International Journal on New Trends in Education and Their Implications
January 2014 Volume: 5 Issue: 1 Article: 03 ISSN 1309-6249

INVESTIGATING PRE-SERVICE TEACHERS' INFORMATION LITERACY IN TERMS OF DEMOGRAPHICAL DATA

Assist. Prof. Dr. Dilek ÇAĞIRGAN GÜLTEN
İstanbul University
Hasan Ali Yücel Faculty of Education
Department of Primary Education
Istanbul, TURKEY

Dr. Yasemin DERİNGÖL KARATAŞ
İstanbul University
Hasan Ali Yücel Faculty of Education
Department of Primary Education
Istanbul, TURKEY

ABSTRACT

In today's world, where information is produced, diversified, disseminated and shared, pre-service teachers are known to be in a never-ending learning process. In this context, it is important to study pre-service teachers' skills of identifying information needs, obtaining, structuring and using information and taking into consideration ethical and legal values in this process. Teachers play an important role in accessing information and bringing up well-qualified generations. Therefore, this research aims to investigate pre-service teachers' information literacy. The research was carried out with survey model, and the research sampling consisted of pre-service elementary and mathematics teachers enrolled in the education faculty of a state university in İstanbul. A survey form that consists of demographical features and "Information Literacy Scale" developed by Adıgüzel (2011) were used as data collection tools. SPSS 19.0 Statistical Package was used for the statistical analysis of the data. The findings of the research are expected to contribute not only to the literature but also to training of mathematics and elementary teachers. In addition to this, they are anticipated to pave the way for further research.

Key Words: Pre-service mathematics teachers, pre-service elementary teachers, information literacy and information.

INTRODUCTION

Learning by oneself (independent learning) and information literacy have become an integral part of lifelong learning in the 21st century. Information literates are those who know how to access, interpret and use information appropriately (Henderson and Scheffer, 2003). Besides, they are ready for any change and challenge that their professional careers and private lives bring forth (Korkut and Akkoyunlu, 2008). In traditional sense, literacy is a static ability of decoding letters of an alphabetic system, whereas it means a developable ability that aims to interpret everything with a message today. In this context, information literacy, which has a contributory role in alleviating the heavy load of information individuals are exposed to in the 21st century, is of great importance due to its functions of not only having the information available in sources but also having the skills of conscious orientation towards information sources, selectivity, critical point of view, reaccess and evaluation (Kurudayıoğlu and Tüzel, 2010).

Information literacy, which requires the efficient use of information sources and centers, means to provide students with skills of finding, evaluating, using and conveying information (Korkut and Akkoyunlu, 2002). These skills are known to be taught most effectively in the process of education (Korkut and Akkoyunlu, 2008). The quality of teachers is a key determining factor of education quality. Therefore, immense production, dissemination and sharing of information has transformed the image of a teacher from someone who knows

substantially to someone who knows how to access information. Well-qualified teachers are those who are aware of the need for information, know how to access, interpret and learn it and produce new information from what they have learnt and able to use this information to solve the problems (Adıgüzel, 2011). ALA (1989) emphasizes the need for redetermining teacher efficacies so that they embrace information literacy efficacies. Thus, as suggested by Korkut and Akkoyunlu (2008), in order to equip students with skills of information literacy, first of all teachers should have these skills and feel themselves competent.

Prospective teachers are candidates enrolled in teacher training programs of education faculties. Therefore, teachers and teacher candidates need to be information literates in order to improve themselves and guide their students (Akkoyunlu and Kurbanoğlu, 2003; Başaran, 2005; Adıgüzel, 2005). Because, teachers who will enable their students to access, use, produce and convey information help students develop their skills of structuring and using information in order to provide interactive and participatory environments (Korkut and Akkoyunlu, 2008). This research was planned moving from the fact that it is crucial to study prospective teachers' skills of identifying information needs, obtaining, structuring and using information and taking into consideration ethical and legal values. It is a fact that elementary and mathematics teachers play important roles in the learning process of students. Therefore, studying prospective mathematics and elementary teachers' information literacies is expected to contribute not only to the literature but also to training of elementary and mathematics teachers.

Aim

This research was carried out for the purpose of investigating pre-service teachers' levels of information literacy. In line with this aim, pre-service teachers' levels of information literacy were studied in terms of gender, department (Mathematics Teaching and Elementary Teaching), computer ownership, Internet and e-mail use. Evaluation of the differences among these variables and the relationships between scale sub-dimensions and total scale scores compose the sub-problems of the research.

METHOD

The research was designed in survey (descriptive-survey) model. Survey model aims to describe the existing situation as it stands in the past or currently (Karasar, 2005).

Research Scope and Sampling

The scope of the research is limited to pre-service mathematics and elementary teachers studying in İstanbul. The sampling of the research, on the other hand, consists of randomly chosen 90 senior pre-service teachers enrolled at the departments of Mathematics Education and Elementary Education of an education faculty in İstanbul.

Data Collection Tools

Personal information form (gender – department - computer ownership - Internet and e-mail use) and "Information Literacy Scale" were used as data collection tools. "Information Literacy Scale" developed by Adıgüzel (2011) is a five-point Likert type scale and is composed of 29 questions. The scale consists of the sub-dimensions of "Information Needs Identification", "Information Access", "Information Use" and "Ethical and Legal Regulations in Information Use". The reliability coefficient of the scale was calculated as .92, whereas it was calculated as .84 in this research. The highest possible score was 145 while the lowest possible score was 29. However, the highest possible score was calculated as 145, the lowest possible score was calculated as 87 and the mean score was calculated as 120.10 in the research.

Data Analysis

Statistical analyses of the data collected in relation to the research problems were carried out using the SPSS19.0 package program. Independent Group t-Test, Kruskal Wallis and Mann Whitney-U tests were used for the analyses of the data depending on the variables. The relationship between the dependent variables was analysed using the Pearson Product-Moment Correlation Coefficient method.

FINDINGS

This section presents the research findings.

Table 1: Results of the Independent Group t Test Performed to Determine Whether Pre-service Teachers' "Information Literacy Scale- ILS" Scores Differ or Not in Terms of Gender

Scores	Gender	N	$\bar{X}$	S	sd	t	p
ILS Dimension 1	Female	58	32,82	3,59	54,415	-,750	,455
	Male	32	33,46	4,36			
ILS Dimension 2	Female	58	45,51	4,77	51,265	-,118	,906
	Male	32	45,65	6,25			
ILS Dimension 3	Female	58	20,89	2,53	51,909	,790	,432
	Male	32	20,40	3,27			
ILS Dimension 4	Female	58	20,70	3,10	64,309	-,200	,842
	Male	32	20,84	3,09			
ILS Total	Female	58	119,94	12,93	53,390	-,137	,891
	Male	32	120,37	16,07			

As presented in Table 1, Independent Group t Test was performed to determine the significant difference between the mean ranks of pre-service teachers' "Information Literacy Scale-ILS" sub-dimensions and total scores in terms of gender. As a result of the analysis, no significant difference was detected between pre-service teachers' Information Literacy Scale-ILS total scores (t= -,137, p>.05) and the sub-dimensions of Information Needs Identification-Dimension 1 (t= -,750, p>.05), Information Access-Dimension 2 (t= -,118, p>.05), Information Use-Dimension 3 (t= ,790, p>.05) and Ethical and Legal Regulations in Information Use-Dimension 4 (t= -,200, p>.05).

Table 2: Results of the Independent Group t Test Performed to Determine Whether Pre-service Teachers' "Information Literacy Scale-ILS" Scores Differ or Not in Terms of Department

Scores	Department	N	$\bar{X}$	S	sd	t	p
ILS Dimension 1	Mathematics	45	33,57	3,18	79,933	1,284	,203
	Elementary	45	32,53	4,42			
ILS Dimension 2	Mathematics	45	46,22	4,65	83,601	1,173	,244
	Elementary	45	44,91	5,88			
ILS Dimension 3	Mathematics	45	21,20	2,30	79,935	1,626	,107
	Elementary	45	20,24	3,19			
ILS Dimension 4	Mathematics	45	21,44	2,45	78,860	2,162	***,033***
	Elementary	45	20,06	3,49			
ILS Total	Mathematics	45	122,44	11,69	80,987	1,597	,114
	Elementary	45	117,75	15,84			

As presented in Table 2, Independent Group t Test was performed to determine the significant difference between the mean ranks of pre-service teachers' "Information Literacy Scale-ILS" sub-dimensions and total scores in terms of department. According to the results of the analysis, there was no significant difference between pre-service teachers' Information Literacy Scale-ILS total scores (t= 1,597, p>.05) and the sub-dimensions of Information Needs Identification-Dimension 1 (t= 1,284, p>.05), Information Access-Dimension 2 (t= 1,173, p>.05) and Information Use-Dimension 3 (t= 1,626, p>.05). The difference between pre-service teachers' arithmetic means and Ethical and Legal Regulations in Information Use-Dimension 4 (t= 2,162, p<.05) was found to be statistically significant. Accordingly, it can be concluded that pre-service mathematics teachers' scores ($\overline{X}$ =122,44) are higher than pre-service elementary teachers' scores ($\overline{X}$ =117,75).

Table 3: Results of the Mann Whitney-U Analysis Perfomed to Determine Whether Pre-service Teachers' "Information Literacy Scale- ILS" Scores Differ or Not in Terms of Computer Ownership

Scores	Presence of Computer	N	S.O.	S.T.	U	Z	P
ILS Dimension 1	Available	82	44,62	354,00	255,500	-1,042	,297
	Non-available	8	54,56	774,00			
ILS Dimension 2	Available	82	44,48	346,00	244,500	-1,193	,233
	Non-available	8	55,94	782,00			
ILS Dimension 3	Available	82	45,53	334,50	325,500	-,037	,971
	Non-available	8	45,19	793,50			
ILS Dimension 4	Available	82	44,95	334,00	283,000	-,650	,515
	Non-available	8	51,13	794,00			
ILS Total	Available	82	44,83	345,50	273,000	-,784	,433
	Non-available	8	52,38	782,50			

As presented in Table 3, Mann Whitney-U analysis was carried out to determine the significant difference between the mean ranks of pre-service teachers' "Information Literacy Scale-ILS" sub-dimensions and total scores in terms of computer ownership. According to the results of the analysis, there was no significant difference between pre-service teachers' Information Literacy Scale-ILS total scores (z= -,784, p>.05) and the sub-dimensions of Information Needs Identification-Dimension 1 (z= -1,042, p>.05), Information Access-Dimension 2 (z= -1,193, p>.05), Information Use-Dimension 3 (z= -,037, p>.05) and Ethical and Legal Regulations in Information Use-Dimension 4 (z= -,650, p>.05).

Table 4: Results of the Kruskal Wallis Test Performed to Determine Whether Pre-service Teachers' "Information Literacy Scale- ILS Scores" Differ or Not in Terms of Internet Use Frequency

Scores	Internet	N	Mean Rank	Chi-Square	Sd	P
Dimension of Information Needs Identification	Less than once a week	11	39,27	2,376	3	,498
	Once a week	08	47,75			
	Several times a week	35	50,16			
	Every day	36	42,38			
	Total	90				
	Less than once a week	11	42,82			
	Once a week	08	41,06			

Dimension of Information Access	Several times a week	35	51,37	2,966	3	,397
	Every day	36	41,60			
	Total	90				
Dimension of Information Use	Less than once a week	11	43,14	1,492	3	,684
	Once a week	08	36,81			
	Several times a week	35	48,39			
	Every day	36	45,35			
	Total	90				
Ethical and Legal Regulations in Information Use	Less than once a week	11	38,68	3,340	3	,342
	Once a week	08	39,38			
	Several times a week	35	51,36			
	Every day	36	43,25			
	Total	90				
Total Scores	Less than once a week	11	38,41	3,314	3	,346
	Once a week	08	42,88			
	Several times a week	35	51,54			
	Every day	36	42,38			
	Total	90				

As presented in Table 4, Kruskal Wallis Test was performed to determine whether "Information Literacy Scale-ILS" scores differ significantly or not in terms of internet use frequency. According to the results of the analysis, there was no significant difference between pre-service teachers' Information Literacy Scale-ILS total scores (x^2= 3,314, p>.05) and the sub-dimensions of Information Needs Identification (x^2= 2,376, p>.05), Information Access (x^2= 2,966, p>.05), Information Use (x^2= 1,492, p>.05) and Ethical and Legal Regulations in Information Use (x^2= 3,340, p>.05).

Table 5: Results of the Kruskal Wallis Test Performed to Determine Whether Pre-service Teachers' "Information Literacy Scale-ILS" Scores Differ or Not in Terms of E-mail Use Frequency

Scores	E-mail	N	Mean Rank	Chi-Square	Sd	P
Dimension of Information Needs Identification	Never	3	9,17	9,404	4	,052
	Less than once a week	14	38,61			
	Once a week	17	43,35			
	Several times a week	38	51,87			
	Every day	18	45,50			
	Total	90				
	Never	3	14,00			

Dimension of Information Access	Less than once a week	14	41,07	11,390	4	**,023**
	Once a week	17	39,76			
	Several times a week	38	54,80			
	Every day	18	39,97			
	Total	90				
Dimension of Information Use	Never	3	28,83	7,231	4	,124
	Less than once a week	14	38,21			
	Once a week	17	45,47			
	Several times a week	38	52,96			
	Every day	18	42,28			
	Total	90				
Ethical and Legal Regulations in Information Use	Never	3	4,50	12,312	4	**,015**
	Less than once a week	14	38,21			
	Once a week	17	45,47			
	Several times a week	38	52,96			
	Every day	18	42,28			
	Total	90				
Total Scores	Never	3	7,00	13,127	4	**,011**
	Less than once a week	14	38,64			
	Once a week	17	41,44			
	Several times a week	38	54,70			
	Every day	18	41,67			
	Total	90				

As shown in Table 5, Kruskal Wallis Test was performed to determine whether "Information Literacy Scale-ILS" scores differ significantly or not in terms of e-mail use frequency. According to the results of the analysis, there was no statistically significant difference between pre-service teachers' Information Literacy Scale-ILS sub-dimensions of Information Needs Identification (x^2= 9,404, p>.05) and Information Use (x^2= 7,231, p>.05). On the other hand, there was a statistically significant difference between the sub-dimension scores of Information Access (x^2= 11,390, p<.05) and Ethical and Legal Regulations in Information Use (x^2= 12,312, p<.05) and total scores (x^2= 13,127, p<.05).

Later, complementary statistical methods were performed to find the source of significant difference between the groups. Since there is not a specific test technique for this purpose, binary comparisons were performed with the non-parametric Mann Whitney-U Analysis.

Table 6: Results of the Mann Whitney-U Analysis Performed to Determine the Source of Significant Difference Between the Mean Ranks of Pre-service Teachers' "Information Literacy Scale- ILS" Scores in Terms of E-mail Use Frequency

Scores	E-mail Use Frequency	N	S.O.	S.T.	U	Z	P
Dimension of Information Access	Never	3	3,50	10,50	4,500	-2,130	**,032**
	Less than once a week	14	10,18	142,50			
	Never	3	5,83	17,50	11,500	-1,488	,146
	Once a week	17	11,32	192,50			
	Never	3	5,50	16,50	10,500	-2,339	**,013**
	Several times a week	38	22,22	844,50			
	Never	3	5,17	15,50	9,500	-1,775	,080
	Every day	18	11,97	215,50			
	Less than once a week	14	16,25	227,50	115,500	-,141	,891
	Once a week	17	15,79	268,50			
	Less than once a week	14	20,11	281,50	176,500	-1,865	,062
	Several times a week	38	28,86	1096,50			
	Less than once a week	14	17,04	238,50	118,500	-,292	,779
	Every day	18	16,08	289,50			
	Once a week	17	21,76	370,00	217,000	-1,940	,052
	Several times a week	38	30,79	1170,00			
	Once a week	17	17,88	304,00	151,000	-,067	,961
	Every day	18	18,11	326,00			
	Several times a week	38	31,43	1194,50	230,500	-1,969	**,049**
	Every day	18	22,31	401,50			
Dimension of Ethical and Legal Regulations in Information Use	Never	3	2,67	8,00	2,000	-2,531	**,012**
	Less than once a week	14	10,36	145,00			
	Never	3	2,33	7,00	1,000	-2,641	**,004**
	Once a week	17	11,94	203,00			
	Never	3	2,50	7,50	1,500	-2,818	**,000**
	Several times a week	38	22,46	853,50			
	Never	3	3,00	9,00	3,000	-2,424	**,011**
	Every day	18	12,33	222,00			
	Less than once a week	14	14,32	200,50	95,500	-,980	,356
	Once a week	17	17,38	295,50			
	Less than once a week	14	20,29	284,00	179,000	-1,844	,065
	Several times a week	38	28,79	1094,00			
	Less than once a week	14	15,75	220,50	115,500	-,411	,694
	Every day	18	17,08	307,50			
	Once a week	17	24,44	415,50	262,500	-1,122	,262
	Several times a week	38	29,59	1124,50			
	Once a week	17	18,71	318,00	141,000	-,402	,708
	Every day	18	17,33	312,00			
	Several times a week	38	30,62	1163,50	261,500	-1,433	,152
	Every day	18	24,03	432,50			
Total Scale	Never	3	3,00	9,00	3,000	-2,290	**,021**
	Less than once a week	14	10,29	144,00			
	Never	3	4,00	12,00	6,000	-2,070	**,040**

	Once a week	17	11,65	198,00			
	Never	3	3,00	9,00	3,000	-2,721	**,001**
	Several times a week	38	22,42	852,00			
	Never	3	3,00	9,00	3,000	-2,424	**,011**
	Every day	18	12,33	222,00			
	Less than once a week	14	15,18	212,50	107,500	-,458	,653
	Once a week	17	16,68	283,50			
	Less than once a week	14	19,82	277,50	172,500	-1,947	,052
	Several times a week	38	28,96	1100,50			
	Less than once a week	14	15,86	222,00	117,000	-,345	,750
	Every day	18	17,00	306,00			
	Once a week	17	22,21	377,50	224,500	-1,802	,071
	Several times a week	38	30,59	1162,50			
	Once a week	17	17,91	304,50	151,500	-,050	,961
	Every day	18	18,08	325,50			
	Several times a week	38	31,22	1186,50	238,500	-1,829	,067
	Every day	18	22,75	409,50			

As presented in Table 6, Mann Whitney-U analysis was performed to find out the source of significant difference between the mean ranks of the "Information Literacy Scale-ILS" total scores and the subdimensions of Information Access and Ethical and Legal Regulations in Information Use in terms of e-mail use frequency. According to the results of the analysis, a significant difference was detected in the sub-dimension of Information Access between pre-service teachers who never use e-mails and those who use e-mails less than once a week: in favor of pre-service teachers who use e-mail less than once a week (z= -2,130; p<.05); between those who never use e-mail and those who use e-mail several times a week: in favor of those who use e-mail several times a week (z= -2,339; p<.05); between pre-service teachers who use e-mail several times a week and those who use e-mail every day: in favor of those who use e-mail several times a week (z= -1,969; p<.05).

A significant difference took place in the sub-dimension of Ethical and Legal Regulations in Information Use between pre-service teachers who never use e-mail and those who use e-mail less than once a week: in favor of those who use e-mail less than once a week (z=-2,531; p<.05); between those who never use e-mail and those who use e-mail once a week: in favor of those who use e-mail once a week (z=-2,641; p<.05); between those who never use e-mail and those who use e-mail several times a week: in favor of those who use e-mail several times a week (z=-2,818; p<.01) and between those who never use e-mail and those who use e-mail every day: in favor of those who use e-mail every day (z=-2,424; p<.05).

With respect to total scale scores, a significant difference was detected between pre-service teachers who never use e-mail and who use e-mail less than once a week: in favor of those who use e-mail less than once a week (z=-2,290; p<.05); between those who never use e-mail and who use e-mail once a week: in favor of those who use e-mail once a week (z=-2,070; p<.05); between those who never use e-mail and who use e-mail several times a week: in favor of those who use e-mail several times a week (z=-2,721; p<.01) and between those who never use e-mail and who use e-mail every day: in favor of those who use e-mail every day (z=-2,424; p<.05).

Table 7: Results of the Pearson Product-Moment Correlation Analysis Performed to Determine the Relationship Between Pre-service Teachers' "Information Literacy Scale-ILS" Total Scores and Dimension Scores

Variables	N	r	P
Total Scale Scores **Dimension of Information Needs Identification**	90	,928	,000
Total Scale Scores **Dimension of Information Access**	90	,977	,000
Total Scale Scores **Dimension of Information Use**	90	,907	,000
Total Scale Scores **Dimension of Ethical and Legal Regulations in Information Use**	90	,877	,000

As shown in Table 7, a positively significant relationship was detected between pre-service teachers' Information Literacy Scale-ILS total scores and the sub-dimension scores of Information Needs Identification (r=,928; p<.01), Internet Access (r=,977; p<.01), Information Use (r=,907; p<.01) and Ethical and Legal Regulations in Information Use (r=,877; p<.01).

CONCLUSION AND DISCUSSION

As a result of the research findings, there was not a statistically significant difference between pre-service teachers' Information Literacy Scale-ILS total scores and sub-dimension scores of Information Needs Identification, Information Access, Information Use, and Ethical and Legal Regulations in Information Use in terms of gender, computer ownership and internet use frequency. Pre-service mathematics teachers' scores were higher than the scores of pre-service elementary teachers in terms of department in the sub-dimension of Ethical and Legal Regulations in Information Use. Another finding is that pre-service teachers' Information Literacy Scale-ILS total scores and sub-dimension scores of Information Access, Ethical and Legal Regulations in Information Use differed significantly in terms of e-mail use frequency. The difference was in favor of those who used e-mail more frequently. The last finding is that there was a positively significant relationship between pre-service teachers' Information Literacy Scale-ILS total scores and the total scores they got from the sub-dimensions of Information Needs Identification, Information Access, Information Use and Ethical and Legal Regulations in Information Use.

According to the research results, it can be concluded that pre-service teachers' levels of information literacy are not relevant to gender and female and male pre-service teachers have similar levels of literacy. The researches by Korkut and Akkoyunlu (2008), Ata and Baran (2011), Usluel (2006), Kahyaoğlu (2011) also support this finding. The research by Kahyaoğlu (2011) also supports the finding that pre-service teachers' levels of information literacy do not differ in terms of computer ownership and internet use frequency. On the other hand, Ata and Baran (2011) found out that self-efficacy perceptions of information literacy differed significantly in terms of computer ownership and internet use frequency. Generally speaking, it can be concluded that pre-service teachers in the sampling have high levels of information literacy and hence, their information literacy levels are not influenced by these variables.

Another finding is that pre-service teachers' e-mail use frequency differentiated with respect to the dimensions of Information Access, Ethical and Legal Regulations in Information Use, and total scale scores. Accordingly, it can be said that pre-service teachers in the sampling use e-mail in order to access information and pay attention to ethical regulations. According to Akkoyunlu and Yılmaz (2005), as pre-service teachers' skills of information literacy increase, the frequency of Internet use increases as well. Therefore, the differences in

information literacy levels in terms of e-mail use frequency would have been expected to occur in terms of internet use frequency, too. As suggested by Atav et al. (2006), pre-service teachers use the Internet to do research and assignments in their daily life. In this context, students' e-mail use can be said to be relevant to their internet use. Actually, it can be concluded that students use the internet to e-mail and thus, to access information. However, the fact that there was not any difference in the sub-dimensions of Information Needs Identification and Information Use has been evaluated as a controversial finding.

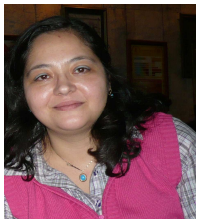
The finding regarding pre-service teachers' information literacy levels in terms of department has been interpreted as that it was due to the courses taken in mathematics education program. However, this finding has been viewed as controversial due to lack of similar research. On the other hand, a positively significant relationship was identified between pre-service teachers' total and sub-dimension scores of the Information Literacy Scale-ILS. That means pre-service teachers' information literacies grow as their activities regarding Information Needs Identification, Information Access, Information Use and Ethical and Legal Regulations in Information Use increase.

As is known, it will be possible to train well-qualified teachers when the characteristics necessary for teachers are integrated into teacher training programs. Therefore, standards of quality pertaining to the realms of new literacy have to be determined in order to equip teachers with efficacies such as information literacy. Teachers' endurance to ever-increasing information is ensured by learning how to access information rather than learning a great load of information. Thus, teachers should be trained as literates in many fields, particularly in information literacy (Adıgüzel, 2005). In line with this aim, the following suggestions can be put forward for further research and researchers:

- Pre-service teachers' information literacies can be studied qualitatively in the dimensions of information needs identification and information use.
- Pre-service teachers' information literacies can be studied in terms of grade levels and departments in education faculties.
- The relationship between information literacies and Internet&e-mail use frequency can be investigated in terms of different variables.
- Since this research is limited to senior pre-service math and elementary teachers studying in İstanbul, it can further be conducted with a broader scope and sampling.
- Quantitative and qualitative researches could be carried out to investigate pre-service teachers' information literacies taking into consideration other variables.

IJONTE's Note: This article is the revised form of the paper presented at the International Conference on New Trends in Education - ICONTE-2013 on 25-27 April 2013, Antalya, Turkey.

BIODATA AND CONTACT ADDRESSES OF AUTHORS



Assist. Prof. Dr. Dilek ÇAĞIRGAN GÜLTEN currently employed as an Assistant Professor at Istanbul University, Hasan Ali Yücel Faculty of Education, Department of Mathematics Education. She is specifically interested in contemporary approaches in instruction, approaches and techniques of teaching, creative drama, curriculum evaluation, lifelong learning, perceptual learning styles, individual differences in learning, the teaching of mathematics and learning of mathematics.

Assist. Prof. Dr. Dilek ÇAĞIRGAN GÜLTEN
Istanbul University, Hasan Ali Yücel Faculty of Education
Department of Primary Education, Istanbul, TURKEY
Tel: 0212 440 00 00/26064
E. Mail: dilek.cgulten@gmail.com

Research Assistant Dr. Yasemin DERİNGÖL KARATAŞ employed as a Research Assistant at Istanbul University, Hasan Ali Yücel Faculty of Education, Department of Mathematics Education and Primary School Teacher Training Program. She is specifically interested in gifted education, creativity in mathematics, approaches and techniques of teaching, curriculum evaluation, individual differences in learning, the teaching of mathematics, and learning of mathematics.

Dr. Yasemin DERİNGÖL KARATAŞ
Istanbul University, Hasan Ali Yücel Faculty of Education
Department of Primary Education, Istanbul, TURKEY
Tel: 0212 440 00 00/26064
E. Mail: yderingl@gmail.com

REFERENCES

Adıgüzel, A. (2005). Avrupa Birliğine Uyum Sürecinde Öğretmen Niteliklerinde Yeni Bir Boyut: Bilgi Okuryazarlığı [A New Dimension of Teacher Qualities During Adaptation Process to European Union: Information Literacy], *Milli Eğitim Dergisi,* 167, 355-363.

Adıgüzel. A. (2011). Bilgi Okuryazarlığı Ölçeğinin Geliştirilmesi [The Development of the Scale of Information Literacy], *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, 17 (2011), 15-28.

Akkoyunlu, B. ve Kurbanoğlu, S. (2003). Öğretmen Adaylarının Bilgi Okuryazarlığı Ve Bilgisayar Öz-Yeterlik Algıları Üzerine Bir Çalışma [A Study On Teacher Candidates' Perceived Information Literacy Self-Efficacy and Perceived Computer Self-Efficacy], *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi,* 24(1), 1- 10.

Akkoyunlu, B., Yılmaz, E. (2005). Öğretmen Adaylarının Bilgi Okuryazarlık Düzeyleri İle İnternet Kullanım Sıklıkları Ve İnternet Kullanım Amaçları [Prospective Teachers' Information Literacy Level, Internet Usage Frequencies and Purposes of their Internet Usage], *Eğitim Araştırmaları*, 19, 1-14.

ALA (American Library Association). (1989) "Presidential committee on information literacy final report". [Online], Retrieved on 20-March-2013, at URL: http://www.ala.org/acrl/publications/whitepapers/presidential

Ata, F., & Baran, B. (2011). Investigation of Undergraduate Students' Information Literaciy Self–Efficacy According to Foreign Language Level, Gender, Computer Ownership and The Internet Connection Duration, 5th International Computer & Instructional Technologies Symposium, 22-24 September 2011, Fırat University, Elazığ- TURKEY.

Atav, E. , Akkoyunlu, B., Sağlam, N. (2006). Öğretmen Adaylarının İnternete Erişim Olanakları Ve Kullanım Amaçları [Prospective Teachers' Internet Access Facilities and Their Internet Usage], *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 30, 37-44

Başaran, M. (2005). Sınıf öğretmeni adaylarının bilgi okuryazarlıklarının değerlendirilmesi [Evaluation of Preservice Primary School Teachers Information Literacy], [Elektronik Versiyonu]. GÜ, *Gazi Eğitim Fakültesi Dergisi,* C. 25, S. 3, 163-177.

Henderson, Martha V. ve Scheffler, Anthony J. (2003). New Literacies, Standards And Teacher Education, *Education,* 124; 2, 390–396.

Kahyaoğlu, M. (2011). Fen Bilgisi Öğretmen Adaylarının Bilgi Okur-Yazarlığı Becerileri İle İnternet Kullanımına Yönelik Tutumları Arasındaki İlişkinin Değerlendirilmesi [Evaluation The Relation Between Science Teacher

Candidates' Attitudes Toward Use of Internet and Information Literacy Skills], *Eğitim Teknolojileri Araştırmaları Dergisi,* 2(3).

Karasar, N. (2004). Bilimsel Araştırma Yöntemi [Scientific Research Method], 13. Baskı, Ankara: Nobel Yayın Dağıtım.

Korkut, E. ve Akkoyunlu, B. (2008). Yabancı Dil Öğretmen Adaylarının Bilgi Ve Bilgisayar Okuryazarlık Öz-Yeterlikleri [Foreign Language Teacher Candidates' Information and Computer Literacy Perceived Self Efficacy], *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 34, 178-188.

Kurbanoğlu, S. ve Akkoyunlu, B. (2002). Bilgi Okuryazarlığı: Bir İlköğretim Okulunda Yürütülen Uygulama Çalışması [Information Literacy: A Study Applied in a Primary School], *Türk Kütüphaneciliği,* 16(1), 20 – 41.

Kurudayıoğlu, M. ve Tüzel, S. (2010). 21. Yüzyıl Okuryazarlık Türleri, Değişen Metin Algısı ve Türkçe Eğitimi [The Types of Literacy of the 21st Century, Changing Text Comprehension and Turkish Teaching], *Türklük Bilimi Araştırmaları,* Güz 2010, S.28, 283-298.

Usluel Y.K. (2006). Öğretmen Adayları ve Öğretmenlerin Bilgi Okuryazarlığı Öz-yeterliliklerinin Karşılaştırılması [Comparison of Prospective Teachers' and Teachers' Information Literacy Self – Efficacy], T 22, 233-243.