An analysis of research on thinking types of cadets

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Abstract: There are few schools provide professional education that prepare special government employees who perform the security functions of Mongolia. This field's demand to take a consideration into cadets psychological and learning processes diversity is high. People are who study and are trained in these university are called cadets. Their training itself is unique procedure which provides psychological preparation. Therefore, it is necessary in the practice to bring distinction to the fore and take an interest to the difference between cadets thinking type and how some problems or characteristics playing a part in it. Within this purpose and need, G. V. Rezapkina's test (Cronbach's alpha value of the reliability of the test is 0.746) was used in order to find the distinctness of cadets thinking type and dissimilarity relation in between their learning characteristic and attitude of cadets who are students at University of Internal Affairs Mongolia. In this research the largest number of people is characterized by a visual and figurative thinking type, which was 549 cadets (74.6%) from the total of 735 participants from Police School, Border Office School, Emergency School and Court Decision Enforcement School. That being the case, we analzyed the difference relation in between the thinking type of cadets and school they are attending by using Kruskal-Wallis test, which resulted there was none. Abstract and symbolic type was resulted high on cadets who have positive attitude, whereas negative attituted cadets were resulted low.

Keywords: Cadet, Thinking type, Cadets psychology

1. INTRODUCTION

The need of an adjusted policy, study of distinction and a training for the qualified personnel was always necessity throughout Mongolia, and the world. Therefore, the special government service has been facing an issue of training specialist, who has to be eligible, follows special orders and has an unique duty. Three universities that government funded have been handling the training of the special government employees. University of Internal Affairs Mongolia prepares 66.6% of proffesion which is provided by law. Thus, the time of their training to be qualified personnel is undoubtedly crucial. Literature review on topic:

- In 2020, Enrique [1], 37 men and 35 women from the University of San Agustin de Arequipa, who are in the age of between 15-17, had participated in the research named "Relationship between Academic Procrastination and Attributions of Achievement Motivation" by Lois Enrique, in Peru. Result showed that relationship between procrastination and atrributions of achievement motivation was inverse.
- In 2023, Khulan [2], A did a research on "Relationship between students individuality, skill of detecting emotions of others and empathy". The result shows that a relationship between skill of detecting emotions of others and empathy is direct, which means empathy cannot exist without a skill of detecting emotions of others.

We conducted a research in the purpose of an analysis on cadets (students of University of Internal Affairs Mongolia) thinking type and our targets were conclude and analyze the empirical evidences of research which are cadets personality trait, thinking type and their other psychological characteristics.

Method of research was to find the relationship of thinking type by analyzing the data of cadets results of Russian scholar G. V. Rezapkina's test which has been taken in the last 6 years.

There are few studies about psychological characteristics of cadets who are being trained to perform special duty to protect national security. That's why it is believed that clarifying the features of cadets thinking type and comparing them with the study of their features, professions and other psychological distinctions will have a significant impact on the learning process and training activities in the future.

2. LITERATURE REVIEW

The psychological problem of the cadet is a concept within the field of military psychology and police psychology of psychological science, and it begins with its clarification. A student who is being trained for a special government service in a basic military profession is called a cadet. According to the Mongolian nomenclature, it is explained as "listener" [3]. A cadet is a student and trainee at various military schools. The term is often used to refer to young people who are training to become military officers [4].

In Canada, the term "Cadet" refers to an officer in training, while in Germany, Cadet is a designation only for officers in training in the German Navy. The idea that a person goes through several stages of development that are common in throughout his life occupies an important place in Erikson's theory of stages of socio-psychological development. According to Erikson's theory, early youth covers 18-25 years. These stages are said to be regulated by epigenetic principles of development. Under the epigenetic principle, Erikson mentioned the following [5].

In principle, human development takes place in a hierarchical manner, and the transition from one stage to another is determined in advance by the person's readiness or preparedness for further development, the expansion of the social scale perceived by the person, and the growth of social interaction.

Generally, society is organized in such a way as to support the social development of the individual and to ensure both the possible pace and positive direction of this development. Erikson believed that personal development takes place throughout life, and from the beginning of youth, a person is ready for close relationships with others, both socially and sexually. And it is the time to acquire a profession, mature, and determine one's direction, which includes interpersonal communication, etc. One pole of this relationship is intimacy, and the other pole is isolation of itself.

According to E. Erikson [6], intimacy is a multifaceted and extensive problem. On the one hand, it includes self-identification without fear of losing anything, and on the other hand, it includes love and sex, as well as sincere friendship and trust. Trusting others and getting close to others depends on how well a person knows himself, and if he doesn't have a stable idea about himself, he can't really get close to others. According to Erikson, the positive aspect of development is love. Affection can express both sensuality and sexual meaning, and it is the ability to open yourself up to others when you feel you need to trust them. However, if you are overwhelmed by your own thoughts, focus too much on yourself, and start avoiding communication with others, the negative side of this stage of development will appear. If you cannot establish a stable, calm, friendly and trusting relationship with others, you will feel lonely and cut off from society. For such people, intimate relationships are avoided because they make demands on people, try their luck, and trust them. It is considered very dangerous at this stage of development if you become obsessed with your own thoughts, focus on yourself and avoid communication with others. If a person cannot establish a calm, reliable and stable relationship with others, a person becomes lonely and falls into a social vacuum (empty space) [7].

At this stage of development, achievements from the social side are very important. Achievements and successes in the social sphere have a great influence on the formation of human moral feelings. A person's sense of morality arises from the time when he realizes the value of his long-term friendship and his role in society. Thanks to all this, a person becomes ready to sacrifice himself for his cherished things. Thinking type includes the characteristics of a nation, behaviors, interests, consciousness, habits, symbols, customs, and traditions phenomena. The most stable aspect of the mentality of the nation is the character or behaviour of the nation [8]. It is a matter of considering how behavior relates to the creative quality of thinking process. Research findings have shown that different types of behavior are similar in creative thinking, but the ways to achieve success are different. That is why it is pointless to judge one characteristic of behavior against another as good or bad, and it is important to consider that one characteristic may be good

in a certain environment but bad in another environment in connection with the multifaceted process of life. Psychologically stable cadets have better communication skills, where interpersonal conflict is easier to deal with, which contributes to cooperation and effective work. Communication skills are vital in the military, where effective interaction and timely communication of information are vital. Psychologically stable cadets often have good listening and comprehension skills, as well as express their thoughts and ideas clearly and persuasively. In addition, psychologically stable cadets often have better control over their emotional and adequate responses during communication. A conflict situation in which they seek to compromise after taking into account the views of others, who are more tolerant. All this contributes to improved cooperation and effective teamwork. Cadets with advanced communication skills make it easier to connect with others, build trusting relationships and maintain a positive team atmosphere. Communication skills training is an important component of the development psychological stability of cadets. It not only helps them to successfully cope with interpersonal conflicts, but also a great support for the effective performance of official duties [9].

Psychologically, it creates an environment that contributes to the development of communication skills, a more harmonious and productive education for cadets, and prepares for successful service and communication in the future community [10].

Attitude is defined as "the general direction of a phenomenon, thought, or idea." A positive or negative evaluation of people, ideas, objects, or events [11]. The simple structure of a person's response to an object or problem, which is more or less determined by emotional, cognitive experiences, and behavioral responses. Attitudes, on the other hand, indicate a person's current mental state. Interpersonal attitudes are the basic part of mutual actions, such as being understood and perceived by each other in varying degrees, thinking objectively, being excited, and feeling. [12].

3. RESEARCH DESIGN AND RESULT

A total of 735 cadets participated in the study by taking a Thinking Type test from students who studied at the University of Internal Affairs of Mongolia in 2019-2020 and 2020-2021.
Survey data from cadets who did not meet the 50% threshold for survey results were considered invalid and excluded. The research results were processed using SPSS-26 and Microsoft Excel.

3.1 Appendix

Excercise 4. Given time: 15minutes, Instructions: Read each question and put a checkmark next to the question that you agree with. There are no good or bad questions here, so don't waste time thinking.

№	Type	Yes	No
1	It is easier to do something yourself than to explain it to others		
2	I am interested in developing computer programs		
3	I like to read books		
4	I like painting, sculpture and architecture		
5	I try to improve my work		
6	If you explain the lesson and the picture to me, I can understand it very well		
7	I like to play chess		
8	Able to express one's thoughts verbally and in writing		
9	When I read a book, I can clearly see the protagonist and the story		
10	I strive to do my planned work independently		
11	I like to make everything by hand		
12	As a child, I used my own special key to communicate with my friends		
13	What I am saying adds to the importance of the item		
14	When I hear a familiar melody, a picture or an image is created in my head		
15	Different passions make human life rich and bright		
16	It's easy for me to find trial and error in advance when solving a goal		
17	I feel like dancing when I listen to music		
18	I am very interested in the work of TV and radio presenter and journalist		
19	It's easy for me to imagine animals and things that don't exist in nature		
20	I try to master the exact sciences (mathematics, physics).		
21	When I was a child, I liked to create with small objects		
22	I try to master the exact sciences (mathematics, physics).		
23	The deep meaning of some poems really appeals to me		
24	The deep meaning of some poems really appeals to me		
25	I don't want to dictate my life to a certain system		
26	I feel like dancing when I listen to music		
27	It is not difficult for me to speak in front of any audience		
28	I like exhibitions, plays and concerts		
29	I'm especially skeptical of things that others say are obvious		
30	I love making things by hand		
31	I'm curious about deciphering the hidden meanings of ancient symbols		
32	I love making things by hand		
33	I learn the rules of language structure easily		
34	I understand and enjoy the beauty of nature and art		
35	By the way, I don't like to go alone		
36	The truth can only be grasped by hand		
37	I'm curious about deciphering the hidden meanings of ancient symbols		
38	I can easily understand formulas, symbols, and case notation		
39	It's easy for me to recall the content of a movie or an event		
40	I don't always rest until I've done my job perfectly		

3.2 Participants in the study

735 students of the University of Internal Affairs Mongolia participated in the survey, 44% of the total participants (323 students) participated in 2019-2020, and 56% (412 students) participated in 2020-2021.
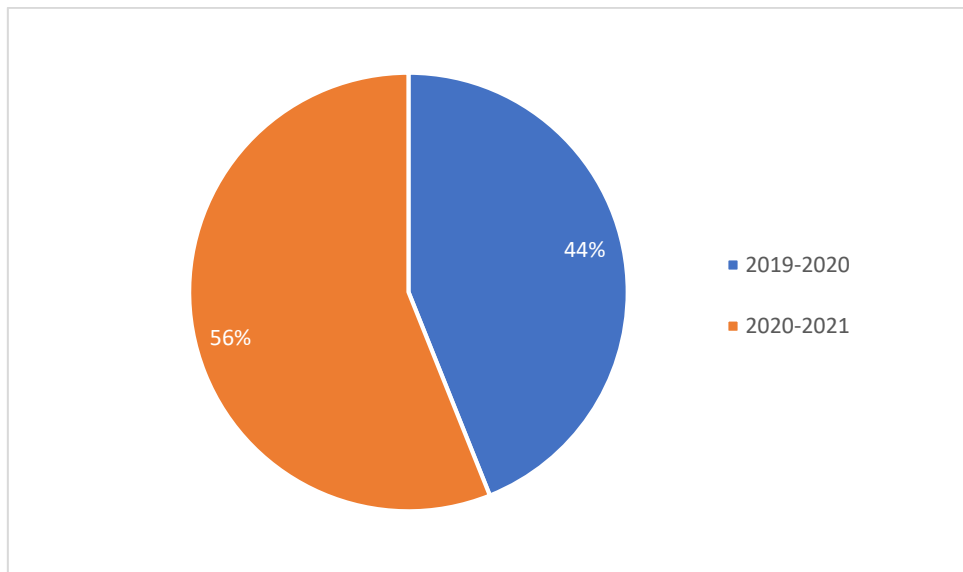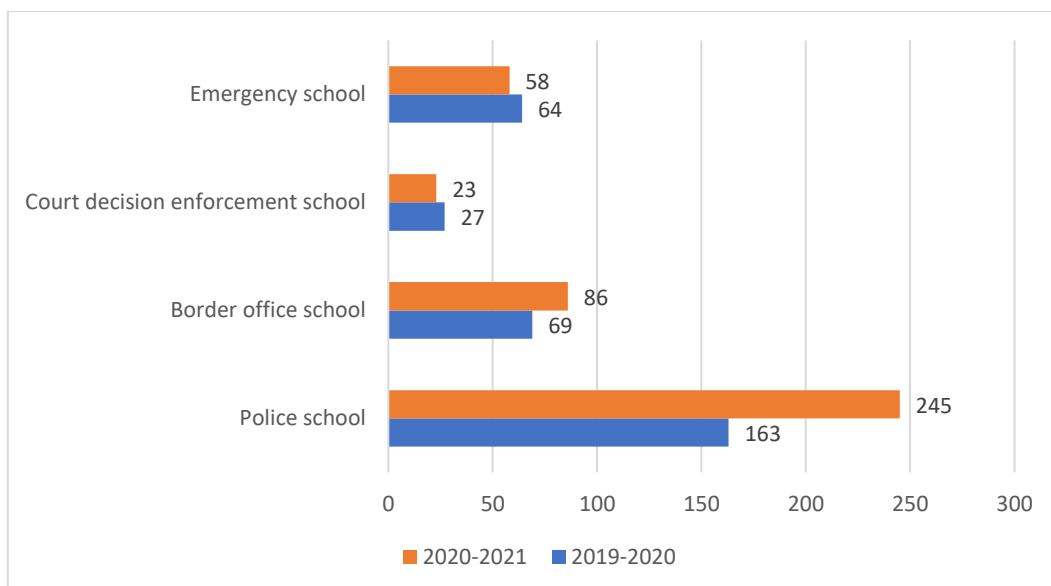

Figure 1. Number of participants

Figure 2. Number of participants per school.

Taking into account the cadets by each school, in 2019-2020, 64 cadets from the Emergency School, 27 from the Court Decision Enforcement School, 69 from the Border Office School, and 163 cadets from the Police School participated. In 2020-2021, 58 students from the Emergency School, 23 from the Court Decision Enforcement School, 86 from the Border Office School, and 245 from the Police School participated.

3.3 Reliability

When analyzing the reliability of the test of G. V. Rezapkina, a Russian scientist who studies thinking types, the alpha value was 0.746, and it was a reliable research method.

Table.1 Cronbach's Alpha Based standard

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.746	0.728	40

3.4 Distribution

The distribution was examined by the Kolmogorov-Smirnov test, which revealed a non-normal distribution. Therefore, non-parametric analysis was used to develop the results. Result of thinking type is shown in
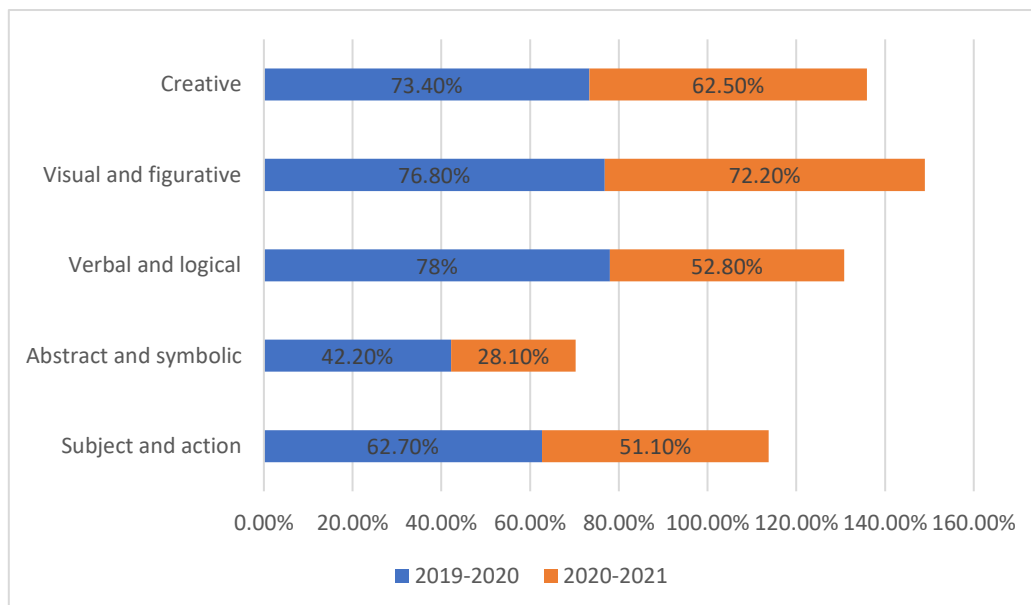

Figure 3. Thinking types of participants

735 cadets took part in the study, 416 cadets or 56.5% of them were subject and action thinking, 254 cadets or 34.5% of abstract and symbolic thinking, 271 cadets or 36.8% of verbal and logical thinking, 549 cadets or 74.6% of visual and figurative thinking, 498 cadets or 67.7% of creative thinking showed up higher. However, 481 or 65.5% of all participants showed weak abstract-symbolic thinking.
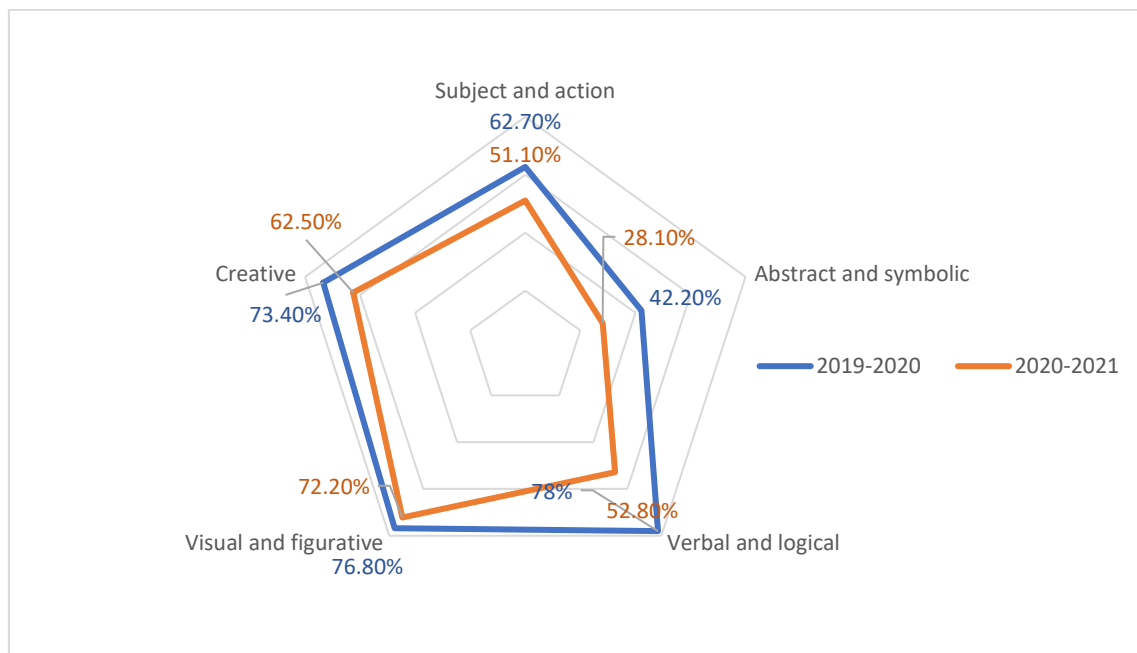

Figure 4. Comparison of thinking type of study participants by year of enrollment

The following results were obtained by comparing the thinking type of all the cadets who participated in the study according to the year of enrollment. The participants who showed higher characteristics of real action thinking accounted for 62.7% of the total participants in 2019-2020, while in 2020-2021 they accounted for 51.1% of the total participants and decreased. The percentage of cadets who are higher in other "Abstract-Symbolic", "Verbal-Logical", "Visual and Figurative" and "Creative" thinking patterns has also decreased compared to the previous year. Kruskal -Wallis analysis of whether this age-related difference was statistically significant revealed significant differences in mental patterns other than the " Visual and Figurative " pattern.
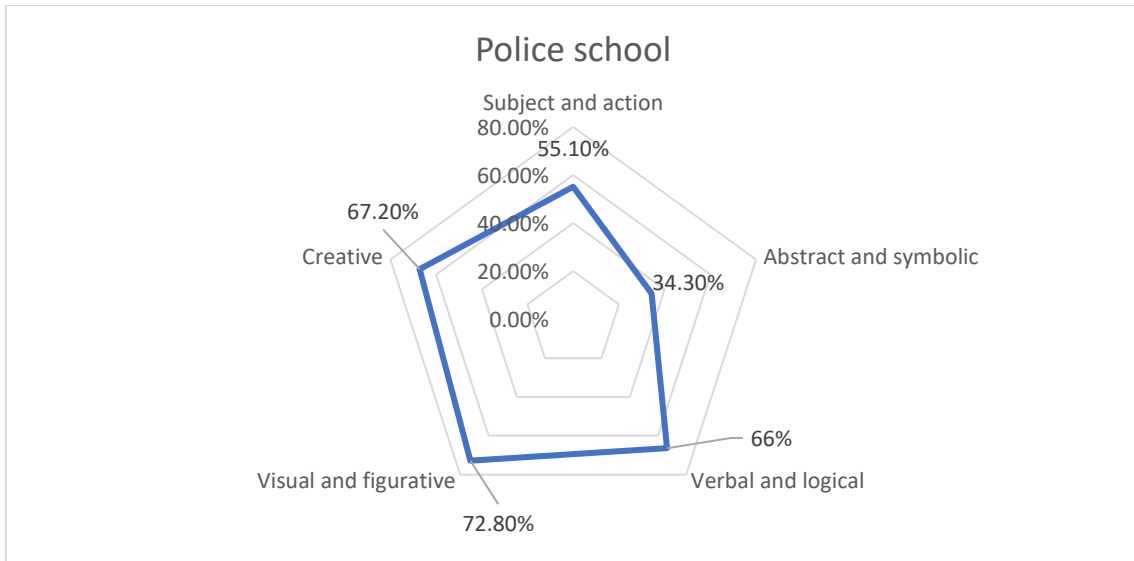
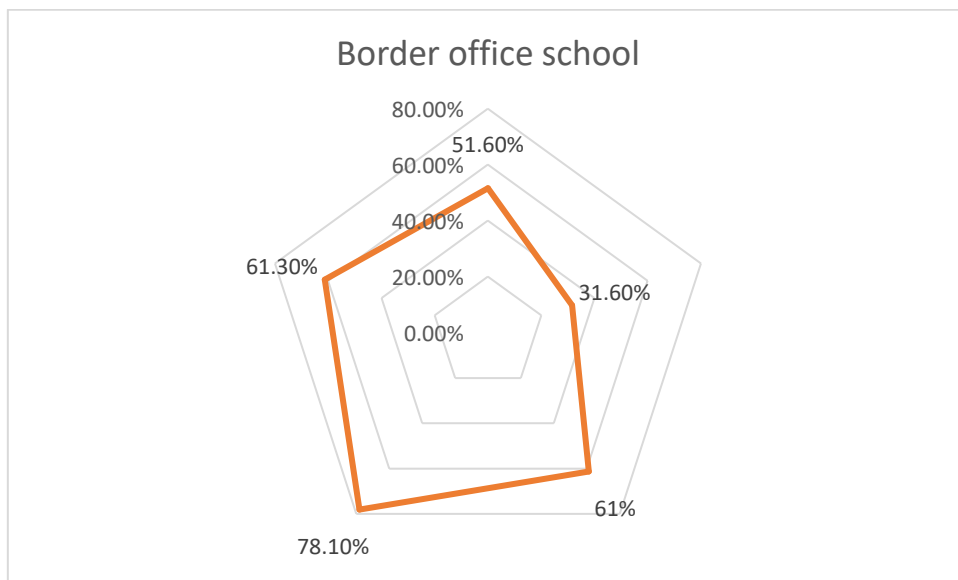Figure 5. Result of Police school's cadets thinking type

In the police school, students with a preference for the subject and action thinking type make up 55.1% of all participating students, students with a preference for the abstract-symbolic type make up 34.3%, and students with a preference for the verbal-logic type are the highest compared to other schools which are 66.4%, 72.8% of students with a preference for visual and figurative type, and 67.2% of students with a preference for creative type respectively.

Figure 6. Result of Border office school's cadets thinking type

In the case of Border Office School, students with a preference for subject and action thinking type make up 51.6% of all participating students, 31.6% for students with a preference for abstract-symbolic type, and 61.3% for students with a preference for verbal-logic type, the students with a preference for visual and figurative type are the highest (78.1%) from other schools, and students with a preference for creative type are 61.3%, respectively.
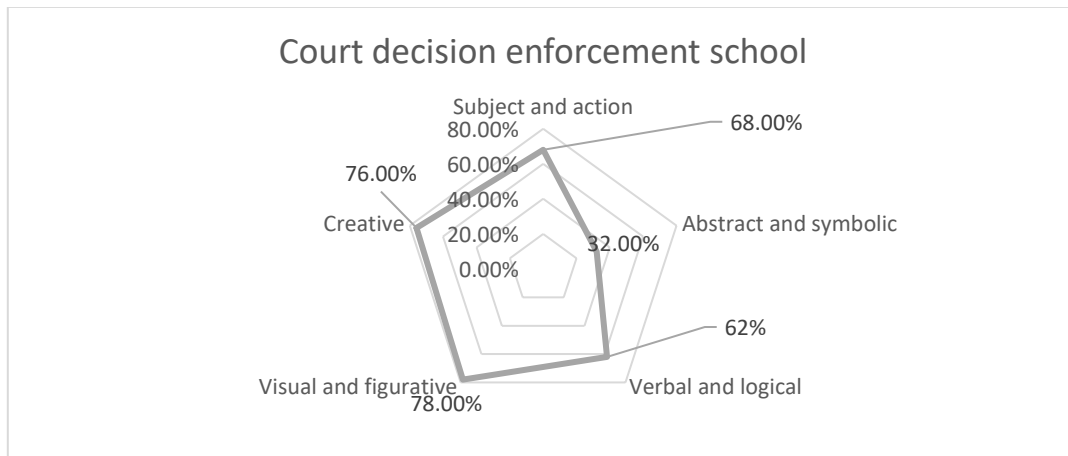

Figure 7. Result of Court decision enforcement school's cadets thinking type

Compared to other schools, students with a preference for the subject and action thinking type of the Court decision enforcement school accounted for 68% of all participating students, while students with a preference for the abstract-symbolic type accounted for 32%, and those with a verbal-logic type accounted for 62% of type, 78% of students shows visual ad figurative type are also resulted the highest creative type which is 76%, respectively.
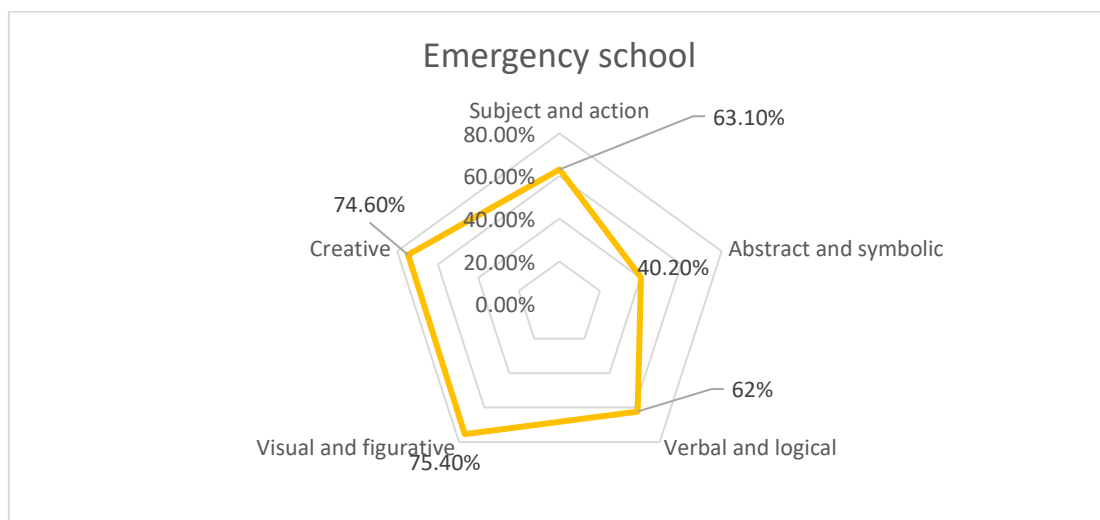

Figure 8.Result of Emergency school's cadets thinking type

In the case of emergency schools, students with a preference for subject and action thinking type account for 63.1% of all participating students, while students with a preference for abstract-symbolic types have the highest percentage (40.2%) of other schools, and a preference for verbal-logic patterns are 62.3% of the students, 75.4% of the students with a preference for the vison and figurative type, and 74.6% of the students with a preference for the creative type respectively.
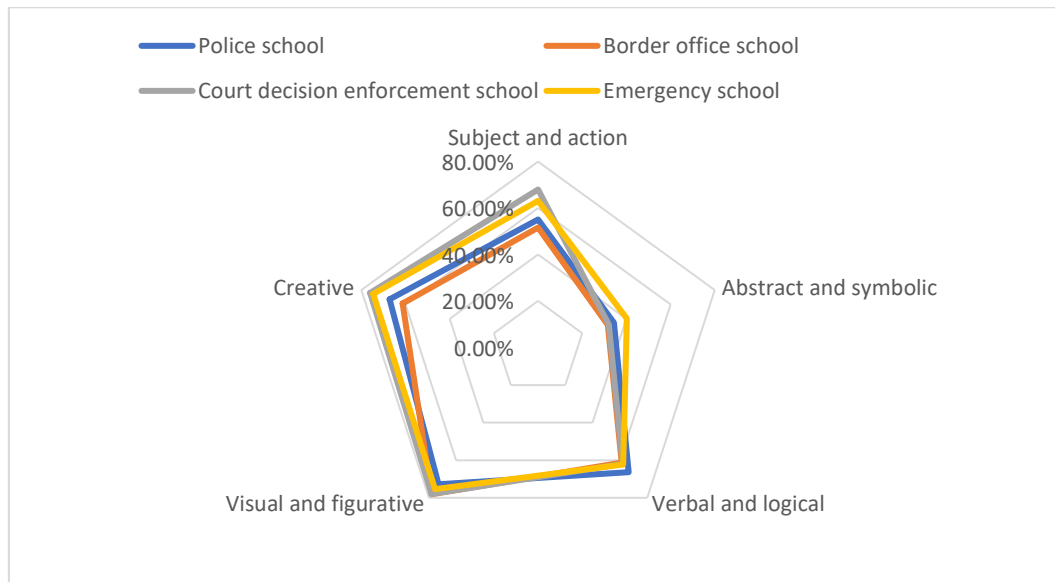

Figure 9. According to each school of thinking of the participants.

The thinking type of the research participants were compared according to the school they are studying in. The Kruskal-Wallis analysis of whether there are differences in these thinking type based on the school of the cadets did not reveal any significant differences. However, the Police School is in the "Verbal-Logical" type of thinking, the Border Office School is in the "Visual and figurative" type of thinking, Court Decision Enforcement School is in the "Subject-Action" and "Creative" types of thinking, and the Emergency Schools cadets percentage is higher in the "Abstract-Symbolic" type of thinking. The results of comparing thinking types with attitudes and learning motivation are shown in Figure .
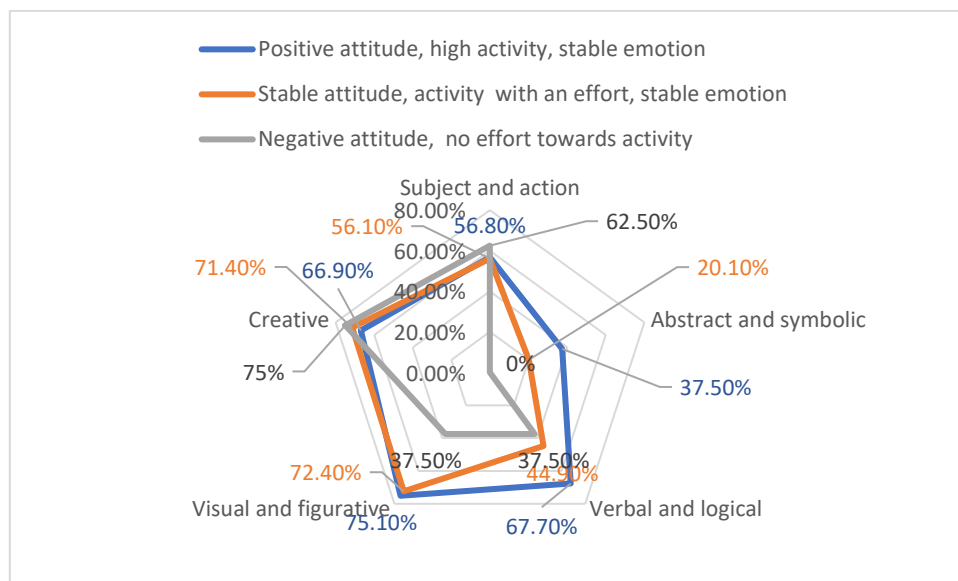
Figure 10. For each thinking type in comparison with learning attitude.

The following results were observed if the percentage of participants with higher thinking types among the total number of participating students was considered for each of their attitudes. The more mature the attitudes of the students who participated in the research were, the more their thinking types were revealed.

Table 2. Test Statisticsa,b

	e1 Hyper-thymic trait of persona-lity	e2 Mania trait of personality	e3 Proving trait of personality	e4 Extreme checking trait of personality	e5 Depressed trait of personality	e6 Anxiety trait of personality	e7changing trait of personality	e8 Timid and excited trait of personality	e9 Emotional trait of personality	e10 Unstable trait of personality
Kruskal-Wallis H	1.855	4.332	7.855	1.947	4.204	3.087	11.718	3.415	2.616	1.31
df	2	2	2	2	2	2	2	2	2	2
Asymp. Sig.	0.395	0.115	0.02	0.378	0.122	0.214	0.003	0.181	0.27	0.519

a Kruskal Wallis Test

b Grouping Variable: r1 Attitude

The following results (오류! 참조 원본을 찾을 수 없습니다.) were observed if the percentage of participants with superior thinking patterns among the total number of participating students was considered for each of their attitudes. As the attitudes of the students who participated in the study matured, their abstract thinking patterns were revealed as superior.
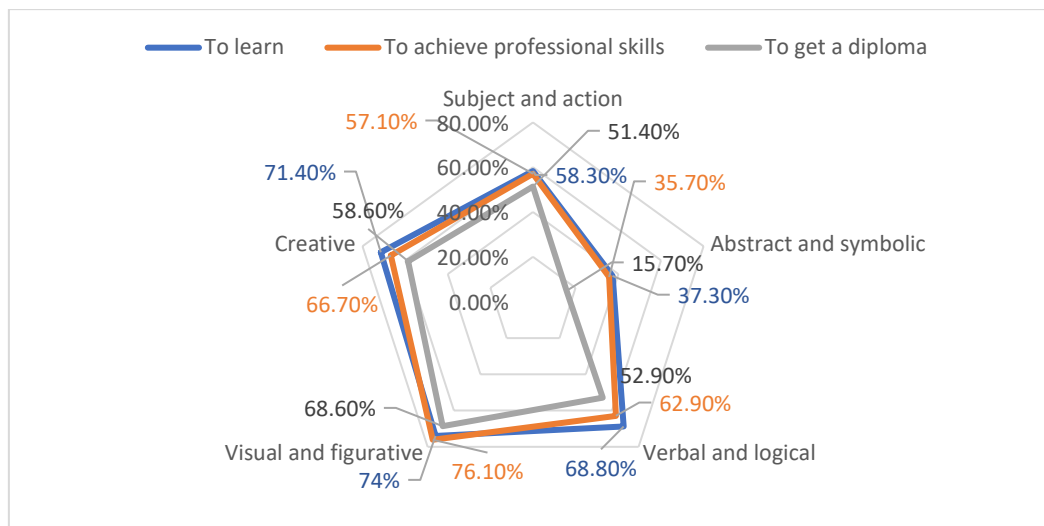

Figure 11. Participants thinking type in comparison with each motivation

The share of cadets with the motivation to get a diploma and the dominant thinking type is lower than the share of the cadets with the motivation to acquire knowledge and professional skills and the dominant thinking type.

No difference was observed between the percentage of students with the motivation to acquire knowledge and to acquire a professiongl skills, and with a dominant mental thinking type.

When the Kruskal-Wallis test was used to check whether the above two parameters were supported by statistical analysis, only the "Abstract-Symbol" and "Verbal-Logic" thinking types revealed statistically significant differences.

4. CONCLUSSION

A total of 735 cadets took part in the research, and for them, vision and figurative thinking and creative thinking type were dominant, and abstract-symbolic thinking was weak.

The Kruskal-Wallis analysis of whether there is a difference depending on the profession of the studied cadets did not reveal any significant differences, but for the listeners of all schools, vison and figurative thinking type was dominant, and for the cadets of the Emergency School, the dominance of creative thinking was high.

Proportion of cadets with high results of "Abstract-Symbolic", "Verbal-Logical" and "Vision and figurative" thinking types among students with low activeness and negative attitude and

emotionally stable students with positive attitude and high activeness were different. Percentage of emotionally stable and active students is higher than the percentage of students who show low activity and an effort. A Kruskal-Wallis test was used to determine whether this low value was statistically significant, and a statistically significant difference was found.

As cadets' attitudes matured, their abstract thinking types were revealed. This proves that attitudes have a positive effect on the formation of thinking types. With the completion of this research, it is important to take into account the effectiveness of the learning process of the cadets, the introduction of active learning methods suitable for their mental characteristics, and the management of multifaceted social work. It is also believed that the results of the study can guide the personal relationship, attitude and motivation between the teacher and the cadets.

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