



Effect of structured physical education program on psychomotor skill development of school going children

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Abstract

The development of children's sense of self is fully influenced by the improvement of their motor abilities and is dependent upon the motor stimulation activities. Distributed practise, rather than collective exercise, is better for the development of psychomotor skills. The aim of the study was to investigate the effect of structured physical education program on psychomotor skill development of school going children of Jammu region. Only manipulative ability of the development of psychomotor skills was included in the study. 520 students of both sexes (Boys and girls), whose ages ranged from 8 to 10, made up the sample. The study was subsequently restricted to the thirteen (13) tehsils in the Rajouri District of the Jammu Region. The influence of a structured physical education programme on the development of various psychomotor skills was examined using a battery of psychomotor skill tests (Pre-test). Two groups were created from the sample: a control group (260) and an experimental group (260). In the experimental group, the physical education teacher followed a systematic 12-week physical education schedule. The same set of tests (Post-test) was administered to both groups following the execution of the plan. And the raw data were collected. The 't' test was used with a significance threshold of 0.05 to compare the development of psychomotor skills between the experimental and control groups. The results showed that both groups improved in terms of their psychomotor skill development, although the experimental group always showed statistically greater improvement. Additionally, it was shown that there were notable differences between the psychomotor skill development of school-age children in the Jammu region.

Keywords: Psychomotor development, manipulative ability, Physical activity, School education, Physical education.

Introduction

The development of children's self-awareness and awareness of their surroundings is highly dependent on motor stimulation exercises. A psychomotor development of the body is the continuous learning of skills that are related to both moral and mental acts. Because leading an active lifestyle enhances one's physical, mental, and

cognitive wellness. In order to include motor experiences into a child's didactic learning, it is necessary that we lead active lifestyles during our childhood. These experiences can also inspire thought. An inadequate field of operation can also impede and delay a person's perceptual abilities (Thompson 1986). Developing the requisite competences and specialized talents is the most important step in preventing learning problems. Children's early psychomotor development aims to provide them a number of abilities that are crucial for success in school (Fisher et.al., 2005; Stodden et.al., 2008).

According to Gallahue (2002), According to a review of the internal journal, motor development is the gradual, progressive alteration in a person's kinetic behaviour brought on by contact with their environment and their motor task. He divides basic motor abilities into three groups: handling, movement, and stabilisation. As a structured set of fundamental motions combining the kinetic models of two or more body components, he defines basic motor skills. The preschool and primary school years are the ideal and fundamental times for kids to develop their core motor skills. The main objectives of the motor programmes are the growth of fundamental skills as well as the stimulation of imagination and creativity.

The growth of a student's psychomotor abilities is supported by empirical data as well as a synthesis of a number of essential concepts. In this process, students are motivated, skills are demonstrated, they engage in physical practise during class, they participate in mental exercises requiring quick and accurate responses, they receive feedback after an activity, and they comprehend the outcomes. The extent to which a learner's psychomotor skills advance depends critically on their level of motivation. The major objective of teaching is to create a state of ambiguity in the student's mind regarding the potential talent. After studying a variety of research studies on how to increase students' motivation, Watson (1980) devised the strategies outlined below. The use of numerous psychological strategies based on individual goals and interests, the importance of skill and personal challenge, arousing interest by presenting a novel idea or a challenging problem, and setting high but reasonable expectations for each participating student are all included.

Physical education is a part of education. The terms "physical" and "education," which are two separate words, make up the sentence. Having to do with the body, something is considered physical if it has to do with physical prowess, physical stamina, fitness, appeal, or health. Education can be characterised as methodical training, education, or preparation for life or for a particular task. Therefore, physical education is the kind of education that starts with a child's physical development and moves on to a person's complete development, with the aim of developing a strong, healthy body, mental acuity, and social and emotional harmony. (Singh, 2004).

School is the holistic place where one enters to get the proper education to become a true citizen of the nation. School is from those places which help to teach us the perfect slogan of enter to learn and leave to serve. School is the second place where we learned about the different cultures, rituals, and customs of the all the communities and also to pay the tremendous respect towards these particulars. School is the place that teaches us the unity, prosperity, and brotherhood. We celebrate the different functions in the school that help us to know our nation. School is the best part of the children's life.

School consists of teachers who teach and students who learn. Students and teachers are directly and indirectly inter dependent to each other. For the middle and high school going children school means Fun, recreation and enjoyment and also about the studies. It is the teacher who moulds and guides the students in the proper manner. It is well said a teacher is the builder of the nation. And the students are the future of the nation. And the future depends upon the builder of the nation.

Methods

For the study, 520 students from both government and private schools across the thirteen (13) Tehsils of the Rajouri District of the Jammu area were chosen. They were in classes 3rd to class 6th, and their ages varied from 8 to 10 years old. The application of a simple random sampling technique for the selection of subjects and a quota sampling technique for the selection of schools by the in each tehsil was applied for the study. Four (4) schools, each with ten (10) students, were chosen from each tehsil for the study. Psychomotor tests were administered to all of the chosen students (Pre-testing). All subjects were split into two homogeneous groups: the control group (260) and the experimental group (260). The complete selection process was detailed in the following table.

Table No: 1

Table showing the total number of Student's per Tehsils School in control as well as experimental group.

Name of the Tehsil	Total School From Each Tehsil	Students From Each Tehsil	Total Students From Each Tehsil	Control Group	Experimental Group
Rajouri	4	10	4 X 10= 40	20	20
Manjakote	4	10	4 X 10= 40	20	20
Darhal	4	10	4 X 10= 40	20	20
Quila Darhal	4	10	4 X 10= 40	20	20
ThanaMandi	4	10	4 X 10= 40	20	20
Kotranka	4	10	4 X 10= 40	20	20
Khawas	4	10	4 X 10= 40	20	20
Teryath	4	10	4 X 10= 40	20	20
Kalakote	4	10	4 X 10= 40	20	20
BeriPattan	4	10	4 X 10= 40	20	20
Sunderbani	4	10	4 X 10= 40	20	20
Nowshera	4	10	4 X 10= 40	20	20
Siot	4	10	4 X 10= 40	20	20
TOTAL	52	10	520	260	260

For 12 weeks, the experimental group (EG) students had a structured physical education (PE) plan conducted by the Physical education teacher. The Control group (CG) Students did not have access to structured PE classes and attended the standard program of school education. After 12 weeks, both groups (EG and CG) repeated the psychomotor testing (Post testing).

Selection of variable

Hopping, Catching, Kicking, Dribbling, Volleying, Skipping, Passing and Rolling and Vertical Jump were selected as variables for this study.

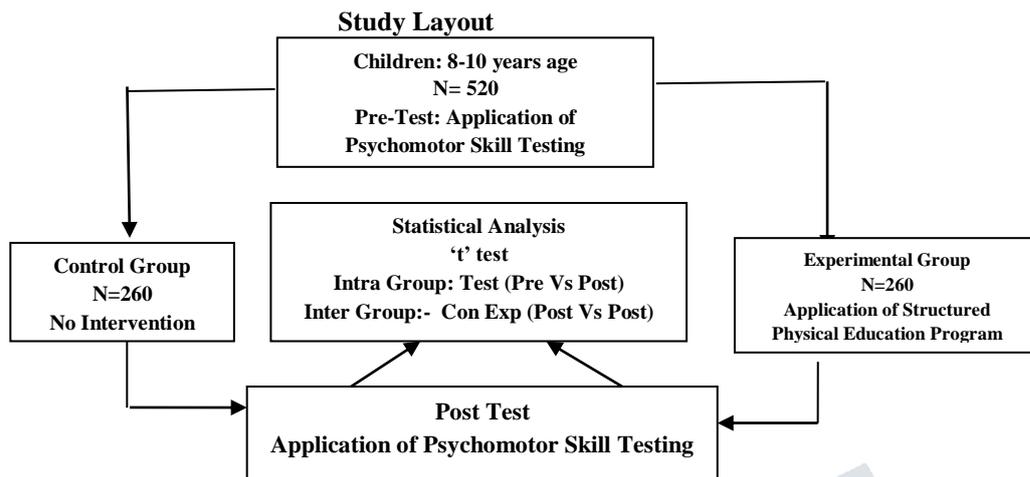
Administration of Training

The first phase of the investigation was the selection of school and testing locations within the school. In the study 520 students from 13 tehsils of Rajouri district of Jammu division were chosen. After selecting the schools and subjects, pre test was conducted on selected subjects to determine various skills of psychomotor components. After completion of the pre test, the students were divided into two homogeneous groups namely a control group (CG, 260 students, 160 girls and 100 Boys) and an experimental group (EG, 260 students, 140 girls and 120 boys). The psychomotor skill development consists of Kicking Skill (KS), Volleying Skill (VS), Passing Skill (PS), Dribbling Skill (DS), Vertical Jump (VS) Hopping Skill (HS), Skipping Skill (SS), Catching Skill (CS) and Rolling Skill (RS).

A structured physical education (PE) program was implemented on the experimental group for 12 weeks. As the selected school in each tehsils were very far from the researcher's place so the experienced PE teacher were selected by the researcher and requested for his help to carry experiment. The researcher first guided and explained the PE teacher about the structured physical education program and training. Then, the PE teacher asked to conduct given program on only on the experimental group (EG). The EG students participated in the PE regular lessons four times a week of 50 minutes long each. The classes started in the mid of June and ended in the September (3 Months) comprises of total 48 PE class sessions. Based on psychomotor principles the classes were designed to promote the activities that would enhance the children's overall growth and development. Program was planned according to different sections like warming-up, circuit training and cool down activities.

The warm-up focused on the activating and the psychological preparation for the physical activity. In each session, the principal section focused on specific activity based on psychomotor skill development involving Kicking, Volleying, Passing, Dribbling, vertical Jump, Hopping, Skipping, Catching and Rolling. We choose to perform most activities using circuits because they are suitable for students given they consist on multiple exercises that are required to reduce time and to develop strength. For the relaxation of the students stretching and relaxation exercises was kept at the last of the program. There is no control over the physical activities of

control group students. After the completion of 12 week structured psychomotor program post test was conducted on both groups i.e. control and experimental group. The post testing was performed in ended September and start October for both groups to compare the psychomotor skill development in each group.



Kicking Skill	<p>The Purpose of this test was to find the ability of the subjects to kick the ball into the respective area and to control the running ball. A soccer ball was placed on a line that was marked 9 feet away from the wall. Another ball was also kept behind the line. The researcher first demonstrated the whole test to the subjects and the subjects were asked to stand behind the line. After demonstration the subjects were asked to do the same. On the signal, "Go," the player kicked the ball against the wall as many times as possible in 30 seconds. The player was also allowed to rebound the ball back so that he could hit the ball back within the marked area. In the event of a wild kick, the player may either retrieve the original ball or use another spare ball. (It was OK to use the hands to retrieve a ball). All kicks must perform from the ground behind the restraining line. The test was repeated three times. The total number of kicks in each 30 second time period was recorded and the highest numbers of kicks were recorded as the personal best.</p>
Volleying Skill	<p>The purpose of this test item is to test the subject's control on volleyball pass. A horizontal line at the height of 3 meters from the ground level was drawn on the training wall. A restraining line at a distance of 2.5 meters from the training wall was marked on the floor. The player was required to stand behind the restraining line with a mini volleyball in his or her hand. The player (examinee) had to thrown the ball vertically upwards from the standing position and made continuously volley pass on the training wall above three meters high line. He/she was then required to make another volley pass vertically upwards when the ball rebounds from the wall and sat on the floor and made pass vertically upward over the head from the sitting position and stand-up to make a volley pass against in the same cyclic order till his/her control over the volleyball without any drop. Each subject was given three attempts. The highest no. Of volleys in three attempts was considered the best score.</p>
Passing Skill	<p>The purpose of this test was to pass and rebound the ball with the accuracy. Six squares of two feet each were marked on a wall in such a way that the lower side of squares was alternatively 3 feet and 5 feet high from the floor. The restraining line was also marked 8 feet behind the line. The subjects were first demonstrated by the researcher and then asked the subjects were asked to stand behind the restraining line and hold the ball with the both hands on the chest side and push the ball into the first target squares, recovers the ball on the rebound while moving to a location in front of the second target moving behind the 8 feet restraining line using the chest pass. They were given three attempts. 30 seconds time period for each subject was given. In 3 trails of 30 seconds the total number of ball hit on the squares perfectly was considered as the score of the subjects. The best of three trials was considered their personal best.</p>
Dribbling Skill	<p>The aim of this test item is to evaluate the skill in basketball handling and controlled dribbling while the body is in motion. The demonstration was first given by the researcher. Six cones were placed at the ground having distance of 6 feet from one another. The subject was asked to stand behind the first cone and then he was asked to dribble the ball from one cone to another till the last cone comes. After then the subject has to return back from the last cone to the first one. The examinee has to dribble the ball along the zig-zag path marked with the help of six cones set up with the distance of 6 feet each. The test is based on three limited trials, first practice Trail And The Remaining Two As The Scoring Trails.</p>
Vertical Jump Skill	<p>The purpose of this test was to measure the vertical jump of the students. The subject was asked to stand behind the wall and raised his/her hand. Then the researcher will mark the wall above the hand. Then the subject was asked to jump as high as he/she can. The subject was asked not to run or leap. Then the researcher will again mark the wall after the jump. The distance between the marked arm and the jumped marked arm was considered as the score.</p>
Hop Skill	<p>The subjects were asked to hop three times, first on one foot and then on the other. Foot of non-support leg is bent and carried in back of the body. "Non-support leg swings in perpendicular fashion to produce force. "Arms bent at elbows and swing forward on takeoff. Then the subject was asked to hop on the right and left foot in the similar manner. Number of hops in one minute was considered as the score of the hop</p>
Skip Skill	<p>Mark off two lines 30 feet apart. Then the subjects were asked to skip from one line to the other for three times. The subjects were asked to move arms alternately in opposition to legs at about waist level. A rhythmical repetition of the step-hop on alternate feet. Foot of non support leg carried near surface during hop phase. The number of skips in one minute was considered as the score of the skip.</p>
Catch Skill	<p>Mark off two lines 15 feet apart. Then the subjects were asked to stand on one line and the ball was tossed on the other side. The ball was tossed underhand directly to student with a slight arc, saying "catch it with your hands." Only count those tosses that are between student's shoulders and waist. "Elbows bend to absorb force. Preparation phase where elbows are flexed and hands are in front of body. "Arms extend in preparation for ball contact. "Ball is caught and controlled by hands only. Number of catches successfully taken by the subjects was considered as the score of the catch.</p>
Rolling Skill	<p>The subject was asked to sit on the knees with the hands in the forward direction parallel to the ground. Then the subject was asked to sit on feet and slightly bend the neck downward and try to roll his body with the support of neck and back. Then he/she was asked to come in the same position from where he has started. The number of times he/she roll in one minute was considered as the score of the roll.</p>

Collection of Data

The data were collected from the school going students of class 3rd to class 6th i.e 8 to 10 years old of Govt and private school of Thirteen Tehsils of Rajouri District of Jammu region. The subjects were first explained about the skills they had to perform; thereafter some trails of each test were done by the students for their better understanding. After that the test was conducted only to experimental group and the data was collected one by one after the session. After collecting the data from the subjects of different tehsils of Rajouri district, the data was analyzed to know the results of the training program. After giving the regular training to the experimental group, some of the subjects from the control group do

practice individually but that not influenced the training program. The data was first analyzed for 1st and 12th week for finding the effect of psychomotor skill development on various skills of school going children. Schedule was set with the different exercises like step-ups, push-ups, sit-ups, squat thrust; tuck jump, etc with the 45 seconds of duration of each exercise. Total of 2 sets was compulsory for each exercise. Their intensity was set up to 30-40%. Between the sets the subject were asked to take the rest for 4 to 5 minutes. Total 50 minutes, comprised of 15 minutes warming up, 30 minutes circuit training and 5 minutes of cool down were the training scheduled of 1st to 3rd week. The data was collected as the pre test and post test of both control and experimental group for dame week. The same procedure was scheduled during the 4-6 week, 7-9 week and 10-12 week of the training session. With the slightly increase in the duration, rest in between, no. of sets and intensity of the exercise. The analyses was having the pre test of control group followed by the post test of each sessions, similarly pre test of experimental group followed by the post test. After pre and post of control and experimental, post test of control and post test of experimental group was also done in order to know the effect of the training program.

Statistical Analysis

The statistical analysis was performed using SPSS as well as MS excel. The variables are presented as the mean, Standard Deviation, Standard Error and Mean difference. Independent 't' test was used in order to analyse the effect of structured physical education program on psychomotor skill development of school going children. Statistical significance was set on 0.05. One intra-group factor of pre test vs. post test and one inter-group factor of post control and post experimental were analysed. The degree of freedom was set on 259.

Table no. 3

Descriptive Statistical scores of pre and post test of structured physical education program on psychomotor skill development of different variables for each of two groups (control and experimental) of 1st and 12th week.

Variable	Group	N	Pre Test		Post Test		Std. Error Mean	Mean Difference (Post-Pre)
			Mean	S.D.	Mean	S.D.		
Hopping	Control group	260	14.92	1.53	15.73	0.71	0.08	0.81
	Experimental Group	260	14.33	1.37	19.46	1.28	0.06	5.13
Catching	Control group	260	6.20	1.40	7.20	0.80	0.08	1.00
	Experimental Group	260	5.57	1.41	11.39	1.17	0.09	5.82
Kicking	Control group	260	6.69	1.36	7.26	0.80	0.07	0.57
	Experimental Group	260	6.10	1.23	11.68	1.13	0.09	5.58
Dribbling	Control group	260	80.04	3.54	74.93	17.37	1.04	-5.11
	Experimental Group	260	80.05	3.39	74.00	2.74	0.11	-6.05
Volleying	Control group	260	14.70	4.48	15.55	0.86	0.08	0.85
	Experimental Group	260	14.30	1.62	19.60	1.48	0.07	5.30
Skipping	Control group	260	15.03	1.99	15.77	1.19	0.08	0.74
	Experimental Group	260	15.01	1.92	20.25	1.87	0.06	5.24
Passing	Control group	260	14.27	1.43	15.28	0.79	0.08	1.01
	Experimental Group	260	14.08	1.45	19.45	1.54	0.08	5.37
Rolling	Control group	260	6.72	1.16	7.36	0.87	0.07	0.64
	Experimental Group	260	6.26	1.26	11.84	1.13	0.05	5.58
Vertical Jump	Control group	260	14.52	1.37	15.38	0.63	0.07	0.86
	Experimental Group	260	14.34	1.13	18.00	1.31	0.06	3.66

Table no. 4

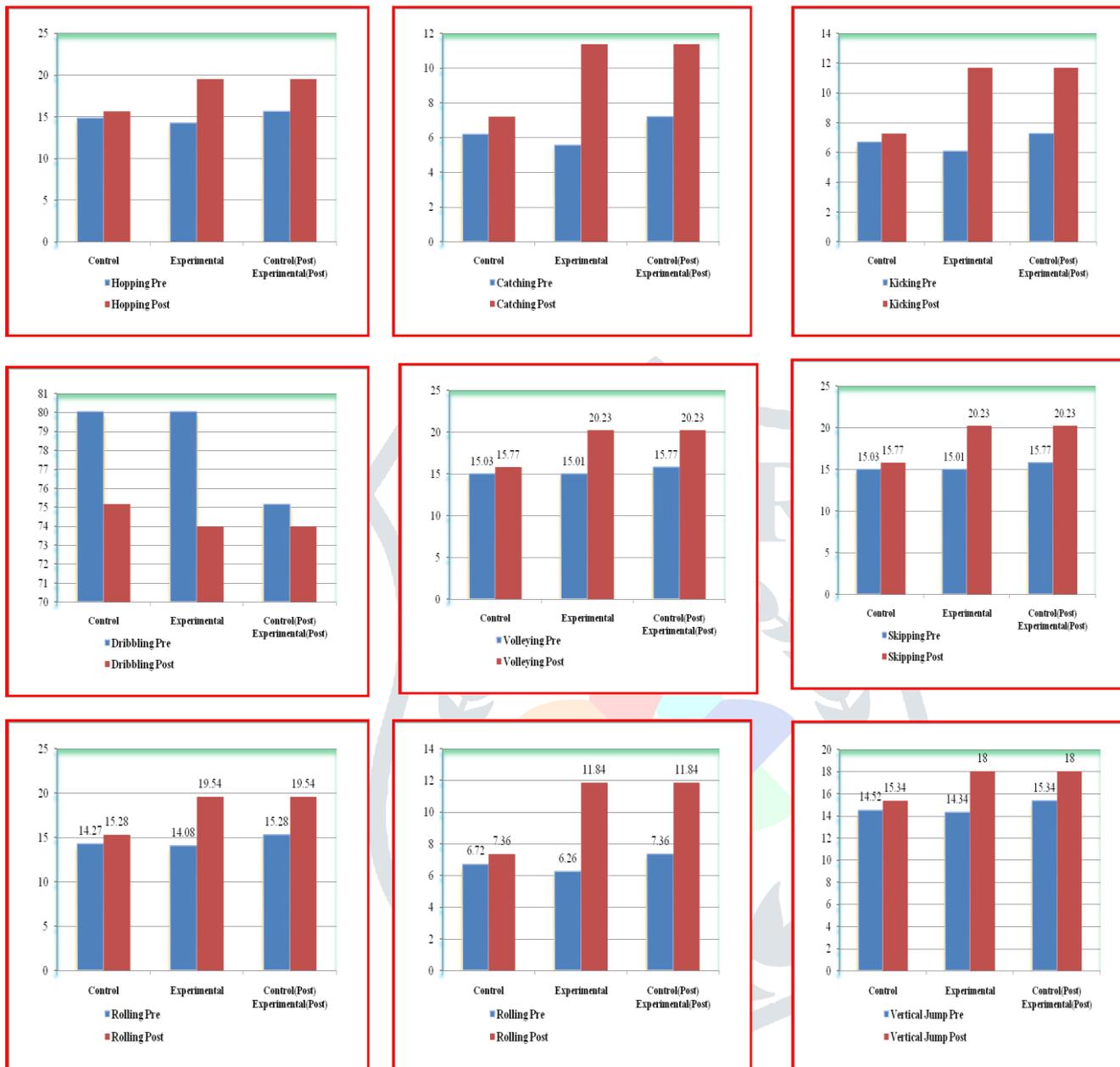
Descriptive Statistical scores of post-post test of structured physical education program on psychomotor skill development of different variables for each of two groups (control and experimental) of 1st and 12th week.

Variable	Group	N	Post Test			Mean Difference (Post-Pre)	't'test
			Mean	S.D	Std. Error Mean		
Hopping	Control group	260	15.73	0.71	0.08	0.81	47.10
	Experimental Group	260	19.46	1.28	0.06	5.13	
Catching	Control group	260	7.20	0.80	0.08	1.00	50.48
	Experimental Group	260	11.39	1.17	0.09	5.82	
Kicking	Control group	260	7.26	0.80	0.07	0.57	50.53
	Experimental Group	260	11.68	1.13	0.09	5.58	
Dribbling	Control group	260	74.93	17.37	1.04	-5.11	50.14
	Experimental Group	260	74.00	2.74	0.11	-6.05	
Volleying	Control group	260	15.55	0.86	0.08	0.85	43.31
	Experimental Group	260	19.60	1.48	0.07	5.30	
Skipping	Control group	260	15.77	1.19	0.08	0.74	44.14
	Experimental Group	260	20.25	1.87	0.06	5.24	
Passing	Control group	260	15.28	0.79	0.08	1.01	42.57
	Experimental Group	260	19.45	1.54	0.08	5.37	
Rolling	Control group	260	7.36	0.87	0.07	0.64	49.91
	Experimental Group	260	11.84	1.13	0.05	5.58	
Vertical Jump	Control group	260	15.38	0.63	0.07	0.86	33.49
	Experimental Group	260	18.00	1.31	0.06	3.66	

Table no. 3 and 4 shows the descriptive scores of pre and post test of controlled and experimental group of difference variables of psychomotor skill development program on school going students. These scores were as a result of pre test of 1st week and post test of 12th week. All the variables showed the significant difference. And found a strong effect of structured physical education program on psychomotor skill development of school going students of Jammu region.

Graph-1

Graphical Representation of Mean Difference between the Post-post tests of Psychomotor Skill Development Program on various Skills of School Going Children



Discussion

Psychomotor skill development program on Hopping, catching, kicking, dribbling, volleying, skipping, passing, rolling and vertical jump respectively clearly signifies the significance difference between the control and experimental group and found the experimental group is more effective than the control group. Because this significant difference may be occurred due to the proper structured training schedule. It is scientifically proved that more than 6weeks provides the positive training effect that comprises of 12 weeks and having 48 different physical education classes. All the subjects of experimental group may participate actively in the entire given schedule while the subjects of control group remained constant. The subjects of the experimental group continuously started increasing their performances in each of the training sessions. The second factor may be their interest towards the activity of psychomotor skill that they were practicing regularly. Some subjects may be good at different sports activity that might help them to learn the skill faster than the normal subjects. Another reason may be training provided help the children to improve their individual characteristics and their surrounding environments. Another reason may be the activities planned for the psychomotor skill development were related to their day to day life experiences and the students were involved in the various physical activities, self care, various class activities and recreational activities etc during the intervention programs.

The researcher tried to minimise the differences between psychomotor test spaces. As schools did not have any gym and not having the available room spaces. In such cases, the tests were performed in open ground areas, which were adapted to minimise any possible spatial difference. So the controlled group might have some visuals that might help them to learn some tactics that fluctuates their average scores.

Conclusion

It was concluded that there is significant and positive effect shown on structured physical education program on psychomotor skill development of school going students of Jammu region. The reason to this may be the children are having sufficient amount of training and continuously practicing of such activities. No doubt exercises are the key to maximise the output in any performance yet it also true to have such activities in all the schools on regular basis to promote and to develop the movement in students as early as possible.

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