

\*

(360)

:

-

-

:

(1998 )

- "

"

- 2003

2003

(2003 )

:

:

\*

)

.2009/4/30

2008/11/12

/

2011 ©

.(Hartnell, 2006 2006

(Heinich, Molendo, Russel and

Smaldino, 2002)

(2000 )

Lawler, )

.(Allison, and Robert, 1998

(Marra, 2004)

(Richard, 2005)

.(2004 )

.(2002 1991 )

.(Stave and David, 2001)

.(2002 )

/

.(2000 1991 )

(2002 )

‡ Bullock, 2004‡Fitzgerald, Lovin, and Branch, 2003)

(2001 ) .Ward, West, and Isaak, 2002 (

(94)

(Zhao and Cziko, 2001)

(Duhaney, 2001)

:

(2005)

(2001)

(350)

(500)

(174)

:

:

Hou (2004)

(Lia and Pratt, 2002)

(200)

(Otaga)

(26)

(ICT)

(49)

:

(%80)

(21)

(14)

(Kennedy, 2002)

( )

(45)

: (Drew, 2001)

.(1994 ) ( ) (10)

.(1998 ) (Reynolds, Trehame and Tripp, 2000)

: -1 :

-2 (1998)

( -3 ) (101) (400)

:

-2007)

(1798)

(2008

(360)

(%20)

(1) .2008/2007

(1)

( )

%42.2	152		
%57.8	208		
%100	360		
%13.3	48	5	
%38.1	137	10-5	
%48.6	175	10	
%100	360		
%74.7	269		
%18.3	66		
%7	25		
%100	360		

(13) :  
 :  
 :  
 (%80)  
 (Open Ended)  
 (98) Questioner)  
 (25)  
 (0.82) (25) :  
 " :  
 (343) (95.2) (360) "  
 :  
 (360) (350) (360)  
 (% 97.2)  
 (40) (40)  
 ) : (108)  
 .( (8)  
 :  
 (21)  
 (13)  
 (8)  
 (12)  
 (18)  
 (13)  
 (120) (40) (13)  
 (10)

Questioner)

2002      2000      1998      )

.      .(2003

(      )      -

(13)

(40)

-      (%80)      (86)

(25)

:      (0.79)      (25)

:

. (%96.6)      (360)      (348)

:

-

(2)

(Open Ended      -

(2)

4.86	15.07		.1
5.124	13.57		.2
5.883	13.34		.3
3.116	12.5	( .. )	.4
3.1	12.4		.5
4.453	12.24		.6
4.188	11.94		.7
3.327	11.82		.8
4.298	11.72		.9
2.73	11.7		.10

4.645	11.55		.11
3.954	11.39		.12
2.989	11.39		.13
5.634	11.32		.14
3.509	11.27		.15
6.122	11		.16
5.329	10.99		.17
5.595	10.99		.18
6.029	10.94		.19
5.05	10.69		.20
4.878	10.55		.21
5.009	10.3		.22
3.416	9.32		.23
3.094	9.15		.24
2.861	8.56		.25
3.224	8.47		.26
5.841	8.06		.27
5.51	7.76		.28
3.65	7.72		.29
3.121	7.7		.30
3.481	7.56		.31
3.084	7.39		.32
3.352	7.38		.33
3.242	7.32	( )	.34
3.122	7.31		.35
2.9	7.19		.36
3.107	7.16		.37
2.931	7.16		.38
2.861	7.11		.39
2.805	7.06		.40
3.94	6.95		.41
3.281	6.9		.42
4.441	6.66		.43
3.248	6.62		.44
3.321	6.6	) ( ..	.45
3.136	6.51		.46

4.293	6.49		.47
3.056	6.47		.48
2.578	6.45		.49
3.501	6.41		.50
2.967	6.36	( )	.51
2.943	6.28		.52
2.197	6.19		.53
3.235	6.19		.54
3.227	6.09		.55
3.477	6.08	( )	.56
3.233	6.08		.57
2.659	6.07	( )	.58
3.558	6.05		.59
3.451	6.02		.60
3.478	6.01		.61
3.105	5.94		.62
4.658	5.92		.63
2.982	5.92		.64
4.929	5.85		.65
3.732	5.82		.66
3.273	5.8		.67
3.339	5.75		.68
3.15	5.73		.69
3.147	5.66		.70
3.534	5.61		.71
3.43	5.55		.72
2.649	5.54		.73
4.827	5.52		.74
2.955	5.48		.75
2.286	5.17		.76
3.767	5.05		.77
3.037	5		.78
3.178	4.97		.79

2.743	4.88		.80
1.768	4.64		.81
2.061	4.55		.82
2.911	4.55		.83
3.121	4.47		.84
3.534	4.45		.85
1.854	4.43		.86
1.886	4.36		.87
2.32	4.29		.88
2.05	4.28		.89
2.115	4.28		.90
3.218	4.1		.91
1.966	4.1		.92
1.902	4		.93
2.024	3.62		.94
2.339	3.56		.95
1.953	3.45		.96
1.984	3.1		.97
3.252	3		.98

(2)

2000)

(2003

Reynolds, at el

:

( ) (Intel)

(3)

(Kennedy, 2002)

(3)

1.4	%0.9	%12.1	%16.1	%71	21	2.67	-	%79.5	%8.4	%12.1	1
2.65	%0.3	%76.7	%12.1	%10.9	22	1.75	-	%10.3	%54.6	%35.1	2
2.77	-	%84.7	%8.4	%6.9	23	1.55	-	%15	%25.5	%59.5	3
2.73	-	%81	%11.2	%7.8	24	2.62	%0.6	%75.9	%9.8	%13.8	4
2.4	%0.3	%54	%32.2	%13.5	25	2.18	-	%51.4	%15.9	%32.7	5
2.58	-	%69.6	%19.2	%11.2	26	2.23	%0.3	%55.5	%11	%33.1	6
2.49	%0.3	%64.9	%19.3	%15.5	27	2.66	-	%79.4	%7.8	%12.8	7
2.44	%0.3	%55.5	%33.6	%10.6	28	2.61	-	%77.9	%6	%16.1	8
2.54	%0.6	%66.4	%21	%12.1	29	2.49	%0.3	%64.7	%19.8	%15.2	9
2.83	%0.3	%87.1	%8.3	%4.3	30	2.61	%0.9	71.3	17.2	%10.6	10
2.45	-	%57.5	%31	%11.5	31	2.54	-	%71.8	%10.5	%17.7	11
2.71	-	%81.6	%8.3	%10.1	32	2.15	-	%48	%19.8	%32.3	12
2.18	-	%52.6	%13.2	%34.2	33	2.33	-	%46.4	%40.5	%13.1	13
2.62	%0.6	%71	%19.5	%8.9	34	2.63	-	%70.3	%22.7	%7	14
2.51	%0.9	%65.2	%20.1	%13.8	35	2.56	-	%67.8	%20.7	%11.5	15
2.84	-	%89.9	%3.8	%6.4	36	2.64	-	%72.7	%19.3	%8	16
2.76	%0.9	%81.6	%11.5	%6	37	2.64	%0.6	%69.3	%25	%5.2	17
2.43	-	%50.9	%42.2	%6.9	38	2.59	%0.6	%63.8	%31	%4.6	18
2.81	%1.1	%87.4	%4.9	%6.6	39	2.77	-	%83.3	%10.9	%5.7	19
2.69	-	%82.2	%4.9	%12.9	40	2.78	%0.3	%86.2	%5.7	%7.8	20

(2.59)				(3)	
		23 20 39 30 36)			
	.(2.32)				(37 19
	.(2.48)	(2.76 2.77 2.77 2.78 2.81 2.83 2.84)			
			:		-1
			"		
-2002			:	"	
	.(2002	) 2008			-2
			:		
		(1998 )			-3
			:		
					-4
			:		
					-5
	(Kennedy, 2002 1998 )		:		
			:		-6
			:		
	( )		:		-7
	( )		:		
(4)			:		
		(4)	:		
			:		)
			:		(

.( ) :

(6) ( ) )

(6) .(

)  
.(

"  
"

(1998 Comber, et al., 1997 Kennedy 2002)

Plomp, 1997) .( )

Makrakis and Sawada, Whitley, 1997 Reinen and  
.(1996

( )

(5)

2003 Wood, 1999 Kennedy 2002)  
(1998

(5)

)

( :

(7)

(4)  
( )

	" "					
0.709	0.374-	3.44148	23.2376	146		
		3.40616	23.3767	202		
*0.003	2.998	3.66882	26.0495	146		
		4.14264	24.7877	202		
*0.011	2.562	3.18231	25.1485	146		
		3.86975	24.1781	202		
*0.006	2.748	3.06595	26.3762	146		
		3.9953	25.3356	202		
*0.016	2.418	11.01669	100.8119	146		
		13.09853	97.6781	202		

.(0,05  $\geq$   $\alpha$ )

\*

(5)

0.083	2.501	29.046	2	58.092		
		11.613	345	4006.423		
			347	4064.514		
*0.005	5.443	81.496	2	162.992		
		14.974	345	5165.868		
			347	5328.859		
*0.009	4.799	58.013	2	116.025		
		12.089	345	4170.699		
			347	4286.724		
*0.014	4.293	52.159	2	104.318		
		12.149	345	4191.415		
			347	4295.733		
*0.003	5.96	836.664	2	1673.328		
		140.382	345	48431.669		
			347	50104.997		

.(0,05  $\geq$   $\alpha$ )

\*

(6)

0.8394	0.0926	-	23.7231		
0.7467	-		23.6304		
-			22.8837		
*1.478	0.6645	-	26.3385		
0.8134	-		25.6739		
-			24.8605		
*1.2483	0.8388	-	25.4692		
0.4095-	-		24.6304		
-			24.2209		
*1.1831	0.8047	-	26.6308		
0.3784	-		25.8261		
-			25.4477		
*4.7487	2.4007	-	102.1615		
2.3481-	-		99.7609		
-			97.4128		

.(0,05 ≥ α)

\*

(7)

0.801	0.222	2.611	2	5.222		
		11.766	345	4059.292		
			347	4064.514		
0.728	0.318	4.899	2	9.798		
		15.418	345	5319.061		
			347	5328.859		
0.444	0.183	10.053	2	20.106		
		12.367	345	4266.618		
			347	4286.724		
0.662	0.412	5.122	2	10.245		
		12.422	345	4285.488		
			347	4295.733		
0.639	0.448	64.931	2	129.861		
		144.855	345	49975.136		
			347	50104.997		

.(0,05 ≥ α)

\*

(7)

:

-1

-2

(2002 )

-3

-4

(2003 )

-5

-6

2000

23-19

2003

2002

.168-148 (140)31

1991

-

2003

:

-

.153 -130 (1)18

---

:	2003	1998
	.2003/9/30-29	
Bullock, D.	2004. Moving From Theory to Practice: An Examination of the Factors That Preserves Teachers Encounter as the Attempt to Gain Experience Teaching with Technology During Field Placement Experiences. Journal of Technology and Teacher Education, 12 (2), 211-237.	. 3-1 1998 .466-453 (2) 25 2001
Comber, C. Colley, A; Hargreaves, D. and Dorn, L.	1997. The Effects of Age, Gender and Computer Experience Upon Computer Attitudes. Educational Research, 39 (2): 123 - 133.	.520 -502 (2) 48 2004
Drew, T.	2001. Teaching in Classroom Technology – Rich. Educational Technology, 1(4) 23-31.	.2004 2000
Duhaney, D.	2001. Teacher Education: Preparing Teachers To Integrate Technology. International Journal of Instructional Media.1 (28),1-23.	:
Ertmer, P. Addison, P. and Lane, M.	1999. Examining Teacher's Belief About The Role of Technology in The Elementary Classroom. Journal of Research on Computing Education. 32 (I), 54 -72.	2006
Fitzgerald, M., Lovin, V., Branch, R.	2003. The Gateway to Educational Materials: an evaluation of an online resource for teachers and an exploration of user behavior. Journal of Technology and Teacher Education. 11(1),21-51.	2003
Hartnell, E.	2006. Teachers' Roles and Professional Learning in Communities of Practice Supported by Technology in Schools. Journal of Technology and Teacher Education; 14 (3), p461-480.	1994 .389-382 (184) 2001
Heinich, R., Molendo, M., Russel, J. and Smaldino, S.	2002. Instructional Media and Technologies for Learning, (7) <sup>th</sup> . New Jersey, Merrill Prentice Hall.	.(265) 2002 : (1)
Hou, K.	2004. The important technological competencies need by secondary schools teachers, Dissertation Abstract International, 62 (1).657 – A.	2005
Kennedy, J.M.	2002. Perceived technological competencies of elementary teachers in U k schools. Dissertation Abstract International, 55 (3). 348 –A.	. 2002 .32-31 16 -15
Lawler, C. Allison, R. and Robert, H.	1998. Using Supportive Planning Software to Help Teachers Integrate Technology into Teaching Educational Technology. Sept- Oct, 29-34.	2000 : 2003 2008-2002
Lia, K. and Pratt, K.	2002. Information and communication	

- Journal of Language, Learning Technology.9 (1). 66-79.
- Steve, H. and David, M. 2001. Teachers' Thinking about Information and Communications Technology and Learning: Beliefs and Outcomes. *Teacher Development*, 5(2), 191 – 210.
- Ward, J. West, L. and Isaak, T. 2002. Mentoring: a strategy for change in teacher technology education. *Journal of Technology and Teacher Education*. 10 (4), 553-569.
- Whitley, B. 1997. Gender Differences in Computer Related Attitudes and Behaviors: A meta-analysis. *Computers in Human Behavior*. 13 (1): 1-22.
- Wood, M,1999,Early Literacy Instruction and Educational Technologies: Three Classroom – Based Models, *DAI*, 60(1):71-A
- Zhao, Y. and Cziko, G. 2001. Teacher adoption of technology: a perceptual control theory perspective. *Journal of Technology and Teacher Education*. 9 (1), 5-30.
- technology (ICT) in secondary schools: The role of the computer coordinator. *British Journal of The Education Technology*, 34 (4), 461-465.
- Makrakis, V. and Sawada, T. 1996. Gender, Computers and Other School Subjects Among Japanese and Swedish Students. *Computers in Education*, 26 (4): 225-231.
- Marra, R. 2004. An Online Course to Help Teachers "Use Technology to Enhance Learning": Successes and Limitations. *Journal of Technology and Teacher Education*, 12 (3), 411-429.
- Reinen, I. and Plomp, T. 1997. Information Technology and Gender Equality: A contradiction in Terminus? *Computers in Education*, 28 (2): 65-78.
- Reynolds, D., Trehame, D. and Tripp, H. 2000. ICT – The hopes and the reality. *British Journal of Education Technology*, 34(2), 151 – 167.
- Richard. C. 2005. The Design of Effective ICT Supported Learning Activities: Exemplary Models, Changing. Requirements and New Possibilities Electronic Version,

---

## **The Degree to which Jordanian Teachers are Ready to Cope with Future Challenges Entailed by the Use of Information and Communication Technology in the Educational Field**

*Narjes Hamdi and Khalil Al-Balawi \**

### **ABSTRACT**

This study aimed at identifying the degree of readiness of Jordanian teachers to cope up with future challenges resulting from the use of information and communication technology in the educational field. The sample consisted of (360) male and female teachers teaching in the public schools. To achieve the objectives of this study, a special measurement for the future challenges resulting from the application of information technology in teaching was constructed. Furthermore, another scale was used to identify the nature of teachers' attitudes towards various roles concerning the use of information and communication technology in teaching. Based upon data analysis, the following results were obtained:

- Teachers showed a high degree of readiness that enables them to cope up with the future challenges resulting from the use of information and communication technology in the educational field.
- Teachers of various academic levels are highly ready to accept their future roles as presented by information and communication technology. Nonetheless, there are differences in the degree of readiness found in two variables; gender and experience, in favor of the males and short experienced teachers, respectively.

**Keywords:** Teachers' Readiness, Future Challenges, Information and Communication Technology.

---

\* Faculty of Educational Sciences, University of Jordan; and Ministry of Education, Jordan. Received on 12/11/2008 and Accepted for Publication on 30/4/2009.