Examining the Importance of Critical Thinking Skills of School Administrators and Teachers' Regarding Their Personal and Professional Lives*

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Abstract
The need for qualified managers and teachers who will improve and give importance to critical thinking skills and accept these skills as a philosophy of life in educational institutions has increased recently. It is unexpectable that managers and teachers who do not improve themselves in terms of critical thinking skills such as analytical thinking, questioning, research, synthesis, analysis and evaluation can contribute to institutions or students. These skills may influence the whole life of students. In this regard, the research purposed to examine how much school administrators and teachers give importance to critical thinking skills in their personal and professional lives. In this frame, it was also aimed at determining whether the importance of critical thinking skills of administrators and teachers would significantly differ in terms of age, seniority, gender, professional seniority, branch, administrative seniority, educational status and the number of in-service training taken variables. The research was carried oud with a survey method. The population of research consisted of school administrators and teachers from formal high schools in Basaksehir, Esenyurt, Avcılar and Beylikduzu townships at the European side of Istanbul. The data were collected through "Critical Thinking Tendency Scale (CTTS). The results revealed that school administrators and teachers give importance to critical thinking skills at medium level both in their professional and personal lives. Although significant difference was found in age, professional seniority and in-service training variables, there is no significant difference in gender, branch and educational status variables. It is suggested that teachers' critical thinking skills be improved during their pre-service education.

Keywords: School Manager, Teacher, Student, Critical Thinking

Introduction

Critical thinking is one of the most important skills that contributes to students' lives in educational systems. Mankind gets also independent thinking skill along with the critical thinking. Socrates defined critical thinking as "evaluating something good or bad" (Ruppel, 2005). If students' critical thinking skills are not improved, they may meet difficulties in live.

Critical thinking means evaluating, judging and identifying everything both with good and bad aspects. Çelikkaya (2012) defines critical thinking as a process which requires high-level cognitive skills such as analysis, synthesis and evaluating the accuracy and fallacy of a situation. Nevertheless, there is not an agreed definition of critical thinking as a result of trying to define it in terms of different disciplines such as philosophy (Şahinel, 2007). A teacher's support in students' critical thinking systems is considered important as their point of view towards world. Only a teacher who thinks in a critical way can form an environment which develops critical thinking, because an individual as a social actor not only creates the social environment but also is created by this social environment (McLaren, 2011). In this context, only a teacher who thinks in a critical way can raise students think critically (Karaşahin, 2009; Peterson & Deal, 2002; Schreglmann, 2011).

Problem Situation

The results of either national and international comparison exams such as PISA (International Student Evaluation Programme) and TIMSS (International Mathematics and Science Survey) or national exams such as LGS (High School Entrance Exam), YGS (Higher Education Entrance Exam), LYS (Undergraduate Placement Test) (New names: LKS (High school Registration System), TYT (General Proficiency Test), YKS (Higher Education Institutions Exam)) cause the education system to be questioned. Besides, it is still discussed that the cognitive qualities of students getting out of the school

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system are under the expected level. When the exam results are analyzed, it is understood that students have difficulty with questions requiring high level of thinking. For instance, if the reading skills are taken into consideration, students mostly have difficulty with long paragraph questions which are based on reading and comprehension.

It will be more appropriate to find the reasons of students' being under the expected performance in the reality of our education system's not preparing students to think at high level. It is seen that in the Turkish education system the number of memorizing questions is more than the number of questions based on critical thinking both in high school and university entrance exams. However, we do not prepare students to life with an education system based on memorization; on the contrary we hebetate even students with high capacity. Whereas students are expected to use their knowledge and put it into practice, think, discuss and improve different points of view. In his survey Korkmaz (2009) reached the idea that teachers' critical thinking tendency and levels are insufficient. It is only possible if school administrators and teachers give importance to critical thinking and instilment of this to students. For this reason, the research purposed to examine how much school administrators and teachers give importance to critical thinking skills in their personal and professional lives. In this frame, it was also aimed at determining whether the importance of critical thinking skills of administrators and teachers would significantly differ in terms of age, seniority, gender, professional seniority, branch, administrative seniority, educational status and the number of in-service training taken variables.

Sub problems

1. How much importance do school administrators give to critical thinking in their professional lives?
2. How much importance do school administrators give to critical thinking in their personal lives?
3. How much importance do teachers give to critical thinking in their professional lives?
4. How much importance do teachers give to critical thinking in their personal lives?
5. Does the importance of critical thinking skills for school administrators differ according to age, gender, professional seniority, branch, management seniority, educational status and the number of pre-service training variables?
6. Does the importance of critical thinking skills for teachers differ according to age, gender, professional seniority, branch, management seniority, educational status and the number of pre-service training variables?

The research is expected to fulfill an important gap in Turkish education system about the related matter. The mentioned research is estimated to provide important contributions to academicians, researchers, decision makers, politicians and students from both the field and out of the field.

Method

In this part, research method, population and sample, instrument, data collection and data analysis process, validity and reliability studies are explained.

Research Model

This study was carried out with a survey research method. A survey research is a research model which aims at determining a past or still-continuing situation (Karasar, 2016). Another feature of survey research is known as being generic. It has the capacity to make generalization about the population depending on data collected from the sample. The aim of survey research is to define nature and features of objects, societies, institutions and events (Metin, 2014).

Population and Sample

Research Population

The population of the research consisted of the school administrators and high school teachers working in public high schools in European side of İstanbul. Working population of the study is school administrators and teachers in public high schools in Başakşehir, Esenyurt, Avcılar and Beylikdüzü in European side of İstanbul. There are 296 schools and 5,184 teachers in Başakşehir; 173 schools and 3,805 teachers in Esenyurt; 167 schools and 2,409 teachers in Avcılar; 205 schools and 4,160 teachers in Beylikdüzü. The given districts are among the biggest districts of İstanbul in terms of population and localization and it is thought that these districts can provide important data regarding demographic circumstances. In these districts, there are so many different people in terms of socio-economic and socio-

cultural aspects. Based on this, there are enough number and kinds of secondary education institutions in these districts to illustrate this structure. In other words, in these districts there are either schools for students from the highest income group or schools for students from the lowest income groups. It is interpreted that there are great differences between among school administrators and teachers in terms of age, education and socio-economic features. There will not be a separate sample of 134 teachers and administrators as whole the managers and teachers are in content of research population.

Data Analysis

The results are analyzed with SPSS Statistics 22 program. As the sampling of the study was large parametric tests were implemented. Minimum and maximum values and stability, errors are checked. Statistical analysis about the subject are made and findings are interpreted accordingly.

Instrument

In the ongoing research, "Critical Thinking Tendency Scale" developed Akbıyık (2002) was used and the study of validity and reliability was made. The Cronbach alpha coefficient internal consistency reliability of the original scale was calculated as 0,87. There were 30 items in the original form of scale. However; 1item was excluded as it had contradictory statements. The items were Likert style and graded from (1) Certainly Disagree to (5) certainly Agree". In the factor analysis, all the items in scale were collected in one dimension. As a result the validity and reliability analysis, the scale consisted of 29 items. The Cronbach alpha coefficient internal consistency reliability of the scale was recalculated and found as 0,812 and it was given in Table 1.

Table 1. Reliability Study

Cronbach's alpha (Reliability coefficient)	N of items (Number of items)
,812	29

The reliability coefficient of the scale is calculated as 0,81. This demonstrates that it is a reliable scale.

Results

The research purposed to examine how much school administrators and teachers give importance to critical thinking skills in their personal and professional lives. In this frame, it was also aimed at determining whether the importance of critical thinking skills of administrators and teachers would significantly differ in terms of age, seniority, gender, professional seniority, branch, administrative seniority, educational status and the number of in-service training taken variables. In this regard, a number of results were obtained. In this part, the results were presented.

Table 2. The most and least valued items in the scale

Items	$\bar{X}$	Std. deviation	max	min
25. I give importance to gather as much information as needed about the study when I am required to make a decision	4.55	,4980	5	4
20.I do not give importance to reasons of problems	2,00	,9725	4	1

In table 2, there are items which take maximum and minimum arithmetic means regarding the importance of critical thinking for teachers and school administrators. The item which has the maximum value is 25th item "*I give importance to collect as much information as needed about the study when I am required to make a decision" with* x=4, 5 arithmetic value. In the same scale the item that has the lowest arithmetic means is 20.th item "*I do not give importance to the reasons of problems"* with arithmetic value x=2, 0. It can be interpreted that managers and teachers have a tendency to critical thinking as they give importance to collecting data when they are asked to make a decision. On the other hand, it is understood that managers and teachers do not give enough importance to find the reasons of their problems.

1. Results Related To First Sub problem of The Research

The first sub problem of the research is **"**How much importance do school administrators give to critical thinking in their professional lives?" In this regard, the results are as follows:

Table 3. Results related to importance of critical thinking of managers regarding their professional lives

Items	$\bar{X}$	Std. deviation	max	min
25. I give importance to gather as much information as needed about the study when I am required to make a decision	4.55	,4980	5	4
13. I do not give importance to discuss the parts of situation in frame of rules when I am required to make decision about a complicated subject.	2,04	1,091	5	1

In table 3, there are maximum and minimum items about importance of critical thinking skills for managers in their professional lives. The item that has the highest arithmetic value is *"I give importance to gather as much information as needed about the study when I am required to make a decision"* (x=4, 5*).* It can be interpreted that they give importance to gather as much information as needed about the study when I am required to make a decision. In the same scale, the item that has the lowest arithmetic means is ''*I do not give importance to discuss the parts of situation in frame of rules when I am required to make decision about a complicated subject"* (x=2,04). It is understood that managers **do not give importance to discuss the parts of situation in frame of rules when I am required to make decision about a complicated subject."** This situation may be related to the similarity between the process of making decision and complicated processes such as problem solving, so they may consider moving according to some rules while evaluating the processes about a complicated situation.

Table 4. Results of ANOVA Test Regarding the Importance of Critical Thinking Skills of Managers

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	218,033	4	54,508	1,930	,109
Within Groups	3671,40	130	28,242		
Total	3889,43	134			

Groups (Managers and seniority)	N	$\bar{X}$	SS
1-5 years	43	61,232	6,342
6-10 years	48	58,979	4,813
11-15 years	25	58,400	5,500
16-20 years	15	58,000	2,927
+21 years	4	61,250	3,947

In table 4, there is one way ANOVA variance analysis which is a parametric test to see whether the importance of critical thinking for managers differ according to professional seniority. It is seen that there is not a significant difference statistically as a result of variance analysis ($F_{(4,130)}$=1,930, p<0,05).

2. Results Related To Second Sub problem of The Research

In this context, the second sub problem of the research is "How much importance do school administrators give to critical thinking in their personal lives? The results were presented as follows:

Table 5. Questions with the highest and the lowest values from the answers of managers

Items	$\bar{X}$	Std. deviation	max	min
5. It is important for me to exactly understand a question before answering it	4.49	,5007	5	4
4. Reasoning the reliability of the source of information is not important for me	1,87	1,048	5	1

In table 5, the item with the highest arithmetic means is "It is important for me to exactly understand a question before answering it" (x=4, 49). In the same scale the item with the lowest arithmetic means is "Reasoning the reliability of the source of information is not important for me" (x=1, 87)". This situation

may be interpreted that managers and teachers do sense-making study during cognitive process before giving an answer to the question, so it can be said that managers and teachers allow for critical thinking. The 5th item with the highest arithmetic means shows that managers and teachers try to understand the question before giving an answer and put it into critical thinking process.

Table 6. The results of ANOVA test according to the seniority variance of managers

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	170,298	4	42,574	,993	,414
Within Groups	5573,45	130	42,873		
Total	5743,74	134			

Groups (Managers and seniority)	N	$\bar{X}$	SS
1-5 years	43	40,162	7,690
6-10 years	48	38,083	6,150
11-15 years	25	38,480	6,481
16-20 years	15	37,733	3,195
+21 years	4	42,250	7,320

In table 6, one way ANOVA variance analysis as a parametric test was used to see whether statistics of managers differ in group determination or not. It is seen that there is not a significant difference statistically as a result of variance analysis ($F_{(4.130)}$ =,993, p<0,05) .

3. Results Related to Third Sub problem of The Research

Third sub problem of the research is "How much importance do teachers give to critical thinking in their professional lives?" The results were presented below:

Table 7. The average of teachers' answers to professional questions

Items	$\bar{X}$	Std. deviation	max	min
The average of teachers' answers to professional questions	3.63	,32530	4,71	3,06

In table 7, it is seen that teachers "agree" to professional questions regarding the critical thinking (x=3, 63). This result illustrates that teachers use critical thinking skills at a good level. However; it is concluded that teachers need to improve themselves in critical thinking as they are just above the score interval of "Indecisive" on Likert scale.

4. Results Related To Fourth Sub problem of The Research

The fourth sub problem of the research is "How much importance do teachers give to critical thinking in their personal lives?" The results were presented below:

Table 8. The average of teachers' answers to personal questions

Items	$\bar{X}$	Std. deviation	max	Min
The average of teachers' answers to personal questions	2,94	,47073	4,43	2,21

In table 8, it is concluded "disagree" as a result of teachers' answers (x=2, 94) on the scale of critical thinking skills. The result demonstrates that teachers use critical thinking skills at a medium level which means that teachers are required to improve themselves in this matter. It should be known that it will not be a suitable approach for a teacher who doesn't give enough importance to critical thinking skills to expect students to be competent in this matter.

5. Results Related To Fifth Sub problem of The Research

The fifth sub problem of the research "Does the importance of critical thinking skills for school administrators differ according to age, gender, professional seniority, branch, management seniority, educational status and the number of pre-service training variables". The results were given below:

Table 9. One Way ANOVA test results of managers according to variance of age

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	114,098	6	19,016	53,33	,000
Within Groups	45,635	128	,357		
Total	159,733	134			

TUKEY Test Results

Groups (Age Range)	n	$\bar{X}$	Std. Deviation
21-25 ages	7	1,000	,0000
26-30 ages	29	1,241	,4355
31-35 ages	34	1,706	,5239
36-40 ages	28	2,286	,5998
41-45 ages	15	3,133	,7432
46-50 ages	11	3,273	,9045
+51 ages	11	4,182	,7508

In table 9, the results of One Way ANOVA test are seen in terms of the importance of critical thinking skills for managers according to age variance. It is understood that there is a significant difference regarding managers' age variable. Tukey test was administered to understand the source of the difference. Tukey test results showed that the biggest difference was between the 46-50 and +51 ages. This can be concluded that these managers in these ranges give less importance to critical thinking skills.

Table 10. The independent t test results of managers according to gender variable

Gender	N	$\bar{X}$	SS	Sd	T	p
Female	164	98,652	11,085	313	-,517	,605*
Male	151	99,317	11,744			

*p<,605

In table 10, it was understood that there was not a significant difference in critical thinking skills according to gender variable (p<,605). In this regard, it can be said that gender variance does not make a difference.

Table 11. One Way ANOVA test results of managers according to professional seniority

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	65,155	4	16,289	22,390	,000
Within Groups	94,578	130	,728		
Total	159,733	134			

TUKEY Test Results

Groups (Professional Seniority)	N	$\bar{X}$	Std. Deviation
1-5 years	21	1,857	1,314
6-10 years	59	1,712	,7890
11-15 years	35	2,286	,6217
16-20 years	14	3,429	,7559
+21 years	6	4,333	,8165

In table 11, One Way ANOVA test results present the importance of managers' critical thinking skills regarding professional seniority variable. Results showed that professional seniority has a significant

difference. Tukey test was used to understand the source of this difference. As a result of Tukey test, it was found that the biggest source came from the ones belonged to 16-20 years and +21 years of professional seniority group. This illustrates that with Professional experience managers may develop better critical thinking skill comparing to the other groups.

Table 12. One Way ANOVA test results of managers regarding to branch variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,785	3	1,262	1,060	,369
Within Groups	155,948	131	1,190		
Total	159,733	134			

Branch	N	Mean	Std. Deviation
English Teacher	14	2,571	1,3425
Maths and Science	55	2,182	1,2185
Social Sciences	43	2,186	,8523
Others	23	1,913	,9960

In table 12, a parametric test One Way ANOVA was used to see whether managers' branch cause a significant difference. As a result of variance analysis, no significant difference was found ($F_{(4,130)}$=1,621, p<0,05).

Table 13. One Way ANOVA test results of managers regarding the management seniority variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	45,219	4	11,305	15,615	,000
Within Groups	94,114	130	,724		
Total	139,333	134			

TUKEY Test Result

Management seniority	N	Mean	Std. Deviation
1-5 years	43	1,767	,5706
6-10 years	48	2,417	,6790
11-15 years	25	2,920	,8622
16-20 years	15	3,267	1,4376
+21 years	4	4,000	2,0000

Table 13 shows One Way ANOVA results of the managers regarding seniority variance. It was understood that management seniority has a significant difference. Tukey test was used to see the source of the difference. It is obvious from the Tukey test that difference is mostly from management seniority range groups between 16-20 years and +21 years. It can be said that year by year managers develop critical thinking skills regarding seniority.

Table 14. One Way ANOVA test results of managers regarding educational status

Educational status	N	Mean	Std. Deviation
Graduate	95	2,168	1,0483
Post-graduate	40	2,200	1,2026

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,028	1	,028	,023	,879
Within Groups	159,705	133	1,201		
Total	159,733	134			

In table 14, a parametric test One Way ANOVA was used to see whether managers' education variable differ statistically. Results showed that there was no significant difference ($F_{(1,133)}$=,023, p<0,0). It can be said that having a graduate degree does not make a difference.

Table 15. One Way ANOVA test results of managers regarding the number of pre-service training

The number of pre-service training	N	Mean	Std. Deviation
1-5	8	1,125	,3536
6-10	41	1,439	,5937
11-15	39	1,846	,5399
+16	47	3,277	,9487

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	92,280	3	30,760	59,738	,000
Within Groups	67,454	131	,515		
Total	159,733	134			

Table 15 illustrates the One Way ANOVA test results. Results showed that the number of pre-service training has a significant difference. Tukey test was used to see the source of the difference. It was found that those who had 16 or more pre-service training has the biggest influence. It can be commented that these trainings may have helped managers to develop critical thinking skills comparing to other groups.

6. Results Related To Sixth Sub problem of The Research

The sixth and last sub problem of the research is "Does the importance of critical thinking skills for teachers differ according to age, gender, professional seniority, branch, management seniority, educational status and the number of pre-service training variables?".

Table 16. One Way ANOVA test results of teachers regarding age variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	105,512	6	17,585	23,302	,000
Within Groups	232,437	308	,755		
Total	337,949	314			

Groups (Age Range)	n	$\bar{X}$	Std. Deviation
21-25 years	94	1,330	,7813
26-30 years	102	1,863	,7041
31-35 years	50	2,220	,7637
36-40 years	28	2,643	,8262
41-45 years	16	3,063	1,0626
46-50 years	11	3,182	1,3280
+51 years	14	3,000	1,8397

Table 16 includes One Way ANOVA test results of teachers regarding age variable. Results illustrated that there is a significant difference regarding age variable. Tukey test was applied to find the source of it and the main source of the difference is from senior teachers. This means that senior teachers give less importance to critical thinking skills.

Table 17. Independent Simples T test results of teachers regarding gender variable

Gender	N	$\bar{X}$	SS	Sd	T	p
Female	164	98,652	11,085	313	-,517	,605*
Male	151	99,317	11,744			

*p<,605

In table 17, it is understood from t test results that there is not a difference regarding gender variable (p<,605). In this context, it can be said that gender variance does not cause a difference.

Table 18. One Way ANOVA test results of teachers regarding professional seniority variable

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	244,897	4	61,224	32,444	,000
Within Groups	584,989	310	1,887		
Total	829,886	314			

Tukey test results

Professional seniority	N	Mean	Std. Deviation
1-5 years	123	1,789	1,4099
6-10 years	112	2,500	1,2376
11-15 years	50	3,240	1,1350
16-20 years	21	4,429	1,6903
+21 years	9	5,444	2,5550

Table 18 shows One Way ANOVA test results regarding professional seniority variable. It is understood that professional seniority variance has a significant difference. Tukey test is applied to see the source of it. Results showed that teachers with 16-20 years and +21 years of professional seniority have a different frame of mind concerning giving importance to critical thinking skills comparing to other other groups.

Table 19. One Way ANOVA test results of teachers regarding branch variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,268	3	1,423	1,326	,266
Within Groups	333,681	311	1,073		
Total	337,949	314			

Branch	N	Mean	Std. Deviation
English teacher	43	1,860	1,0137
Maths and Science	115	2,139	1,1538
Social Sciences	95	1,905	,8639
Others	62	1,919	1,0604

In table 19, One Way ANOVA results were presented. Results proved that there is not a significant difference regarding branch variable ($F_{(3,111)}$=1,326, p<0,05).

Table 20. One Way ANOVA test results regarding educational status variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,220	1	,220	,204	,652
Within Groups	337,730	313	1,079		
Total	337,949	314			

Educational status	N	Mean	Std. Deviation
Graduate	221	2,005	1,0423
Post-graduate	94	1,947	1,0304

In table 20, One Way ANOVA results were presented. Results showed that there is not a significant difference regarding educational status ($F_{(1,313)}$=,204, p<0,05). In this context, it can be commented that education does not make any difference.

Table 21. One Way ANOVA test results of teachers regarding the number of pre-service training variable

Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	100,232	3	33,411	43,710	,000
Within Groups	237,718	311	,764		
Total	337,949	314			

Tukey Test Results

The number of pre-service training	N	Mean	Std. Deviation
1-5	123	1,415	,7780
6-10	95	1,968	,7502
11-15	48	2,479	,8989
+16	49	2,980	1,2330

In table 21, One Way ANOVA test results were given. Results showed that there is a significant difference regarding the number of pre-service trainings taken. Tukey test was applied to find the source. Test results showed that teachers who had more than 16 pre-service trainings have higher critical thinking skills. This demonstrates that the higher the number of pre-service training, the more importance to critical thinking skills will be given.

Conclusion, Discussion and Suggestions

The research purposed to examine how much school administrators and teachers give importance to critical thinking skills in their personal and professional lives. In this frame, some results were obtained. These results were presented below.

1. The results revealed that school administrators and teachers give importance to critical thinking skills at medium level both in their professional and personal lives. Yücel (2013) and Korkmaz (2009) found similar results. He found that critical thinking tendency of preservice teachers is either at medium or mostly at low level. However, Naktiyok and Çiçek (2014) found that managers have critical thinking skills at minimum level.
2. According to another result, teachers and managers resemble when critical thinking skills are considered. While evaluating difficult situations like problem solving, they behave with certain rules.
3. According to another result, it is seen that managers and teachers try to understand a question properly in their cognitive processes before giving an answer to the question, which shows that managers and teachers allow for critical thinking. It is understood that managers and teachers try to understand questions and get into critical thinking process before answering.
4. It is seen that teachers have given the answer of “agree” to critical thinking in their professional lives. This result revealed that teachers use critical thinking skills in their professional lives at a good level. However; teachers who score “I am indecisive” need to improve their critical thinking skills.
5. It is also seen that teachers who score the answer “I am indecisive” to personal lives use critical thinking skills in their personal lives at medium level. This means that teachers who have an important place at the education system need to improve themselves regarding critical thinking skills.
6. It is concluded that age, professional seniority, the number of pre-service trainings have a significant difference for both teachers and managers. However; there is not a significant difference in terms of gender, branch and educational status. This demonstrates that graduate and post-graduate education cannot contribution to teachers and managers regarding critical thinking skills as expected. Yücel (2013) found that there is no significant difference regarding teachers’ gender.

Consequently if the place of critical thinking tendency is stated clearly, the necessity of critical thinking in education programs will also be emphasized with its reasons. When the social problems varying according to societies and their cultures are taken into consideration, it is possible to find a number of reasons to explain and prove the necessity for improving the critical thinking skills of students. Each educational level, each discipline or lecture, during the education process each activity should be designed in accordance with each other to improve students’ critical thinking skills. That’s why it is highly important to take precautions to enable students to have critical thinking skills while preparing the

education programs. However; educators don't reach an agreement about how to teach critical thinking skills, though they share the idea of improving the critical thinking skills along with the education system. The recommendations reached through this study are as follows:

Recommendations

1. As the number of pre-service trainings makes a positive contributions for both teachers and managers, more in service trainings should be organized.
2. In order to teach these skills, programs should contain classes about critical thinking skills at faculty of education.
3. Some thematic activities like philosophy days can be organized at universities.
4. It can be helpful to provide books and journals to schools for both teachers and managers' use.
5. Another mixed research can be conducted to compare results.

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