusiasm and high ambition in achieving a target.	0.6
KE3	Expert in managing and managing finances	0.6
KE4	Seize all the opportunities that exist	0.6
KE5	Like challenges	0.4
KC1	Likes activities related to data processing and computing	0.8

Code of Characteristics	Personality Characteristics	Expert Value
KC2	Likes regular activities	0.4
KC3	Think and talk systematically	0.6
KC4	Expert in drafting and executing plans	0.6
KC5	Likes activities that are routine and repetitive	0.4

3.4 CF Rules

The application of the CF method to an expert system requires several rules in the form of variables (personality characteristics denoted by KR, KI, KA, KS, KE and KC) and the weight value given by the expert. User character sample data is obtained from personality inventory filling data conducted in September 2020. Weight values are required for each personality character. Experts provide a scale of weight values for each character between 0.2 – 1.0. The CF rule containing personality characteristics and weight values from experts for each personality is shown in table 3.

Tabel 3. Rule CF

Rule Personality Type	Rule Personality Type
Realistic	IF KR1 (0.8) AND KR2 (0.4) AND KR3(0.6) AND KR4 (0.8) AND KR5 (0.8) THEN KP1
Investigative	IF KI1(0.6) AND KI2 (0.8) AND KI3(0.6) AND KI4 (0.6) AND KI5(0.4) THEN KP2
Artistic	IF KA1(0.2) AND KA2 (0.6) AND KA3(0.4) AND KA4 (0.8) AND KA5(0.2) THEN KP3
Social	IF KS1 (0.8) AND KS2 (0.6) AND KS3(0.4) AND KS4(0.4) AND KS5 (0.2) THEN KP4
Enterprising	IF KE1 (0.8) AND KE2(0.6) AND KE3(0.6) AND KE4(0.6) AND KE5(0.4) THEN KP5

Conventional IF KC1(0.8) AND KC2(0.4) AND KC3(0.6) AND KC4(0.6) AND KC5 (0.4) THEN KP6

3.5 Process of Multiplying Expert CF with User CF

After the expert assessment process is completed, the user fills in the personality inventory using a Likert scale, each scale has a different value which will be multiplied by the expert value. This user weight value is influenced by the answer from the user or user. This result will also affect the personality type of the user, therefore honesty is needed in filling out the personality inventory. The following is a Likert scale table used by users, as shown in table 4.

Table 4. User Value

User Rating	Answer
Very Incompatible	0
It is not in accordance with	0.2
Slightly Incompatible	0.4
Quite Appropriate	0.6
In accordance	0.8
Very Appropriate	1

The user value that has been obtained from the results of filling out the personality inventory is multiplied by the weight value from the expert, this aims to compare whether the results sought or the hypothesis are in accordance with the facts found. for this case has 1 hypothesis and many rules and many facts, the first step that needs to be done is to multiply the expert value by the user value, as shown in table 5.

Table 5. Multiplication between CF expert and CF user

Possibility 1= Realistic					Possibility 2= Investigative				
No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User	No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User
1	KR1	0,80	0,40	0,32	1	KI1	0,6	0,4	0,24
2	KR2	0,40	0,20	0,08	2	KI2	0,8	0,4	0,32
3	KR3	0,60	1,00	0,60	3	KI3	0,6	0,6	0,36
4	KR4	0,80	1,00	0,80	4	KI4	0,6	1	0,6
5	KR5	0,80	0,40	0,32	5	KI5	0,4	0,4	0,16
Possibility 3= Artistic					Possibility 4= Social				
No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User	No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User
1	KA1	0,2	0,4	0,08	1	KS1	0,8	0,6	0,48
2	KA2	0,8	0,4	0,32	2	KS2	0,6	0,6	0,36
3	KA3	0,6	0,6	0,36	3	KS3	0,4	0,6	0,24
4	KA4	0,8	0,6	0,48	4	KS4	0,4	0,6	0,24
5	KA5	0,2	0,2	0,04	5	KS5	0,2	0,2	0,04
Possibility 5= Enterprising					Possibility 6= Conventional				
No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User	No	Code of Characteristics	CF Expert	CF User	CF Expert * CF User
1	KE1	0,8	0,6	0,48	1	KC1	0,8	1	0,8
2	KE2	0,6	0,8	0,48	2	KC2	0,4	0,8	0,32
3	KE3	0,6	0,8	0,48	3	KC3	0,6	1	0,6
4	KE4	0,6	0,6	0,36	4	KC4	0,6	1	0,6
5	KE5	0,4	0,4	0,16	5	KC5	0,4	0,6	0,24

3.6 Calculation of CF Combination Value

After the process of multiplying the CF value of the expert with the CF of the user, then the calculation of the combined CF value is carried out. It aims to find out the evidence or facts that are relevant to the hypothesis[18]. To find out the value of the certainty of the hypothesis from this many rules and evident, equation (1) is used.

$$CF_{combination} = CF_1 + (CF_2 * (1 - CF_1)) \quad (1)$$

Meanwhile, to calculate the CF value of the combination in the next iteration to the last

iteration for each personality type, equation (2) is used.

$$CF_{combination} = 1 + (CF_3 * (1 - CF_{combination} 1)) \quad (2)$$

Based on the results of calculating the combined CF value for User A, there are several personality types that stand out, namely the Conventional personality type 98%, Realistic 97% and Enterprising 92%. This is very much in accordance with the correlation of Holland's vocational personality types shown in Figure 5. The display of personality correlation in User A can be seen in Figure 6.

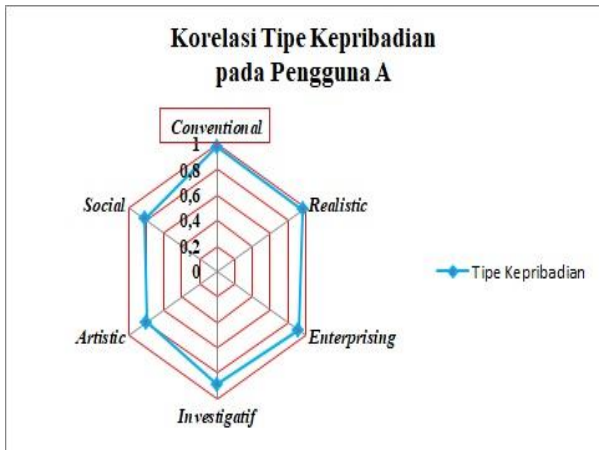


Figure 6. User Personality Correlation A

Holland's personality type allows every human being to have a combination of personality types. User A has a combination of Conventional, Realistic and Enterprising personalities. If we relate it to a career, User A has the potential to become a talented entrepreneur in the automotive or IT field. The combination of these personality types can be seen in table 6.

Table 6. Calculation of Combination CF Value

Possibility 1 = Realistic				
CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination
1	0,32	0,08	0,68	0,37
2	0,37	0,60	0,63	0,75
3	0,75	0,80	0,25	0,95
4	0,95	0,32	0,05	0,97
Possibility 2 = Investigate				
CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination
1	0,24	0,32	0,76	0,48
2	0,48	0,36	0,52	0,67
3	0,67	0,60	0,33	0,87
4	0,87	0,16	0,13	0,89
Possibility 3 = Artistic				
CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination
1	0,08	0,32	0,92	0,37
2	0,37	0,36	0,63	0,60
3	0,60	0,48	0,40	0,79
4	0,79	0,04	0,21	0,80
Possibility 4 = Social				
CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination

1	0,48	0,36	0,52	0,67
2	0,67	0,24	0,33	0,75
3	0,75	0,24	0,25	0,81
4	0,81	0,04	0,19	0,82

Possibility 5 = Enterprising

CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination
1	0,48	0,48	0,52	0,73
2	0,73	0,48	0,27	0,86
3	0,86	0,36	0,14	0,91
4	0,91	0,16	0,09	0,92

Possibility 6 = Conventional

CF1+(CF2*(1-CF1))				
Iteration	CF1	CF2	(1-CF1)	CF Combination
1	0,80	0,32	0,20	0,86
2	0,86	0,60	0,14	0,95
3	0,95	0,60	0,05	0,98
4	0,98	0,24	0,02	0,98

3.7 Product Display

The integrated Career Exploration System (C-Exsys) application is designed web-based using the PHP programming language [13]. The initial display of this application is a login form, where the user logs in by filling in the user name and password. The display of this Login form is shown in Figure 7.

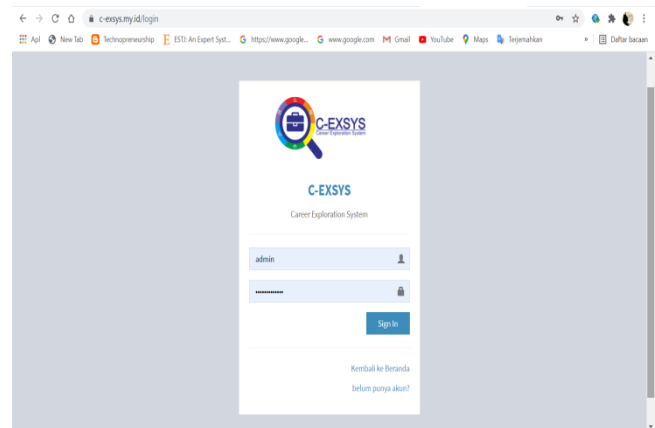


Figure 7. C-Exsys Login Form

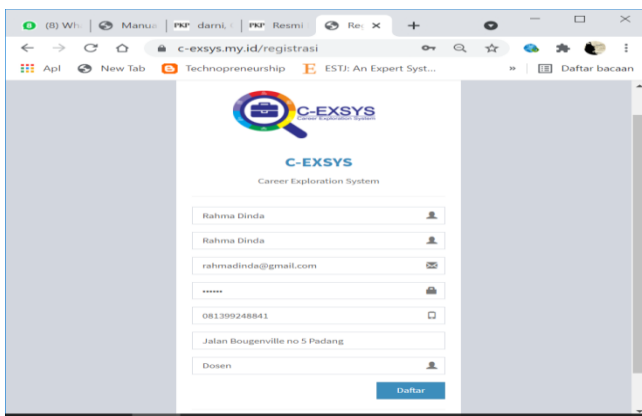


Figure 8. Biodata of Job Seekers

After users log in, they begin to fill in personal data, this aims to match the work with their field and competence of expertise. The display of this user's personal biodata form can be seen in Figure 8. After filling in the user's personal data, the next step is to fill in the personality inventory data, where in this personality inventory there are 30 statement items that must be filled in by the user. The answers to each item have been weighted according to the weighting contained in table 4. The appearance of this personality inventory can be seen in Figure 9.

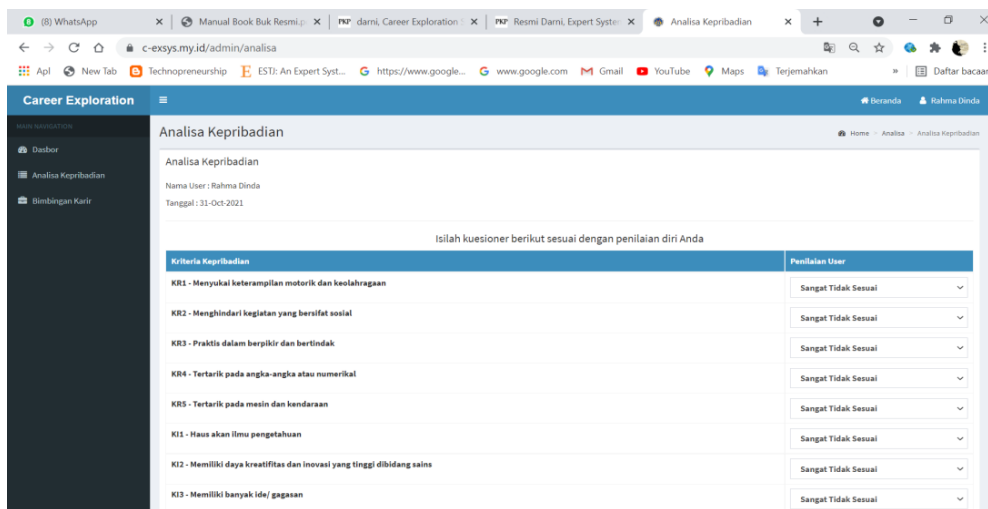


Figure 9. Personality Inventory Data

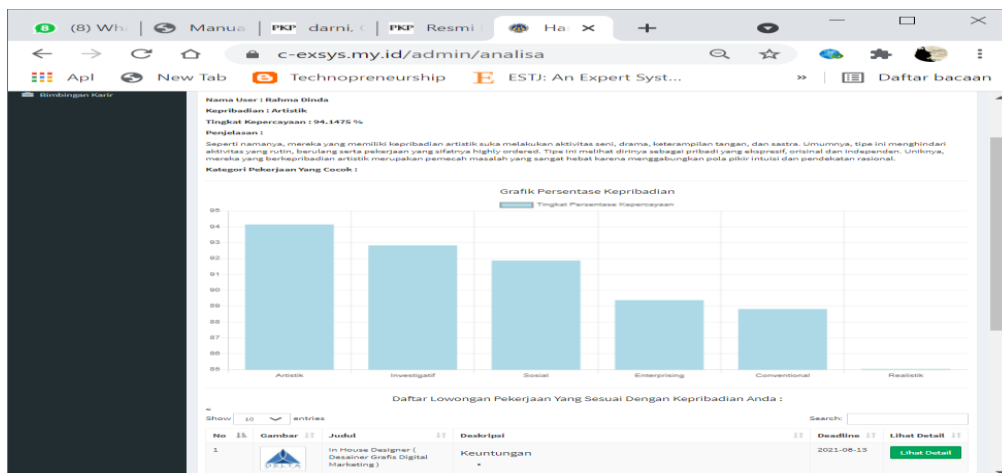


Figure 10. Personality Inventory Data Analysis

The next step after filling out the personality inventory is matching the personality data that has been obtained from filling out the personality inventory with the company or agency that needs it according to the criteria desired by the company. But before that, the user must enter personal data first and then click the job search button to find a

company that matches the user's competence, expertise and personality. The next test is carried out by the company or agency that accepts job seekers. The display can be seen in Figure 10. Job Matching Analysis.

3.8 Product Validity Test

After the application of an integrated career expert system is designed, it is necessary to test the application that has been designed, in this test there are 22 assessment items which are divided into 3 aspects, namely aspects of design, operation and benefits. In the validation test process, 3 experts in the field of Informatics Engineering were involved. Based on the test results, the design validation value is 0.88 (Valid), Operation is 0.88 (Valid), and Benefit is 0.90 (Very Valid). The calculation of the validation value of the expert is measured using the validity of aiken which can be seen in equation (3)

$$V = s / |n(c-1)| \dots(3)$$

The final result of this expert validation test can be seen in Figure 11.

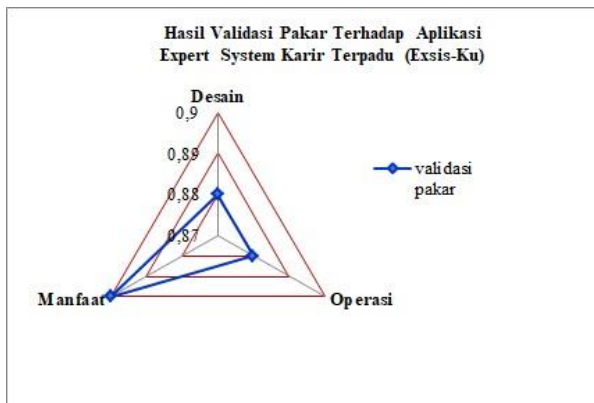


Figure 11. Expert Validity Test Results on the C-Exsys Application

3.9 Practical Test

Practical testing of the integrated career expert system application is carried out by users consisting of SMK alumni who are looking for work according to their field of expertise. In testing the practicality of this application, 73 alumni who were looking for work were taken as samples. There are 22 statement items related to the practicality of the application when used. The statement items include aspects of format, content and language. Based on the test results, the format aspect is 0.82 (Practical), the content aspect is 0.87 (Practical) and the language aspect is 0.79 (Practical). The results of this test can be visualized in the form of a graph as shown in Figure 12.

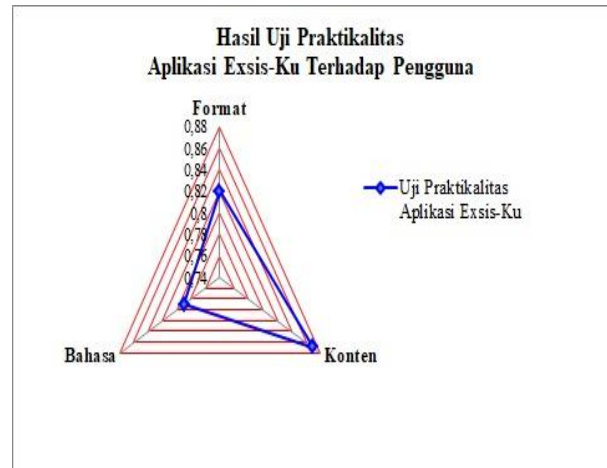


Figure 12. Practical Test Results on C-Exsys Application

3.10 Product Effectiveness Test

At this stage, the application is disseminated and sees the level of effectiveness of the integrated career expert system application that has been built. Based on the results of the analysis of effectiveness data on product development of the integrated career expert system application, it was stated that the average score for effectiveness was 111.33, thus the percentage of needs analysis was 82.47% with a high level of effectiveness category for the use of this integrated career expert system application. This can be seen in the statistical description of Table 7.

Statistics	
Effectiveness	
N	Valid 73
	Missing 0
Mean	111.33
Median	113.00
Mode	111 ^a
Std. Deviation	10.383
Variance	107.807
Range	50
Minimum	77
Maximum	127
Sum	8127
a. Multiple modes exist. The smallest value is shown	

CONCLUSION

Based on the results of the application implementation and data analysis that has been carried out, the integrated career expert system application can run well and in accordance with the functions and logic of the program that has been

designed. This is evidenced by the results of the construct test where, there is a suitability of indicators with RIASEC dimensions that can match personality with work with the following results: $p = 0.26972$ and $RMSEA = 0.029$ which shows that the model fits this because the p value > 0.05 and $RMSEA < 0.05$. Furthermore, the expert validity test on aspects of Design 0.88 (Valid), Operation 0.88 (Valid), and Benefits 0.90 (Very Valid). This proves that the application can operate properly according to the function and logic of the program. Finally, the expert application of this integrated career system has also been tested on users to measure the level of practicality. Based on the results of the practicality test, the format aspect is 0.82 (Practical), the content aspect is 0.87 (Practical) and the language aspect is 0.79 (Practical). This proves that the application designed is user friendly.

With this application, graduates can easily find jobs that match IDUKA's needs and match the personality characteristics of job seekers. So that the work results will be better and increase and can reduce the unemployment rate that comes from SMK graduates.

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