The effect of psycho-motor play on motor and body perception competence for young children with developmental delays

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ABSTRACT

This paper aims to describe how psycho-motor play advances motor competence and body perception, by helping to shape a positive self-image and activate movement. The participants were 4-7 year-old children with developmental delays who attended an inclusive nursery school. The measurement tools used for the pre-test and post-tests were the Mot 4-6 test, the Perception/Motor Competence Test and the Psycho-Educational Profile. The children participated in a six week programme in which they were exposed to various pieces of play equipment. For the data analysis, the total result of the children's performance was averaged and statistical significance with the t-test and Wilcoxon-test used to determine the difference between pre and post programme scores. The following results were obtained: Firstly, psycho-motor play was effective in the improvement of balance, postural control, and the coordination in the motor competence of Young Children with Developmental Delays (YCDD). Secondly, psycho-motor play was effective for the improvement of body scheme (a component of body perception) and spatial orientation.

Key words: balance, body perception, motor competence, postural control, psycho-motor play (PM), spatial orientation, young children with developmental delays (YCDD)

Introduction

Play has often been described as "the occupation of the child" and regarded as an essential part of development. In observing the daily lives of young children, it is seen that their behaviour largely consists of play in the form of free acting; in other words, pleasant movement of the body. They grow through continuous movement, which is a method of communicating within their world, and they discover their world by the way in which it relates to their bodies. Young children perceive their inner life and the outside world through movement. They develop their basic imagination through their bodies and the space around them. Through movement they develop postural control and various movement skills[1].

These movement patterns are essential for the development of the basic senses and the body's motor functions, including gross motor movement competence like crawling, standing, walking, running and hanging onto something as well as fine motor movement, such as holding, grasping, fitting, coordinating and operating. Both gross and fine motor functions are important skills that should lead the other developmental areas. This means that young children develop their bodies, social skills, positive emotions and adaptability to daily life during play and movement[2]. Motor competence of young children is an important factor in regulating healthy motor skills and dynamic balance throughout life. It is therefore important to ensure that young children become familiar with the movement of their bodies by offering them diverse motor experiences. However, most young children with developmental delays (YCDDs) are more delayed in aspects related to their bodies than their typically developing peers, as they tend to not move around as much as other children and follow their parents around rather than exploring their environment, which in turn limits their own intuitive activities. They therefore tend to have a negative self-image and limited social relationships. Due to insufficient sensitivity and deficient perceptibility of their circumstances, they are often limited in their independent activities, so their already delayed development becomes even more delayed[3]. Furthermore parents and professionals (teachers and therapists) alike, consider what the children's deficiencies are when planning intervention, without taking into account what the children want, when they are happy and what their strengths are. In doing so, parents and professionals sometimes do not realise that the smiles on these children's faces disappear during training. They use many intervention programmes in an attempt to "normalise" these children, thinking that they are doing their best. The aim of intervention should, however, rather be on ensuring that the body development of YCDDs is promoted, that they have a positive self-image, and that they adjust in their community as healthy people and live their lives for themselves[4].

The purpose of this study was thus not to approach the YCDDs as part of a training programme, but to participate in playing with them in order to encourage them to open their minds, to assist them in knowing the world around them, and to encourage self-confidence and a positive attitude through play.

Psycho-motor approach and its theoretical background

Kipard[5], the originator of the psycho-motor (PM) approach, described it as a holistic, human, developmental, movement education of the child, without focusing only on his/her abilities, achievements, weakness and problematic behaviour. The approach advocates that children play liberally, express themselves spontaneously, and it regards the individual's strengths and motor experiences as important. PM is applied to the delayed child when he/she shows problematic behaviour, and PM tries to positively influence all the developmental areas. Thus, PM has to be understood as a systematic intervention which facilitates development and growth. It regards the development of a child's positive self-confidence as the single most important factor, and not the development of a special capacity (aka "splinter skill") or higher IQ.

When children have a strong belief that "I can do it", it makes them aware of their potential abilities. This self-confidence, or positive self-image, is derived from the experiences of the body and from movement assignments, and not primarily from the encouraging words of parents or other professionals. The experiences through the body are understood more easily by the child, are remembered for a long time and can be expressed more readily[6].

PM needs the following three experiences, each of which will improve the chances of successful achievement, namely:

i) the body experience for the improvement of self-competence;
ii) experiencing the equipment and material for the improvement of recognising it (e.g. if the children play with the ball, they can

feel and remember its features, e.g. round, hard, soft, etc.); and

iii) the social experience for the holistic improvement of the child. Through these experiences, children learn the relationship between their own world, the material world and the world of others. (See Appendix 1 for an example from the PM programme). More importantly, support builds up positive self-confidence and helps children realise their strengths or capacity despite their problematic behaviour.

In this study, the main focus was on young children with developmental delay who lacked body experiences and experiences with a variety of equipment to facilitate motor development.

The theoretical background of PM is described by Merleau-Ponty[7], who says that the mediator between movement and the human being is the body. This can be regarded as a unitary concept (mind and body as one) as children express their experiences through movement.

A human being is connected to the world through the body. Movement is the original expression of the body, so the movement of a person has an important meaning in itself. The understanding of PM is therefore that people express themselves through movement, attitude, play, and stories. Everybody should be given the opportunity to interact and communicate with their surroundings without regard to their disability or degree of the disability, and to recognise their living world, and their own significance.

PM also emphasises that human beings discover their stories from talking, looking at pictures, playing and reporting on what they see. They need another person to retell their stories, thereby enabling them to discover the significance and meaning of these stories. Through this telling and retelling of stories humans find the relevance of body-phenomenology as highlighted by Merleau-Ponty and PM. The Viewpoint of Understanding by Seewald[8] states that the therapists' understanding of children should be free from the danger of one-sided analysis requiring self-reflection about the relationship between the object and the method. Thus, the Viewpoint of Understanding helps to clarify what it means when children express themselves through movement, gesture, attitude, play and talk[9].

Besides the simple physical functions, our bodies perform various roles and functions such as movement, facial expression, positioning of the legs and arms or walking. In most cases emotions are expressed through the movement of the body. Furthermore, the emotions become clearer through play, moving and exercise. Movement is not merely a simple moving activity of physical exercise, but it is the mechanism of relating to the five senses of the person. Tactile sense, visual sense and auditory sense are also stimulated with a person's movement. So, to understand a person's movement through the body, therapists should approach intervention from this viewpoint. PM performs this role by considering the body-dimension and the psychological dimensions together[10].

The psycho-motor approach and play

Children make play come alive through their own interpretation thereof. The vaulting horse becomes a ship and the children have to defend the ship against the enemy pirates. Scooter boards are changed into boats, and soft balls are thrown into the military camp by the pirate ship, as artillery. So the children play in situations that resemble their daily lives or fantasy worlds. Through this kind of play, the children's daily experiences appear to be symbolic activities and are treated as new and filtered. The children express themselves during symbolic activities, so they sometimes have opportunities for problem-solving. In this way PM assists in helping the children by providing them with opportunities to search for a "new world" through play. Children express themselves and communicate through movement and play. Using their discretion, children connect their favourite images or stories with play as well as processing their past experiences. Moreover, play helps them to deal with emotional conflict. If the children can decide on their behaviour, they can play with 100% focus and power. Because psycho-motor play allows the children to express themselves with appropriate form, it has significant meaning. Ultimately, intervention is provided through a combination of play and movement in which the professional exposes children to various play materials and initiates play activities with these materials[11] as described in *Appendix 1*.

Methodology

Aim

The aim of the study was to assess whether PM had a positive effect on the psycho-motor competence of a group of young children with developmental delays.

Participants

A class at an inclusive nursery school, affiliated to a church in South Africa was selected for the purpose of the study. A paediatric psychiatrist diagnosed all eight children in the class with a developmental delay, making them possible participants. One mother did not give consent for participation, therefore her child was excluded. Of the seven remaining participants, two were frequently absent, due to health reasons and personal circumstances. Consequently, the data of only five participants are included. The chronological ages of the participants ranged from 4 to 7 years old, and their characteristics are shown in *Table 1*.

Table 1: Characteristics of the participants

Child	CA	Gender	Severity	Diagnosis	Previous Invention
A	5 yr	Female	Moderate	Communication and motor delays	None
B	4 yr	Male	Moderate	Autism	Behaviour management for six months
C	5 yr	Male	Mild	Communication and intellectual impairment	AAC
D	7 yr	Female	Severe to Profound	Cerebral Palsy and Rett syndrome	None
E	6 yr	Male	Moderate	Autism	None

Measurement Instruments and Equipment

Three measurement instruments were used to test the effect of psycho-motor play. In order to test this effect on motor competence (dynamic balance, postural control, speed and coordination) the Mot 4-6[12] was used, while two tests were used to test the effect on body perception, namely the Perception/Motor Competence Test[13] and the PEP[14]. Each of these three tests will now be described in more detail.

1. Mot 4-6 [12]

Following the pilot study, ten activities from a possible eighteen included in the Mot 4-6[12] were selected as they were deemed appropriate for children with developmental delays. The purpose of the Mot 4-6 is to assess motor competence in four to six year old typically developing children. An expert panel discussion revealed that some tasks were too difficult for the chosen population, and were therefore not included during the pre-test or the post-test procedure (e.g. jumping over a rope at two different heights). Eliminating these tasks did not influence the scoring of the Mot 4-6. See *Table II* on page 15 for a description of the test.

2. Perception/Motor Competence Test[13]

The Perception/Motor Competence Test of Lee[13] measured the body perception (in terms of body scheme, body awareness, body concept and laterality) spatial orientation (in terms of position in space and spatial relations) as well as time perception (in terms of speed and accuracy). See *Table III on page 15* for a description of the test.

Table II: Activity, performance component and equipment used in the Mot 4-6

No	Activity	Performance Component	Equipment
1	Walking forward on a balance beam	Dynamic balance Spatial orientation Tactile discrimination	Balance beam (length 200cm; breadth 10cm)
2	Making as many dots on a paper (tapping) as possible, in a predetermined time	Speed of task completion Fine coordination	Pen A4 paper Stopwatch
3	Picking up handkerchief with toes (both left and right)	Speed of task completion Dynamic balance	Handkerchief (40cmx40cm) Stopwatch
4	Jumping sideways over a rope on the floor from left to right as many times as possible in a predetermined time	Quick movement of both feet	String (2m) Stopwatch
5	Transferring three tennis balls as quickly as possible from one box to another	Speed of task completion Dynamic balance	Tennis balls (3) Two small boxes Stopwatch
6	Hitting a target board with a tennis ball from a 3m distance	Eye-hand coordination Gross coordination Accuracy	Target board (diameter 40cm) Four tennis balls
7	Star jumping ("Jumping Jacks") for 10 seconds	Speed of task completion Motor planning	Stopwatch
8	Rolling over on the floor with a fully outstretched body	Body schema Coordinated movement of whole body	None
9	Wiggle through a hula-hoop without touching the sides of the hoop	Dynamic balance Gross coordination Motor planning	Hula-hoop
10	Getting up and sitting down from a cross-legged position while holding a ball over the head with both hands	Dynamic balance Motor planning	Ball

Table III: Perception/Motor Competence Test (Lee, 1997)

Performance Component		Instruction	Evaluation item	Score	Test		Total
					Pre	Post	
Body percep-tion	Body scheme	Make body look like a ball	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
		Make body look like a stick	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
	Body awareness	Make body as small as possible (shrink)	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
		Make body as big as possible (stretch)	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
	Body concept	Naming body parts	Eye, mouth, ear, nose, head, hand, foot, belly button, elbow	1 point per item			
	Laterality	Midline crossing	Can complete task (arms and legs)	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
Spatial orienta-tion	Position in space	Raise both hands above head and return to original position	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
		Put both hands on floor and return to original position	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
	Spatial relations	Participate in obstacle course without bumping into objects	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
Time percep-tion	Speed	Can walk quickly in a given direction	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
		Can walk slowly in a given direction	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			
	Accuracy	Child starts and stops walking with sign being shown	Can complete task	Above (2)			
			Can partly complete task	Normal (1)			
			Cannot complete task	Below (0)			

The Perception/Motor Competence Test was selected to augment the PM play programme as PM primarily focuses on gross motor activities. This test was used for the pre- and post-test, and all items were included.

3. Psycho-Educational Profile Test (PEP)[14]

The PEP was conducted in order to evaluate behaviour and basic sensory competence as a basis for motor competence. It tests both chronological age (from one to twelve years old) and mental age (from one to five years old). In other cases this test has been used for diagnosing developmental delays, as it measures the following skill areas: imitation, perception, gross or fine motor skills, hand-eye coordination, understanding of language (receptive language) and expressive language. This study selected three sensory items (tactile, auditory and visual) from the complete list of items to measure basic body perception. See *Table IV* for a description of the test.

Table IV: PEP Test

Action	Sensory system	Response	Score
Reaction to tickling	Tactile sense	Child reacts suitably to tickling (smiles or laughs)	2 points
		Child reacts slightly unsuitably (scared or avoidance behaviour)	1 point
		Child reacts unsuitably (cries or shows no reaction)	0 points
Reaction to a whistle	Auditory sense	Child reacts suitably to the sound (asks about the sound or blinks eyes)	2 points
		Child reacts slightly unsuitably (appears to listen, but does not react)	1 point
		Child shows no reaction	0 points
Fitting three geometrical shapes into a form board	Visual sense	Child can fit two or more shapes	2 points
		Child can fit at least one shape	1 point
		Child cannot fit any of the shapes	0 points

Test procedures, treatment programme and data analysis

For the pilot study, the researchers used a participant who met the same criteria as set for the main study, at the same inclusive nursery school, in order to judge whether test procedures and measuring instruments were suitable for the children being tested. The identical test procedure as suggested for the main study was used, but for a shorter time (only 1 week). The testing was done by two professionals who were familiar with the children (the vice-principal of the school and a teacher). They were trained in the administration and scoring of the three measurement instruments. The main researcher (and first author), acted as an observer as well as being the second rater. Results from the pilot study showed firstly, that the measurement instruments were appropriate for eliciting the required behaviour. Secondly, both the pre- and post-tests could easily be done, as the measuring instruments captured the participant's interest. The pilot study therefore verified the suitability of the measuring instruments for evaluating PM.

The collection of data started with a pre-test that consisted of the Mot 4-6 test, Perception/Motor Competence Test and PEP test. The tests were performed by two testers (the same two who participated in the pilot study), with the main researcher acting as a second rater, and a fourth person who assisted with logistical procedures (e.g. keeping time). Children were tested individually, and at the end of each test they were allowed to play in the kid's gym until their next test started. Each test took between 10 and 15 minutes.

The intervention programme encompassed eighteen sessions over a six week period. Between the ninth and tenth sessions of the programme a mid-test was conducted for confirmation of programme appropriateness, but the result of the mid-test was not included in the statistical analysis. In the first three weeks (weeks 1 – 3) YCDD were exposed to various pieces of equipment in the programme (e.g. a balance beam, a parachute, scooter board, soft cloth, ball, square mat, etc.), in an attempt to establish a relationship between the body and the equipment (free play with the equipment). The testers initiated the play activities and provided regular opportunities for rest by monitoring the children's fatigue levels. During the play activities the children touched the various pieces of equipment, threw them, rode on them, rolled in them and lay down on them. During the second three weeks (weeks 4 – 6) the researchers facilitated specific play activities able to develop motor competence through exposure to equipment. For example, during weeks 1 to 3, the children could touch the parachute and feel the fabric it was made from, lie down on the open parachute and roll up in it. During weeks 4 to 6, the children sat on the parachute while adults slowly lifted and moved it up and down. The children became excited as they tried to balance themselves during this activity. At the end of the programme, the post-test was performed. After descriptive statistics were obtained, the results of the t-test and Wilcoxon test were applied to the data to test the statistical significance between the pre-and post scores.

Ethical approval was obtained from the University of Dankook, Seoul. Approval for children to participate was obtained from the parents.

Results

The effect of PM on motor competence (Dynamic balance, Postural control, Speed, Coordination)

This study divided the items of Mot 4-6 test into four factors namely dynamic balance (walking forward on a balance beam, picking up an handkerchief with the toes, getting up and sitting down from a cross-legged position while holding a ball over the head with both hands); postural control (rolling, wriggling though a hula-hoop); speed (jumping sideways over a rope on the floor from left to right, putting a tennis ball in a box) and coordination (hitting the target, making dots on a paper). The t-test was used to compare the difference in the scores of the Mot 4-6 test obtained before and after implementation of the PM programme. Three of the four variables, dynamic balance (0.033), postural control (0.005), coordination (0.035), showed a statistically significant difference at the 5% level of confidence. The Wilcoxon test yielded a statistically significant difference for the postural control variable (0.038). (See *Table V*)

Table V: The result of Mot 4-6 Test

Ability	Test	Average	N	SD	t-test (p-value)	Wilcoxon (p-value)
Dynamic balance	Pre	0.67	5	0.782	-3.270	-1.857
	Post	1.07	5	0.596	(0.033)	(0.063)
Postural control	Pre	0.60	5	0.418	-5.715**	-2.070*
	Post	1.30	5	0.274	(0.005)	(0.038)
Speed	Pre	0.10	5	0.224	-1.372	-1.300
	Post	0.50	5	0.500	(0.242)	(0.194)
Co-ordination	Pre	0.20	5	0.298	-3.138*	-1.841
	Post	0.73	5	0.494	(0.035)	(0.066)

* $p<0.05$
** $p<0.01$

The effect of PM on body perception

The t-test was used to compare the difference in basic body perception as measured by three sub-items of the PEP, but none of the items showed a statistically significant difference between the scores obtained before the programme began and those obtained after completion, and hence will not be shown.

Thereafter, the results of the Perception/Motor Competence Test were divided into the three factors: body perception (body scheme, body awareness, body concept and laterality); spatial orientation (position in space and spatial relations) and time perception (speed and accuracy). The individual test scores are shown in *Table VI*. The t-test as well as the Wilcoxon were applied. Only time perception appeared to be statistically significant (0.022). The purpose of the time perception variable was to measure the speed and accuracy of different movements.

Table VI: Result of the Perception/Motor Competence Test

Performance component	Test	Average	N	SD	t-test (p-value)	Wilcoxon (p-value)
Body perception	Pre	0.77	5	0.696	-2.086	-1.753
	Post	1.45	5	0.650	(0.105)	(0.080)
Spatial orientation	Pre	0.93	5	0.596	-1.510	-1.289
	Post	1.40	5	0.796	(0.206)	(0.197)
Time perception	Pre	0.33	5	0.471	-3.651*	-1.857
	Post	1.00	5	0.745	(0.022)	(0.063)

* $p<0.05$

Discussion

To fulfill the aim of the study, namely whether movement experience through PM play has a positive effect on the motor competence of YCDD, the pre- and post-test scores of the Mot 4-6 test were compared. Improved results were found in the dynamic balance, postural control, and coordination performance components, but not in speed. This was expected as the speed component was more delayed in the children than the other components. Considering the Perception/Motor Competence Test, children A and B improved considerably, from 9 points to 12 and 6 points to 17 respectively, but because of the small sample size the whole result did not appear statistically significant. Two items of the body perception section (namely body scheme and laterality) showed a statistically significant difference at the 5% level between the pre- and post-test. The improvement of body scheme is seen as a result of the increased familiarity with the equipment that the children were exposed to and that was experienced through their movement. The same effect was seen when the children jumped over cone hurdles, crawled under the scooter board, etc. Despite the relatively short experimental period, the PM programme was found to be appropriate for YCDD if interventionists are thoroughly prepared. This requires interventionists to be knowledgeable about PM and understand its underpinnings, but also that the special equipment (e.g. custom-made toys) be available. In addition, if the PM programme offers appropriate activities for YCDD (space, time, teacher and peer's participation for spontaneous play, toys, etc) they could make suitable choices for themselves, be engaged as their interests are considered, and finish the programme successfully[15].

Conclusion and Recommendations for Further Studies

This study attempted to develop the motor and body perception competence of YCDDs through PM play and the programme progressed from the gross motor play to fine motor play and then to play involving eye-hand coordination. However, the PM programme is mainly an activity programme for gross motor skills, so to supplement the frailty of this aspect of PM, the study added play programmes focused on fine motor activities as described by Lee[16], ·Ha[17], and Whang[18]. As the above-mentioned studies were focused on typically developing children, they could not be applied to the YCDDs as is, they were, therefore, simplified and modified. If the characteristics of YCDD are followed through the programme cycle, it is noticeable that if the children are exposed to enough equipment and can do something with it, play develops. The vulnerability of the play activity of YCDDs does not mean denying them the opportunity of playing with peers, but that cooperative play is insufficient. The YCDDs initially stuck to playing with the equipment alone, but soon they joined their peers, expressing enjoyment in the play activities through facial expressions, laughter and a decrease in self-stimulatory behaviour. When they had played enough, they lost interest in the equipment and their peers, resulting in disengagement.

The children's favourite piece of equipment was the balance beam. The balance beam acted as a bridge that connected two 'vaulting horses' that had a height of 30cm, and the children tried not to fall off the bridge. This activity helped to develop their balance, postural control, and coordination. Once the children had crossed the balance beam, they raised the gym ball on the balance beam and attempted to cross with the ball. Eventually when they crossed the balance beam, after many failures, they smiled happily. Such spontaneous play prompted a search for the rest of the play equipment, thus, through this programme the children could shape their knowledge about how the equipment related to themselves and their world.

On the grounds of the above conclusion, recommendations for future studies are made. Firstly, because the ultimate goal of PM play is to create a 'positive self-image', this study also tried to advance the shaping of a positive self-image with motor and body perception development. However, due to the relatively short intervention period, the study had to remain focused on basic body perception. Further studies of longer periods (more than six months) should therefore be undertaken. Secondly, YCDD should be integrated with typically developing peers, as inclusion is of critical importance for these children's development. Interventionists should become skilled in the ways to act as participants in this context and not as a director or advisor[19].

Acknowledgement

The input of Prof Kitty Uys and Ms Karin van Niekerk (Centre for AAC, university of Pretoria) is gratefully acknowledged. They greatly assisted us in using terminology that would be understandable to South African occupational therapists, thereby providing invaluable input.

References

1. Whang SG. The effect and conduct of the program about young children's body activities. Unpublished Doctoral thesis. South Korea, Seoul: University of Joongang, 2000.
2. Lee S. The theory and practice of the child play. South Korea: Changji, 1990.
3. Lee MK. The effect of an exercise program on leadership and on the social relationships of YCDD. Unpublished Master's thesis. South Korea: University of Gongju, 2001.
4. Jeong YS. The effect of psycho-motor play on motor competence and body perception competence for young children with developmental delays. Unpublished Master's thesis. South Korea, Seoul: University of Dankook, 2006.
5. Kipard EJ. Psychomotorik in Praxis und Teolorie. Dortmund: Gütersjoh. 1989.
6. Rhie SJ. Phenomenological conversation about "the body" of Psychomotoricity. Transcript of lecture. South Korea, Seoul: University of Cathoric. 2004.
7. Merleau-Ponty M. Phenomenology of perception. New Jersey: Humanities. 1962.
8. Seewald J. Verstehn der Ansatz und Seine in der Thiorielandschaft der Psychomotorik. In: Praxis der Psychomotorik. 1997.22(1): 4-15.
9. Kim YT, Kim IM. The theory and intervention of psycho-motor through understanding views of Seewald. Journal of Special Education, 2005. 6(4): 75-92.
10. Rhie SJ. The understanding of movement in the psycho-motor approach. Transcript from seminar. South Korea, Seoul. 2004.
11. Zimmer R. Psychomotorik. Koeln: Schorndorf. 1995.
12. Zimmer R, Volkamer M. MOT 4-6. Motoriktest für vier-bis sechsjährige Kinder. Weinheim. 1987
13. Lee HK. The effect of physical program through sport outfits on

basic movement and perception-motor competence. Unpublished Master's Thesis. South Korea: Seoul: University of Myungji, 2003.
14. Schloper E, Reichler RJ. Individualised assessment of autistic and developmentally disabled children: Volume 1. Psycho-educational Profile (PEP). Pro-Ed: Texas. 1979.
15. Park WH. The direction of leisure program for people with severe and multiple disabilities. Unpublished doctoral thesis. South Korea, Seoul: University of Joongang, 2002.
16. Lee MK. The effect of an exercise program on leadership and on the social relationships of YCDD. Unpublished Master's thesis. South Korea: Gongju: University of Gongju, 2001.
17. Ha MJ. The influence of the sensory integration training about cerebral palsy and intellectual impairment of children. Unpublished Master's thesis. South Korea, Seoul: University of Dankook, 2005.
18. Whang JY. The influence of the fine muscle co-ordination play on the maladjusted behaviour and concentration. Unpublished Master's Thesis. South Korea, Daegu: University of Daegu, 2004.
19. Bornman J, Almqvist L. Positive functioning: Exploring its relevance for disability and intervention. South African Journal of Occupational Therapy. 2007: 37: 2-3. ❑

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Appendix 1: PM programme (One example from 18 possible group activities)

Activity	The sky turns around
Goal	Practicing balance by turning around (fast and slow)
Performance component	Dynamic balance, body scheme, vestibular sensation, activity level
Equipment	Three scooter boards, small mat, parachute
Procedure	**1. Warm up activity** The children try to keep their balance while sitting on a big ball. The teacher tries to disturb the child's balance by gently pushing the ball. Peers are encouraged to imitate the teacher. This activity enables the child to experience balance responses at first hand. **2. Main Activity** Two scooter boards are placed next to each other with a mat covering both the boards. One child then lies on the scooter in a prone position. A peer is asked to gently rotate the scooter boards. The teacher is available to assist if needed. **3.Closing Activity** Teacher connects three scooter boards and spreads the parachute to cover them. Children are encouraged to lie on the parachute. The teacher gently pulls the scooter board while playing calming music, giving the children the opportunity to relax and decrease their activity level.
Outcomes	• Children practise dynamic balance through fast or slow movements. • Through movement the child builds body scheme and experiences vestibular sensation. • The closing activity is important for children who experience heightened activity levels during the main activity.
Evaluation	This activity is suitable for improving the dynamic balance of the children with severe and multiple disabilities, who do not move spontaneously. It also develops postural control in a playful manner.

Through the lens of a peer: understanding leisure boredom and risk behaviour in adolescence

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ABSTRACT

There has been very little research investigating leisure boredom and risk behaviour among adolescents in South Africa. Using a qualitative approach, this study investigated adolescents' perceptions of leisure boredom and risk behaviour during free time. The sample of participants comprised three groups of adolescents: a community group, a school group and a group who had dropped out of school. Participants documented their free time experiences by taking photographs that were later discussed in focus groups. The findings showed that the participants were bored in their free time mainly because they had nothing to do. The low socio-economic environment where they lived contributed to occupational deprivation and imbalance in their free time, maintaining or 'trapping' the adolescents within the situation and contributing to feelings of boredom. The participants spent much of their free time 'hanging out' on street corners or in backyards, which allowed them to socialise, but inevitably led to boredom. Participants felt that boredom was part of life, although some perceived it to be 'dangerous' because it often led to risky behaviour. In conclusion, the study showed that for the participants, leisure is an occupational concern due to the occupational deprivation and imbalance occurring within their free time. Occupational therapists should consider how leisure boredom influences adolescent health, wellbeing and development, and plan interventions accordingly.

Key words: Adolescence, free time, leisure boredom, photographs, risk behaviour

Introduction

Leisure boredom is being experienced by young South Africans and can influence aspects of their lives. A previous study conducted among school-going adolescents in Cape Town (South Africa) showed that leisure boredom was relatively higher among girls and younger adolescents[1]. Another study showed that adolescents who experience higher leisure boredom were at greater risk of dropping out of school[2]. These studies used a quantitative approach, thus