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Comparison of curiosity levels of physical education teachers to the teachers of other branches

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Abstract

It is thought that a teacher with a sense of curiosity is more effective in arousing sense of curiosity of his/her students. In this regard; the study aimed to determine curiosity levels of branch teachers, to explore whether or not their curiosity levels differed in terms of the variables of gender, age, professional seniority (length of service) and marital status and to compare curiosity levels of physical education teachers to the teachers of other branches. The study was conducted with 388 branch teachers who taught in Kayseri during the academic year of 2011-2012. As the data collection tool; Curiosity Index (CI-3) [which was developed by Ainley (1987) (cited by Fulcher, 2004) and Turkish version of which was made by Demirel and Coşkun (2009)] was used. For the data analyses; descriptive statistics methods such as frequency (n), percentages (%), arithmetical means and standard deviation were used in order to analyze descriptive personal information. In order to detect the differences; such non-parametric tests as Mann Whitney U test and Kruskal-Wallis test were employed because the data did not follow a normal distribution and homogeneity conditions were not obtained in the variables of gender, age, marital status, professional seniority (length of service). In light of the findings; it was found out that curiosity levels of those branch teachers who were aged between 23 and 30, female and single were higher and that curiosity levels of physical education teachers were lower than other branch teachers in Kayseri.

Keywords: Curiosity, physical education teacher, branch teacher, breadth, depth.

Beden eğitimi öğretmenlerinin meraklılık düzeylerinin diğer branş öğretmenlerine göre karşılaştırılması

Özet

Merak duygusuna sahip bir öğretmenin öğrencisinin merak duygusunu harekete geçirmede daha etkili olacağı düşünülmektedir. Bu bağlamda Milli Eğitim Ortaöğretimde görev yapan branş öğretmenlerinin meraklılık düzeylerinin belirlenerek cinsiyet, yaş, mesleki kıdem ve medeni durum değişkenlerine göre farklılaşıp farklılaşmadığını ortaya koymak ve beden eğitimi öğretmenlerinin meraklılık düzeylerini diğer branş öğretmenlerinin meraklılık düzeyleri ile karşılaştırmak amaçlanmıştır. Araştırma, 2011–2012 eğitim-öğretim yılında Kayseri'de görev yapan 388 branş öğretmeni üzerinde gerçekleştirilmiştir. Veri toplama aracı olarak, Ainley (1987) tarafından geliştirilen (Akt. Fulcher, 2004) ve Türkçe 'ye uyarlama çalışmaları Demirel ve Coşkun (2009) tarafından yapılan "Meraklılık Ölçeği (CI-3)" kullanılmıştır. Verilerin analizinde kişisel bilgiler için betimsel istatistik yöntemleri frekans (n), yüzde (%), aritmetik ortalama ve standart sapma kullanılmıştır. Farklığı tespit etmek amacıyla; cinsiyet, yaş, medeni durum, mesleki kıdem değişkenlerinde normal dağılım ve homojenlik koşulları yerine gelmediği için Non-Parametrik testlerden Mann-Whitney U testi ve Kruskall Wallis testi uygulanmıştır. Sonuçlar 0,05 ve 0,01 anlamlılık düzeyinde değerlendirilmiştir. Elde edilen bulgulara göre; Kayseri ilindeki; kadın, 23-30 yaş ve bekar branş öğretmenlerinin meraklılık düzeyleri yüksek ve beden eğitimi öğretmenlerinin meraklılık düzeyi diğer branş öğretmenlerine göre daha düşük bulunmuştur.

Anahtar kelimeler: Meraklılık, beden eğitimi öğretmeni, branş öğretmeni, derinlik, genişlik.

INTRODUCTION

Lately, lifelong learning term in education has often been uttered by educators. Lifelong learning is defined as the set of activities that enhance – personally, socially or professionally- one's knowledge, abilities and proficiency throughout his/her life (3). Lifelong learning comprises some

affective characteristics –particularly- desire to know and curiosity.

Curiosity is defined as a wish to understand or to know something and a desire, eagerness, enthusiasm or worry to acquire, to do and to deal with something (26). According to Faccione et al. (12) and Kökdemir (16); curiosity reflects one's disposition to acquire information and to learn new things without any expectation or interest.

Theoreticians have made different definitions about curiosity motives. Curiosity is defined by Piaget (1952) as a necessity to increase knowledge, by Bruner (1966) as a vital distinguishing mark so that not only mankind but also species can survive, by Freud (1915) as a thirst for knowledge, by Hebb (1955) as a natural tendency of organism towards cognitive processes and by Maslow (1970) as an important element in one's psychological development (20). According to Maw and Maw (1968); a curious individual responds positively to the new, different, mysterious and conflicting events; needs to know more about the environment and himself, tastes new experiences, examines his environment very well and is insistent when investigating a subject (17).

Berlyne -who is considered as doyen of academic studies on curiosity and has examined motivational elements that stimulate curiosity motivation and their effects upon behaviors in his studies- initiated his researches in 1950s (2). In his observational studies that have paved the way for the applied and experimental psychological studies, Berlyne emphasizes that interestingly, even animals -by repressing their physiological needs in some cases- show energetic behaviors that are not driven by life-concern. Therefore; Berlyne states that curiosity helps develop explorative behaviors by increasing motivation or by providing extra motivation (14). According to the curiosity theory of Berlyne, exploration motive is very strong among human beings and creates curiosity; as the result of which the decreased eagerness and other potential motives are optimized while such motives as boredom and dullness are reduced (14). Curiosity also leads to such motives and behaviors as innovation, challenge, paradox and surprise (5).

Curiosity is closely interrelated with lifelong learning. Particularly; it is essential that higher education and university education should offer an educational model that provides the students with a setting suitable for lifelong learning and improvement. Universities should be active by providing students with opportunities that improve their professional abilities as well as lifelong sustainable learning habits.

It may be said that an education of quality is the one designed by a student-centered approach and should provide the students with more insight than the objectives predicted by the program or the topic, make the students think about the topic, increase imagination of the students and enable the students to make constructive criticism. An education of quality should show the students way about what and how to learn. It may be said that only those students who are curious or eager to learn mentally are more open to inquisition. In this sense; it is of high importance for teachers to do activities that trigger motives of curiosity of the students and to use modern teaching methods in the education processes. Pedagogues agree that a well-trained teacher can create a flexible, democratic teaching-learning setting in which students can feel free and express themselves freely, without fear or authority or a rote-learning based education system (15,24,13,6,25). It is essential that teachers be a role model on this point.

The aim of the study was to determine curiosity levels of branch teachers who taught at state high schools. Accordingly; the sub-problems of the study were:

1. What were levels of the curiosity of the branch teachers?

2. Did levels of the curiosity of the branch teachers differ in terms of gender, age, professional seniority (length of service) and marital status?

3. Did levels of the curiosity of the physical education teachers differ as compared with other branch teachers?

MATERIAL & METHOD

In this study, a survey model was used in order to determine levels of the curiosity of the branch teachers and to compare the curiosity of the physical education teachers with other branch teachers.

Study Group

The population of the study was composed of 1480 branch teachers who taught at state high schools in Kayseri city center (Melik Gazi and Koca Sinan). The sample of the study was consisted of a

total of 388 branch teachers (126 female teachers and 262 male teachers) recruited using random sampling method ($mean_{age}$= 33.92±5.88; $mean_{professional\ seniority}$ =9.64±5.87). Table 1 included demographic information about the teachers.

Table 1. Demographic information of the teachers.

		n	%
Gender	Female	126	32.5
	Male	262	67.5
Academic Branch	Physical education	230	59.3
	Verbal -Linguistic	73	18.8
	Scalar	53	13.7
	Foreign Language	32	8.2
Age	23-30 years	129	33.2
	31-40 years	217	55.9
	41-59 years	42	10.8
Professional Seniority (length of service)	1-5 years	109	28.1
	6-10 years	123	31.7
	11-15 years	102	26.3
	≥ 16 years	54	13.9
Marital status	Married	306	78.9
	Single	86	21.1
Total		388	100

Data Collection Tools

The form used to gather data in the study was consisted of two parts. In the first part, "Personal Information Form" was used and in the second part, Curiosity Index (CI-3) [which was developed by Ainley (1) (cited by 14) and Turkish version of which was made by Demirel and Coşkun (10)] was used. The index has two subscales: Breadth (27 items) and Depth (20 items). Breadth is one's searching for information of comprehensive content and diversity. Person wants to have encouraging and different experiences in this subscale of Curiosity Index. Depth is one's curiosity for a specific subject, idea or person and his attempts to learn about them in a continuous way. Person intends to search about his personal field of interest or topic in detail as far as possible in the depth subscale of the Curiosity Index (14, cited by 10). Curiosity index is composed of a total of 47 items. It is 6-point Likert type index. In this study, it was established that the minimum score to be obtained from the index was (47x1) 47 while the highest score was (47x6) 282. Cronbach alpha coefficient in the study was .89 (27 items) for breadth subscale, .88 (20 items) depth subscale and .93 (47 items) for total index and these values were reasonable.

Data Collection

The Curiosity Index was administered to the branch teachers who taught at the state high schools located in Kayseri city center during the academic year of 2011-2012. Prior to this study, the branch teachers were informed of the purpose of the research and were told how important to answer the questions frankly. Administration of the index lasted nearly 10 minutes but it took much time to visit each teachers.

Analysis of the Data

For the data analyses; descriptive statistics methods such as frequency (n), percentages (%), arithmetical means ($\overline{X}$) and standard deviation (Sd) were used in order to analyze descriptive personal information. In order to detect the differences; such non-parametric tests as Mann Whitney U test and Kruskal-Wallis test were employed because the data did not follow a normal distribution and homogeneity conditions were not obtained in the variables of gender, age, marital status, professional seniority (length of service). Level of significance was set at 0.05 and 0.01.

RESULTS

Results related to the first sub-problem

The first sub-question of the study was determined as "What were levels of the curiosity of the branch teachers?". Table 2 presented descriptive statistical results on curiosity levels of teachers.

It was found out that mean depth subscale score of the curiosity index of the branch teachers was mean=96.30±12.52, mean breadth subscale score of the curiosity index of the branch teachers was mean=122.39±16.50 and mean total score was mean =218.70±27.25. Judging by the highest score (282); it may be argued that teacher obtained scores above the average. Mean item score of depth subscale was (96.30/20) 4.81, mean item score of breadth subscale was (122.39/27) 4.53 and mean total score was (218.70/47) 4.65. It may be said that teachers' mean item score of depth subscale was higher than their mean item score of breadth subscale. Table 3 included the items from which highest mean scores were obtained and the items from which lowest mean scores were obtained from the Curiosity Index.

Table 2. Descriptive statistical results on curiosity levels of teachers.

	n	min	max	$\overline{X}$	Sd
Depth	388	42	120	96.30	12.52
Breadth	388	58	162	122.39	16.50
Curiosity Total	388	100	282	218.70	27.25

The 1st (mean=5.37±.88) item and the 5th (mean=5.26±.96) item of the Curiosity Index had the highest mean scores while the 39th item (mean=2.69±1.72) and the 44th mean=2.72±2.67) item had the lowest mean scores (table 3).

Results related to the second sub-problem

The second sub-question of the study was determined as "Did levels of the curiosity of the branch teachers differ in terms of gender, age, professional seniority (length of service) and marital status?". Table 4 presented results on curiosity levels of the branch teachers in terms of gender.

As the result of the Mann Whitney-U test performed to determine whether or not teachers' mean depth scores, breadth scores and total scores of the Curiosity Index changed significantly in terms of gender variable; the difference between the groups was found to be statistically significant ($p<0.01$). Mean depth scores, breadth scores and total scores of female physical education teachers were higher than male physical education teachers. Table 5 presented results on curiosity levels of the branch teachers in terms of teachers' ages.

There was statistically significant difference in teachers' mean depth scores, breadth scores and total scores of the Curiosity Index in terms of age ($p<.05$). As the result of the Mann Whitney test performed among the age groups to explore the cause of the difference, it was seen that the cause of the difference was 23-30 and 31-40 age groups. Curiosity levels of teachers who belonged to 23-30 age group was higher than the teachers of 31-40 age group. Table 6 presented results on curiosity levels of the branch teachers in terms of teachers' professional seniority (length of service).

When table 6 was analyzed, teachers' mean depth scores, breadth scores and total scores of the Curiosity Index did not show any statistically significant difference in relation with professional seniority (length of service) ($p>.05$). It may be suggested that teachers' length of professional service did not affect their curiosity levels. Table 7 presented results on curiosity levels of the branch teachers in terms of branch teachers' marital status.

Table 4. U-test results of curiosity scores in terms of gender.

Index	Gender	N	Median	Z	P
Depth	Female	126	224.37	-3.639	.000*
	Male	262	180.14		
Breadth	Female	126	221.71	-3.315	.001*
	Male	262	181.42		
Curiosity	Female	126	224.67	-3.675	.000*
Total	Male	262	179.99		

* p<.01

As the result of the Mann Whitney-U test performed to determine whether or not teachers' mean depth scores, breadth scores and total scores of the Curiosity Index changed significantly in terms of being married or being single; the difference between the groups was found to be statistically significant in mean breadth scores and mean total index scores ($p<0.05$). It was noted that mean breadth, depth and total index scores of single branch teachers were higher than married branch teachers (table 7).

Table 3. The items from which highest mean scores were obtained and the items from which lowest mean scores were obtained from the curiosity index.

	$\overline{X}$	Sd
Items from which highest scores were obtained		
1. I like learning as much as possible of a topic in order to know it in detail.	5.37	.88
5. I keep doing an activity until I finish it.	5.26	.96
Items from which lowest scores were obtained		
39. I like doing nothing.	2.69	1.72
44. Learning new things really bores me a lot.	2.72	2.62

Table 5. Kruskall Wallis Test results of curiosity scores in terms of age.

Index	Age	n	Median	X^2	P
Depth	23-30 age	129	217.40	8.833	.012*
	31-40 age	217	180.41		
	41-59 age	42	196.98		
Breadth	23-30 age	129	218.48	8.911	.012*
	31-40 age	217	181.76		
	41-59 age	42	186.68		
Curiosity Total	23-30 age	129	219.19	9.931	.007**
	31-40 age	217	179.90		
	41-59 age	42	194.12		

*p<.05, **p<.01

Table 6. Distribution of curiosity scores in terms of professional seniority (length of service).

Index	Professional Seniority (Length of Service)	n	Median	X^2	P
Depth	1-5 years	109	209.20	2.909	.406
	6-10 years	123	192.87		
	11-15 years	102	186.04		
	16 ≥ years	54	184.51		
Breadth	1-5 ≥	109	211.41	5.595	.133
	6-10 ≥	123	197.22		
	11-15 ≥	102	175.38		
	16 ≥ years	54	190.27		
Curiosity Total	11-5 years	109	211.80	4.817	.186
	6-10 years	123	194.34		
	11-15 years	102	178.17		
	16 ≥ years	54	190.78		

Table 7. Distribution of Curiosity Scores In Terms of Marital Status

Index	Marital Status	n	Median	Z	P
Depth	Married	306	188.58	-2.010	.044*
	Single	82	216.60		
Breadth	Married	306	186.48	-2.723	.006**
	Single	82	224.45		
Curiosity Total	Married	306	186.69	-2.650	.008**
	Single	82	223.64		

*p<.05, **p<.01

Table 8. Distribution of Curiosity Scores In Terms of Branches

Index	Branches	n	Median	X	P
Depth	Physical Education	230	163.67	45.539	.000*
	Verbal -Linguistic	73	235.21		
	Scalar	53	227.61		
	Foreign languages	32	268.36		
Breadth	Physical Education	230	177.24	20.331	.000*
	Verbal -Linguistic	73	206.86		
	Scalar	53	209.04		
	Foreign languages	32	266.25		
Curıosity Total	Physical Education	230	169.97	32.832	.000*
	Verbal -Linguistic	73	219.16		
	Scalar	53	219.71		
	Foreign languages	32	272.83		

* P<.01

Results related to the third sub-problem

The third sub-question of the study was determined as "Did levels of the curiosity of the physical education teachers differ as compared with other branch teachers?". Table 8 presented results on curiosity levels of the teachers in terms of their branches. It was seen that there was statistically significant difference in mean depth scores (Z=45.539; p=.000, p<.01), mean breadth scores Z=20.331; p=.000, p<.01) and mean total scores of the Curiosity Index (Z=-32.832; p=.000, p<.01) in terms of

branches (p<.01). In order to explore the cause of the difference; pairwise Mann Whitney test was performed.

According to the results of the test; it was seen that there was a statistically significant difference between physical education teachers and teachers of verbal-linguistic courses in mean depth subscale scores (Z=-4.668; p=.000, p<.01) and total score of Curiosity Index (Z=-3.212; p=.001, p<.01) whereas no statistically significant difference existed in mean breadth subscale scores (Z=-1.889; p=.059, p>.05). Accordingly; depth subscale and total Curiosity Index level of teachers of verbal-linguistic courses such as Turkish, Geography were higher than physical education teachers.

It was observed that there was a statistically significant difference between physical education teachers and teachers of scalar courses in mean depth subscale scores (Z=-3.919; p=.000, p<.01), mean breadth subscale scores (Z=-2.003; p=.045, p<.05) and total score of Curiosity Index (Z=-3.081; p=.002, p<.01). In other words; depth subscale, breadth subscale and total Curiosity Index levels of teachers of scalar courses such as Scalar, Physics, Biology and Chemistry were higher than physical education teachers.

It was discovered that there was a statistically significant difference between physical education teachers and teachers of foreign languages in mean depth subscale scores (Z=-4.841; p=.000, p<.01), mean breadth subscale scores (Z=-4.139; p=.000, p<.01) and total score of Curiosity Index (Z=-4.716; p=.000, p<.01). In other words; depth subscale, breadth subscale and total Curiosity Index levels of teachers of English and German courses were higher than physical education teachers.

Also; the items from which highest mean scores and lowest mean scores were obtained were analyzed in relation with branches. When teachers were examined in terms of being physical education teachers, verbal-linguistic teachers, scalar-teachers and foreign language teachers; it was understood that the items from which highest mean scores and lowest mean scores were obtained were similar. The items from which highest mean scores were obtained were the 1st item "I like learning as much as possible of a topic in order to know it in detail.", the 5th item "I keep doing an activity until I finish it." and the 2nd item "I can always spare time for a topic I am interested in in order to investigate it." whereas the items from which lowest mean scores were obtained were the 39th item "I like doing nothing." and the 44th item "Learning new things really bores me a lot".

DISCUSSION

The study aimed to determine curiosity levels of branch teachers, to explore whether or not their curiosity levels differed in terms of the variables of gender, age, professional seniority (length of service) and marital status and to compare curiosity levels of physical education teachers to the teachers of other branches.

It was found out that teachers' curiosity levels were above the average (218.70). In the study of Demirel and Çoşkun (10) on university students and the study of Deringöl et al. (11) on candidate primary school teachers, it was reported that curiosity levels of the university students were above the average, too; which was in agreement with our study. In our study, teachers' mean depth item score was higher than mean breadth item score. Therefore, it may be concluded that teachers were more interested in searching a topic in a detailed way rather than searching for information of comprehensive content and diversity.

When teachers' mean curiosity index scores were examined in terms of gender, it was seen that the difference was more significant on behalf of female teachers; which made us conclude that curiosity was a dominant characteristics among female teachers than male teachers. The study of Demirel and Çoşkun (10) on university students reported that curiosity levels of male students were higher whereas in the study of Deringöl et al. (11) curiosity levels of female students were higher. In many studies that investigated curiosity levels as a sub-dimension of critical thinking tendency; it was demonstrated that gender did not affect curiosity levels of university students (18,27,9,21,22,23,8,7). McBride (19) argued that curiosity levels of female physical education teachers were higher than male physical education teachers. In our study conducted with teachers, it may be suggested that female teachers are more interested in and eager in searching certain topics, participating in different activities and enlivening their lives.

When physical education teachers' mean curiosity index scores were examined in terms of age, it was seen that curiosity levels of those who belonged to 23-30 age group were higher than the

teachers of 31-40 age group. It may be maintained that younger teachers may wish to experience encouraging and different activities and may be more enthusiastic to know new things about their interests.

When physical education teachers' mean curiosity index scores were examined in terms of professional seniority (length of service), it was noted that professional seniority (length of service) did not affect curiosity levels. We were of the opinion that teachers –regardless of their professional seniority (length of service)- are more eager to spare more time for their interests, to experience new things, to participate in different activities and to focus on a topic for a long time. In a study conducted by Bahadır and Certel (4) on physical education teachers, it was pointed out that teachers whose professional seniority (length of service) was between 1 and 6 years had higher curiosity levels. It was found out that marital status (being married or being single) affected curiosity levels of teachers. Curiosity levels of single teachers were higher. It may be suggested that single teachers who have neither spouses nor children have more time to participate in different activities and to focus on a topic in depth.

It was discovered that a statistically significant difference existed among the teachers in terms of academic branches. Curiosity levels of physical education teachers were lower than teachers of verbal-linguistic courses, scalar courses and foreign languages; which was not the expected result. Teaching and learning processes at the school of physical education are interdisciplinary and multidisciplinary. Curiosity levels of physical education teachers who are thought to be participating in different activities both during professional life and academic life are expected to be high. Our study was conducted in Kayseri province located in Central Anatolian Region; the cultural, environmental and other factors of which are very different from other regions and therefore, these factors are thought to have affected and to have shaped curiosity characteristics of the teachers in our study. In this sense; we are of the opinion that similar studies should be made in provinces located in other geographical regions with both teachers and candidate teachers and should be compared with each other in order to obtain more realistic results.

As a conclusion; it was understood that curiosity levels of those branch teachers who were aged between 23 and 30, female, single and taught at high schools were higher and curiosity levels of physical education teachers were found to be lower than other branch teachers in Kayseri Province. It is very essential that teachers possess sense of curiosity which is a sub-dimension of critical thinking tendency so that they can educate individuals who can easily adapt to different conditions, are flexible, can think freely and have lifelong learning approach. Today; especially physical education teacher should have sense of curiosity in order to develop curiosity motivation in psycho-motor area. In this regard; physical education teachers should be assisted with on-job trainings so that they can teach using effective and active teaching methods and techniques by raising curiosity, can professionally upgrade themselves, can have more effective abilities to reach, to use and to produce information. As a recommendation; it is expected that studies with larger sample groups which will uncover the factors affecting curiosity and will compare curiosity levels of physical education teachers during academic education and professional life will contribute to the literature.

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