THE RELATIONSHIP BETWEEN THE UTILIZATION LEVELS OF THE STUDENTS OF FACULTY OF SPORTS SCIENCES GENERAL LEARNING STRATEGIES AND THEIR CRITICAL THINKING DISPOSITIONS*

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ABSTRACT

In this study, it was aimed to identify the utilization levels of the students of Faculty of Sports Science, Selcuk University, general learning strategies and their critical thinking dispositions and reveal whether or not there was a relationship between learning strategies and critical thinking dispositions. The universe of the study consists of 1030 students studying in daytime and evening education in the departments of Physical Education and Sports Teaching, Sport Management, Coaching Education, and Recreation of the Faculty of Sport Sciences, Selcuk University, in Spring Semester in the educational year of 2015-2016. All universes was attempted to reach but since the survey was not administered to the absent students at the moment application was made and those not wanting to participate in the survey, the study was carried out on 808 students. In the study, as data collecting instrument, Personal Information Form, developed by the researchers, Assessment Scale for General Learning Strategies, developed by Öztürk (1995), and California Critical Thinking Disposition Inventory, adapted by Kökdemir (2003) to Turkish, were utilized. Whether or not the data show normal distribution was examined by Kolmogorov-Smirnov Test and, as a result of the study, since the data show normal distribution, in order to reveal the relationship between learning strategies of the students and their critical thinking dispositions, the technique of Pearson Product-Moments Correlation Coefficient (r) was utilized. In the study, significance level was chosen as α=0.05. As a conclusion of the study, it was identified that the students "frequently" utilized all of general learning strategies (repetition, interpretation, placing in the mind, recall, cognition managing and affective). Again, in the study, it was identified that the levels of the students to search for truth, become open minded, become systematic, and think critically were low; that their levels to become analytic, feel self-confident, become curious, and think critically were medium; and that they had the tendency to think critically at low level. Finally, it was identified that there was positive directional relationships at the low level between all learning strategies of the students of sports sciences and their critical thinking dispositions.

Keywords: Learning Strategies, Critical Thinking, Sports Sciences, Student.

SPOR BİLİMLERİ FAKÜLTESİ ÖĞRENCİLERİNİN GENEL ÖĞRENME STRATEJİLERİNİ KULLANMA DÜZEYLERİ İLE ELEŞTİREL DÜŞÜNME EĞİLİMLERİ ARASINDAKİ İLİŞKİ*

ÖZ

Bu araştırmada, Selçuk Üniversitesi Spor Bilimleri Fakültesi öğrencilerinin genel öğrenme stratejilerini kullanma düzeylerinin ve eleştirel düşünme eğilimlerinin belirlenmesi ve öğrenme stratejileri ile eleştirel düşünme eğilimleri arasında bir ilişkinin olup olmadığının ortaya konması amaçlanmıştır. Araştırmanın evrenini 2015-2016 eğitim-öğretim bahar yarıyılında Selçuk Üniversitesi Spor Bilimleri Fakültesi'nde Beden Eğitimi ve Spor Öğretmenliği, Spor Yöneticiliği, Antrenörlük Eğitimi ve Rekreasyon Bölümü'nde okumakta olan 1030 1. ve 2. Öğretim öğrencisi oluşturmuştur. Evrenin tamamına ulaşılmaya çalışılmış fakat uygulama yapıldığı anda mevcut olmayan öğrenciler ile ankete katılmak istemeyen öğrencilere anket uygulanmadığından araştırma 808 öğrenci üzerinde yürütülmüştür. Araştırmada veri toplama aracı olarak, araştırmacılar tarafından geliştirilen kişisel bilgi formu, Öztürk (1995) tarafından geliştirilen "Genel Öğrenme Stratejileri Değerlendirme Ölçeği" ve Kökdemir (2003) tarafından Türkçe'ye uyarlanan "California Eleştirel Düşünme Eğilimi Ölçeği" kullanılmıştır. Verilerin normal dağılım gösterip göstermediği Kolmogorov-Smirnov testi ile incelenmiş ve bu inceleme sonucunda veriler normal dağılım gösterdiğinden dolayı öğrencilerin öğrenme stratejileri ile eleştirel düşünme eğilimleri arasındaki ilişkiyi ortaya çıkarmak için pearson momentler çarpım korelasyon (r) katsayısı tekniğinden yararlanılmıştır. Araştırmada anlamlılık düzeyi için α=0.05 seçilmiştir. Araştırma sonucunda; öğrencilerinin genel öğrenme stratejilerinin tamamını (tekrar, anlamlandırma, zihne yerleştirme, hatırlama, bilişi yönetme, duyuşsal) "sıklıkla" kullandıkları tespit edilmiştir. Yine araştırmada; öğrencilerin doğruyu arama, açık fikirlilik, sistematiklik eleştirel düşünme düzeylerinin düşük; analitiklik, kendine güven ve meraklılık eleştirel düşünme düzeylerinin ise orta olduğu; genel olarak ise düşük düzey eleştirel düşünme eğilimine sahip oldukları saptanmıştır. Son olarak araştırmada, spor bilimleri fakültesi öğrencilerinin öğrenme stratejilerinin tamamı ile eleştirel düşünme eğilimleri arasında çoğunlukla düşük düzeyde pozitif yönlü ilişkiler olduğu tespit edilmiştir.

Anahtar Kelimeler: Öğrenme Stratejileri, Eleştirel Düşünme, Spor Bilimleri, Öğrenci

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INTRODUCTION

The interest to learning strategies has emerged by a turn from behaviorist approaches to cognitive approach. In behaviorist approach, in related to learning, while how the way the material is presented affects learning is dealt with, in cognitive approach, it is tried to be understood how the coming information is processed and structured in the memory[3,22]. In other words, learning strategies have emerged as the instruments and techniques, which will make cognitive process easy or make an active state, based on information processing and coding principles, which are presented in the theory of information processing[19].

Learning strategies consist of the behaviors and thoughts, from which are expected to affect the form of choosing, arranging, and integrating the new information to be taught[1]. The main function of learning strategies is to enable the students to supervise and direct their learning. The students can use the different learning strategies for every subject or case of learning. This also shows that learning strategies are in the diversifiable and changeable quality, if necessary. It can be said that the students, who can utilize the different learning strategies and develop new learning strategies, can realize the most effective learning by themselves[16].

There are many definitions related to learning strategy in the literature. Among these, Gagne and Driscoll (1988) defined learning strategies as “the processes the student use to teach themselves”[7]. The primary aim in learning strategies is to enable the student to teach himself/herself. What is important in using strategy is to determine and use learning strategies that are compatible with the case of learning. Learning strategies include techniques enabling the individual to transfer the stimulations that come to his/her senses to the short and long term memory, and to process in long term memory. These strategies, which make learning easier, also enable to motivate the students and newly learnt behaviors to become permanent[5].

Mayer, who carries out comprehensive studies about learning, collected learning strategies under 8 classes[20].

1. Repetition strategies for the basic learning cases,
2. Repetition strategies for the complex learning strategies
3. Interpretation strategies for the basic learning cases,
4. Interpretation strategies for the complex learning cases,
5. Organization strategies for the basic learning cases,
6. Organization strategies for the complex learning cases,
7. Strategies for following comprehension
8. Affective and motivational strategies

According to Epstein (1999), critical thinking is a defense against the world, in which there is a lot of information, and many people try to persuade us[4]. The ability of critical thinking is rid of wavering the individual between not confirmed claims and thoughts. Reasoning and criticism toward finding the truth is necessary for the cognitive developments of individuals.

Being able to critically think and make effective decision are the cognitive skills, which an educated individual has to have [14]. Critical thinking is a motor driving information production. In a democratic society, that the individuals have the skills of critically thinking and that they use the skills of critically thinking and making decisions in the solution of complex social problems are very important. According to the views of educational philosophers, critical thinking is an inseparable part of education, not one of the options, which can be used in teaching process[15].

Critical thinking is a process, which is based on the experience of research, intuition and logic, and which has universal values and it is used in the difficulties faced. It needs thinking from every aspect and, sometimes, opposite thinking. What is underlying it is the ability to be able to observe our own thoughts and interpret these. It also enables to solve the problems more consciously and make decision effectively [21].

In the light of this information, in the study, it was aimed to examine between general leaning strategies and tendencies of critical thinking of the students studying in the Faculty of Sports Sciences, Selcuk University.

MATERIAL AND METHOD

Model of the Study

In this study, carried out in compatible with relational scanning model, it was attempted to be introduced whether or not there was a relationship between learning strategies of the students and their critical thinking dispositions. Relational browsing models are research models aimed at determining the presence and/or extent of change between two or more variables [12].

Universe and Sample

The universe of the study consists of total 1030 students studying in the departments of Physical Education and Sports, Sports Management, Coaching Education, and Recreation of the Faculty of Sport Sciences, Selcuk University, in the educational year of 2015-2016.

All universe was attempted to reach but since the survey was not administered to the absent students at the moment application was made and those not wanting to participating in the survey, the study was carried out on 808 [$n_{(male=551)}$, $n_{(female=257)}$] students.

The number of official student and students responding survey, obtained by exchanging correspondence with student administration office of Selcuk University Faculty of Sports Sciences are given in Table 1 in detail.

Table 1. The Number of Official Students Enrolled in the Faculty of Sports Sciences, Selcuk University

	1st Grade	2nd Grade	3rd Grade	4th Grade	Total
Physical Education and Sports	51	56	51	91	249
Sports Management	40	40	40	52	172
Sport Management (Evening Education)	38	42	41	51	172
Coaching Education	40	45	38	64	187
Coaching Education (Evening Education)	37	38	37	64	176
Recreation	36	-	-	-	36
Recreation (Evening Education)	38	-	-	-	38
General Total	280	221	207	226	1.030
The Number of Students Responding Questionnaire					
Teaching of Physical Education and Sports	38	40	28	78	184
Sports Management	40	35	30	45	150
Sport Management (Evening Education)	35	34	40	40	149
Coaching Education	37	38	31	33	139
Coaching Education (Evening Education)	36	31	32	30	129
Recreation	29	-	-	-	29
Recreation (Evening Education)	28	-	-	-	28
General Total	243	178	161	226	808

Data Collecting Instruments

In the study, as data collecting instrument, Personal Information Form, developed by the researchers, Assessment Scale for General Learning Strategies, developed by Öztürk (1995)[17], and California Critical Thinking Disposition Inventory, adapted by Kökdemir (2003) to Turkish, for measuring critical thinking dispersions were utilized[13].

Assessment Scale for General Learning Strategies

In the stage of developing the scale by Öztürk (1995), the relevant literature was reviewed and, after the structure of information processing model, the flow of information in intellectual processes from this point of view, and main points, which can be effective in this flow are studied, each of seven main points, identified in the first stage was accepted as strategy[17]. These 7 strategies forming the scale are Attention Strategy, Repetition Strategy, Interpretation Strategy, and Strategy of Placing in the Mind, Recall Strategy, Strategy of Cognition Managing, and Affective Strategy. For making these 7 learning strategies more functional, the main tactics each strategy includes and stages used in implementing these tactics were determined as student behavior and a total of 63 behaviors (6 attentions, 9 repetition, 19 interpretation, 6 placing in memory, 6 recalls, 9 cognition managing, and 11 affective) under 7 strategies were developed. In order to identify the use frequency of each behavior, 5-point classification scale (never, very little, sometimes, frequently, always) was adopted. In identification of validity of assessment scale, the views of a total of 11 teaching members (4 from Educational Programs and Teaching area, 4 from Psychological Services in Education area, and 3 from Educational Technology) are from as 4 from Hacettepe University and 7 from Gazi University) were received and, in the direction of their views, the necessary arrangements were carried out. The assessment draft revised was reexamined by the same teaching members and made ready for the application. In order to identify whether or not the scale prepared was understandable, a pilot study was carried out on 40 students and the items the students had difficulties in understanding were identified and corrected. With the same way, in the different 20 people from this group, a second application was carried out and the scale draft was brought into its final state[17]. In providing the reliability of the scale, test-retest method was used. For this aim, the same scale was administered for two times to a group of 106 people from the Faculty of Vocational Education, not included in the scope of study, with intervals of one week and correlation coefficient of the points obtained at the end of this application was calculated, based on the scores of each strategy. According to data obtained, correlation coefficients between two applications were calculated as .64 for Attention Strategy, .71 for repetition strategy, .74 for interpretation strategy, .61 for Strategy of Placing in the Mind, .71 for Recall Strategy, .79 for Cognitive Managing Strategy, and .64 for Affective Strategies[17].

In the analysis of data related to general learning strategies the students in the scope of study use, the scale was not dealt with a whole and the scores of the dimension of each strategy were obtained. Since 5th question taking place in the sub dimension of Strategy for Placing in the Mind and 2nd, 3rd, 6th, 7th, 8th, 9th, and 11th questions taking place in the sub dimension of Affective Strategy are negative, they were scored in the opposite direction. By dividing the scores obtained by the numbers of item/tactic, the levels of the students in that dimension were obtained. According to this, the use levels of the students general learning strategies were scored according to the ranges of 1.00–1.79, never; 1.80-2.59, very little; 2.60-3.39,

sometimes; 3.40–4.19, frequently; and 4.20–5.00, always[11].

California Critical Thinking Disposition Inventory (CCTDI)

Original scale consists of 7 subscales and 75 items[6]. While internal consistency coefficients of subscales ranged between .60 and .78, internal consistency coefficient for total score was found as .90 [10]. As a result of the studies of validity and reliability, carried out by Kökdemir (2003), since CCTDI showed a different structure from its original one, it fell to 6 subscales and a total of 51 items[13]. The numbers of items taking place in subscale are 10 for analyticalness, 12 for open-mindedness, 9 for curiousness, 7 for self-confidence, 7 for searching for the truth; and 6 for systematicity. In the scale, 5-point rating was used to assign maximum 6 points for the option "I definitely agree with it" and minimum 1 point for the option "I disagree with it at all". The reliability coefficients of subscales were identified as .75 for analyticalness, .75 for open-mindedness, .78 for curiousness, .77 for self–confidence, .61 for searching for the truth, and .63 for systematicity. Total internal consistency coefficient of the scale was found as .88. For all of California Critical Thinking Disposition Inventory, it was stated that the critical thinking dispositions of the people, whose scores are less than 240 (40x6), were lower, while these dispositions of the people, whose scores are more than 300 (50 x 6), were higher.

Analysis of the Data

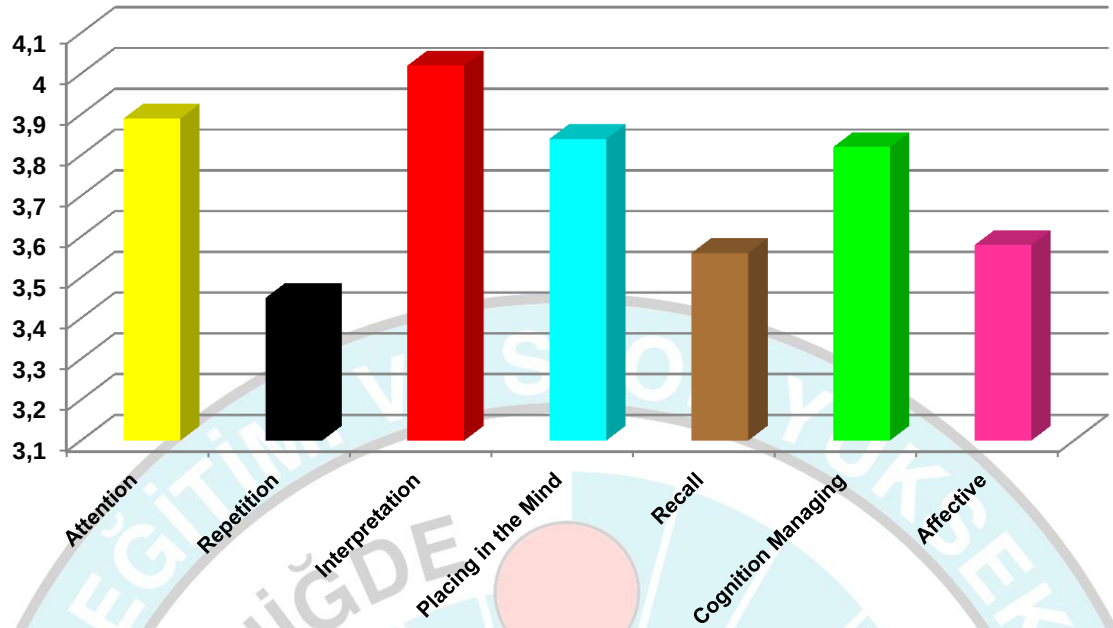
Whether or not the data shows normal distribution was examined by Kolmogorov-Smirnov and, as a result of this examination, since the data showed normal distribution, Pearson product-moment correlation coefficient (r) technique were utilized to reveal the relationship between the relationship between learning strategies of the students and their critical thinking dispositions. In the study, α=0.05 was chosen for significance level.

FINDINGS

808 daytime and evening education students studying in the departments of Physical Education and Sports Teaching, Sport Management, Coaching Education, and Recreation of the Faculty of Sport Sciences, Selcuk University, in Spring Semester in the educational year of 2015-2016 participated in the study. Of the students participating in the study, 68.2% were male$_{(n=551)}$, 31.8% were female$_{(n=257)}$; 35% had sports management$_{(n=283)}$, 33.3% were trained in coaching$_{(n=269)}$, 23.4% were physical education and sport teachers$_{(n=189)}$, 8.3% were studying in recreation$_{(n=67)}$; 29.6% of them were in Class 1$_{(n=239)}$, 24.6% were in the 4th grade$_{(n=199)}$, 23.4% were in the 2nd grade$_{(n=189)}$, 22.4% were in the third grade$_{(n=181)}$; 47.3% were aged 20-22 years$_{(n=382)}$, 29.5% were 23-25 years old$_{(n=238)}$, 18.3% were 17-19 years old$_{(n=148)}$, 5% were found to be in the group of 26 years or older$_{(n=40)}$.

Table 2. The Levels of the Students about Using General Learning Strategies

	n	$\bar{x}$	Ss	Min	Max	
Attention Strategy	808	3.89	0.59	1.00	5.00	
Repetition Strategy	808	3.45	0.53	1.00	5.00	1.00-1.79 Never
Interpretation Strategy	808	4.02	0.75	1.00	5.00	1.80-2.59 Very little
Strategy for Placing in the Mind	808	3.84	0.55	1.50	5.00	2.60-3.39 Sometimes
Recall Strategy	808	3.56	0.67	1.00	5.00	**3.40-4.19 Frequently**
Cognition Managing Strategy	808	3.82	0.66	1.00	5.00	4.20-5.00 Always
Affective Strategy	808	3.58	0.71	1.64	4.73	

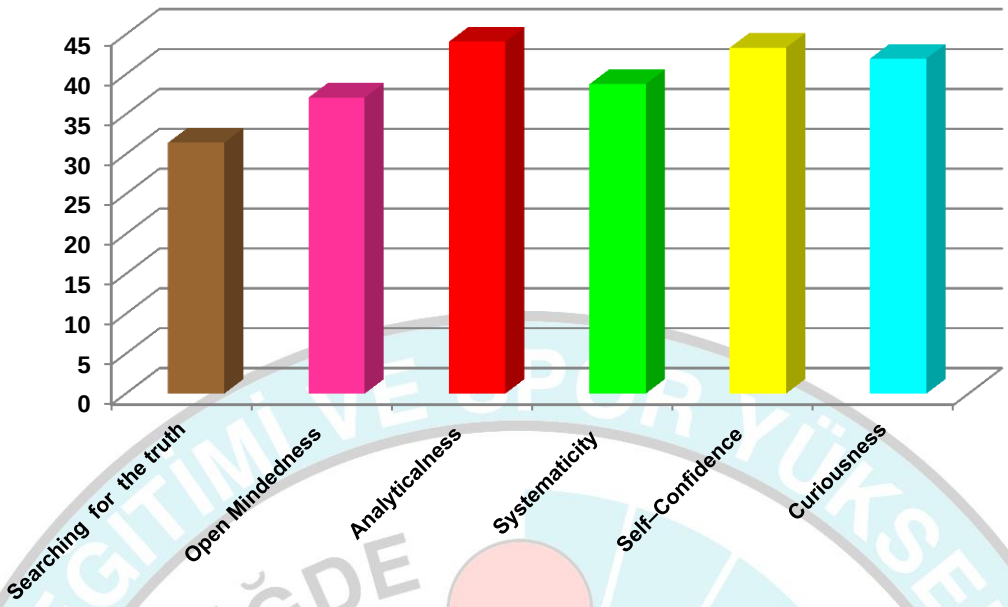


Graph 1. The Levels of the Students Utilize General Learning Strategies

When Table 2 and Graph 1 are examined, it was identified that among general learning strategies, the students of Faculty of Sports Sciences were frequently used attention ($\overline{X}$ =3.89), repetition ($\overline{X}$ =3.45), interpretation ($\overline{X}$ =4.02), placing in the mind ($\overline{X}$ =3.84), recall ($\overline{X}$ =3.56), cognition managing ($\overline{X}$ =3.82), and affective ($\overline{X}$=3.58) strategies.

Table 3. The Mean Scores of the Scores Regarding California Critical Thinking Disposition Inventory (CCTDI) and Its Subscales (n=808)

	X	SS	Range	Min.	Max.
Searching for the truth	31.44	6.33	48.57	10.00	58.57
Open Mindedness	37.09	6.34	46.67	13.33	60.00
Analyticalness	44.11	6.47	42.00	18.00	60.00
Systematicity	38.78	5.56	48.33	10.00	58.33
Self–Confidence	43.35	7.17	44.29	15.71	60.00
Curiousness	41.99	6.49	47.78	12.22	60.00
CCTDI	236.78	20.70	155.37	156.10	311.48



Graph 2. The Mean Scores of the Scores Regarding California Critical Thinking Disposition Inventory (CCTDI) and Its Subscales

When Table 3 and Graph 2 are examined, the definitive statistical results of California Critical Thinking Disposition Inventory (CCTDI) and its subscales are presented. While the minimum score to be able to receive from all CCTDI is 60 and maximum score is 360, the mean CCTDI scores of the students are 236.78±20.70, the minimum score received is 156.10 and maximum score is 311.48. The minimum score to be able to receive from each subscale is 10 and maximum point is 60. In this context, when mean score of subscale is examined, the mean score of subscale "searching for the truth" is 31.44±6.33; subscale "open mindedness", 37.09±6.34; subscale "analyticalness", 44.11±6.47; subscale "systematicity", 38.78±5.56; subscale "self-confidence", 43.35±7.17; and subscale "couriousness", 41.99±6.49.

According to the general assessment score of the inventory, it is stated that general critical thinking dispositions of the people, whose scores are less than 240, are low; those having the score between 240 and 300, medium; and those having the score more than 300, high. Again, for each scale, those having less than 40 points are accepted at the level of high critical thinking; those having the points between 40 to 50, medium; and those having the points 50 and over, high.

Table 4. The Results of Pearson–Product Moment Correlation Coefficient Carried Out For Identifying the Relationship between Learning Strategies of the Students and Their Critical Thinking Dispositions

		Searching for the truth	Open-Mindedness	Analyticalness	Systematicity	Self-Confidence	Curiousness	CCTDI
Attention	r	-0.041	0.115**	0.127**	0.103**	0.230**	0.111**	0.205**
	p	0.245	0.001	0.000	0.003	0.000	0.002	0.000
Repetition	r	-0.068	0.033	0.169**	0.083*	0.145**	0.121**	0.153**
	p	0.052	0.351	0.000	0.019	0.000	0.001	0.000
Interpretation	r	-0.156**	0.226**	0.218**	0.186**	0.415**	0.128**	0.324**
	p	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Placing in the mind	r	-0.143**	0.137**	0.198**	0.102**	0.334**	0.153**	0.251**
	p	0.000	0.000	0.000	0.004	0.000	0.000	0.000
Recall	r	0.080*	-0.069	0.102**	-0.022	-0.088*	0.128**	0.039
	p	0.023	0.050	0.004	0.530	0.012	0.000	0.272
Cognition Managing	r	-0.053	0.099**	0.243**	0.116**	0.218**	0.148**	0.243**
	p	0.131	0.005	0.000	0.001	0.000	0.000	0.000
Affective	r	-0.093**	0.305**	0.175**	0.271**	0.367**	0.086*	0.347**
	p	0.008	0.000	0.000	0.000	0.000	0.015	0.000

In Table 4, the relationship between the dimensions of general learning strategy and their critical thinking was examined. As a result of this examination, it was identified that;

There was a positive directional at the low level between attention strategy and their critical thinking dispositions of open-mindedness (r=0.115; P<0.01), analyticalness (r=0.127; P<0.01), systematicity (r=0.103; P<0.01), self-confidence (r=0.230; P<0.01), curiousness (r=0.111; P<0.01), and general critical thinking dispositions (r=0.205; P<0.01);

That there was a positive directional at the low level between the repetition strategy of the students and their critical thinking dispositions of analyticalness (r=0.169; P<0.01), sytematicity (r=0.83; P<0.01), self-confidence (r=0.145; P<0.01), curiousness (r=0.121; P<0.01) and general thinking dispositions (r=0.153; P<0.01);

that there was a negative directional at low level between interpretation strategies of the students and their critical thinking dispositions of searching for the truth (r=-0.156; P<0,01), while there was a positive directional at low level between critical thinking dispositions of open-mindedness (r=0.226; P<0.01), analyticalness (r=0.218; P<0,01), systematicity (r=0.186; P<0.01), self-confidence (r=0.415; P<0.01), curiousness (r=0.128; P<0.01) and general critical thinking dispositions (r=0.324; P<0,01);

that there was a negative directional at the low level between placing in the mind strategy of the students and their critical thinking dispositions of searching for the truth, while there was a positive directional at low level between critical thinking dispositions of open-mindedness (r=0.137; P<0.01), analyticalness (r=0.198; P<0.01), systematicity (r=0.102; P<0.01), self-confidence (r=0.334; P<0.01), coriousness (r=0.153; P<0.01) and general critical thinking dispositions (r=0.251; P<0.01);

that there was a positive directional at the low level between recall strategies of the students and their critical thinking

dispositions of searching for the truth (r=0.080; P<0.05), analyticalness (r=0.102; P<0.01) and curiousness (r=0.128; P<0.01), while there was a negative directional at low level between this strategy and critical thinking dispositions of self–confidence (r=-0.088; P<0.05);

That there was a positive directional relationship at low level between cognition managing strategy of the students and their critical thinking dispositions of open–mindedness (r=0.099; P<0.01), analyticalness (r=0.243; P<0.01), systematicity (r=0.116; P<0.01), self–confidence (r=0.218; P<0.01), curiousness (r=0.148; P<0.01) and general thinking dispositions (r=0.243; P<0.01), and

that there was a negative directional at the low level between affective strategy of their critical thinking tendencies of searching for the truth (r=0.093; P<0.01); positive directional at the low level between their critical thinking dispositions of open-mindedness (r=0.305; P<0.01) analyticalness (r=0.175; P<0.01), systematicity (r=0.271; P<0.01), curiousness (r=0.086; P<0.01); while there was positive directional at the medium level between critical thinking dispositions of self-confidence (r=0.367; P<0,01) and general critical thinking dispositions (r=0.347; P<0.01).

DISCUSSION AND CONCLUSION

The research conducted to examine the relationship between the level of use of general learning strategies and the tendencies of critical thinking by students studying at the Faculty of Sport Sciences has resulted in the following results:

It was identified that the students of Faculty of Sports Sciences frequently used attention, repetition, interpretation, placing in the mind, recall, cognition managing, and affective strategies among general learning strategies. In terms of mean score, it was seen that they used interpretation at the highest level and repetition strategy at the lowest level (Table 2). There are generally many studies showing parallelism with our study results.

It was identified by Yüksel and Koşar (2001) that the students of Faculty of Education frequently used learning strategies[24], while Weinstein et al (1979) found that postgraduate and undergraduate students frequently used most of learning strategies[23]. In the study, carried out by Çağlayan (2008), the students of Physical Education and Sports College “frequently” used attention, repetition, interpretation, placing in the mind, and cognition managing among learning strategies and “sometimes” affective strategies[2].

In the study, which does not overlap with our study results, and is carried out by Hamurcu (2002), it was identified that the applicants for preschool teaching used the repetition and affective strategies the most[9].

It was identified that the critical thinking levels of searching for the truth, open-mindedness, systematicity are low, while their critical thinking levels of analyticalness, self–confidence, and curiousness are medium (Table 3). According to these results, it is possible for us to say that the students generally have critical thinking disposition at low level. Also in the study, which shows parallelism with our study results, and is carried out, by Güven and Kürüm (2008), the similar results were reached[8]. Güven and Kürüm (2008) concluded that total critical thinking dispositions of teaching applicants were generally at the low level[8].

In the study carried out by Saçlı and Demirhan (2008) to identify critical thinking levels of the students studying in the program of physical education and sports teaching and compare critical thinking levels of the students in terms of

the variables of gender, grade level, and sort of score for access to university, it was stated that the mean score of critical thinking of the students participating in the study 55.85±7.02 and that the students had critical thinking skill at medium level[18]. This study partly overlaps with our study.

It was found that there was a significant relationship between the dimensions of students' general learning strategies and the dimensions of critical thinking tendencies (Table 4). It is possible to make the following comments in the light of these results:

Attention is an important step in realizing the action of critical thinking. For selecting the necessary one among many stimulator coming from environment, it is necessary for that stimulator has some features, which makes that stimulator distinct from the other ones, namely, which causes attention to focus on it. In the general meaning, in parallel with the rise of the levels to use these features, we can say that critical thinking dispositions of open-mindedness, which expresses the tolerance of the person toward the different approaches and his/her sensitivity to their own faults; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; systematicity, which has tendency to research in organized, planned, and careful way; self-confidence, which reflects the confidence the person feels toward his/her reasoning processes as is evident from its name; and curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest, and general critical thinking dispositions will rise.

In parallel with that the students more frequently use the activities such as loudly repeating the subject, repeating and writing down the important parts in mind (repetition strategy), in order to reduce the limitedness of short time memory related to storing information and providing its permanence, we can say that analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; systematicity, which has tendency to research in organized, planned, and careful way; self- confidence, which reflects the confidence the person feels toward his/her reasoning processes; and curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest, and general critical thinking dispositions will rise.

In parallel with that the activities such as asking questions, summarizing the information, keeping note, determining outlines, etc. used to relate the new information with the existing information and enable them to pass long term memory are more frequently used (interpretation strategy), we can say that the critical thinking dispositions of searching for the truth meaning to measure the tendencies of the students to evaluate the alternatives or the thoughts different from each other will decrease, while critical thinking tendencies of open-mindedness, which expresses the tolerance of the person toward the different approaches and his/her sensitivity to their own faults; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; systematicity, which has tendency to research in organized, planned, and careful way; self-confidence, which reflects the confidence the person feels toward his/her reasoning processes, as is evident from its name; and curiousness, which reflects the tendency of person to acquire information and

learn new things, without having any expectation of gain and interest, and general critical thinking dispositions will rise.

"Placing in mind" strategy, which enables the all information encountered to be coded by using classification, scheme, etc. for providing easiness in understanding and placing in the mind, includes the activities such as forming hierarchical structures, identifying contrasts, and forming schemes. In the general meaning, in parallel with the rise of the use levels of the students about this subject, we can say that the critical thinking dispositions, which mean to measure the tendencies of the students to evaluate the alternatives or the thoughts different from each other will decrease, while the critical thinking dispositions of open-mindedness, which expresses the tolerance of the person toward the different approaches and his/her sensitivity to their own faults; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; systematicity, which expresses tendency to research in organized, planned, and careful way; self-confidence, which reflects the confidence the person feels toward his/her reasoning processes, as is evident from its name; and curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest, and general critical thinking dispositions will rise.

With the rise of the level the students use recall strategy, which is defined as bringing the information from long term memory, we can say that critical thinking dispositions of searching for the truth meaning to measure the tendencies of the students to evaluate the alternatives or the thoughts different from each other; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest will rise; while critical thinking disposition of self-confidence, which reflects which reflects the confidence the person feels toward his/her reasoning processes, as is evident from its name will decrease.

In parallel with the rise of that the levels the students use the cognition managing strategy, which means how the individual learns, and that he/she can effectively arrange his/her own learning, we can say that critical thinking dispositions of open-mindedness, which expresses the tolerance of the person toward the different approaches and his/her sensitivity to their own faults; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; of systematicity, which has tendency to research in organized, planned, and careful way; self-confidence, which reflects the confidence the person feels toward his/her reasoning processes, as is evident from its name; and of curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest, and general critical thinking dispositions will rise.

In parallel with that the level the students use affective strategy used to be able to overcome the difficulties, resulted from emotional factors, we can say that critical thinking dispositions of searching for the truth, which means to measure the tendencies of the students to evaluate the alternatives or the thoughts different from each other will decrease; while open-mindedness, which expresses the tolerance of the person toward the different approaches and his/her

sensitivity to their own faults; analyticalness, which expresses the tendency to be careful against the cases that can potentially stir up trouble, to reason and use objective evidence even in the face of difficult problems; systematicity, which has tendency to research in organized, planned, and careful way; curiousness, which reflects the tendency of person to acquire information and learn new things, without having any expectation of gain and interest; and self-confidence, which reflects the confidence the person feels toward his/her reasoning processes, as is evident from its name; an and general critical thinking dispositions will rise.

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