

\*

136

.0.05

1.68

1.74

.(3.0 =

) 4.01

.1.54

.1.64

(2)

(3)

(4)

(1)

(5)"

.2010/5/20

2009/12/3

\*

(13)

:

(6)

( )

(7)

(8)

:

-6

.1

(10)

(9)

12

"

.2

"

.3

(11)

"

12 6

(12)"

-

-

:

.1

.2

.3

(14)»

(15)

(21)

(16)

(22)

33

8

4

( 12 21)

Cognitive Ability

» (17)

(23)

(24)

Sense Receptors

(18)

(... / / )

)

(... )

(... )

(19)

(25)

» »

(20)

Auditory Memory

(26)

63

(27)

11

(2005)

( 12-6)

(28)

Queen Brooks

136  
.2007-2006

:

- -

.2

2007-2006

136

1969

( )  
( )

:

( )  
( )

.3

Cronbach's Alpha

:

0.79

:

.4

(

:

.1

(4) (5) :

(1) (2) (3)

(

(

:  
:  
( 4) ( 3) :  
( 3) ( 3)  
:  
(29)  
3.0  
.3.0  
.3.0  
:  
:  
(SPSS)  
:  
(3.0) .%100  
(One-Way ) .(5-1)  
ANOVA  
0.05  
.% 95  
63  
.%46.3

...									
						.%53.7		73	
					8				
					-8				.(%30.9) 42
		.( )				%20.6		28	10
				-	40	12		-10	
		%91.2	(1)		26	%19.1			%29.4
								12	
%7.4	(		)		17				
		1.16		%1.5		27		%12.5	
	)			.053		%21.3		29	%19.9
(					26		%14.7		20
				%18.4		.%12.5		17	%19.1
		%32.4		%41.2		%8.1			
.1.06				2.13				%77.9	106
				%14		9			
%61.8	%14.7			%9.6					%6.6
	1.76						%8.1		11
				.1.11				%2.2	3
								%4.4	6
								. %0.7	
		1.74				51			
1.63				0.79				%37.5	
0.73 (F)		0.73				.%62.5		85	
				0.40				%60.3	82
				0.05		33			
						%15.4		%24.3	
								)	
						4		.(	
2.34		8						%5.9	8
				0.80			57	6-4	
1.48	10		8			7			%41.9
		0.66				132		.%52.2	71
12	10					4			%97.1
		0.28		1.27				%2.9	
				12					
	0.57			1.47					
	0.001			24.57 (F)			7		
		0.05						% 5.1	
								%25	34

	1.55								
			.063			2.73			
						2.12		0.63	
					0.69		1.49		0.80
	1.51					0.28		1.30	
			0.50					1.28	
(F)	0.58		1.57		20.91 (F)		0.42		1.31
		0.52		0.41				0.001	
		0.05							0.05
	1.74	8							
			0.67						
1.52	10	8							
			0.59						
1.33	12	10							
12			0.28				0.82		1.79
1.60						1.62			
4.36 (F)			0.47			1.73 (F)		0.70	
			0.01						0.10
				0.05					0.05
	2.03								-
	1.54		0.83		%14	(2)			
0.69		1.61		0.44	)				
	0.25		1.39		%8.1	(			
		0.31		1.32			%33.1	%44.9	
(F)		.022		1.49	)		.099	2.03	
		0.001		4.63		%2.9	(		
			0.05			%8.1			
								%71.3	%17.6
					%91.2		.077		1.43
						)			
					1.17		%0.7	%8.1	(
					%52.2		.055		
					%40.4	%7.4	(		)



		12				
(F)	0.49		1.59			
	0.001		15.20		0.65	1.66
		0.05		1.48		
				3.58 (F)	0.46	0.06
						0.05
	2.39					
	2.10		0.68			
0.70		1.62		0.57		
	0.38		1.60			-
	0.31		1.38		%61 (3)	
11.79 (F)		0.31		1.43		
		0.001			%11 (... )	
			0.05	1.50		%27.9
					.069	
					%2.9	
					%37.5	%6.6
						%52.9
	0.70		1.77	%17.6	.074	1.60
1.72						
0.20 (F)		0.57		%30.1	%44.9	%7.4
			0.66		2.13	
			0.05			.104
				0.59	1.72	
	( )		-	1.75		
%52.9	(4)			0.07 (F)	0.66	
						0.79
						0.05
%4.7	( )					
		%7.1	%35.3			
.109			3.04			
				2.21	8	
			%63.5			0.64
%5.9	%24.7			1.57	10	8
4.40			%5.9			0.63
	%70.6	.104		12	10	
					0.38	1.47

					%3.5	%4.7	%21.2
( )			:			4.59	
0.79			4.01				.074
0.62		1.74					
	1.68						
1.54			0.75		3.85		
		0.54					0.83
.				0.69			4.21
					0.04		4.38 (F)
						0.05	
(6 )							
	1.65						
		0.54					
0.58		1.64					.
	0.99	0.01 (F)					
		0.05			4.12	8	
							0.62
.				4.08	10	8	
							0.65
2.06	8			3.81	12	10	
		0.58				0.90	
10	8						12
	0.58		1.52	(F)		1.0	4.04
	10					0.53	0.75
	0.26		1.35	12			0.05
		12					
0.45		1.56					.
	0.001	16.22 (F)					
		0.05			3.87		
						4.20	0.79
				0.66		4.13	0.50
					0.84		3.78
	2.35					0.91	4.02
0.46		1.88	0.61	0.67 (F)		1.12	3.88
	0.67	1.58					0.65
		0.25	1.43				0.05
1.42		0.25		1.33			
	13.68 (F)	0.17					.
			0.001				
			0.05			(5)	

(36)

0.66

1.73

(37)

1.59

2.01 (F)

0.49

0.16

0.05

(38)

(30)

(31)

(32)

(33)

(34)

(35)

( )

:

:

(1)

		%	%	%	%	%		
0.53	1.16	91.2	1.5	7.4	--	--	) .(	1
1.06	2.13	32.4	41.2	8.1	18.4	--	) (	2
1.11	1.76	61.8	14.7	9.6	14.0	--		3
0.75	1.68	61.8	19.1	8.4	10.8	--		

(2)

		%	%	%	%	%		
0.99	2.03	33.1	44.9	8.1	14.0	--	) (	4
0.77	1.43	71.3	17.6	8.1	2.9	--	) (	5
0.55	1.17	91.2	0.7	8.1	--	--	) (	6
0.63	1.55	52.2	40.4	7.4	--	--	) .(	7
0.54	1.54	62.0	25.9	7.9	4.2	--		

(3)

		%	%	%	%	%		
0.69	1.50	61.0	27.9	11.0	--	--	) .(...	<b>8</b>
0.74	1.60	52.9	37.5	6.6	2.9	--		<b>9</b>
1.04	2.13	30.1	44.9	7.4	17.6	--		<b>10</b>
0.62	1.74	48.0	36.8	8.3	6.8	--		

(4)

		%	%	%	%	%	*	
1.09	3.04	7.1	35.3	4.7	52.9	--	) .(	<b>11</b>
1.04	4.40	5.9	--	5.9	24.7	63.5		<b>12</b>
0.74	4.59	--	3.5	4.7	21.2	70.6	.	<b>13</b>
0.79	4.01	4.3	12.9	5.1	15.3	44.7		

%62.5

85

\*

(5)

1	0.79	4.01	
2	0.62	1.74	
3	0.75	1.68	
4	0.54	1.54	
--	0.56	1.64	

## (6)

	<b>F</b>			
0.99	0.01	0.54	1.65	
		0.58	1.64	
	<b>F</b>			
0.001	16.22	0.58	2.06	8
		0.58	1.52	10 - 8
		0.26	1.35	12 - 10
		0.45	1.56	12
	<b>F</b>			
0.001	13.68	0.61	2.35	
		0.46	1.88	
		0.67	1.58	
		0.25	1.43	
		0.25	1.33	
		0.17	1.42	
	<b>F</b>			
0.16	2.01	0.66	1.73	
		0.49	1.59	

- .Dobree and Beulter, Blindness (11)
- .101 :(54) . (12)
- .Vermeij, Teaching Exploration, 25(3): 1 (13)
- . (14)
- .133 :(4)23 . (15)
- . (16)
- .Barraga and Erin, Visual Handicaps (16)
- .Heinze, Communication Skills (17)
- .W.H.O, Disease Incidence. (3)
- .Heinze, Ibid (18)
- . (4)
- .Barraga, Ibid (19)
- .Gilbert and Foster, Childhood Blindness (5)
- .Beliveau and Rutberg, Orienting the Visually (20)
- . (6)
- .Sahin, Teaching Science (21)
- . (7)
- .Cox, et al. Young Children's Use (22)
- .Carey and Matyas, Effectiveness of Sensory (23)
- .269 (8)
- .Beliveau and Rutberg, Ibid (24)
- .Fazzi, Imagining the Possibilities (9)
- .Heinze, Ibid (25)
- .Scholl, Foundations of Education (10)

.Barraga, Ibid (33)	.Barraga and Erin, Ibid (26)
.Carey and Matyas, Ibid (34)	.Matanga, Assessing the Needs (27)
(35)	.Reidmiller, Art for the Visually (28)
(36)	.Babbie, The Practice of Social Research (29)
	(30)
.Carey, Ibid (37)	.Matanga, Ibid (31)
.Carey et al (38)	.Cox, et al., Ibid (32)

2008

.113-91 :(1)1 .

2008

.156-133 :(4)23 .

1991

: 285-269

23-20

2004

2009

2003

.2003

2006

2007

1998

2006

2006

.125-101 :(54)

2001

2005

2001

1996

Al-Louzi, Salah. 2005. Difficulties Facing Disabled Students at the University of Jordan: A Survey Study. *Annals of the Faculty of Arts. Ain Shams University.* 33(Oct.-Dec.): 339-375.

Babbie, Earl. 2007. *The Practice of Social Research.* Belmont, CA: Thomson Wadsworth.

Barraga, N. and Erin, J. 1992. *Visual Handicaps and Learning.* Texas: Proed.

Beliveau, M. and Rutberg, J. 1981. Orienting the Visually Impaired Child to the Recreation Setting. In Kelly, J. (Editor), *Recreation Programming for Visually Impaired Children and Youth.* New York: American Foundation for the Blind.

Carey, Leeanne and Matyas, Thomas, 2008. Effectiveness of Sensory Discrimination Training When Delivered by Family Members: A Pilot Study. *Brain Impairment.* 9(2): 140-151.

Carey, Leeanne et al. 1993. Sensory Loss in Stroke Patients: Effective Tactile and Proprioceptive Discrimination Training. *Archives of Physical Medicine and Rehabilitation.* 74: 602-611.

Cox, Ralf et al. 2009. Young Children's Use of Visual Aid: An Experimental Study of the Effectiveness of Training.

- 9(2): 823-832.
- Kusek, Zal and Rist, Ray, 2004. *Ten Steps to a Results-Based Monitoring and Evaluation System*. Washington, D.C.: World Bank.
- Matanga, Zephonia. 2000. *Assessing the Needs of Visually Handicapped Students and Workers*. Unpublished Ph.D. Dissertation. Toronto: The University of Toronto.
- National Association of Social Workers, 1995. *Encyclopedia of Social Work*. Washington, D.C.: NASW Press.
- Reidmiller, Lauri. 2003. *Art for the Visually Impaired and Blind: A Case Study of One Artist's Solution*. Unpublished Ph.D. Dissertation. Columbus, Ohio: Ohio State University.
- Sahin, Mehmet. 2009. *Teaching Science to Visually Impaired Students: A Small-Scale Qualitative Study*. *US-China Education Review*. 6(4): 19-26.
- Scholl, G. 1986. *Foundations of Education for Blind and Visually Handicapped Children and Youth: Theory and Practice*. New York: American Foundation for the Blind.
- Vermeij, Geerat. 2006. *Teaching Exploration: Correcting a Glaring Flaw in the Education of Blind Children*. *Future Reflections*. 25(3): 1-2.
- World Health Organization, 2004. *Disease Incidence, Prevalence, and Disability*. Geneva, Switzerland: WHO Publications.
- Developmental Medicine and Child Neurology*. 51(6): 460-467.
- Department for International Development. 2000. *Disability, Poverty and Development*. London: Stairway Communications.
- Dobree, J. and Boulter, E. 1982. *Blindness and Visual Handicap: The Facts*. Oxford: Oxford University Press.
- Eseryel, Deniz. 2002. *Approaches to Evaluation of Training: Theory and Practice*. *Educational Technology and Society*. 5(2): 93-98.
- Fazzi, D. and Petersmeyer, B. 2001. *Imagining the Possibilities: Creative Approaches to Orientation and Mobility*. New York: American Foundation for the Blind.
- Fazzi, D. et al. 2005. *Early Intervention in Visually Impaired Children*. *International Congress Series*. 1282: 117-121.
- Gilbert, C. and Foster, A. 2001. *Childhood Blindness in the Context of Vision 2020: The Right to Sight*. *Bulletin of the World Health Organization*. 79(3): 227-232.
- Heinze, T. 1986. *Communication Skills*. In Scholl, G. (Editor), *Foundations of Education for Blind and Visually Handicapped Children and Youth: Theory and Practice*. New York: American Foundation for the Blind.
- Kesiktas, A. 2009. *Early Childhood Special Education for Children with Visual Impairments: Problems and Solutions*. *Educational Sciences: Theory and Practice*.



---

## Evaluating Sensory Training Services Introduced to Visually Disabled Children

*Salah Hamdan Al-Louzi and Sawsan Mahmoud Mohammed \**

### ABSTRACT

This study evaluated sensory training services introduced to students of Abdullah Ibn Um Maktoum School in the city of Amman through a social survey. The study was conducted on 136 male and female students through using the instruments of a questionnaire, an interview, and a discussion with each of two focus groups. The questionnaire composed of two parts. The first part included some questions related to the characteristics of respondents and their families. The second part included the Scale of Sensory Training which included thirteen statements related to the development of each of the senses of smelling, touching, hearing, and vision. All statements were designed according to Likert Scale with five response categories.

Many statistical techniques were employed, including frequencies, percentages, means, standard deviations, and Cronbach's Alpha to measure the internal consistency among statements of the used scale. One-Way ANOVA test was also used to test the statistical differences between means of respondents' responses. The level of significance was set at an alpha level of 0.05.

Findings showed that respondents held a positive position towards services provided to them that were related to the development of visual sense with a statistical mean value of 4.01. In contrast, respondents had a negative position towards services provided to them that were related to each of the senses of hearing with a mean value of 1.74, smelling with a mean value of 1.68, and touching with a mean value of 1.54. Respondents' position towards all statements of the scale was negative with a mean value of 1.64. Generally, there were differences with a statistical significance between respondents' position towards the Scale of Sensory Training and each of the variables of age and education. Conversely, there were no differences with a statistical significance between respondents' position towards the Scale of Sensory Training and each of the two variables of gender and intensity of disability. Finally, the study provided many recommendations that were derived from the findings.

**Keywords:** Visual disability, sensory training, children, vision, hearing, touching, smelling.

---

• The Institute of Social Work, University of Jordan. Received on 3/12/2009 and Accepted for Publication on 20/5/2010.