Effectiveness of modeling strategy on the functional locomotor skills development for intellectualy disable childrens

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Abstract:

This research aims to identify the effect of the modeling strategy on learning basic motor skills for children with mental disabilities from the age of 5 to 8 years through the application of a proposed 12-week program. The experimental approach was used and with pre- and post-measurement for one group to suit the nature of the research. A sample was chosen random selection. The research was conducted intentionally among young children with mental disabilities from the New Helwan Youth Center. The total sample size was (20) male and female players. A number of (10) players were chosen as a sample for the exploratory study, representative of the original community and from outside the main research sample. They were chosen randomly in order to identify the effect of the modeling strategy on the basic movement involved in (running - jumping - horse step - gap - jump - sliding), The most important results were as follows: The percentage of improvement for the variables ranged between (60.7% and 80.6%), and the best percentage of improvement was the slide and the lowest percentage was for the jumping skill. The researcher recommends using the modeling method for players with mental disabilities to improve basic motor skills.

فاعلية استراتيجية النمذجة في تنمية المهارات الحركية الوظيفية لدى الأطفال المعاقين فكرياً

الملخص:

هدف هذا البحث الي التعرف علي تأثير استراتيجية النمذجة علي تعلم المهارات الحركية الاساسية للاطفال ذوي الاعاقة الذهنية من للمرحلة السنية من 5الي 8 سنوات من خلال تطبيق برنامج مقترح من 12 اسبوع، وتم استخدام المنهج التجريبي وبالقياس القبلي والبعدي لمجموعة واحدة لمناسبتة لطبيعة البحث، تم اختيار عينة البحث بالطريقة العمدية من الاطفال ذوي الاعاقة الذهنية صغار السن من مركز شباب حلوان الجديدة وبلغ اجمال حجم العينة (20) لاعب ولاعبة، وتم اختيار عدد (10) لاعبين كعينة للدراسة الاستطلاعية،ممثلة للمجتمع الاصلي ومن خارج عينة البحث الاساسية، تم اختيارهم بالطريقة العشوائية بهدف التعرف علي تأثير استراتيجية النمذجة علي الحركية الاساسية المتمسلة في(الجري- القفز - خطوة الحصان- الفجوة- الوثب – الزحلقة)، وجائت اهم النتائج كالتالي تراوحت نسبة التحسن للمتغيرات بين (60.7 % ، 80.6 %) وان احسن نسبة تحسن كانت الزحلقة واقل نسبة كانت لمهارة الوثب، وتوصي الباحثة بأستخدام اسلوب النمذجة للاعبين ذوي الاعاقة الذهنية لتحسين المهارات الحركية الاساسية.

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Introduction and research problem:

Childhood is considered the true wealth of nations, and the civilizational progress of countries is measured by the extent of their interest in childhood in general and those with mental disabilities in particular. Children in the pre-school stage tend to play that depends on physical movement. The happiness that the child feels while playing indicates that play represents a natural satisfaction of his basic needs. Through play, the child develops his body and mind, realizes himself, and achieves integration between mental, motor, psychological, and social functions.

The disabled child, like other children, tends to play and to use play tools. In fact, he has many abilities that need the attention of the parents, teachers, and supervisors in charge of him, to be guided to the right direction. Play is one of the necessary activities that can help in developing... Physical, mental, psychological and social aspects. (23:3)

Amin Al-Khouly and Osama Kamal (1999) point out that emphasis should be placed on learning basic functional motor skills, such as correct standing, running, jumping, hanging, throwing, and others, because they are basic movements that are important for his environmental adaptation, while trying to teach him some (special) motor skills that suit his condition and that do not require many cognitive dimensions or high compatibility between his body parts, and at the same time work to increase his level of physical fitness.(296:4)

Developing a child's motor skills and motor abilities is extremely important, to help the child participate in motor activities and sports to gain motor experiences. A child who has not had the opportunity to develop these skills may face difficulty or rejection from peers. (45:5)

The goals of special physical education for children with mental disabilities do not differ from the general goals of physical education for normal children. Therefore, physical education activities for children with mental disabilities are often the same as those for their normal children and may even be their primary means of success and self-provement. (5:36)

Modeling is one of the important processes in modifying behaviours because of observing and immetating the behavior of another person. This process is essential in most stages of human learning. We learn most of our behaviors by observing others' behaviors and imitating them. (2)

Modeling is defined as one of the forms of observational learning, where people observe themselves or their peers successfully performing a behavior, then imitate the behavior and apply it in new situations. It is a behavioral intervention based on observational learning that includes teaching specific behaviors through observing models to acquire.

There are fields of modeling method such as daily life skills, social life skills, linguistic skills, purchasing skills, professional skills, academic skills, and sports skills.

Rogers and others (2005) (14) believe that there is a weakness in imitation among children with disabilities, especially motor imitation, but early intervention and educational programs have a significant impact in

improving these skills in these children, and these matters are of great importance in the development of many.

Individuals with mental disabilities constitute social phenomenon, whether in civilized societies that care for their citizens to provide them with the best opportunities for social congruence, or in developing societies, where individuals with mental disabilities become a burden on the family and the country, they need to be given the energy and effort they require to provide them with physical and psychological care. The disabled child, like other children, tends to play and to use play tools. In fact, he has many abilities that need the attention of the parents, teachers, and supervisors in charge, to be directed in the right direction. Play is one of the necessary activities that can help in developing Physical, mental, psychological, and social aspects. Early intervention has a significant impact in improving these skills.(9)

Through the researcher's work in the field of teaching and her dealings with young players with mental disabilities, and based on her awareness of the importance of play and motor activities to develop and enhance their motor performance, and enhance their social interaction, and through the researcher's observation, she found that the child with mental disability is a good imitator of motor skills and life skills. This is what He prompted her to design a program using modeling to teach some functional locomotor skills to children with mental disabilities.

Research importance:

- The lack of studies that dealt with the development of basic motor skills in children with intellectual disabilities in the age group (5-8) years.
- Opening new horizons for the use of modeling for young players with mental disabilities=
- Developing basic skills for children with intellectual disabilities by capturing their interest and motivating them to continue learning while achieving maximum enjoyment and participation.

Definition of terminology:

Functional locomotor skills are basic movements that are important for environmental adaptation, and that do not require many cognitive

dimensions or high compatibility between body parts, and at the same time work to increase his level of physical fitness. (Procedural definition)

Aim of the research

1 - The research aims to identify the effectiveness of the modeling strategy on the functional locomotor skills development of children with intellectual disabilities from the age of 5-8 years

Research hypotheses:

There are statistically significant differences between the pre-and post-measurements in transitional skills in favor of the post-measurement among young players with mental disabilities, the research sample.

The research procedures included a set of basic steps:

Research Method:

The researcher used the experimental method with a single group design (experimental) and used measurements (pre-post) to suit the nature of the research.

Research community:

Young (20) players from Helwan Youth Center with mild mental disabilities whome are capable of learning, age from 5-8 years old, registered in the Egyptian Special Olympics.

The research sample:

The sample was selected intentionally. The research sample included (10) Players enrolled in the Egyptian Special Olympics for the sports season. 2022-2023

Data collection methods:

The researcher used the following tools to collect data for this research:

First: References and studies related to the research.

Second: Official records

- Registration Form:

The researcher used the form for the Orlich test (TGMD2). It had a collection form Data for young players, such as name, age, preferred hand, and preferred foot, in addition to motor skills results.

- Orlich test model
- Expert Opinion Poll on the proposed program

Third: The program:

Program goal:

- Developing functional locomotor skills for children with mental disabilities using the modeling stratigy represented in transitional motor skills (running, galloping, and jumping, hop, leap, Slid, Horse step).

Proposed programme:

The researcher considered the scientific foundations of the training program, which begins with a good warm-up, which lasts from 5 to 10 minutes, to raise the body temperature and stimulate blood circulation.

- Program duration:

The program took three months to implement, with (12) weeks, with (2) weekly units and (24) training units. The training unit time is 45 seconds, and Table (1) shows a model for organizing a daily unit.

Skill objectives: walking - running – jumping- leap- slid
Educational objectives: Honesty - taking responsibility
Tools used: collars, balls, markers, collars, and tapes

Table (1): A model for organizing a daily unit

Modeling style	Objectives Kinetics	Time	Objectives Kinetics	Modeling style
Introduction Warm-up	Accompanied by music - [Standing] Walking in place while moving the arms beside the body - [Standing feet parallel.] Take a step right then left - [feet parallel. Arms aside] Repeat the above while moving the arms up and down. - [Standing] run in place while raising the knees high - [Standing] Run forward for 5 meters, then run backward for 5 meters, touching an object placed at the ground. - Repeat the previous exercise left and right	10 min		A model of players with disabilities warming up
	Accompanied by music 1-[standing. Arms aside] jumping jack 2-[standing. Arms aside] jump squat position 3- [squat position] performed jumping forward twice and then high once 4-[Horizontal oblique. Knee support] Move the water bottle from right to left and repeat.	30 min	Walking Running Jumping	Use illustrated modeling, live modeling

	5-[Horizontal oblique. Support the elbows] stability 6-[Standing on all fours] Constancy [Standing on both knees and hands] Walking around the room and imitating an elephant without bumping into anything			The main part
	Accompanied by music [Standing] Walking forward 4 steps, then stop clap hands four times, repeating backward, then to both side .	5 min	direction awareness	Final part

Program implementation methods:

- Explaining exercises, displaying skills, and ensuring that young players understand the performance.

- Using the researcher Modeling:

The methods used in modeling varied (pictures, videos, a model of players with mental disabilities A model of normal players, assistance from normal players and those with mental disabilities (all young players participating during the performance as well as when showing a distinctive level of performance and stimulating the motivation of young players by using technology, augmented reality, gamification strategy, and encouraging banners.

- Using symbolic and moral incentives that would stimulate the motivation of young players to participate and perform.

(TGMD2) was filled out to collect data for each sample member. This form included the players' data, including the player's preferred hand to use, as well as the foot, and the results of the various tests. (Attachment 1)

Table (1): Experts' opinion on tool control skills as measured by the Orlich test. Percentage of their agreement

transitional motor skills	Agree	Disagree	%
Running	9	1	90
Jumping	8	2	80
Horse step	10	0	100
Gallop	9	1	90
Hop	8	2	80
Leap	9	1	90
Slid	10	0	100

Statistical treatments:

The arithmetic mean, the standard deviation, the skewness coefficient, the significance of the differences using the Mann - Wanty method, the correlation coefficient, the significance of the differences, and the percentages of change.

First: Display the results:

This part deals with a presentation of the results that were reached through statistical treatments of the research data. According to the objectives and hypotheses of the research, the results were presented as follows:

Below is a presentation of the results obtained:

Significance of change between the two measurements (pre and post) Table (2) and percentages of change Table (2)

Table (2)

The significance of the differences between pre-measurements and post-measurements in the transitional skills under investigation (n=10)

the exams	Pre-measurement		Dimensional measurement				Signal direction	Z value	Probability of error
	A	M	A	M	Average rank	Total ranks			
Running	.69921	3.4000	.73786	6.1000	0.00 5.50	0.00 55.00	- Zero + 10 = zero	2.919	0.004
Jumping	0.632	2.800	0.527	4.500	0.00 5.50	0.00 55.00	- Zero + 10 = zero	2.919	0.004
Horse step	0.483	3.700	0.516	6.600	0.00 5.50	0.00 55.00	- Zero + 10 = zero	2.913	0.004

Hop	0.527	3.500	0.666	6.00	0.00 5.50	0.00 55.00	Zero – 10 + =Zero	2.840	0.005
Leap	0.788	4.200	0.737	6.900	0.00 5.50	0.00 55.00	Zero – 10 + =Zero	2.859	0.004
Slid	0.516	3.600	0.527	6.500	0.00 5.50	0.00 55.00	Zero – 10 + =Zero	2.913	0.004

It is clear from Table (2) that: There are statistically significant differences between the pre- and post-measurements in all the transitional skills under study and in the direction of the post-measurement, as all error probability values are smaller than the significance level of 0.05.

Table (3)

Percentages of change between the average of the pre-measurements and the average of the post-measurements In the transitional skills under research (n=10)

the exams	Pre-measurement	Dimensional measurement	Percentages of change
Running	3.4000	6.1000	79.4
Jumping	2.800	4.500	60.7
Horse step	3.700	6.600	78.4
Hop	3.500	6.00	71.4
Leap	4.200	6.900	64.3
Slid	3.600	6.500	80.6

It is clear from Table (3) that:

The percentages of change between the average of the pre-and post-measurements in transitional skills were limited to between (60.7% and 80.6%.

Second: Interpretation and Discussion of results:

It is clear from Tables (2, and 3) the positive effect of the proposed training program using modeling on improving transitional skills (running, galloping, and jumping, hop, leap, Slid, Horse step).

Thus, the hypothesis is validated, which states:

- "There are statistically significant differences between the pre-and post-measurements in transitional skills in favor of the post-measurement among young players with mental disabilities."

The researcher believes that the proposed program helped improve the motor skills of children with mental disabilities, and this may agree with what some references and studies have indicated, such as Helmy Muhammad Ibrahim and Laila Al-Sayyid Farhat (1998AD) (6), Khaled bin Youssef Saif Al-Din (2013AD) (7) In addition to what Khairiya Ibrahim Al-Sukkari and others (2015) (8) pointed out to the importance of play and its role in acquiring motor skills for the child during the pre-school stage, where play is a functional, mediating and educational entry point for motor development and learning, and that play is important in acquiring skills. During the preschool period. This agreed with Magdy Mahmoud and Nahid Fahmy Hatiba (2015 AD) (12) that play develops the child's muscular system, and motor games also help in developing the child's physical and motor skills, and that motor activities provide opportunities for the child to be able to express himself, through which he can learn motor skills.

The researcher believes that the positive impact of the program may be due to the method used in organizing the content, where a logical psychological organization was followed, taking into account the characteristics, inclinations, and abilities of children and their corresponding needs and desires on the one hand, as well as progression, sequence, and continuity on the other hand, and based on what references and studies have indicated. Hisham Abdullah Muhammad Al-Rabie (2007AD) (13), Mona Muhammad Naguib, Maha Muhammad Abdel-Wahhab (2015AD) (11), Helmy Ibrahim, Laila Al-Sayyid Farhat (1998AD) (6), Khairiya Ibrahim Al-Sukkari, and others (2015AD) (8)), Amin Al-Khouly, Osama Kamel Rateb (1999)(4), Ahmed Maher, Ali Muhammad Abdel Majeed, Iman Ahmed (2007 AD) (1) About the foundations and

principles of building and organizing motor programs for children with mental disabilities and for their peers who are the same chronological age, and the importance of organizing the content and choosing activities that suit the nature and characteristics of the participants in the program. Here comes the role and importance of modeling in the progression and choosing the best appropriate teaching methods at each stage.About the =(1 foundations and principles of building and organizing motor programs for children with mental disabilities and for their peers who are the same chronological age, and the importance of organizing the content and choosing activities that suit the nature and characteristics of the participants in the program. Here comes the role and importance of modeling in the progression and choosing the best appropriate teaching methods at each stage,The researcher attributes the development that occurred because of using the modeling method in the proposed program because of its importance in teaching motor skills to players because of their ability to imitate. This is consistent with Al-Zubaidi's study, which proved the effectiveness of the modeling program (living and inanimate) in developing emotional intelligence, and the methods of Visual stimuli (modeling) are of great importance in their use as educational means in training children with special needs for skills As mentioned kinny et all (2003)(10), as the skills and behaviors depicted develop imitation and simulation in them, and provide new opportunities to address the deficit and shortcomings of this skill in children with mental disabilities, as shown by the study of Kalberger and Marinda, which showed It showed that the video method is effective in acquiring the imitation skill among children with mental disabilities while retaining and remembering it.

First: Conclusions:

Considering the research objectives and hypotheses, Within the limits of its sample and procedures, the researcher presents the following conclusions:

1-The proposed program uses modeling Simulation has a positive effect on the development of transitional motor skills such as running, jumping, broad jumping, jumping, Horse steps, and slides for participating children.

2- The use of modeling and simulation in the program contributed to improving general motor development.

3 - The program, using modeling and simulation, improved the general motor development of the children participating in it.

4 - Considering the principles of constructing and organizing the content of motor programs for children with mental disabilities would have a positive impact on the development of basic motor skills.

Second: Recommendations:

Considering the research results, the researcher presents the following recommendations:

1- Using programs using modeling, simulation, and similar programs for children with mental disabilities to develop transitional motor skills, tool control skills, and non-transitional skills for children with mental disabilities.

2- Use and design modeling and simulation programs in all sports and various disciplines and levels for people with mental disabilities.

3- Paying attention to designing educational programs for children with mental disabilities because they contribute to developing and building the basic base for athletes at the global level of young players with mental disabilities.

4 - Pay attention to the stage under the age of 8 for children with mental disabilities Because it is the stage of teaching basic motor skills.

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