

*

(%50)

(130)

(TBSL)

.(SPSS)

.(0.05= α)

(10)

:

.(Meichtry, 1993)

(UNSCO,

(Mayer)

1992)

.(1997)

(National

Research Council (NRC) 1996)

)

.(1998

(Mckee and Ogle, 2005)

2008/3/12

.2009/1/18

*

/

(Kouba, Champagn,
.Piscitelli, Havasy, White and Hurley, 1998)

...

.(Meichtry, 1993; Bingle Gaskell, 1994)

.(Hazen, 2002)

(Chiappetta and Collettee,

1989)

.(2003)

.(Nelson, 2001)

.(1998 2006)

(2061)

(American Association for the

.Advancement of Science (AAAS), 1989)

)

.(1999

(Chiapetta,
)

Sethna and Fillman, 1993)
(2006

(UNSCO,

.1992; AAAS, 1989; Norris and Hurd, 1998)

.(2003)

(1985)

()

:
-
(24)

(12) -
(12) -

(1993)
(30)

) (18) -
(1998) (3) -

(1996) - (9) -
()) . (2003)

(Chin, 2005)

) (

(2003)

(%50)

(26)

(2008)

2008/2007

()

(1995)

(2007)

(84)

(2006)

Kalu and 2006

2008 1996)
(Lee, 2000 Ekwueme, 2004
(Chin, 2005)

.(177)

)

Kalu and Ekwueme,

Chin, 2005 1995 2006
(2004

(3)

(Kalu and Ekwueme, 2004)

.(1996)

(ICT)

(%51)

(151)

(1996)

(%90.9)

(1995)

Lee,)

(2000

(31)

2061

(260)

(Macaraoglu, 1998)

(10) (15) 2008/2007 (130)
 (1) (%50) ()
 (1)

					10	10	5	5	
65	41	24	47	18	21	15	29		
65	26	39	28	37	8	24	33		
130	67	63	75	55	29	39	62		

(2)

0.72	15	
0.77	70	
0.70	15	
0.89	100	

(8)

(4)

(100)

:

(15)

(70)

(15)

)

.(

)

(

)

.(

(100)

(6)

Test of Basic Scientific Literacy

- (Laugksch and (TBSL)

- Spargo, 1999)

- (AAAS, 1989)

(2006) (2006) (2008)

(2004)

(110) (TBSL)

:

(TBSL)

(118)

(60) (20)
 (60)
 2004 2006) (60) . (0.89)
 .(Laugksch and Spargo, 1999 2006 0.72 .
 (2) 0.77

(3)

(60) ()

	()				
*0.000	5.849	129	8.262	64.24	130

(0.05 = α) *

(4)

()

	()					
0.924	0.095	128	6.2748	64.307	65	
			9.9114	64.169	65	

" ()

()

(3) (60)
 (3) Three way-
 () ANOVA
 (64.24)
 (8.262)
 (60)
 () (4.24)
 (0.05= α)
 (3) " :

Teaching (ICT)) (5.849) ()
 .(0.000)

(70000) (2008) (ICDL) (1987) (ERfKE)
 .(INTEL)

)

.(2003 2006 (Information Communication

(5)

7.485	65.594	7.417	66.23	7.66	65.25	5	
5.065	71.750	2.774	71.800	6.47	71.71	10 5	
4.196	71.071	3.719	72.500	3.32	67.50	10	
7.005	67.984	6.298	69.464	7.40	66.80		
7.538	57.920	7.043	59.150	8.22	53.00	5	
8.709	62.185	9.719	61.157	5.40	64.63	10 5	
5.338	62.733	5.035	64.250	5.51	61.00	10	
7.833	60.716	8.038	60.829	7.52	60.45		
8.356	62.500	7.901	61.939	8.94	63.14	5	
8.906	65.128	9.734	63.375	6.78	67.93	10 5	
6.356	66.758	5.963	68.833	5.68	63.36	10	
8.262	64.238	8.504	64.053	7.99	64.49		

(Lee,

2000; Chin, 2005; Kalu and Ekwueme, 2004)

1996)

2006

2008

2003

(2007

1995

.(4)

(4)

(64.307)

(0.138)

(64.169)

:

:

" :

(4)

()

()

"

(0.095)

()

(0.05= α)

)

.(0.924)

(

()

(6)

3-way ANOVA

	()				
0.170	1.90	95.54	1	95.54	
*0.000	35.47	1781.43	1	1781.43	
*0.000	8.81	442.76	2	885.53	
0.988	0.00	0.01	1	0.01	*
0.207	1.59	80.14	2	160.28	*
0.809	0.21	10.64	2	21.28	*
0.377	0.98	49.32	2	98.65	* *
		50.21	118	5924.98	
			129	8807.608	

.(0.05 = α)

*

(ERfKE)

.(2005)

(2007)

(7)

Scheffe

10	10 - 5	5		
*4.258	2.628		62.500	5
1.630			65.128	10 - 5
			66.758	

(0.05 = α)

*

(INTEL) (ICDL)
()

" :

(5)

2003)

(5)

(1995 2006

(Three-
(6)

(2 \times 3 \times 2) way ANOVA)
(6)

(Post- Hock- Analysis)

(Scheffe)

(0.05 = α)

(7)

(67.984)

(7)

(60.716)

(10) (5
(66.758) (10)
(62.500) (5)

)

(10

2003)

(Chin, 2005 1995

(1989)

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(4)

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(6)

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(6)

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(12)

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(1996

= α)

(0.05

(0.05 = α)

(0.05 = α)

(10-5)

(5)

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(2007

2008

2003

1998

13) 4

2006

.83 -63 (14

- .500-485 (2) 23
1996
- 1998
- 1993
- 2006
- 2003
- 2003
- 2008
- American Association for the Advancement of Science (AAAS). 1989. *Science for All American's*. Washington, DC, Auther.
- Bingle, W. H. and Gaskell, P. J. 1994. Scientific Literacy for Decision Making and the Social Construction of Scientific Knowledge. *Science Education*, **78** (2), 185-201.
- Chiappetta, E. L. and Collette, A. T. 1989. *Science Instruction in The Middle and Secondary Schools*, 2nd edition. Columbus, Ohio, Merrill Publishing Company.
- Chin, Chi-Chin. 2005. First Year Pre-Service Teachers in Taiwan, Do They Enter the Teacher Program with Satisfactory Scientific Literacy and Attitudes Toward Science? *International Journal of Science Education*, 27 (13):1549-1570.
- Hazen, R. 2002. *Why Should you be Scientifically Literate?* Action Bioscience.org. Retrieved from: <http://www.actionbioscience.org/newfrontiers/hazen.html>.
- Norris, S. and Hurd, P. 1998. Scientific literacy: New Minds for Changing World, *Science Education*, 82 (3): 407-416.
- Kalu, I. and Ekwueme, C. O. 2004. Assessment of teacher's level of literacy and Attitude towards information and communication technology application in science, Technology and Mathematics education. *E-Journal of instruction science and technology (e-Jist)*, 7 (1).
- Kouba, V. L., Champagn, A. B., Piscitelli, M., Havasy, M., White, K. and Hurley, M. 1998. Literacy in the National Science and Mathematics Standards: Communications and Reasoning *ERIC*. ED 417396) Retrieved from: <http://cela.albang.edu/scimath/index.html>.
- Lee, O. 2000. Perceptions of Scientific Literacy and
- 2007
- .152 -108 (3) 8
- 2006
- 2003
- .100-65 (2) 52
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- 1995
- 1997
- (14)
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- .2
- 1998
- .299 -233 (49) 2
- 1998
- ()
- 2006

- On Student Views About The Nature Of Science. *Journal of Research in Science Teaching*, 30 (5): 429-443.
- National Research Council. 1996. *National Science Education Standards*. Washington, DC: National Academy Press. Retrieved from: www.nap.edu/readingroom/books/nses/html
- Nelson, G. D. 2001. *Benchmarks and Standards at Tools for Science Education Reform*. AAAS. Retrieved from: www.Project2061.com.html.
- UNESCO. 1992. *The Project 2000+ Declaration (Brochure)*, Paris, France: Author.
- Elementary Teacher Preparation Held by Science Professors and Science Education Professors. *Florida Journal Educational Research*, 40 (1): 5-27.
- Macaroglu, E., Tasar, M. F. and Cataloglu, E. 1998. Turkish Preservice Elementary School Teacher's Beliefs About The Nature of Science. A paper presented at the annual meeting of national Association for research in science teaching (NARST). 19-22 April 1998; San Diego, CA.
- McKee, J. and Ogle, D. 2005. *Integrating instruction: Literacy and Science*, New York: Guilford Publications.
- Meichtry, Y. T. 1993. The Impact of Science Curricula

The Scientific Literacy Level of Teachers' Educational Diploma at The Jordanian Universities

*Talal Al-Zoubi, Ibrahim Al-shar'a and Mohammad Khair Al-Salamat**

ABSTRACT

The present study aimed at exploring the scientific literacy level of teachers joining the educational diploma programs at Jordanian universities. In order to achieve the purpose of the study a (TBSL) was developed and administered to a systematic randomized sample of 130 teachers, forming 50% of the population of the study.

To answer the questions of the study, the (SPSS) package was used to analyze the data. Findings of the study indicated that the participant teachers' level of scientific literacy was satisfactory, and that there were statistically significant differences in their level of scientific literacy ascribed to specialization in favor of science teachers, and to experience in favor of those of more than (10) years at ($\alpha = 0.05$). However, no statistically significant differences were found to be ascribed to the variables of university, gender the interaction of the study variables.

In light of the findings, it is recommended that teachers' level of scientific literacy be promoted through teacher education programs, and including courses of scientific literacy in university studies.

Keywords: Jordanian Universities, Educational Diploma, Scientific Literacy.

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