



comparison with the minimum norm from the National Evaluation System from the secondary school cycle.

The development of the conditional capacities - strength, at this age level, can be realized through methods and means used in the physical education lesson.

The physical education lesson is the only way to prepare the physical activity and to improve the general motor capacity, education for health, for a healthy lifestyle.

The general motor capacity through its objectives to improve the conditional capacities, coordinative and intermediate, brings its contribution in the increase of the physical abilities in order to prevent accidents.

Achieving the instructive-educational objectives of the secondary physical education subsystem in order to achieve functional independence in life can be obtained through an optimal projection and planning of the physical education activity.

School is an efficient instrument in knowing the manifestation level of the general motor capacity, of knowing one self.

Educating students to continuously and systematic practice the physical exercises and to participate in different sport activities depending on everyone's aptitudes.

The variety of means used in the practice of physical education field, the multitude of connections with other related fields, requires choosing and using methods and exercises with the highest efficiency in educational practice, in order to achieve an optimum overall general motor capacity for this age.

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THE EFFECTS OF MOTOR EDUCATION PROGRAM BY USING THE EVALUATIVE DOCUMENTS' PACKAGE "PORTFOLIO" ON SENSORY MOTOR PERCEPTION IN KINDERGARTEN CHILDREN

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Abstract

Purpose. The current research aimed to designing and identifying the effects of a motor education program to develop sensory motor perception for kindergarten children and evaluating it with portfolio.

Methods. The sample contains (n=120) was randomly chosen (50% out of the community) and divided into three groups (40 children each) for the three research groups (control – experimental with program – experimenting with the program and portfolio). The researcher used the motor perception scale (by the researcher) as a pre- and post- test. The recommended program was applied for (12 weeks) with two activities per week.

Results. Data indicated that the recommended program has a positive effect on improving sensory motor perception of pre-school children. The second experimental group children (portfolio) surpassed their peers in the control and first experimental groups.

Conclusions. The use of evaluative documents' package "portfolio" was the improvement of the sensory motor

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perception in kindergarten children.

Key words: pre-school child – motor education – sensory motor perception.

Introduction

Our modern age has witnessed quick developments in all fields of life. It is the age of information revolution, scientific advance and technological developments. This necessitates that modern societies should prepare their children comprehensively to face such challenges. In the light of recent developments in quality concepts of kindergarten programs "concordant developmental practices, concordant contextual approach and developmental power", there are four major aspects of practices: change and growth follow up, comprehensiveness and predictability. Therefore, the teacher should consider the child's age, individuality according to his/her growth pattern and character and learning pattern and family background. In addition, children learn better through self-directed activities (Wood, 1999). The teacher plays a major role in providing an environment rich with educational activities supporting the child's activities and talking to children during activities. Preparing motor activities is one of the richest fields of self-development for the learner's character and learning as it provides the child with a chance to practice activities and to learn more vocabulary through practice. The interaction with the surrounding environment stems from the combination of motor and cognitive processes. Good motion with effective results depends on correct perception of the performer and his/her perception of the surrounding world. Developing cognitive abilities of the individual depends on motion as one of the basic pillars of this development (Al-Sarameed & Etman, 1990). When the child acquires a good level of motor perception skills, this means that his/her nervous system is growing and will and this, in turn, reflects on other aspects as an indicator of these aspects. Therefore, one theory proposed that children with good cognitive development tend to show higher levels of achievement on reading, spelling and writing (Rateb & Al-Khouly, 1994). The increase in learning skills needs evaluative methods suitable for the learning style. Evaluation is one of the bases of the learning process and its results guide the teacher to select specific aims and goals to achieve (Al-Laquany, 1995; Ahmed, 2000). It is considered as a value of any aspect of human activity as good or poor, correct or incorrect (Bowe, 2000). Evaluation of kindergarten children is different from other stages' evaluation as this specific stage is very critical and the child's nature and characteristics should be considered very carefully. Therefore, evaluation should be continuous and based on the aims and philosophy of this stage concentrating on the general development of the child in an environment prepared

specifically for this reason. There are several types of evaluation for kindergarten children. One of these types is the portfolio as an effective tool enabling good agreement between the child and teacher upon what makes good work (Faramawy, 1997).

Portfolio is a set of the child's works, gathered to identify the child's efforts, development and achievements. Its contents should reflect the classroom activities. Portfolio is a powerful tool that enables children, teachers, parents, administrators and educational policy makers to know the development and progress of each child through learning and evaluation processes (Meisels, 1995). Portfolio is a useful tool in recording and keeping children's activities in classroom according to the aims set by the teacher. It also documents the child's growth and development accurately. The portfolio contains the child's works. Thus, it shows his/her achievements in different activities. Therefore, it is not only an evaluative tool, but also a way to help the child to reflect on his/her work and to inform parents with these achievements (Keshner, 1995; Gronlund, 1998; Gaber, 1999; Grace, 1990). The portfolio can contain a various set of other informational processes (like written notes on the child's work and parents' evaluation). It can be used to evaluate the child's abilities and improvement (Dietel, et al. 1991). It helps in improving the sensory motor perception of kindergarten children through helping them to recognize information coming from different senses and react according to motor behavior (Crratty, 1973). To develop the motor education program and the sensory motor perception scale, the researcher reviewed the related literature for sensory motor perception (Meszaros, 1979; Harris, 1986; Sawan, & Al-Gohary, 1994; Abd Al-Mageed, 1995; Amer, 1996) and pre-school children (Meisels, 1995; Gronlund, 1998; Gelfer, et al. 1991; Ball & Mary, 1995; Gussie, 1999; Ahmed, 2004). The researcher found out the lack of related studies in Arabic for the topic of evaluating kindergarten children, although this topic is very important as this age stage is critical and effective in developing the child. The researcher reviewed the related literature to identify the components portfolios and how to evaluate these components. The current study addresses the problem the importance of sensory motor perception of the child in this stage as the child needs to know the surrounding environment (spatial or time), shapes and colors to identify the ways of dealing with this environment. This can be facilitated through developing sensory motor perception via motor activity and can be evaluated using the portfolio. The current research aimed to designing and identifying the effects of a motor education program to develop sensory



motor perception for kindergarten children and evaluating it with portfolio.

Methods

Research community included all children (4-6 years) in Al-Zahra primary school in Kafr al-Shaikh (n=240) for the school year (2009/2010). Sample

(n=120) was randomly chosen (50% out of the community) and divided into three groups (40 children each) for the three research groups (control – experimental with program – experimental with the program and portfolio). Tables (1-2) show variance analysis of the two variables (age – sensory motor perception) among the three groups.

Table.1 Variance analysis among the three groups on age

Groups	Freedom	Sum of quarters	Mean of quarters	V
Inter-groups	2	1.46	0.73	
Intra-groups	117	242.33	2.07	0.35
Total	119	243.79		

Table.1 showed no statistically significant differences among the three groups on age.

Table. 2 Variance analysis among the three groups on the dimensions of the sensory motor perception scale

Dimension	Variance source	Freedom	Sum of quarters	Mean of quarters	V
Posture and balance	Inter-groups	2	0.26	0.13	
	Intra-groups	117	77.62	0.66	0.19
	Total	119	77.88		
Tempo and neuromuscular control	Inter-groups	2	0.80	0.40	
	Intra-groups	117	77.77	0.66	0.60
	Total	119	78.57		
Recognizing body image	Inter-groups	2	0.75	0.38	
	Intra-groups	117	89.92	0.77	0.49
	Total	119	90.68		
Perceiving shapes	Inter-groups	2	0.40	0.20	
	Intra-groups	117	64.56	0.55	0.36
	Total	119	64.96		
Total	Inter-groups	2	3.72	1.86	
	Intra-groups	117	1101.58	9.42	0.20
	Total	119	1105.30		

Table. 2 showed no statistically significant differences among the three groups on the dimensions of the sensory motor perception scale.

Tools:

The researcher used the following tools to collect data:
The sensory motor perception scale (by the researcher).
The recommended motor education program (by the researcher).
Child's portfolio (by the researcher).

First: the sensory motor perception scale:

To design the sensory motor perception scale, the researcher reviewed the related literature (3-25-26-27-28). The researcher identified four dimension of the scale. Each dimension included several items (total

items = 30). The first version of the scale was presented to experts in childhood education, physical education methodology and curricula and sports psychology. All items with agreement of (50%) or more were included in the final version. Table (3) shows experts opinions on the sensory motor perception scale.

Table. 3 showed the percentage of experts' agreement on each item of the scale. All items above (50%) were included in the final version (n=20) as shown in table (3).

Table. 3 The final version of the sensory motor perception scale.

Dimensions and items	Percentage
Posture and balance	
1- Forward walk	80%
2- Backward walk	90%
3- Sideward walk	80%
4- Jumping	80%
5- Right foot hoop	70%
6- Left foot hoop	90%
7- Right and left slide	90%



Tempo and neuromuscular control		
1-	Hand-eye coordination	90%
2-	Foot-eye coordination	80%
3-	Neuromuscular coordination	80%
Recognizing body image		
1-	Body parts identification	80%
2-	Motion mimic	90%
3-	Hurdle test	70%
4-	Ground angles test	80%
Perceiving shapes		
1-	Circle	80%
2-	Square	70%
3-	Rectangle	90%
4-	Triangle	80%
5-	Horizontal line	80%
6-	Vertical line	90%

Validity and reliability of the sensory motor perception scale:

1- Validity: The researcher used the jurors' validity as the scale was presented to experts to show their opinions. The final version included (4) dimensions and (20) items.

2- Reliability: The researcher computed the scale's reliability using test/re-test on a sample of (10) children from outside the main sample. Time interval between two tests was (10) days.

Second: The recommended motor education program:

The program aims at improving the sensory motor perception for pre-school children. It works on developing the following dimensions:

- Posture and balance
- Tempo and neuromuscular control
- Recognizing body image
- Perceiving shapes

The program was designed considering the following:

- Specific characteristics of the age group under investigation.
- Individual differences.
- Fulfilling child's needs for motion and activity.
- Improving sensory motor perception of the pre-school child.
- Consistency with school capabilities and safety measures.
- Challenging children's abilities to stimulate their motivation.
- Interesting and enjoyable.

Program content:

After literature review (Al-sarheed & Etman, 1990; Keshner, 1995; Hammad, 1990; Tony, 1991; Tolba, 1995; Abd Al-Kareem, 1995; Abd El-Razek, 1997; Saber & Abd El-Fattah, 2002), the researcher chose a group of games, exploratory activities, spatial activities and motor activities (n=24) suitable for this age group. The chosen activities were distributed on the four dimensions (6 activities each). The program content was comprehensive, continuous and integrative.

Third: The portfolio:

The child's portfolio took the shape of a small decorated box, with four sides decorated with normal shape while the fifth side carried a special shape for each child to facilitate the child's recognition of his/her own portfolio.

Each portfolio contained a video tape, photographs of motor activity, teacher's notes, aims list or documentation list (the scale's items).

Children were videotaped during program application (at the end of each week). Each aim's activities were gathered together to identify if the child achieved this aim or not.

The portfolio reflected real results of the child's growth and development. Children enjoyed keeping and reviewing their videotapes as this provides them with organization and self-expression skills.

In preparing the portfolio, the researcher followed the following:

- Preparing arrangements for maintaining the portfolio: choosing and decorating the box (before program).
- Planning major aims (before program).
- Collecting children's performances (during program)
- Evaluating children's performances (during program).

Results

Table.4 Variance significance between the pre- and post- tests on the dimensions of the sensory motor perception scale for the control group (n=40)

Dimension	Pre-test		Post-test		Means difference	Change (t)
	Means	SD	Means	SD		

1-	Posture and balance	1.51	1.01	1.86	0.92	0.35	23.17%	1.62
2-	Tempo and neuromuscular control	1.68	0.94	1.97	0.87	0.29	17.26%	1.43
3-	Recognizing body image	1.74	1.12	1.83	0.83	0.09	51.17%	0.42
4-	Perceiving shapes	1.56	0.87	1.76	0.79	0.20	12.82%	1.07
5-	Total	6.49	2.78	7.42	2.58	0.93	14.33%	1.55

(t) Table value on ($p \leq 0.05$) = 2.02

Table. 4 indicates statistically significant differences on ($p \leq 0.05$) between pre- and post-tests on the sensory motor perception scale for the control group in favor of the post-test. The improvement percentage between the pre- and post- tests on the sensory motor perception scale for the control group. This percentage ranged from (17.26%) for Tempo and neuromuscular control and (12.82%) for perceiving shapes.

Table. 5 indicates statistically significant differences on ($p \leq 0.05$) between pre- and post-tests on the sensory motor perception scale for the first experimental group in favor of the post-test. The improvement percentage between the pre- and post- tests on the sensory motor perception scale for the first experimental group. This percentage ranged from (82.885%) for recognizing body image and (151.41%) for perceiving shapes.

Table. 5 Variance significance between the pre- and post- tests on the dimensions of the sensory motor perception scale for the first experimental group (n=40)

	Dimension	Pre-test		Post-test		Means difference	Change	(t)
		Means	SD	Means	SD			
1-	Posture and balance	1.54	0.65	3.21	1.06	1.67	108.44%	8.49
2-	Tempo and neuromuscular control	1.72	0.73	3.19	1.14	1.47	85.46%	6.87
3-	Recognizing body image	1.87	0.72	3.42	1.12	1.55	82.88%	7.36
4-	Perceiving shapes	1.42	0.69	3.57	1.62	2.15	151.41%	7.72
5-	Total	6.55	2.97	13.39	4.62	6.84	104.42%	7.87

Table. 6 Variance significance between the pre- and post- tests on the dimensions of the sensory motor perception scale for the second (portfolio) experimental group (n=40)

	Dimension	Pre-test		Post-test		Means difference	Change	(t)
		Means	SD	Means	SD			
1-	Posture and balance	1.62	0.74	3.65	1.21	2.03	108.44%	9.05
2-	Tempo and neuromuscular control	1.87	0.76	3.44	1.07	1.57	85.46%	7.56
3-	Recognizing body image	1.93	0.73	3.72	1.62	1.79	82.88%	6.37
4-	Perceiving shapes	1.47	0.65	3.84	1.34	2.37	151.41%	10.06
5-	Total	6.89	3.42	14.65	3.76	7.76	104.42%	9.65

(t) Table value on ($p \leq 0.05$) = 2.02

Table. 6 indicates statistically significant differences on ($p \leq 0.05$) between pre- and post-tests on the sensory motor perception scale for the second (portfolio) experimental group in favor of the post-test. The improvement percentage between the pre- and post-

tests on the sensory motor perception scale for the second (portfolio) experimental group. This percentage ranged from (83.95%) for Tempo and neuromuscular control and (161.22%) for perceiving shapes.

Table. 7 Variance analysis among post-tests for the three groups (control – first experimental – second experimental)

Dimension	Variance source	Freedom	Sum of quarters	Mean of quarters	V
Posture and balance	Inter-groups	2	69.60	34.80	
	Intra-groups	117	133.93	1.14	30.40
	Total	119	203.53		
Tempo and neuromuscular control	Inter-groups	2	49.49	24.75	
	Intra-groups	117	124.85	1.07	23.19
	Total	119	174.35		
Recognizing body image	Inter-groups	2	82.54	41.27	
	Intra-groups	117	178.14	1.52	27.10
	Total	119	260.68		
Perceiving shapes	Inter-groups	2	102.34	51.17	
	Intra-groups	117	196.72	1.68	30.43
	Total	119	299.06		



(V) Table values on ($p \leq 0.05$) = 3.09

Table. 7 indicated statistically significant differences among the post-measurements on the dimensions of the

sensory motor perception scale. The researcher will use L.S.D test to identify these differences.

Table. 8 Variance significance among post- tests on the dimensions of the sensory motor perception scale for the three groups (control – first experimental – second experimental) using L.S.D. test.

Dimension	Variance source	Means	Groups		V
			Portfolio	1 st experimental	
Posture and balance	Portfolio	3.65		0.44	1.97 →
	1 st experimental	3.21			1.39 →
	Control	1.86			
Tempo and neuromuscular control	Portfolio	3.44		0.25	1.79 →
	1 st experimental	3.19			1.72 →
	Control	1.47			
Recognizing body image	Portfolio	3.72		0.30	1.89 →
	1 st experimental	3.42			1.59 →
	Control	1.83			
Perceiving shapes	Portfolio	3.84		0.27	2.08 →
	1 st experimental	3.57			1.81 →
	Control	1.76			

Table. 8 indicates statistically significant differences among the post-measurements on the dimensions of the

sensory motor perception scale in favor of the two experimental groups.

Table. 9 Improvement percentage among the post-tests on the total score of the dimensions of the sensory motor perception scale for the three groups (control – first experimental – second experimental)

Dimension	Variance source	%	Groups		
			Portfolio	1 st experimental	Control
Posture and balance	Portfolio	125.31%		16.87 →	102.10 →
	1 st experimental	108.44%			85.27 →
	Control	23.17%			
Tempo and neuromuscular control	Portfolio	83.95%		1.51 ↑	66.69 →
	1 st experimental	85.46%			68.20 →
	Control	17.26%			
Recognizing body image	Portfolio	92.75%		9.87 ↑	87.58 →
	1 st experimental	82.88%			77.71 →
	Control	5.17%			
Perceiving shapes	Portfolio	161.22%		9.81 →	148.40 →
	1 st experimental	151.41%			138.59 →
	Control	12.82%			
Total score	Portfolio	112.63%		8.20 →	98.30 →
	1 st experimental	104.43%			90.10 →
	Control	14.33%			



Table. 9 indicates statistically significant differences among the post-tests on the total score of the dimensions of the sensory motor perception scale for the three groups (control – first experimental – second experimental)

Discussion

According to the results which indicates statistically significant differences among the post-tests on the total score of the dimensions of the sensory motor perception scale for the three groups (control – first experimental – second experimental) in favor of the second (portfolio) experimental group. This is due to the application of the recommended program with the portfolio as it helped the children to enjoy using videotapes and photographs and maintaining them.

The portfolio contains teacher's notes and videotapes for children's performance levels. Children's involvement in their evaluation helps them improve their motor skills quickly.

This is in agreement with previous studies (Gelfer, et al. 1991; Ball, & Mary, 1995; Ahmed, 2004) as the results of tempo and neuromuscular control were in favor of the first experimental group (85.46%). This indicates the positive Effect of A Motor Education Program Using Evaluative Documents' Package "Portfolio" on Developing Sensory Motor Perception in Kindergartens' Children (study sample).

Conclusions

The recommended program has a positive effect on improving sensory motor perception of pre-school children.

The second experimental group children (portfolio) surpassed their peers in the control and first experimental groups.

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