FIRST RESULT-THE TIA APPLICATION FOR STUDENTS' MANAGING TALENT IN DISTANCE HIGHER EDUCATION

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Abstract

The concept and practice of managing student talents and interests must be taken very seriously. Students are valuable human beings with high-value assets for themselves, universities, jobs, institutions, and society. Therefore, the campus's role is needed to develop students' soft skills. Distance higher education provides more expansive openness to the public for access to higher education wherever they are without age restrictions. However, the participation of distance education students is not optimal in non-academic activities. Because they do not know their talents and interests, the ages are very diverse, the student domiciles are spread out, and they do not find the right place to express their aspirations. Meanwhile, more soft skills can be developed in extra-curricular activities. This paper aims to develop applications measuring students' talents and interests. In achieving this goal, we assume students do not know their talents and interests. The research method is the development of the TIA (Talent and Interest Allocation) application, which measures six types of student intelligence characteristics: linguistics, logical-mathematical, musical, kinesthetics, interpersonal, and intrapersonal. The TIA application is applied to new students at Universitas Terbuka Padang in Even Semester 2022/2023. The number of respondents who participated was 1359 students from 29 study programs in 19 districts and cities of West Sumatra, Indonesia. Based on the TIA application, students directly know their dominant characteristics and get recommendations for appropriate academic and non-academic activities. Therefore, students can choose extra-curricular activities according to their talents and interests. Students can also use the results of the TIA application to assist the learning process. Students can choose a variety of learning sources according to dominant characteristics and anticipate their weaknesses by practicing new skills. This paper benefits students, universities, human resource practitioners, and policymakers by providing an easy-to-use application for a talent management system in distance higher education.

Keywords: Talent management, interest, distance, higher education, application.

1 INTRODUCTION

Long-distance higher education provides more expansive openness to the public for access to higher education wherever they are without age restrictions. One of the challenges faced by distance education, especially by Universitas Terbuka (UT), is to create student activities that can facilitate student diversity. The age of students varies significantly from 20 to 75 years old. Student domiciles spread from urban to rural, even to the islands. The student's study programs

are diverse. At the UT regional office, we can find study programs with one student, while thousands demand other programs. The number of UT students per region is described in Figure 1. Therefore, distance higher education needs to conduct an appropriate analysis in facilitating student activities according to the dominant characteristics of students.

Every person is intelligent according to their respective characteristics. Gardner & Hatch (1989) discovered the theory of Multiple Intelligences (MI). In MI theory, there are eight types of individual intelligence, i.e., Linguistic, Logical-Mathematical, Spatial, Musical, Naturalist, Bodily-Kinesthetic, Interpersonal, and Intrapersonal. The implementation of MI has been applied in various practical fields and studied theoretically from the perspective of psychology, neuroscience, and genetics (Davis, Christodoulou, Seider & Gardner, 2011). For instance, implementations of MI in higher education are a collaboration between students and universities, linkage of mission, goals, processes, and results in the assessment, the need for more technology in college classrooms (Kezar, 2001), and the relationship between affective and cognitive learning outcomes (Visser, Ashton & Vernon, 2006).

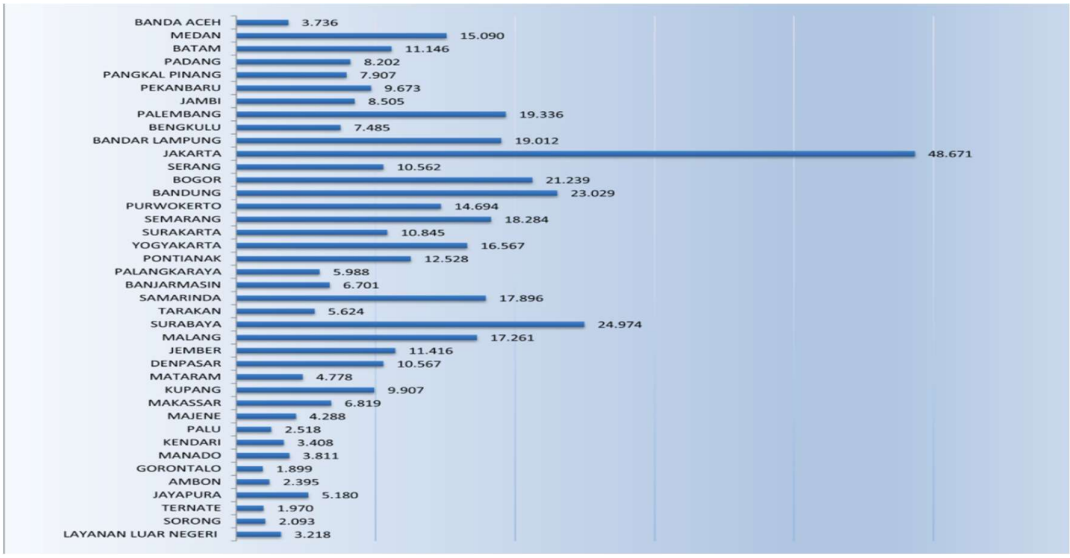

Figure 1. Number of UT Students per Regional Office in April 2023 (ut.ac.id)

The distance education service system should help students get to know themselves and recommend activities that suit their talents based on dominant intelligence. However, students are also encouraged to take part in various activities based on the tendencies of other types of intelligence they have. Today's jobs require employees to have extraordinary skills to face

challenging responsibilities. Organizations must acquire the necessary skills to overcome the challenges of today's competitiveness (Pynes, (2008).

Therefore, institutions, including Universitas Terbuka, need to provide applications that can measure students' talents and interests based on the tendency of everyone's type of intelligence. That application is used by new students and analyzed by managers as decision developers in various activities in their respective units.

2 METHODOLOGY

This research uses the development method to create a new application. The application aims to analyze the talents and interests of students, especially in Distance Higher Education. The application is named TIA (Talent and Interest Allocation). The research population is new undergraduate program students of Universitas Terbuka Padang in Semester 2022/2023 Even. The total population is 1915 students. The sampling technique used probability sampling—the research sample from all districts and cities in West Sumatra, Indonesia. Primary data comes from new UT Padang students who fill out questionnaires on the TIA application.

2.1 TIA Application Development

First, the TIA application development used a planning chart. The application consists of two types of users, namely, students and managers. The manager account functions to create questionnaires and see the results. Meanwhile, the student must request the TIA account to answer the questions and get the results.

The application developer gives the manager user and password access. Managers can change question items and scores as needed. Furthermore, managers can view individual questionnaire results and overall recap. In the manager's account, she/he can choose the graphic display type according to the residence areas or study programs.

The student account on the TIA application consists of several stages, as follows:

1) Students submit an account request through the TIA application consisting of a student ID number, name, and email address.
2) Students get notifications about the user and password in their registered email.
3) Students sign into the TIA application.
4) Students fill in biodata: gender, birth year, domicile, faculty, and study program.

5) Students choose the answers according to their character facts. Questions can be in the form of writing or guessing pictures.
6) After answering all the questionnaires and no question items were missed, the results of the dominant intelligence type came out.
7) Next, the TIA application gives activities recommendations to increase knowledge and skills according to their best three intelligence dominant.

In general, the architectural flow of the TIA application can be seen in Figure 2.

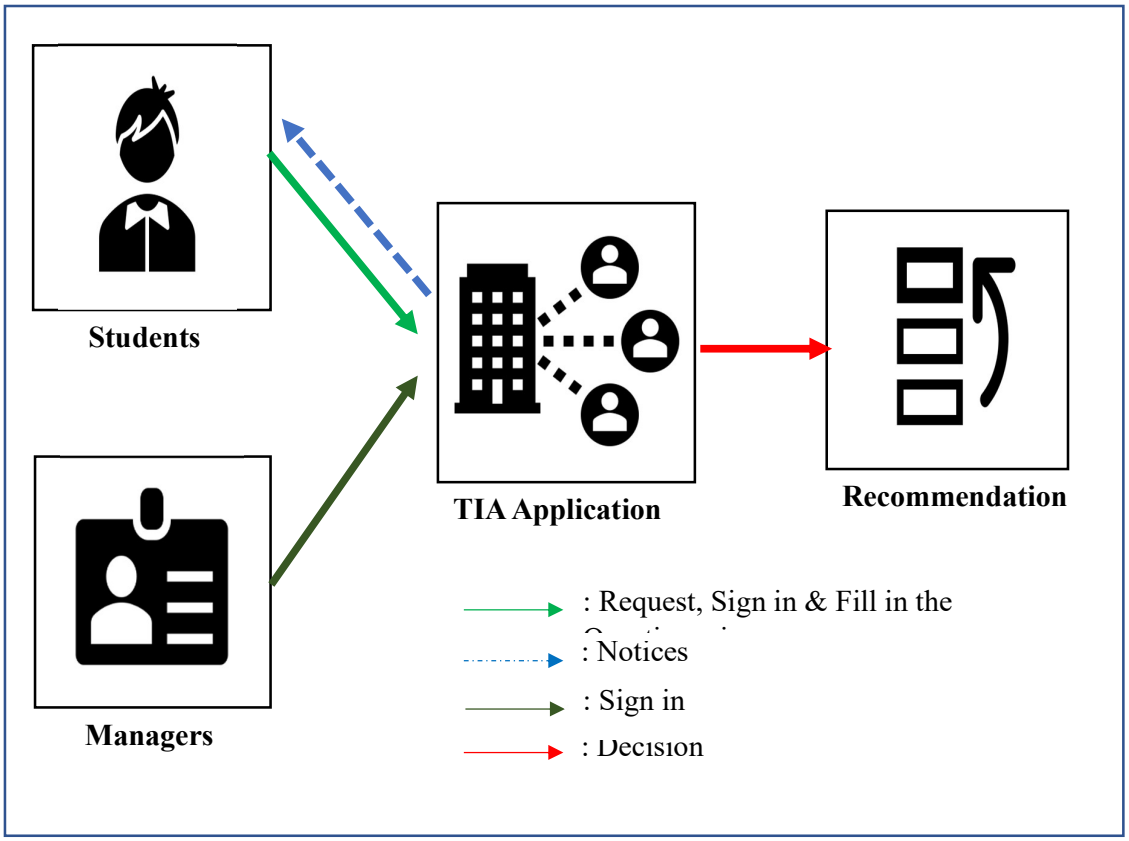

Figure 2. TIA Application Architecture

2.2 TIA Application Implementation Instrument

The research instrument was a questionnaire to classify students into six types of intelligence. The types of intelligence observed in this study were linguistic, logical-mathematical, musical, kinesthetic, interpersonal, and intrapersonal. Every question was scored 1 for "yes" and 0 for "no" answers. The variables and indicators of research instruments using the types of

intelligence in Gardner & Hatch (1989) which has been widely implemented empirically and theoretically in psychology and other fields (Chen, 2004). We described the operational definition of research variables in Table 1.

Table 1. Variable Operational Definitions

Variable (Intelligence Type)	Indicators (Sensitivity and Capability)	Item Code	Question
Linguistics (L)	Interpret Words	L1	You like to read various writings; newspapers, magazines, car brands, stickers on city transportation, and even product labels.
		L2	One of the games that you like is Scrabble and TTS.
		L3	You are pretty confident and convincing when arguing with others.
	Distinguishing Language Functions	L4	You can provide clear and straightforward directions or explanations.
Mathematical Logic (LM)	Discern	LM1	Your daily activities are neatly arranged and organized.
	Logical	LM2	Logic games like chess and computer games require your preferred strategy.
	Reasoning	LM3	When faced with a problem, you usually compile your steps.
	Numerical Pattern	LM4	You like to see or look for patterns of relationships between objects or between numbers.

Variable (Intelligence Type)	Indicators (Sensitivity and Capability)	Item Code	Question
Musical (M)	Produce and Appreciate Rhythm	M1	While doing something, you like to hum or whistle.
		M2	Memorizing songs, especially the tunes, is very easy for you.
	Musical Expressiveness	M3	There are one or several musical instruments that you can play.
		M4	If music is playing, you can sing in the right notes.
Kinesthetic (K)	Body Movements	K1	It is not enough just to see it to learn new things. You prefer to be able to do it yourself.
		K2	You like adventures that impress you are spectacular, and are physically demanding.
		K3	When exercising is an activity that you look forward to at school.
		K4	Solving a problem while moving: walking, running, or exercising is the right way and makes you more comfortable.
Interpersonal (Ie)	Respond appropriately to the moods, temperaments, motivations, and desires of others	Ie1	If there is a problem, you prefer to discuss it with others rather than think about it yourself.
		Ie2	You like to 'get together' with friends during your free time.
		Ie3	You like to direct other people to do something, and you like to be a leader.
		Ie4	You quite often help friends solve their problems.
Intrapersonal (Ia)	Accurately guide one's behavior, strengths, weaknesses, desires, and intelligence	Ia1	Participating in self-development seminars interests you.
		Ia2	When holiday time comes, you imagine a comfortable place to be alone, to reflect, not too crowded and not in the city center.
		Ia3	You set your life goals and know where you are going
		Ia4	You prefer activities you can do alone rather than those involving many people.

We must make a threshold to allocate students' talents and interests. The threshold in this research was that students meet the 75% minimum criteria based on intelligence types.

3 FINDINGS AND DISCUSSION

Our novelty is an application for allocating students' talents and interests, namely the TIA application. It is a website-based application (tia-application.com).

3.1 TIA Application Display

The appearance of the tia-application.com can be seen in Figures 3 to 6. In Figure 3, we can see the initial stages of the TIA Application display used by students. After students register, a notification appears to check their email to get the login password.

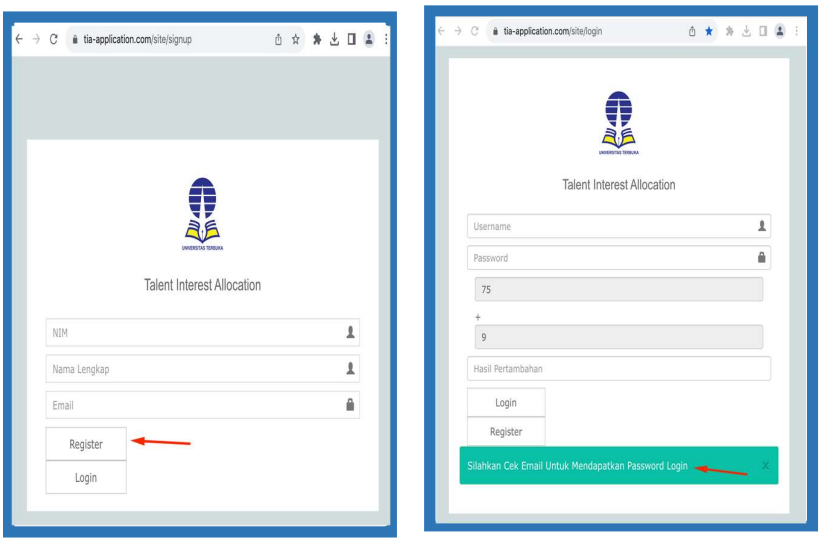

Figure 3. Initial View of the TIA Application

Figure 4 shows the appearance of the TIA application for requesting student biodata. Biodata is needed to analyze results based on area of residence, study program, and other supporting information such as gender and age.

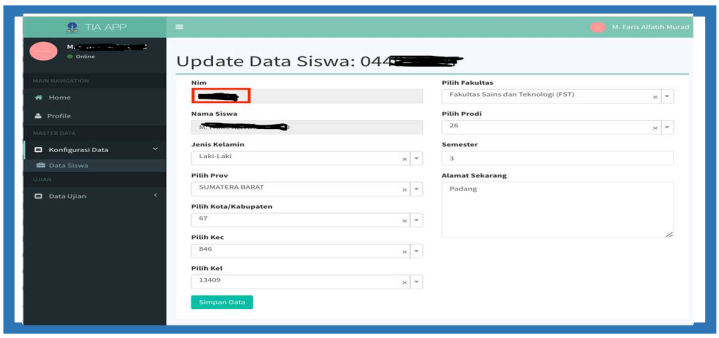

Figure 4. Fill in the TIA Application Biodata

Figure 5 shows the appearance of the TIA application when answering the questionnaire based on the list of questions in Table 3.1. Questions to measure the dominant type of student intelligence related to daily behavioral tendencies or actions.

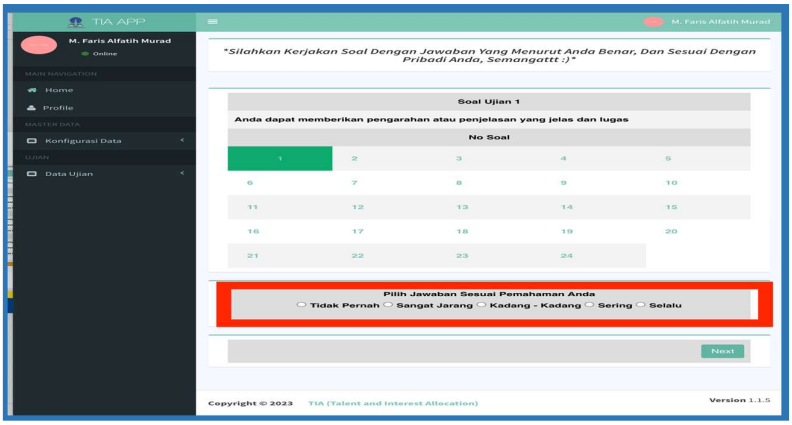

Figure 5. TIA Application Question Lists

Figure 6 shows a student's allocation to certain types of intelligence. Besides that, the application also provides examples of student activities to obtain optimal results in soft skills.

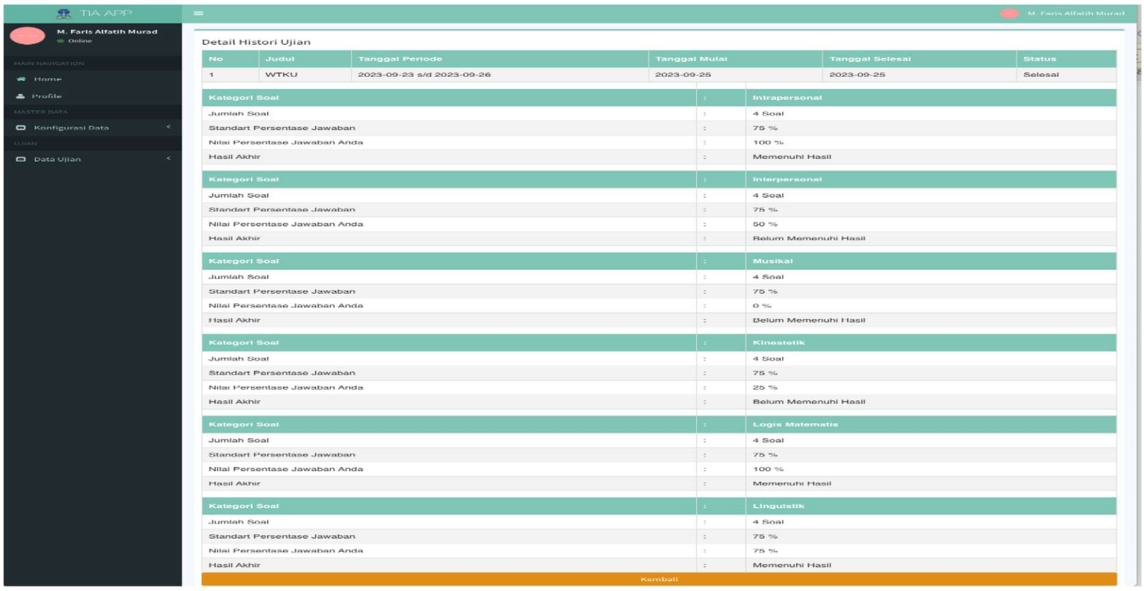

Figure 6. TIA Application Decision Results and Recommendations

3.2 Research Object Description

The number of respondents who participated in filling out the questionnaire was 1359 students. The samples were spread across 19 regencies and cities in West Sumatra (Table 2) from 29 undergraduate study programs (Table 3).

Table 2. Respondent's Domicile

No	Domicile Area	Respondents
1	Agam Regency	98
2	Bukittinggi City	58
3	Dharmasraya Regency	26
4	Solok Regency	44
5	Solok City	30
6	Mentawai Islands Regency	9
7	Lima Puluh Kota Regency	90
8	Padang City	328
9	Padang Panjang City	19
10	Padang Pariaman Regency	74
11	Pariaman City	32
12	Pasaman Regency	111
13	Pasaman Barat Regency	66
14	Payakumbuh City	65
15	Pesisir Selatan Regency	104
16	Sawahlunto City	22
17	Sijunjung Regency	32
18	Solok Selatan Regency	17
19	Tanah Datar Regency	134
	Total	1359

Table 3. Respondent's Study Program

No	Faculties	Study Programs	Respondents
1	Law, Social, and Political Sciences	Law	154
2		Public Administration	71
3		Communication Studies	44
4		Business Administration	43
5		Library	41
6		Records management	22
7		Government Science	11
8		English Literature (Area of Interest:Translation)	11
9		Taxation	10
10		Sociology	4
		Sum	**411**
11	Science and Technology	Information Systems	29
12		Food Technology	14
13		Agribusiness	13
14		Urban and Regional Planning	8
15		Statistics	3
		Mathematics	2
16		Biology	1
		Sum	**70**
17	Economics and Business	Management	218
18		Accountancy	96
19		Economic Development	3
20		Syariah Economics	7
		Sum	**324**
21		Primary Teacher Education	439
22		Teacher Education For Early Childhood Educatio	102

3.3. TIA	23	Education and Teacher Training	Mathematics Education	4
	24		Indonesian Language And Literature Education	3
	25		Pancasila And Civic Education	2
	26		English Language Education	1
	27		Biology Education	1
	28		Chemistry Education	1
	29		Education Technology	1
			Sum	**554**
			Total	**1359**

Measurement Results

Based on the TIA application processing, the following results are as follows. UT Padang students dominate having intrapersonal intelligence (14 out of 19 regencies and cities) and then interpersonal type only five regencies and cities (Table 4).

Table 4. Type of Student Intelligence per Region

No	Domicile Area	L	LM	K	M	Ie	Ia	Dominant
1	Agam Regency	71	71	77	51	74	87	Intrapersonal
2	Bukittinggi City	33	38	40	33	41	44	Intrapersonal
3	Dharmasraya Regency	20	23	22	16	21	23	Mathematical Logic & Intrapersonal
4	Solok Regency	35	35	29	27	34	38	Intrapersonal
5	Solok City	25	24	28	13	20	25	Linguistics & Intrapersonal
6	Mentawai Islands Regency	6	5	7	5	8	6	Interpersonal
7	Lima Puluh Kota Regency	66	66	70	45	74	76	Intrapersonal
8	Padang City	236	264	248	179	271	276	Intrapersonal
9	Padang Panjang City	17	15	17	12	19	19	Interpersonal & Intrapersonal

10	Padang Pariaman Regency	52	55	60	42	63	61	Interpersonal
11	Pariaman City	25	26	27	19	24	27	Kinesthetic & Intrapersonal
12	Pasaman Regency	88	77	77	64	93	96	Intrapersonal
13	Pasaman Barat Regency	53	49	54	39	61	59	Interpersonal
14	Payakumbuh City	43	50	54	41	53	52	Kinesthetic
15	Pesisir Selatan Regency	81	75	84	68	91	95	Intrapersonal
16	Sawahlunto City	19	17	17	15	14	19	Linguistics & Intrapersonal
17	Sijunjung Regency	28	26	26	19	27	31	Intrapersonal
18	Solok Selatan Regency	14	14	14	11	14	13	Linguistics, Mathematical Logic, Kinesthetic, Interpersonal
19	Tanah Datar Regency	106	98	100	72	108	114	Intrapersonal

Recommendation

Based on Table 5, the intelligence type of UT Padang students is intrapersonal and dominated by three faculties: Faculty of Law, Social, and Political Sciences, Faculty of Economics and Business, and Faculty of Education and Teacher Training. Meanwhile, Faculty of Science and Technology students tend to have kinesthetic intelligence. Therefore, based on these results, we can plan suitable activities for UT Padang students.

Table 5. Type of Student Intelligence per Faculty

No	Faculty	L	LM	K	M	Ie	Ia	Recommendation
1	Education and Teacher Training	437	411	430	318	457	490	1. Intrapersonal (88%) 2. Interpersonal (83%) 3. Linguistics (79%)
2	Law, Social, and Political Sciences	302	317	312	239	334	344	1. Intrapersonal (84%) 2. Interpersonal (81%) 3. Mathematical Logic (77%)

3	Economics and Business	233	249	239	182	264	272	1. Intrapersonal (84%) 2. Interpersonal (82%) 3. Mathematical Logic (77%)
4	Science and Technology	46	51	60	32	55	55	1. Kinesthetic (86%) 2. Intrapersonal (79%) 3. Interpersonal (79%)

Based on the results of processing the types of intelligence of Universitas Terbuka students, recommendations can be made for policymakers so that they can make the right decisions. Non-academic activities include student activities outside of lectures. Meanwhile, academic activities are a series of systems that support the learning process in distance education.

An organization should give more consideration to recruiting people (Bajoulvand, 2015). Therefore, we need non-academic activities based on regions according to the dominance of intrapersonal intelligence to develop students' thinking and analytical abilities. Below are some recommendations for relevant activities.

a. Workshop on writing funding proposals. Funding grants are available from UT and the government. Because the program is a competition event, students must have maximum preparation in making proposals to convince funders.

b. Entrepreneurship development. Entrepreneurship is a training effort to contribute to creating jobs since becoming a student. Entrepreneurs who pass funding need a coach to increase their profit. Meanwhile, self-funded entrepreneurs must also be strengthened in business development by institutions.

c. Leadership training. Students need leadership training to improve their life skills. This training can foster student self-confidence.

Other self-development training, according to the majority of student choices, can be facilitated by UT. Thus, students can have a better life and contribute to the community. In Teoh & Lıau (2023) research, they found that training, mentoring, and counseling programs were crucial for students to overcome obstacles, survive, communicate with others, and make decisions.

Recommendations for improving student academic abilities are a series of learning processes supporting increasing grades or meeting graduation requirements. With the risk, if a student fails the course, the student must repeat and pay the fee again until the required score is

sufficient to graduate. Academic activities with intrapersonal nuances per region can be prioritized in various forms of activity as follows.

a. Workshop on writing Professional Capability Consolidation (PCC) reports for students of educational programs. In the UT curriculum, students must at least get a B+ grade in PCC courses.

b. Workshop on writing scientific papers. In the UT curriculum, every student must pass the scientific writing course.

Furthermore, UT Padang students from the Faculty of Science and Technology, with a predominance of kinesthetic intelligence, can attend activities that involve making products. There are workshops fostering product innovation in food and beverages, handicrafts, waste compost management, and various other productions. According to study programs, in line with Erdem & Keklik's research (2020) results, significant differences were also revealed in several multiple intelligence domains.

4 CONCLUSION

Based on the application of the TIA application, students directly know their dominant characteristics and get recommendations for appropriate academic and non-academic activities. Thus, students can choose extra-curricular activities according to their talents and interests. Students can also use the results of the TIA application to assist the learning process. Students can choose a variety of learning sources according to dominant characteristics. Besides that, students can anticipate their weaknesses by practicing new skills. This paper benefits students, universities, human resource practitioners, and policymakers by providing an easy-to-use application for a talent management system in distance higher education. The application can be applied for further research to see the relationship between knowledge about a person's interests and talents and citizenship intelligence (Kusnadi & Alrakhman, 2022).

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