

DETERMINING INTERESTS AND TALENTS OF PRIMARY SCHOOL STUDENTS USING THE CERTAINTY FACTORS

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Abstract: Interest is an interest in an object that comes from the heart. Talent is a condition in a person that enables him with special training to achieve a special skill, knowledge, skill. For this reason, an expert system for determining students' interests and talents was designed. The method used in this research is the certainty factor (CF) method. The results based on the characteristics experienced by these students show that the type of interest and talent that exists in these students is linguistics with an expertise level of 0.66 and a percentage of 66% and has a fairly good accuracy score.

Keywords: certainty factor; interest; talent

Abstrak: Minat merupakan ketertarikan akan sesuatu objek yang berasal dari hati. Bakat adalah suatu kondisi pada seseorang yang memungkinkannya dengan suatu latihan khusus mencapai suatu kecakapan, pengetahuan, keterampilan khusus. Untuk itu dirancang suatu sistem pakar penentuan minat dan bakat siswa. Metode yang digunakan pada penelitian kali ini ialah metode faktor kepastian (CF). Hasil berdasarkan ciri-ciri yang dialami oleh siswa tersebut bahwa jenis minat dan bakat yang ada pada siswa tersebut adalah linguistik dengan tingkat kepastian 0,66 dan persentase 66 % dan memiliki nilai akurasi yang cukup baik.

Kata kunci: bakat ; faktor kepastian; minat

INTRODUCTION

Interest is an interest in an object that comes from the heart. Interest is an interest in an object that comes from the heart. Talent is a condition in a person that enables him with special training to achieve a special skill, knowledge, skill [1].

The skills that students have, both in terms of academics and personality, can be identified by determining their interests and talents. This knowledge is

needed when providing assistance and developing skills that match your talents. It is very necessary to develop skills from an early age to be able to optimize students' existing talents, because this will be useful after graduating from school in carrying out real life, especially the world of work. Determining interests and talents can be done by mapping the direction of study selection and self-development in extracurricular activities to obtain the competencies and skills needed by students.[2][3]. The aim of

this research is to help make it easier for teachers to group students according to their interests and talents.

This expert system becomes an expert in answering questions in solving a problem [4][5]. The method used is the certainty factor method. by proving the uncertainty of an expert's thinking in detecting existing problems[6][7].

Previous research also used this method, resulting in a fairly appropriate confidence percentage in detecting this problem From this research, the results of testing of this method showed that 2 disease data were detected with 10 symptoms experienced.[8][9][10].

METHOD

Image 1 explains the research framework.

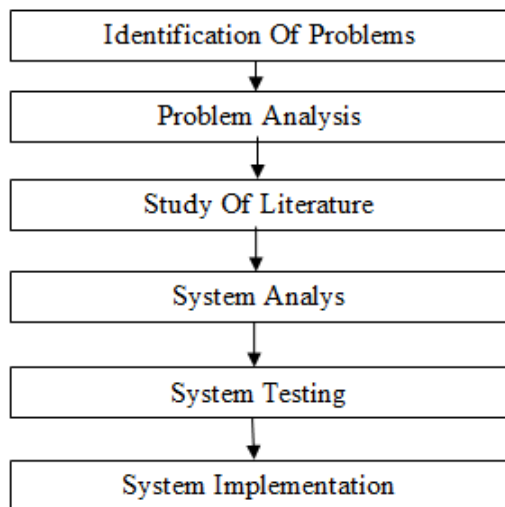


Image 1. Research Framework

Identification of problems

The problem that occurs when teachers determine the interests and talents of students is that teachers only determine based on feelings or seeing the students' daily habits.

Problem analysis

Analysis of problems in determining students' interests and talents where teachers incorrectly determine students' interests and talents. The amount of data tested is 3 interest and talent data

Study of literature

Collection of data and information, namely interviews with sources who are experts in their fields and through literature/journals related to this research.

Certainty Factor is defined as follows:

$$Cf(Hi, Ev) = MB(Hi, Ev) - MD(Hi, Ev) \quad (A1)$$

$$CF(D) = MB - MD \quad (A2)$$

$$CF(D1, D2) = [CF(DE1) + CF(DE2) * [1 - CF(DE1)]] \quad (A3)$$

System analysis

By analyzing the weaknesses and feasibility of the system

System testing

By testing the application whether the system is running properly.

System implementation

By implementing the Adobe Dreamweaver CS 3 and MySQL.

RESULTS AND DISCUSSION

Characteristics data that corresponds to the determining interests and talents are then entered into the system to be processed based on the specified sym(sympton)

Characteristics data of interests and talents is shown

Table 1. Characteristics of interests and talents

Characteristics	interests and talents		
	Linguistics	Math Logic	Visual
Likes Reading	√		
Likes writing	√		
Likes to tell stories	√		
Talkative	√		
Easy to understand new word	√		
Likes to argue with other people	√		
Likes giving speeches	√		
Likes counting numbers		√	
Likes playing chess		√	
Likes to think scientifically		√	
Likes counting		√	
Likes doing research		√	
Easy to understand the story		√	
Likes to sketch			√
Likes taking photos			√
Likes playing puzzles			√
Easy to recognize shapes			√
Likes to daydream and fantasize			√

Table 2 is pest data and solutions for interests and talents.

Table 2. Interet.Talent/Type Data and Solutions

Code	Name Pest	Solutions
PY1	Linguistics	Writer, journalist, poet, lawyer, speaker, politician
PY2	Math Logic	Accountant, Lecturer/Teacher, Mathematics, Technician, Programmer
PY3	Visual	Painter, Design, Navigator, Architect

Where CF(DE1,DE2) is the combined certainty factor for symptom 1 and symptom 2, CF(DE1) is the certainty fac-

tor for symptom 1, CF(DE2) is the certainty factor for symptom 2.

The following is a table 3 of MB weights and MD weights:

Table. 3 MB Weights

Certainty Term	MB
No	0
Don'tKnow	0,2
A Little Sure	0,4
Pretty Sure	0,6
Sure	0,8
Very Confident	1

Tabel 4. Bobot MD

Certainty Term	MD
Very Confident	0,31 - 0,4
Sure	0,11 - 0,2
A Little Sure	0 - 0,10

Tabel. 5 Sym Data and Weight

Code Sym	Sym	Cf Weight	
		MB	MD
GE1	Likes Reading	1	0,2
GE2	Likes writing	0,8	0,2
GE3	Likes to tell stories	0,6	0,3
GE4	Talkative	1	0,4
GE5	Easy to understand new word	0,6	0,2
GE6	Likes to argue with other people	1	0,2
GE7	Likes giving speeches	1	0,2
GE8	Likes counting numbers	1	0,2
GE9	Likes playing chess	0,8	0,3
GE10	Likes to think scientifically	0,6	0,2
GE11	Likes counting	1	0,2
GE12	Likes doing research	0,8	0,2
GE13	Easy to understand the story	0,6	0,3
GE14	Likes to sketch	0,6	0,3
GE15	Likes taking photos	1	0,4
GE16	Likes playing puzzles	0,6	0,25
GE17	Easy to recognize shapes	1	0,2
GE18	Likes to day-dream and fantasize	1	0,2

From table 5 above in the form of symptom data and the CF weight of each symptom, it can be seen in table 6 the

Characteristic Decision of interests and talents

Table 6. Characteristic Decision of interests and talents

Code Charac- teristics	Code interests and talents		
	PY1	PY2	PY3
GE1	√		
GE2	√		
GE3	√		
GE4	√		
GE5	√		
GE6	√		
GE7	√		
GE8		√	
GE9		√	
GE10		√	
GF11		√	
GF12		√	
GF13		√	
GF14			√
GF15			√
GF16			√
GF17			√
GF18			√

From the case, the determination of interests and talents can be seen. The following is a calculation of the CF value of the pest symptoms on the citrus plant:

$$CF(D1, D2) = [CF(D1) + CF(D2) * [1 - CF(D1)]]$$

If the following characteristic are selected:

G1 : Likes Reading

G3 : Likes to tell stories

G13 : Easy to understand the story

Linguistics (D01)

G1 : Likes Reading

G3 : Likes to tell stories

MB:

$$\begin{aligned} CF(MB1, MB3) &= MB1 + MB3(1 - MB3) \\ &= 1 + (0,6 * (1 - 1)) \\ &= 1 \end{aligned}$$

MD:

$$\begin{aligned} CF(MD1, MD3) &= MD1 + MD3(1 - MD3) \\ &= 0,2 + (0,3 * (1 - 0,2)) \\ &= 0,2 + (0,3 * 0,8) \\ &= 0,2 + 0,24 \\ &= 0,44 \end{aligned}$$

$$\begin{aligned} CF(\text{Linguistics}) &= MB - MD \\ &= 1 - 0,34 \\ &= 0,56 \end{aligned}$$

Math Logic

G13 : Easy to understand the story

$$\begin{aligned} CF(\text{Math Logic}) &= MB - MD \\ &= 0,6 - 0,3 \\ &= 0,3 \end{aligned}$$

So the result of the largest CF is:

$$\begin{aligned} &= \text{Max}(CF \text{ Linguistics}, CF \text{ Math Logic}) \\ &= \text{Max}(0,56, 0,3) \\ &= 0,56 (\text{Linguistics}) \end{aligned}$$

So based on the results of the diagnosis that has been carried out, it can be concluded that the type of student interest and talent in elementary school students is Linguistics with an expertise level of 0.56 and a percentage of 56%

Image 2 is a consultation page display.

Hasil Konsultasi

Identitas

Nama	Rizka Adelia
Kelas	3A
Jenis Kelamin	Perempuan

Ciri Yang Terpilih

No	Ciri-ciri Minat dan Bakat
1	Suka Membaca
2	Suka Berbicara
3	Mudah memahami cerita

Hasil Analisa

No	Jenis Minat dan Bakat	Kepercayaan
1	Linguistik	56%
2	Logika Matematika	30%

Jenis Minat/Bakat	Linguistik
Solusi	Penulis, Wartawan, Pengajar, Pengacara, pembicara, politikus

Image 2. Consultation Page

Image 3 explains the results of the diagnosis which contains characteristic of interest, talent and solutions.

Hasil Konsultasi	
Nama	rizka adelia
Umur	21
Jenis Kelamin	Perempuan
Diagnosa	Kata Daun
CF (%)	80.00
GEJALA TERPILIH:	
Kode	Nama Gejala
G01	Daun Menggugul
G02	Tunas-tunas muda kering
G10	Daun busuk
Solusi	
semprotkan air secara rutin pada seluruh bagian tanaman	

Image 3. The results of the diagnosis

CONCLUSION

From the test results obtained based on the characteristics experienced by the student, the student's type of interest and talent is linguistics with a skill level of 0.866 and 66% and has a fairly good sharpness value.

So from the results above, this method can be used to help make it easier for teachers to group students according to their interests and talents.

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