Effects of Specific Exercises on Pommel Horse "Russian" Skill Performance Level in Elite Junior Gymnasts

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Abstract

Introduction

Through follow-up for Republic tournaments under 13 years researcher noticed low performance level of this skills, and Through an interview and discussion with some coaches about low performance level of this skill, their opinions were :

1. Russian skill training require great time with the importance of standardizing stages and control transition from one stage to another, which form burden on the player and requires highly experienced coaches.

2. Lack of fixed specific exercises program of this skill and this left to individual efforts of coaches, in addition to that educating this skill depends on trial and error.

So it was important to set specialist specific exercises (physical and skill) to upgrade this skill (through learning speed and arriving to mastery and fixing stages in shortest possible time), where it is basic and criteria for good performance on pommel horse, also player success in performing it is a good indicator of progress on this apparatus.

Research Objectives

- Identify the effect of the proposed specific training program on improving physical elements related to Russian skill (power, strength endurance, and flexibility) on pommel horse for gymnastics juniors
- Identify the effect of pre mentioned physical elements on improving performance level on pommel horse for gymnastics juniors.

Most Important Conclusions

- Specific exercise program lead to increase performance level for the skill under study on pommel horse for players under 13 years old.
- There are differences in players progress level which is due to individual differences represented in the following:
- 1. Differences in physical characteristics levels between players.
- 2. Differences in physical characteristics acquiring level between players
- 3. Differences in skill performance acquiring level between players

Most Important Recommendations

- 1. Using proposed training program in this research when teaching Russian skill.
- 2. Conducting similar studies in the skills which coaches find difficulty in teaching or developing.

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Introduction

Gymnastics developed amazingly during last years, recognized mostly in creativity and complexity of performed routines It is likely that such improvement is the result of sciencebased improvements in training methodology

The training process in gymnastics aims to enhance technical performance level with coach recognizing crucial technical elements and working on developing them simultaneously developing high level of physical fitness.

In this regard, Tudor o. Bompa (1999, p108) argue that the primary objective of specific exercises is to develop performance level of

specific motor skills through developing it characteristics as it is the key factor for player excel in competition.

Watanabe (1998, p102) and Don Tonry (1997, p90) adds that skill preparation in gymnastics aims to mastery and link motor skill in routine fullil evaluation requirements as described in gymnastic rules.

By looking into ? horse technical requirements which put by the technical commeti in eygptien federationgymnastics for juniors under 13 years,for sport season2009-2010- it could be speculated that as most compulsory routine (motor sentence) end with Russian skill , mastering this skill is a good indicator of athletes progress on this apparatus.

Figure (1) Technical performance for Russian skill (Procedural descriptions)



Figure (1) shows technical performance for Russian skill which can be done at the beginning in the middle or at the end and on one pommel without counting it as repetition so the value of the difficulty increases by increasing the number of rotations also it can by done on the floor exercise equipment.

Through national tournament follow-up researcher noticed low performance level of this skills,. Despite the fact that this skill set for older stages, Performing it with requirement level was in unsatisfied rate in most players routine either on pommel horse or on floor

So it was important to set specialist specific exercises (physical and skill) (through learning speed and arriving to mastery and fixing stages in shortest possible time), to upgrade this skill

Whereas specific exercises (exercises that is performed in a way identical to skill performance and at the same motor path and with the same amount of strength used) in all programs achieve marked improvement in skills performance, so they are of great importance in gymnastics. (Mohamed Alawy, Mohamed Radwan, 1979: pp21-22), (Fawzy Yaakoub, Adel Abd ElBasir, 1982: p48), (Talha Hussain El-Din et al,1993 : p9)

El Sayed Abdel-Maksoud (1994, p18) confirmed that specific (special) exercises have dynamic matching between its path and skill motor path, with the necessity to simulate timeline in some parts of the skill, at least,

(Talha Hussain (1993, pp 57-58) indicated the importance of specific exercise and described it as exercises characterized by privacy in equicate physical skills and motor abilities in certain body parts as per requirements of gymnastics skills performance, where it works on concentrating strength amount required in muscles contraction for the proper performance and also its contraction time.

(Mohamed Ibrahim Shehata and Mohamed Mahmoud Abdel-Salam (1992, pp 394-395) and the Wesam Shawqi (1996, p5), quoting from Harra that specific exercises are used for developing correct performance of gymnastics' basic motor skills. Research objectives:

- Identify the effect of the proposed specific training program on improving physical fitness related to Russian skill(power, strength endurance , and flexibility) on pommel horse for gymnastics juniors
- Identify the effect of specific physical elements on improving performance level on pommel horse for gymnastics juniors .

Research Hypotheses

- Specific exercises improve physical fitness related to Russian skill
- Physical fitness is related to performance level of Russian skill

Research Procedures

The researcher used the experimental approach using experimental design with two equivalence groups (experimental group, and control group) for its relevance to the study nature. This research was conducted during the period from January to 30 March 2010 in Smouha 12 club on sample of sports a gymnastics(W,H,Years) All registered in Egyptian Federation of Gymnastics (6 from Smouha Club and 6 from Military Establishment club) sample divided into two equivalent groups in basic, skill and physical variable, sample was selected due to the following reasons:

1. Availability of appropriate number as a sample for this research.

2. Convergence of age and skill performance level for members of research sample.

3. Researcher is supervising their training and develop their training plans and programs.

4. Availability of devices and resources necessary to implement research experiment.

Table (1)Descriptive statistics of basic variables, physical tests and measurements, arbitrators scores for skill performance
level for total sample before experiment (n = 12)

Resea	Statistical significance arch bles	Measurement unit	Mean	±SD	Minimum value	Maximum value	sk	Ke	Variation coefficient
	Age	Year	9.866	0.261	9.5	10.3	0.537	1.533	2.645
	Height	Cm	127.66	1.557	125	130	0.546	0.226	1.219
	Weight	Kg	27.833	1.527	26	30	0.034	1.342	5.486
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	Repetition /sec	8.25	0.4522	8	9	1.327	0.326	5.48
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	Repetition /sec	7.916	0.792	7	9	1.327	0.326	7.538
er	No of raising legs backward upward from laying on horse in 15 seconds	Repetition /sec	15.75	0.452	15	16	1.327	0.326	2.871
Pow	No of raising legs backward upward to touch hands in15th	Repetition /sec	12	0.738	11	13	0	0.856	6.15
	Number of twisting body from stand on hand within two circles in 15 seconds	Repetition /sec	7.667	0.492	7	8	2.055	2.64	4.968
	Number of pulling with hands from hanging in 15 second	Repetition /sec	9.466	0.514	9	10	2.055	2.64	4.246
	Number of arms bending from horizontal lying in 15 seconds	Repetition /sec	17.666	0.651	17	19	0.439	0.337	3.69
	Time of climbing 5 meters rope	second	13.583	0.514	13	14	0.388	2.63	3.79
rance	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Repetition	3	0.538	2	4	0	0.733	17.93
npu	Time of Standing on hands	second	52.916	1.781	50	56	0.033	0.685	3.37
l er	stability time in V angle	Second	9.166	0.717	8	10	0.262	0.685	7.83
rengtl	Number of double leg circles from parallel support.	Count	13.666	0.651	13	15	0.439	0.337	4.77
St	Number of double leg circles from cross support.	Count	15.666	0.778	15	17	0.719	0.792	4.97
	Time of horizontal pivot	Second	3.75	0.621	3	5	0.17	0.091	16.56
or e	Shoulders bend's motor range	Mark	26.25	0.621	25	27	0.17	0.091	2.37
Mote rang	Shoulder extension's motor range	Mark	82.75	0.621	82	84	0.17	0.091	0.75
Judges evaluation for skill performance level		Mark	4.291	0.257	4	4.5	0.388	2.263	6

Table (1) displays statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level for total sample before experiment and its results reveal that all variance coefficients are between 0.750-7.538evidencing sample homogeneity and all skewness factors are between ± 3 which means curve normality.

Table (2)

Statistical significance of basic variables, physical tests and measurements, arbitrators scores for skill performance level of research groups before experiment

	Statistical significance		Measuremen	Experiment $n = 0$	al group	Contro	l group	Difference	T 1
Rese	earch ables	Significante -	t unit	Mean	±SD	Mean	±SD	Between means	T value
	Age		Year	9.866	0.294	9.866	0.294	0	0
]	Height		Cm	127.833	1.722	127.5	1.516	0.333	0.356
V	Weight		Kg	27.833	1.602	27.833	1.602	0	0
	Number upwards fr on vault	Number of raising trunk upwards from inverted hang on vaulting in 15 second		8.333	0.516	8.166	0.408	1.666	0.62
	No of rais upward to bar by fe	sing legs forward to touch wall high eet insteps in 15 second	Repetition /sec	8	0.894	7.833	0.752	0.167	0.349
	No of rais upward horse	ing legs backward from laying on in 15 seconds	Repetition /sec	15.833	0.408	15.666	0.516	0.166	0.62
Power	No of rais upward	ing legs backward to touch hands in15th	Repetition /sec	12.166	0.752	11.833	0.752	0.333	0.767
	Number from stan two circl	of twisting body d on hand within es in 15 seconds	Repetition /sec	7.677	0.516	7.667	0.516	0	0
	Number hands fro	of pulling with om hanging in 15 second	Repetition /sec	9.5	0.547	9.333	0.516	0.167	0.542
	Number from hori	of arms bending zontal lying in 15 seconds	Repetition /sec	17.833	0.852	17.5	0.547	0.333	0.877
	Time of c	limbing 5 meters rope	second	13.5	0.547	13.666	0.516	0.166	0.542
nce	No of lift to stand angle pive (ing with strength on hands from ot on parallel bars number)	Repetition	3	0.894	3	0.632	0	0
ura	Time of S	tanding on hands	second	52.5	1.87	53.333	1.751	0.833	0.797
pue	stability	time in V angle	Second	9	0.894	9.333	0.516	0.333	0.791
strength 6	Numbe circles	r of double leg s from parallel support.	Count	13.333	0.516	14	0.632	0.666	3
01	Numbe circles fro	er of double leg om cross support.	Count	15.333	0.516	16	0.894	0.666	0.1851
	Time of	horizontal pivot	Second	3.833	0.753	3.667	0.516	0.166	2.447
otor 1ge	Shoulde	rs bend's motor range	Mark	26.5	0.547	26	0.632	0.5	1.464
Mc rar	Shoulder	extension's motor range	Mark	82.666	0.516	82.833	0.752	0.166	0.447
Judges evaluation for skill performance level		Mark	4.333	0.258	4.25	0.273	0.083	0.542	

T significant (at 0.05 level) = 2.45

Table No. (2) displays basic variables, physical tests and measurements, judges scores for skill performance level for research groups before experiment and its results reveal that there is no statistically significant differences at 0.05 confidence level between the two groups before

experience. Therefore, we can return this to several factors can be summarized as follows:

Sample subjects are the same (climatic, education, training) conditions as they are living in the same residential area and playing in clubs in same area, and sample subjects are

characterized by average or below average performance level of this skill, sample equivalence in age stage (see sample selection terms), and random distribution of research sample to research groups.

Research Procedural Steps

I Determining muscle work for Russian skill, then classifying at as per muscle work type

II Setting specific exercises:

Specific exercises for Russian skill have been developed (appendix 3) with reference to:

- Skill motor structure (introductory phase main phase final phase)
- Previous analysis for muscle work related to skill performance.
- Seeking experts opinions.
- Analysing some educational films produced by International Gymnastics Federation.

While selecting and setting specific exercises the following have been considered

Dividing the skill technically:

- Dividing skill performance on low mushrooms apparatus (without rings) into four equal parts
- Moving to difficult level in skill performance only after mastering the less difficult level.
- Working and correspondence muscles during the skill performance (1997: p87)
- Difficulty progression.
- Contains the main part of the skill.
- Be easier than skill performance.
- Identify type of muscle contraction used .
- Determine training ways and methods for each strength form (periodic training with low and high intensity related to strength).
- Identify physical level research sample players.

III physical and skill tests:

Researcher identified most important tests that measure physical and skill fitness elements which related to Russian skill on pommel horse (appendix 2) and by analyzing scientific references and research and previous studies (Ahmed ELhady,1997) (Fawzy Yakob, Adel Abd El basir, 1982) (Atiat Khatab, 1987) (Mohamed ALawy, M. Nasr El-Din Radwan, 1979) (Mohamed ALawy, M. Nasr El-Din Radwan, 1982) (Mohamed Sobhy Hassanin, 1995) (Mohab Abd ELRazek et al, 2004) (Wessam Zaki, 1996) (Gensen, C.R and Hirst, C.C. 1980)

The following have been considered in these tests:

1. fulfilling scientific Conditions (validity, stability and objective) for selected tests.

2. Already implemented on samples similar to research sample.

3. Can be applied smoothly and easily with the availability of tools

These tests are:

Physical tests:

Power:

1. Number of raising trunk upwards from inverted hang on vaulting in 15 second

2. No of raising legs forward upward to touch wall high bar by feet insteps in 15 second

3. No of raising legs backward upward from laying on horse in 15 seconds

4. No of raising legs backward upward to touch tester hands in15th

5. Number of twisting body from stand on hand within two circles in 15 seconds

6. Number of pulling with hands from hanging in 15 second

7. Number of arms bending from horizontal lying in 15 seconds

8. Time of climbing 5 meters rope

9. Horizontal pivot open

Skill endurance tests

1. No of lifting with strength to stand on hands from angle pivot on parallel bars (number)

- 2. Time of Standing on hands (seconds)
- 3. stability time in V angle (seconds)

4. Number of side waving from parallel pivot (number)

5. Number of side waving from crossed pivot (number)

Flexibility:

- 1. Shoulders bend's motor range
- 2. Shoulder extension's motor range

IV Pilot studies:

1. Identifying how physical characteristics correlate with the skill under study.

This study was conducted in during the period from 1/12 to 5/12/2010 and was aimed to identify:

- Measurements and tests appropriateness for the motor skill.
- The best order of performing these measurements and tests to get best result.
- Measurements and tests appropriateness for the age stage.
- Equipments efficiency.
- Determine the difficulties that face the researcher during measurement.

Table (3) arbitrators scores for skill under study's

Correlation coefficients between arbitrators scores for skill under study's performance level and physical measurements for experimental group, control group and both groups

	Statistical significance	Experimental	Control	Both
	Research variables	group	group	groups
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	0.938	0.874	0.906
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	0.896	0.617	0.805
er	No of raising legs backward upward from laying on horse in 15 seconds	0.9	0.605	0.848
)W(No of raising legs backward upward to touch hands in15th	0.846	0.596	0.792
P	Number of twisting body from stand on hand within two circles in 15 seconds	0.963	0.801	0.862
	Number of pulling with hands from hanging in 15 second	0.901	0.656	0.84
	Number of arms bending from horizontal lying in 15 seconds	0.857	0.756	0.895
	Time of climbing 5 meters rope	0.868	0.176	0.534
ance	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	0.917	0.782	0.9
Inp	Time of Standing on hands	0.936	0.658	0.886
en	stability time in V angle	0.935	0.772	0.895
gth	Number of double leg circles from parallel support.	0.985	0.814	0.928
ren	Number of double leg circles from cross support.	0.971	0.814	0.934
St	Time of horizontal pivot	0.945	0.588	0.851
otor Ige	Shoulders bend's motor range	0.948	0.521	0.848
Mc	Shoulder extension's motor range	0.898	0.376	0.841

Table (3) reveals presence high correlation between arbitrators scores for skill under study's performance level and physical measurements for experimental group, control group and both groups, and so these measurements are appropriate to selected age stage

2. This study was conducted in the period from 12 to 15/12/2010, The aim was to identify:

- Exercises appropriateness or players age stage.
- Arranging exercises according to its difficulty degree.

- Identify players maximum performance in each exercise, to make formation of training load possible.
- Determine physical and skill tests appropriateness for the age stage and identify the difficulties that may face performing it, with classifying it as per muscles work groups.

Through pilot studies it was possible to:

- Identify appropriate specific exercises.
- Arranging exercises in sequence according to its difficulty degree.

• Maximum players' performance for each exercise have been identified and through which formation of training was possible with consideration of individual differences during training sessions of proposed program

V assess the skill level of performance:

Researcher has identified skill level study sample through arbitrators, whether before, during or after experiment and got the players score for performing Russian skill as it is performed with compulsory routine for age stage under (13) years.

VI proposed training program:

Proposed specific exercise was set in form of proposed program, time allocated for this skill has been deducted from the traditional program and was forms in proposed program cope with the set program.

Program Objectives

1. Development physical fitness elements related to skill under study.

2. Educating and training of skill under study to improve its skill performance level.

Program timetable

Total program time has been determined as follows:

- Number of weeks of proposed exercises program is: (12) weeks in three months.
- Number of training sessions per week (6) sessions.
- Number of apparatuses used in training in one session = three apparatuses
- Time module = 240 minutes and is divided as follows:

Session unit time is 240 minutes devided as follows:

warm up	45 minutes.
1st apparatus	45 minutes.
2nd apparatus	45 minutes.
3rd apparatus	45 minutes
Special physical preparation	60 minutes.

Time training on the pommel horse during the program period is calculated as follows:

- Skill training time on the apparatus (45 minutes) x apparatus training days (3 days weekly) x number of weeks (12 weeks) = 45 x 3 x12 = 1620 minutes
- Physical training time on the apparatus = 60 minutes divided by number of apparatuses
 (6) 10 minutes for each apparatus at each training session.

Pre- measurements:

- Pre-measurements from conducted during the period from 21/12/2009 to 28/12/2009 for all variables under consideration.
- Research experiment application:
- Research experiment has been applied in the period from 1/1/2010- 28/3/2010 and for a period of three consecutive months at Military Establishment and Smouha Clubs
- In-between measurements:
- In-between were conducted in the period from 21/2/2010-14/2/2010 in all variables under consideration.
- Post- measurements:
- Post measurements were carried out in the period from 29/3/2010 to 30/3/2010 for all variables under consideration.

Statistical work:

Statistical work were carried out on row data using SPSS program to obtain for:

Mean.

Standard deviation.

Skewness Coefficient.

T Test.

F test.

LSD test

Improvement ratios.

Results and discussion

I. Results and discussion for research groups in the middle of the experiment

Results and discussion for research groups in the middle of the experiment

II. Results and discussion for research groups in the during the experiment

Results and discussion for experimental group in the during the experiment

Results and discussion for control groups in the during the experiment

1. Results and discussion for research groups in the middle of the experiment

Table (4)
Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level
of research groups at middle of experiment

	Statistical		Experi	mental	Contro	1 group	Difference	
	significance	Measurement	gro	oup	Contro n -	- 6	Difference	Т
Resea	arch	unit	n =	= 6	11 -	- 0	Between	value
varia	bles		Mean	±SD	Mean	±SD	means	
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	Repetition /sec	9.8333	0.40825	9.166	0.408	0.666	2.828
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	Repetition /sec	9.8333	0.405	9	0.894	0.833	2.076
er	No of raising legs backward upward from laying on horse in 15 seconds	Repetition /sec	17.166	0.405	16	0.632	1.166	3.796
Powe	No of raising legs backward upward to touch hands in15th	Repetition /sec	14	0.894	12.833	0.752	1.166	2.445
	Number of twisting body from stand on hand within two circles in 15 seconds	Repetition /sec	11.666	0.516	11	0.632	0.666	3
	Number of pulling with hands from hanging in 15 second	Repetition /sec	11.1666	0.408	9.833	0.762	1.333	3.814
	Number of arms bending from horizontal lying in 15 seconds	Repetition /sec	20.35	0.408	18.5	0.547	2	4.899
	Time of climbing 5 meters rope	second	12.966	0.516	12.5	2.345	0.166	0.17
nce	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Repetition	7.666	0.816	4.667	0.516	3	7.606
ura	Time of Standing on hands	second	62.166	1.416	55.833	0.752	3	7.606
pu	stability time in V angle	Second	17.5	2.949	12.666	0.516	6.333	9.383
ngth e	Number of double leg circles from parallel support.	Count	25.833	1.471	22.333	1.632	4.833	3.954
Stre	Number of double leg circles from cross support.	Count	28.166	2.169	22.833	1.722	3.5	3.9
	Time of horizontal pivot	Second	5.5	0.547	4.333	0.211	1.167	3.769
or	Shoulders bend's motor range	Mark	32.166	0.752	26.666	0.516	5.333	6.276
Mot	Shoulder extension's motor range	Mark	87.166	1.69	83.5	0.547	5.5	14.758
Jud	ges evaluation for skill performance level	Mark	6.5833	0.37639	4.8333	0.7527	1.75	6.957

T significant (at 0.05 level) = 2.45

From Table (4) which displays Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups at middle of experiment, superiority of experimental group over control group in this stage (i.e. after six weeks) is clear with statistically significant differences at 0.05 significance level, in most of physical measurements which form 76.461% from total measurements. As well as in judges scores for performance level of skill under

study. For example number of bend arms from horizontal lying was 20.50 times for experimental group which is larger (better) than the control group 18.500 times with difference of 2.000 times and this difference significant at level 0.05, T = 4.8999 Table (4)

From the above mentioned, we can say that experimental group which followed the propose specific program using special exercises for developing power, strength endurance , flexibility and motor range, in addition to the unified skill program has made remarkable progress in the middle of the experiment more than the control group that followed traditional training program for developing pre-mentioned physical abilities, in addition to unified training program

2. Results and discussion for research groups after the experiment

Table (5)

Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups after experiment

Rese	Statistical significance M Research		Experin gro n =	nental up	Control n =	group 6	Difference Between	T value
varia	ables		Mean	±SD	Mean	±SD	means	, al a c
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	Repetition /sec	10.833	0.408	10.166	0.408	0.666	2.828
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	Repetition /sec	10.833	0.408	9.833	0.752	1	3.873
er	No of raising legs backward upward from laying on horse in 15 seconds	Repetition /sec	18.166	0.408	16.666	0.516	1.5	5.582
Powe	No of raising legs backward upward to touch hands in15th	Repetition /sec	15	0.894	13.833	0.752	1.167	2.15
	Number of twisting body from stand on hand within two circles in 15 seconds	Repetition /sec	13.833	0.408	12.833	0.408	1	2.729
	Number of pulling with hands from hanging in 15 second	Repetition /sec	11.833	0.408	10.833	0.752	1	2.739
	Number of arms bending from horizontal lying in 15 seconds	Repetition /sec	21.5	0.836	19.5	0.536	2	7.746
	Time of climbing 5 meters rope	second	10.5	0.547	12.8333	2.639	2.333	2.214
nce	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Repetition	0.9333	1.032	6	0.894	3.333	5.976
ura	Time of Standing on hands	second	64.5	1.87	57	0.894	7.5	8.859
end	stability time in V angle	Second	22.5	1.048	14	0.532	8.5	17
ngth e	Number of double leg circles from parallel support.	Count	32.333	0.816	25.5	1.048	6.833	12.593
Stre	Number of double leg circles from cross support.	Count	33.333	0.816	25.666	1.032	7.666	14.264
	Time of horizontal pivot	Second	7.166	0.753	4.666	0.516	2.5	26.708
or ge	Shoulders bend's motor range	Mark	34.333	1.211	27.5	0.547	6.833	12.593
Mot rang	Shoulder extension's motor range	Mark	89	0.894	83.666	0.816	5.333	10.787
Jud	ges evaluation for skill performance level	Mark	8.333	0.258	6.5	0.316	1.833	11

T significant (at 0.05 level) = 2.45

From Table (5) which displays Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups after experiment, superiority of experimental group over control group in this stage is also clear with statistically significant differences at 0.05 level, in most of physical measurements which form 88.235% from total measurements. As well as in judges scores for performance level of skill under study. For example time of angular

stability was 22.5 second for experimental group which is larger (better) than control group 14.000 seconds with difference of 0.5000 second and this difference significant at level 0.05, T = 17.000 Table (5)

From the above mentioned, we can say that experimental group which followed the proposed specific program using special exercises for developing power, strength endurance, and motor range, in addition to the unified skill program has made remarkable progress after the experiment more than the control group that followed traditional training program for same pre-mentioned physical abilities, in addition to unified training program.

So, it can be concluded that experimental group made significant progress over control group, this can be attributed to great similarity between time path for power, strength endurance, motor range, and judges scores for skill performance level during specific developed exercises in proposed training program which followed by the experimental group during the two stages (Support on hands - transition with hands in a 360 degree circle while keeping rest of the body space). extended in horizontal level in Accordingly, we can recommend that development of power and other elements should not be intended for itself without relating it to skill performance nature.

3. Results and discussion for research groups during the experiment

A. Results and discussion for experimental group during the experiment

 Table (6)

 Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of experimental group during experiment

	Statistical significance Measurement Pre- n		Pre- meas	Pre- measurement		In-between measurement		Post- measurement	
Researce variable	ch es	unit	Mean	±SD	Mean	±SD	Mean	±SD	1 value
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	Repetition /sec	8.333	0.516	9.832	0.408	10.833	0.408	47.500
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	Repetition /sec	8.000	0.894	9.833	0.408	10.833	0.408	32.798
ci.	No of raising legs backward upward from laying on horse in 15 seconds	Repetition /sec	15.833	0.408	17.166	0.408	18.166	0.408	49.333
Powe	No of raising legs backward upward to touch hands in15th	Repetition /sec	12.166	0.752	14.000	0.894	15.000	0.894	17.154
	Number of twisting body from stand on hand within two circles in 15 seconds	Repetition /sec	7.666	0.516	11.666	0.516	13.833	0.408	251.667
	Number of pulling with hands from hanging in 15 second	Repetition /sec	9.500	0.547	11.166	0.408	11.833	0.408	41.035
	Number of arms bending from horizontal lying in 15 seconds	Repetition /sec	17.833	0.752	20.500	0.836	21.500	0.836	32.881
	Time of climbing 5 meters rope	second	13.500	0.547	12.666	0.516	10.500	0.547	49.808
nce	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Repetition	3.000	0.894	7.666	0.816	9.333	1.032	76.579
ura	Time of Standing on hands	second	52.500	1.870	62.166	1.416	64.500	1.870	79.491
end	stability time in V angle	Second	9.000	0.894	17.500	2.949	22.500	1.048	79.104
ngth	Number of double leg circles from parallel support.	Count	13.333	0.516	25.832	0.471	32.333	0.816	541.450
Stre	Number of double leg circles from cross support.	Count	15.333	0.516	28.166	1.169	33.333	0.816	672.240
	Time of horizontal pivot	Second	3.830	0.852	5.500	0.547	7.166	0.752	34.884
ltor Ige	Shoulders bend's motor range	Mark	26.000	0.547	32.116	0.752	34.333	1.211	126.214
Mo ran	Shoulder extension's motor range	Mark	82.666	0.516	87.166	1.169	89.000	0.894	78.562
Judges evaluation for skill performance level		Mark	4.333	0.258	6.583	0.376	8.333	0.258	263.182

F significant

(at 0.01 level) = 3.68 (at 0.01 level) = 6.26

Table (7)

Significance of difference between the three measurements (pre, in-between and post) for basic variables, physical tests and measurements, judges scores for skill performance level of experimental group using LSD test

Research variables wight increase unit wight were unit variance unit Mean solution (mode) SD (mode) Output (mode) L3.31 (mode) L3.31 (mode) <thl3.31 (mode) <thl3.31 (mode)</thl3.31 </thl3.31 	Statistical significance		Maaaaa	Verieres			Sig	neans'	LCD	
Research variables umit Source Pre Preval Between Prost Prost Post Prost Post Prost Post Prost Post Prost Post Prost Post Prost Post Preval Post Preval Post <thpreval Post Preval Post Preva</thpreval 	Dage	significance	Measurement	variance	Mean	SD		differences		L.S.D
Number of raising trunk upwards from inverted hang on valiting in 15 second Pre 8.333 0.516 Deven 10 0.632 No of raising legs forward upward to touch wall high have upward from laying on horse in 15 seconds Repetition Pre 8.0.894 1.833 2.833 0.689 No of raising legs backward upward to touch hands in 15th Repetition Pre 10.833 0.408 1 1 Number of twisting body from stand on hand within two circles in 15 seconds Repetition Pre 1.666 0.408 1 1 Number of palling with hands from hanging in 15 seconds Repetition Pre 7.666 0.516 4 6.167 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 9.04 1.166 0.408 1 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 1.7.666 0.516 2.1.67 No of lifting with strength to stand on hands Repetition Pre 1.333 0.408 1 Number of double leg circles from rons support. Repetition Pre 1.333 0.566 1.145	Kese		umi	source			Pre	In- Detween	Post	VALUE
Number of raising legs forward upward to touch wall high har by feet insteps in 15 second Repetition In-between Post 9.832 10.333 0.408 1 No of raising legs forward upward to touch wall high bar by feet insteps in 15 second Repetition Pre 8 0.408 1 No of raising legs backward upward from laying on horse in 15 seconds Repetition Pre 15.833 0.408 1 No of raising legs backward upward from laying on horse in 15 seconds Repetition Pre 15.833 0.408 1 Number of twisting body from stand on hand within two circles Repetition Pre 1.666 0.408 1 Number of runs bending from horizontal lying in 15 seconds Repetition Pre 1.666 0.516 4 0.647 Number of runs bending from stand on hand within two circles from hanging in 15 seconds Repetition Pre 17.833 0.408 1 Pre 1.666 0.516 4 6.167 0.649 Time of climbing 5 meters rope Second Pre 17.833 0.408 1 Pre 1.833 0.404 1	Valla	Number of mising translations		Dro	Q 222	0.516		1 5	2.5	0.(22
Production Inclusion Product 3.82 0.408 1 No of raising legs forward upward to touck wall high bay feet insteps in 15 seconds Repetition Pre 8 0.894 1.833 0.408 1 No of raising legs backward upward to touch hands in 15th Repetition Pre 1.666 0.408 1 1 No of raising legs backward upward to touch hands in 15th Repetition Pre 1.666 0.408 1 Number of twisting body from stand on hand within two circles in 15 seconds Repetition Pre 1.666 0.516 4 6.167 Number of ruisting body from stand on hand within wo circles in 15 seconds Repetition Pre 9.5 0.547 1.667 2.333 0.649 Number of pulling with hands from hanging in 15 seconds Repetition Pre 1.7333 0.408 0.667 Pre 1.7333 0.408 0.667 1.145 0.547 0.833 3 Time of climbing 5 meters rope Sccond Pre 1.7333 0.408 0.667 Post 1.666		from inverted hand on voulting in	Denstition	Le hotwoon	0.333	0.310		1.5	2.5	0.032
No of raising legs forward upward to touch wall high bar by feet insteps in 15 second Prec 8 0.804 1.8.33 2.8.33 0.869 No of raising legs backward upward from laying on horse in 15 seconds Prec 15.8.33 0.408 1 1 0.5.33 0.408 1 0.5.33 0.578 No of raising legs backward upward to touch hads in 15th Prec 15.8.33 0.408 1 1.333 2.833 0.578 Number of twisting body from stand on hand within two circles Repetition Prec 12.166 0.752 1.8.33 2.833 1.201 Number of pulling with hands from hanging in 15 seconds Repetition Prec 1.5 0.6049 1 Prec 9.5 0.547 1.667 2.333 0.649 Number of pulling with hands from hanging in 15 seconds Repetition Prec 17.833 0.752 2.2667 3.667 Time of climbing 5 meters rope Second Prec 12.55 0.836 1 Prec 9.2.5 1.877 0.833 1.032 2.472		15 second	Repetition	In-Detween Dost	9.852	0.408			1	
Proof mising legs forward upward from lasteps in 15 second Repetition In-between 9.833 0.408 1.833 2.833 0.408 No of raising legs backward upward from laying on horse in 15 seconds Pre 15.833 0.408 1 1 0.578 No of raising legs backward upward to touch hands in15th Repetition Pre 12.166 0.408 1 1 Number of twisting body from stand on hand within two circles in 15 seconds Repetition Pre 1.833 0.408 1 1 Number of twisting body from stand on hand within two circles in 15 seconds Repetition Pre 7.666 0.516 4 6.167 0.682 Number of pulling with hands from horizontal lying in 15 seconds Repetition Pre 7.666 0.516 4 0.607 2.333 0.649 Number of arms beading from horizontal lying in 15 seconds Repetition Pre 1.7833 0.752 2.667 3.667 1.145 Time of climbing 5 meters rope Second Pre 1.256 0.836 1 1.067 0.333 0.76		No of mining loss formund unusual		Pro	10.855	0.408		1.922	2 822	0.960
Image of the second Image of the second <thimage of="" second<="" th="" the=""> Image of the second <thimage of="" second<="" th="" the=""> Image of the second</thimage></thimage>		to touch well high her by feet	Depatition	In between	0.822	0.094	-	1.835	2.855	0.809
Image of the section of section of section of the secon of the secon of the section of the section of the section of t		instens in 15 second	Repetition	Post	10.833	0.408			1	
No of infining legs backward in and from laying no horse in a lassed backward in a fassing legs backward in a fassing legs backward in a fassing legs backward in stand on hands in 15th stand on hand within two circles in 15 seconds Repetition In-between in-between 17.1366 0.048 1 1.333 2.833 1.201 Number of twisting body from stand on hand within two circles from hanging in 15 seconds Repetition Repetition Pre 7.666 0.516 4 6.167 0.682 Number of pulling with hands from hanging in 15 seconds Repetition Pre 11.66 0.408 0.667 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 11.833 0.408 0.667 Time of Climbing 5 meters rope stand on hands from angle pivot on parallel bars Repetition Pre 12.35 0.547 0.833 1.145 In-between 12.666 0.516 2.167 1.145 1.145 1.145 In-between 12.666 0.516 2.167 1.145 1.145 In-between 12.666 0.516 2.167 1.145 In-between 12.666 0.516		No of mising loss hadward		Pro	15.833	0.408		1 333	2 3 3 3	0.579
Image: Seconds Instruction Instruction <thinstruction< th=""> Instruction <thinstruction< th=""> <thinstruction< th=""></thinstruction<></thinstruction<></thinstruction<>		upward from laying on horse in	Papatition	In between	17 1666	0.408		1.555	2.355	0.578
No Description Description <thdescription< th=""> <thdesc< td=""><td></td><td>15 seconds</td><td>Repetition</td><td>Post</td><td>18 166</td><td>0.408</td><td></td><td>-</td><td>1</td><td></td></thdesc<></thdescription<>		15 seconds	Repetition	Post	18 166	0.408		-	1	
No of raising legs backward upward to touch hands in 15th Repetition Inc 1201 1303 2003 11201 Number of twisting body from stand on hand within two circles in 15 seconds Repetition Pre 7.666 0.516 4 6.17 0.682 Number of pulling with hands from hanging in 15 seconds Repetition Pre 9.54 1.666 0.516 4 6.167 0.682 Number of pulling with hands from hanging in 15 seconds Repetition Repetition Pre 9.54 1.667 2.333 0.649 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 17.833 0.752 2.667 3.667 1.145 Time of climbing 5 meters rope Second Pre 13.5 0.547 0.833 3 0.76 Time of Standing on hands Second In-between 7.666 0.816 1.667 2.137 Stability time in V angle Second In-between 7.666 0.816 1.667 2.333 Number of double leg circles from cross support. Pre 13.333		15 seconds		Pro	12 166	0.400		1 833	2 833	1 201
upward to touch hands in 15th Repetition Post 13 0.894 1 Number of twisting body from stad on hand with two circles from hanging in 15 seconds Repetition Pre 7.666 0.516 2.167 Number of pulling with hands from hanging in 15 seconds Repetition In-between 11.363 0.408 0.667 Number of arms bending from horizontal lying in 15 seconds Repetition In-between 11.363 0.408 0.667 Time of climbing 5 meters rope stad on hands from angle pivot on parallel bars Repetition Pre 13.833 0.408 0.667 Post 11.56 0.547 0.836 1 1.15 Time of climbing 5 meters rope Second Pre 10.5 0.547 0.833 3 0.76 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 Time of double leg circles from ross support. Repetition Pre 1.048 5 1.35 1.667 Number of double leg circles from cross support. Pre 1.53.33 0.516		No of raising legs backward	Repetition	In-between	12.100	0.894		1.055	2.055	1.201
Repetition Prevaluation Prevaluation <td>er</td> <td>upward to touch hands in15th</td> <td>Repetition</td> <td>Post</td> <td>15</td> <td>0.894</td> <td></td> <td></td> <td>1</td> <td></td>	er	upward to touch hands in15th	Repetition	Post	15	0.894			1	
L Number of within good on hand within two circles in 15 seconds Repetition in 15 second Repetition Post 11.66 0.516 2 0.649 Number of pulling with hands from hanging in 15 second Repetition Repetition Pre 9.547 1.667 2.333 0.649 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 9.53 0.547 1.667 2.333 0.649 Time of climbing 5 meters rope stand on hands from angle pivot on parallel bars Repetition Pre 1.35 0.547 1.667 2.333 0.649 Time of Standing on hands Second Pre 1.35 0.547 0.833 3 0.76 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Stability time in V angle Second Pre 9 0.894 8.5 13.5 2.472 Number of double leg circles from cross support. Pre 9 0.894 12.5 1.437 Post 22.51 1.048 1.048 1.049	MO	Number of twisting body from		Pre	7 666	0.516		4	6 167	0.682
Stand of number of pulling with hands from hanging in 15 seconds Repetition Pre 9.5 0.547 1.667 2.333 0.608 Number of pulling with hands from hanging in 15 second Repetition Pre 9.5 0.547 1.667 2.333 0.608 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 11.833 0.408 0.667 1.145 Time of climbing 5 meters rope stability time in V angle Second Pre 13.5 0.547 0.633 1 Time of Standing on hands Repetition Pre 13.5 0.547 0.667 1.145 Time of Standing on hands Second In-between 10.5 0.547 0.667 1.299 Stability time in V angle Second Pre 9.333 1.032 0.667 1.2 2.472 In-between 17.5 2.949 5 5 0.547 0.547 0.567 1.2 2.472 In-between 17.5 2.949 5 0.567 1.2 2.472 1.667	Р	stand on hand within two circles	Repetition	In_between	11 666	0.516		+	2 167	0.082
Number of pulling with hands from hanging in 15 second Repetition Pre 9.300 0.408 0.667 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 11.833 0.408 0.667 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 11.833 0.408 0.667 Time of climbing 5 meters rope stand on hands from angle pivot on parallel bars Second Pre 13.55 0.547 0.833 1 Pre 3 0.894 4.667 6.333 1.299 In-between 10.5 0.547 0.833 1.209 In-between 10.5 0.547 0.667 1.2 View Repetition Pre 3 0.894 4.667 6.333 1.299 In-between 7.666 0.816 1.667 2.333 0.272 1.667 Pre 9 0.894 8.5 13.5 2.658 In-between 17.5 2.949 5 1.667 Post 17.5		in 15 seconds	Repetition	Post	13 833	0.310			2.107	
Number of pulling with hands from hanging in 15 second Repetition In-between 11.1.66 0.407 1.1.807 2.1.307 0.647 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 11.833 0.408 0.667 Time of climbing 5 meters rope stand on hands from angle pivot on parallel bars Repetition Pre 13.55 0.547 0.836 0.762 Time of Standing on hands Second Pre 13.55 0.547 0.833 0.766 Pre 10.5 0.547 0.833 1.299 0.76 In-between 12.666 0.516 2.167 0.76 Pre 3.032 Pre 1.333 0.76 In-between 7.666 0.816 1.667 Time of Standing on hands Second Pre 9.333 1.032 2.472 Stability time in V angle Second In-between 17.5 2.949 5 Pre 9.0333 0.516 12.5 1.437 1.437 In-between 17.5		in 15 seconds		Pro	0.5	0.408		1 667	2 3 3 3	0.640
from hanging in 15 second Repetition In lockweat 11.103 0.408 0.007 Number of arms bending from horizontal lying in 15 seconds Repetition Pre 17.833 0.752 2.667 3.667 1.145 Time of climbing 5 meters rope Second Pre 17.835 0.547 0.836 1 1 No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Stability time in V angle Second Pre 5.2.5 1.87 9.667 12 2.472 In-between 62.166 1.816 2.533 1.325 2.658 In-between 17.5 2.949 5 5 1.667 1.437 Post 62.16 1.87 1.666		Number of pulling with hands	Papatition	In between	9.J	0.347		1.007	2.555	0.049
Number of arms bending from horizontal lying in 15 seconds Repetition Total In-between 11.333 20.752 0.405 2.667 1.445 Time of climbing 5 meters rope stand on hands from angle pivot on parallel bars Second In-between 20.5 0.836 1 No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 13.5 0.547 0.833 1.02 Time of Standing on hands Second In-between 7.666 0.816 1.667 1.067 Time of Standing on hands Second In-between 7.666 0.816 1.2.5 1.2 2.472 Time of Standing on hands Second In-between 17.5 2.949 5 stability time in V angle Second In-between 17.5 2.949 5 Number of double leg circles from cross support. Pre 13.333 0.516 12.5 19 1.437 In-between 5.5 0.547 1.667 3.333 0.673 Number of double leg circles from cross support. Pre 1.5.33 0.516		from hanging in 15 second	Repetition	Dost Rost	11.100	0.408		-	0.007	
Number of arms bending from horizontal lying in 15 seconds Repetition Interaction of a model of a				Pro	17.033	0.408		2 667	2 667	1 1 4 5
Inderwein 20.0 0.030 1 Imbedivention Post 21.5 0.836 1 Time of climbing 5 meters rope Second Pre 13.5 0.547 0.833 3 0.76 No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 In-between 16.65 1.87 9.667 12 2.472 Time of Standing on hands Second In-between 17.5 2.949 5 Pre 9 0.894 8.5 13.5 2.658 In-between 17.5 2.949 5 1.437 In-between 22.5 1.048 Pre 13.333 0.516 12.5 19 1.437 In		Number of arms bending from	Papatition	In between	20.5	0.732		2.007	3.007	1.143
Operation Product 21.3 0.330 0.333 0.76 Time of climbing 5 meters rope Second In-between 12.666 0.516 2.167 No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second In-between 7.666 0.816 1.667 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 In-between 62.166 1.416 2.333 0.299 5 0.894 8.5 13.5 2.658 In-between 17.5 2.949 5 0.894 8.5 13.5 2.658 In-between 17.5 2.949 5 0.894 8.5 13.5 2.658 In-between 17.5 2.949 5 1.437 6.5 1.437 In-between 17.5 2.949 5 1.667 3.333 0.516 12.25		horizontal lying in 15 seconds	Repetition	Dost Rest	20.5	0.830			1	
Time of climbing 5 meters rope Second In-between 12.666 0.516 0.747 0.833 1.076 No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 5 1.87 9.667 12 2.472 In-between 62.166 1.416 2.333 1.32 2.472 stability time in V angle Second Pre 9 0.894 8.5 13.5 2.658 Number of double leg circles from parallel support. Pre 13.333 0.516 12.5 19 1.437 In-between 25.832 1.471 6.5 1.238 1.238 1.238 In-between 25.833 0.516 1.2.833 18 1.238 In-between 25.166 1.169 5.166 3.333 0.673				Post	12.5	0.830		0.822	2	0.76
No of lifting with strength to stand on hands from angle pivot on parallel bars Repetition Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 3 0.894 4.667 6.333 1.299 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 Mumber of double leg circles from parallel support. Second In-between 62.166 1.416 2.333 0.516 12.5 1.437 Number of double leg circles from cross support. Repetition Pre 13.333 0.516 12.833 18 1.238 In-between 28.133 0.516 12.833 18 1.238 1.238 In-between 5.5 0.547 1.667 3.333 0.673 In-between 5.5 0.547 1.667 3.333 0.673 In-between 5.5 0.547		Time of climbing 5 maters rope	Second	In between	12.5	0.547		0.855		0.76
No of lifting with strength to stand on hands from angle pivot on parallel bars Pre 30.894 4.667 6.333 1.299 Time of Standing on hands Repetition In-between 7.666 0.816 1.667 1.2 2.472 Time of Standing on hands Second In-between 62.166 1.416 2.333 2.472 stability time in V angle Second In-between 62.166 1.416 2.333 2.658 Number of double leg circles from parallel support. Pre 9 0.894 8.5 13.5 2.658 Number of double leg circles from cross support. Repetition Pre 13.33 0.516 12.25 19 1.437 Time of horizontal pivot Second In-between 25.832 1.471 6.5 Pre 13.333 0.516 12.283 18 1.238 In-between 28.166 1.169 5.166 1.667 3.333 Time of horizontal pivot Second In-between 35.10.61 1.2833 1.247 S	Time of climbi	The of childing 5 meters tope	Second	Dost	12.000	0.510	-		2.107	1
Ite 112 3 0.333 1.239 1.239 stand on hands from angle pivot on parallel bars Repetition In-between 7.666 0.816 1.667 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 stability time in V angle Second In-between 62.166 1.416 2.333 2.658 Number of double leg circles from parallel support. Repetition Pre 9 0.894 8.5 13.5 2.658 Number of double leg circles from cross support. Repetition In-between 25.832 1.471 6.5 Pre 13.333 0.516 12.833 18 1.238 In-between 28.166 1.169 5.166 Pre 33.333 0.816 0.673 Time of horizontal pivot Second Pre 3.833 0.752 0.667 3.333 0.616 <td></td> <td>No of lifting with strength to</td> <td></td> <td>Pro</td> <td>10.5</td> <td>0.347</td> <td></td> <td>1 667</td> <td>6 3 3 3</td> <td>1 200</td>		No of lifting with strength to		Pro	10.5	0.347		1 667	6 3 3 3	1 200
Stand on hands from angle privit on parallel bars Repetition Processed (Pressort 9.333 1.037 Time of Standing on hands Second Pre 52.5 1.87 9.667 12 2.472 Time of Standing on hands Second Pre 62.166 1.416 2.333 2.658 stability time in V angle Second In-between 62.166 1.416 2.333 Number of double leg circles from parallel support. Pre 9 0.894 8.5 13.5 2.658 Number of double leg circles from cross support. Repetition Pre 13.333 0.516 12.5 19 1.437 Time of horizontal pivot Second Pre 15.333 0.516 12.833 18 1.238 Mere Shoulders bend's motor range Mark Pre 38.33 0.752 1.667 7.833 1.247 Shoulder extension's motor range Mark Pre 26.5 0.547 1.667 7.833 1.247 Judges evaluation for skill performance level Mark <td></td> <td>stand on hands from angle nivot</td> <td>Repetition</td> <td>In_between</td> <td>7 666</td> <td>0.874</td> <td></td> <td>4.007</td> <td>1.667</td> <td>1.299</td>		stand on hands from angle nivot	Repetition	In_between	7 666	0.874		4.007	1.667	1.299
Open particle outs Pre 52.5 1.87 9.667 12 2.472 Time of Standing on hands Second In-between 62.166 1.416 2.333 2.472 stability time in V angle Second Pre 9.0894 8.5 13.5 2.658 stability time in V angle Second In-between 17.5 2.949 5 Number of double leg circles from parallel support. Repetition Pre 13.333 0.516 12.5 19 1.437 Number of double leg circles from cross support. Repetition Pre 15.333 0.816 0 0 Time of horizontal pivot Second In-between 28.166 1.169 5.166 0.752 0.677 1.667 3.333 0.673 In-between 5.5 0.547 1.667 7.833 1.247 Shoulders bend's motor range Mark Pre 26.5 0.547 1.667 7.833 1.247 Judges evaluation for skill performance level Mark Pre 4		on parallel bars	Repetition	Post	0.333	1.032		-	1.007	
Time of Standing on hands Second Intervent 62.166 1.87 2.007 1.2 2.472 stability time in V angle Second Pre 9 0.894 8.5 13.5 2.658 stability time in V angle Second Pre 9 0.894 8.5 13.5 2.658 Number of double leg circles from parallel support. Repetition Pre 13.333 0.516 12.5 19 1.437 Number of double leg circles from cross support. Repetition Pre 15.333 0.516 12.833 18 1.238 Time of horizontal pivot Second Pre 15.333 0.516 12.833 18 1.238 Time of horizontal pivot Second In-between 25.5 0.547 1.667 3.333 0.673 Time of horizontal pivot Second In-between 32.166 0.752 1.667 7.833 1.247 Mark Pre 26.56 0.547 1.667 7.833 1.247 Mark		on paraner bars		Pro	52.5	1.052		9.667	12	2 472
Open product Indicating on hands Second Indicating on hands Second Pre 0.2.100 1.410 2.333 Post 64.5 1.87 Indicating on hands Pre 9 0.894 8.5 13.5 2.658 stability time in V angle Second In-between 17.5 2.949 5 2.658 Number of double leg circles from parallel support. Repetition Pre 13.333 0.516 12.5 19 1.437 Number of double leg circles from cross support. Repetition Pre 15.333 0.516 12.833 18 1.238 Time of horizontal pivot Second In-between 28.166 1.169 5.166 5.166 Post 33.333 0.816 0.673 1.667 3.333 0.673 Time of horizontal pivot Second In-between 5.5 0.547 1.6667 7.833 1.247 Mark In-between 32.166 0.752 Pre 26.5 0.547 1.667 7.833		Time of Standing on hands	Second	In_between	62 166	1.07		9.007	2 3 3 3	2.472
Open product 100 (100)		Time of Standing on hands	Second	Post	64.5	1.410			2.333	
Image: stability time in V angle Second Image: second	ce			Pro	04.5	0.80/		8.5	13.5	2 658
Image: boot of post stability time in v arige Second Information of pression of the p	ran	stability time in V angle	Second	In-between	17.5	2 949		0.5	5	2.050
Number of double leg circles from parallel support. Prevant 13.333 0.516 12.5 19 1.437 Number of double leg circles from cross support. Repetition Prevant 15.333 0.516 12.5 19 1.437 Number of double leg circles from cross support. Repetition Prevant 15.333 0.516 12.833 18 1.238 Time of horizontal pivot Repetition Prevant 28.166 1.169 5.166 12.833 18 1.238 Time of horizontal pivot Second Prevant 3.833 0.752 1.667 3.333 0.673 Shoulders bend's motor range Mark Prevant 26.5 0.547 1.667 7.833 1.247 Shoulder extension's motor range Mark Prevant 26.66 0.516 4.5 6.333 1.273 Judges evaluation for skill performance level Mark Prevant 4.333 0.258 2.25 4 0.429	npu	sublity line in v angle	Beeona	Post	22.5	1.048			5	
Intermediation Inter	ı eı	Number of double leg circles		Pre	13 333	0.516		12.5	19	1 / 37
Image: Second Instruct support. Instruct suport. <t< td=""><td>ıgtł</td><td>from parallel support</td><td>Repetition</td><td>In-between</td><td>25 832</td><td>1 471</td><td></td><td>12.5</td><td>65</td><td>1.437</td></t<>	ıgtł	from parallel support	Repetition	In-between	25 832	1 471		12.5	65	1.437
$ \frac{100}{100} = \frac{100}{100} =$	trer	from paraner support.	Repetition	Post	32 333	0.816			0.5	
$\frac{110}{1000} = \frac{11000}{10000} = \frac{110000}{100000000000000000000000000000$	S			Pre	15 333	0.516		12 833	18	1 238
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Number of double leg circles	Repetition	In-between	28 166	1 1 69		12.035	5 166	1.230
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		from cross support.	repetition	Post	33,333	0.816			5.100	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				Pre	3 833	0.752		1 667	3 333	0.673
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Time of horizontal pivot	Second	In-between	5.5	0.547		1.007	1 666	0.075
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		This of horizontal pivot	Beeona	Post	7 166	0.752			1.000	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				Pre	26.5	0.547		1 667	7 833	1 247
End In between Salads On black On black <tho< td=""><td>ge</td><td>Shoulders bend's motor range</td><td>Mark</td><td>In-between</td><td>32.166</td><td>0.752</td><td></td><td>1.507</td><td></td><td>1.27/</td></tho<>	ge	Shoulders bend's motor range	Mark	In-between	32.166	0.752		1.507		1.27/
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ran	ziouracio cena o motor range		Post	34,333	1.211				
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	or 1			Pre	82,666	0.516		4 5	6.333	1 273
Z Distribute of heads Distr<	1ot	Shoulder extension's motor range	Mark	In-between	87,166	1.169			1.833	1.273
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2	Subarder extension 5 motor range	mun	Post	89	0.894			1.000	
Judges evaluation for skill performance levelMarkInc4.5550.2562.2540.425Post8.3330.2580.2580.4250.4250.425		L		Pre	4,333	0.258		2.25	4	0.429
level Post 8.333 0.258	Judg	ges evaluation for skill performance	Mark	In-between	6.583	0.276			1.75	0.127
		level		Post	8.333	0.258			1.10	

Figure (2) Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups during experiment



Figure (2) (Continue) Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups during experiment



Figure (2) (Continue)

Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of research groups during experiment



Judges evaluation for skill performance level

Results of tables No. (6), (7) and Figure (2) which displays Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of experimental group before, during and after experiment reveal existence of statistically significant differences at 0.05 level in all power measurements; for example number of body twisting from inverted hang to measure the abdominal muscles power was 8.333 times before experiment and increased to 9.832 times in middle of the experiment, at the end of the experiment it reached 10.833 times and there was statistically significant difference between these values as F value = 47.500

Same case was repeated for all strength endurance measurements, for example No of lifting with strength to stand on hands from angle pivot on parallel bars for measuring strength endurance for shoulder belt and back muscles was 3 times before experiment increased to 7.666 times in middle of the experiment, at the end of the experiment it reached 9.333 times and there was statistically significant difference between these values as F value = 76.579, same was for motor range measurement for shoulder joints bending and extending where F were 126.214, 78.562 respectively

A well as for judges evaluation for skill performance level for skill under study during the experiment where there were statistically significant differences at 0.05 level where F was = 263.182, with calculating Lowest significance difference (LSD) for the difference between means that shows significant differences the following were extracted:

• For the differences between physical measurements and tests (power, strength

endurance and motor range), as well as judges evaluation for skill performance level before and in middle of experiment, all differences was statistically significant as LSD were 0.632- 0.869- 0.578- 1.201- 0.682-1.145- 0.760-1.299-2.472- 2.658-1.437-1.238- 0.673-1.247- 1.273- 0.429 respectively

- The same for the differences between physical measurements and tests, as well as judges evaluation for skill performance in middle of experiment and after the experiment where most differences (82.35%) were statistically significant at 0.05 as LSD were like what mentioned in previous paragraph.
- The same for the differences between physical measurements and tests, as well as judges evaluation for skill performance before and after experiment where all differences were statistically significant at 0.05 as LSD were like what mentioned previously.

From the above mentioned, we can say that experimental which followed group the proposed specific program using special exercises for developing power, strength endurance, flexibility and motor range, in addition to the unified skill program has made remarkable progress significant at 0.05 level whether in physical measurement and tests or judges evaluation for skill performance through research stages either in middle of it or after it comparing with level before experiment.

B. Results and discussion for control group during the experiment

Table (8)

Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of control group during experiment

	Statistical	Measurement	Pr	e-	In-bet	ween	Post	- ment	
Rese varia	earch	unit	Mean	±SD	Mean	±SD	Mean	±SD	F value
	Number of raising trunk upwards from inverted hang on vaulting in 15 second	Repetition /sec	8.166	0.408	9.167	0.408	10.166	0.408	26.000
	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	Repetition /sec	7.833	0.752	9.000	0.894	9.833	0.752	9.397
	No of raising legs backward upward from laying on horse in 15 seconds	Repetition /sec	15.666	0.516	16.000	0.632	16.666	0.516	5.000
Powei	No of raising legs backward upward to touch hands in15th	Repetition /sec	11.833	0.752	12.833	0.753	13.833	0.752	10.588
ł	Number of twisting body from stand on hand within two circles in 15 seconds	Repetition /sec	7.666	0.516	11.000	0.632	12.833	0.752	100.135
	Number of pulling with hands from hanging in 15 second	Repetition /sec	9.333	0.516	9.833	0.752	10.833	0.752	7.500
	Number of arms bending from horizontal lying in 15 seconds	Repetition /sec	17.500	0.547	18.500	0.547	20.333	0.516	20.000
	Time of climbing 5 meters rope	second	13.333	0.516	12.500	2.345	12.833	2.639	0.510
ance	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Repetition	3.000	0.632	4.066	0.516	6.000	0.894	27.727
ınp	Time of Standing on hands	second	53.333	1.751	55.833	0.752	57.000	0.894	14.348
en	stability time in V angle	Second	9.333	0.516	12.666	0.516	14.000	0.532	111.429
lgth	Number of double leg circles from parallel support	Count	14.000	0.632	22.333	1.632	25.500	1.048	152.440
trer	Number of double leg circles from cross support	Count	16.000	0.984	22.833	1.722	25.666	1.032	91.966
S	Time of horizontal pivot	Second	3.667	0.516	4.333	0.516	4.666	0.516	5.833
tor ige	Shoulders bend's motor range	Mark	26.000	0.632	26.666	0.516	27.500	0.547	10.516
Mo ran	Shoulder extension's motor range	Mark	82.833	0.752	83.500	0.547	83.666	0.816	2.283
	Judges evaluation for skill performance level	Mark	4.250	0.273	4.833	0.752	6.161	0.316	33.090

F significant (at 0.01 level) = 3.68 (at 0.01 level) = 6.26

Table (9)

Significance of difference between the three measurements (pre, in-between and post) for basic variables, physical tests and measurements, judges scores for skill performance level of experimental group using LSD test

	Statistical significance	Measurement	Variance			S	ignificance of n differences	nificance of means' differences	
Rese	arch	unit	source	Mean	SD	Pre	In-Between	Post	VALUE
, arra	Number of raising trunk upwards		Pre	8.166	0.408		1.000	2.000	
	from inverted hang on vaulting in	Repetition	In-between	9.167	0.408			1.000	0.578
	15 second		Post	10.166	0.408				
	No of raising legs forward upward		Pre	7.833	0.752		1.167	2.000	
	to touch wall high bar by feet	Repetition	In-between	9.000	0.894			0.833	1.135
	insteps in 15 second		Post	9.833	0.752				
	No of raising legs backward		Pre	15.666	0.516		0.333	1.000	
	upward from laying on horse in 15	Repetition	In-between	16.000	0.632			0.667	0.788
	seconds		Post	16.666	0.516				
			Pre	11.833	0.752		1.000	2.000	
	No of raising legs backward	Repetition	In-between	12.833	0.753		11000	1.000	1.065
'er	upward to touch hands in15th	repetition	Post	13.833	0.752			11000	11000
MO	Number of twisting body from		Pre	7 666	0.516		3 333	5 167	
Ч	stand on hand within two circles in	Repetition	In-between	11 000	0.632		5.555	1 833	0 906
	15 seconds	repetition	Post	12.832	0.752			1.055	0.200
			Pre	9 333	0.516		0.500	1 500	
	Number of pulling with hands from hanging in 15 second	Repetition	In-between	9.833	0.752		0.500	1.000	0.966
		Repetition	Post	10.833	0.752			1.000	0.900
			Pre	17 500	0.752		1.000	2 000	
	Number of arms bending from horizontal lying in 15 seconds	Repetition	In_between	18 500	0.547		1.000	2.000	0.774
		Repetition	Post	20.333	0.547			1.000	0.774
			I USL Dro	12 222	0.516		1 167	0.833	
	Time of alimbing 5 maters rope	Second	In between	12.500	2.245		1.107	0.833	2 914
	Time of climbing 5 meters rope	Second	III-Detween Doct	12.300	2.343			0.335	2.914
	No of lifting with strength to stand		I USL Dro	2 000	0.622		1.667	2 000	
	No of fitting with strength to stand	hands from angle pivot on Repetition	In hotwoon	3.000	0.032		1.007	3.000	0.989
	on nands from angle pivot on		III-between Doot	4.000	0.310			1.555	0.989
	paraner bars		POSt	52 222	0.894		2,500	2667	
	Time of Standing on hands	Second	In hotwoon	55.002	0.752		2.300	5.007	1 710
	Time of Standing on hands	Second	III-between	57.000	0.752			1.107	1./19
8			Post	0.222	0.894		2 222	1.((7	
an	-t-hilito time in Manala	C l	Pie In hotoreau	9.333	0.510		3.333	4.007	0.799
mp	stability time in v angle	Second	In-between Doot	12.000	0.510			1.555	0.788
en			Post	14.000	0.332		0.222	11,500	
gth	Number of double leg circles from	Depatition	Pre In hotwoon	14.000	0.032		8.333	2 167	1 667
ren	parallel support	Repetition	III-between	22.552	1.052			5.107	1.007
St			Post	23.300	1.048		6.922	0.667	
	Number of double leg circles from	Demetitien	Pre In hotoreau	10.000	0.894		0.835	9.007	1 705
	cross support	Repetition	In-between	22.833	1.722			2.833	1.795
			Post	25.000	1.052		0.666	0.000	
		G 1	Pre	3.667	0.516		0.666	0.999	
	Time of horizontal pivot	Second	In-between	4.333	0.516			0.333	0.321
			Post	4.666	0.516		0.667	1 500	
e	O(1) = 1.1 and $h = 1.2$		Pre	26.000	0.632		0.667	1.500	0.000
gug	Shoulders bend's motor range	Mark	In-between	26.666	0.516			0.833	0.802
r ra		-	Post	27.500	0.547		0.667	0.022	
oto			Pre	82.833	0.752		0.667	0.833	1.011
Μ	Shoulder extension's motor range	Mark	In-between	83.500	0.547			0.166	1.011
			Post	83.666	0.816		0.502	0.070	
Jud	ges evaluation for skill performance		Pre	4.250	0.273		0.583	2.250	0.502
	level	Mark	In-between	4.833	0.752			1.667	0.702
1			Post	6.162	0.316				

Results of tables No. (8), (9) and Figure (2) which displays Statistical significance of basic variables, physical tests and measurements, judges scores for skill performance level of control group before, during and after experiment reveal existence of statistically

significant differences at 0.05 level in all power measurements; except for time of rope (5M) climbing where there was no statistically significant differences at 0.05 level, for example number of raising trunk upwards from inverted hang to measure the abdominal muscles power was 8.166 times before experiment and increased to 9.167 times in middle of the experiment, at the end of the experiment it reached 10.833 times and with calculate the significant degree between these measurements reveal existence statistically significant difference as F value = 36.00.

Same case was repeated for all strength endurance measurements, for example number of lifting with strength to stand on hands from angle support on parallel bars for measuring strength endurance for shoulder belt and back muscles was 3 times before experiment increased to 4.066 times in middle of the experiment, at the end of the experiment it reached 6.000 times after the experiment and with calculate the significant degree between measurements reveal existence of these statistically significant difference as F value = For motor range measurement for 27.727. shoulder joints bending reveal there was statistically significant differences at 0.05 level where F were 10.516. For motor range measurement for shoulder joints extending reveal there was no statistically significant differences at 0.05 level F was 2.283.

There were statistically significance difference at 0.05 level in judges evaluation for skill performance level for skill under study during the experiment where F was 33.090, with calculating Lowest significance difference (LSD) for the difference between means that shows significant differences the following were extracted:

For the differences between physical measurements and tests (power, strength endurance and motor range), as well as judges evaluation for skill performance level for skill under study before and middle of experiment, reveal some differences – which form 58.833% from total differences) were statistically significant at 0.05 level as LSD were 0.578- 1.135- 0.906- 0.774- 0.989-1.719- 0.788- 1.667 – 1.795 – 0.312 respectively.

- For ٠ differences between physical measurements and tests, as well as judges evaluation for skill performance for skill under study in middle of experiment and after the experiment reveal most differences form 64.7065% total (which from differences) were statistically significant at 0.05 level as LSD were like what mentioned in previous paragraph.
- Also for differences between physical measurements and tests, as well as judges evaluation for skill performance for skill under study before and after experiment reveal most differences (which form 88.235 from total differences) were statistically significant at 0.05 level as LSD were like what mentioned previously.

With calculating Lowest significance difference (LSD) for the differences between means found remarkable progress for the measurements in middle and after the experiment comparing with level before conducting the experiment and with significant differences at 0.05 level.

From the above mentioned, we can say that control group which followed a program for developing power, strength endurance , flexibility and motor range, in addition to the unified skill program using total method and trial and error for education the skill, has made remarkable progress at 0.05 level whether in physical measurement and tests or in judges evaluation for skill performance for the skill (research subject) through research stages either in middle of it or after it comparing with level before experiment

So it is possible to return progress achieved by each group to the nature of training program it followed, especially if we note that both groups were equivalent before experiment and they face same conditions during experiment except for difference in training nature and program for each of them.

<i>Table</i> (10)
Improvement percentage or research groups during experiment

Ν	Power								Strength endurance						Motor range		evel
Research groups Research variables	Number of raising trunk upwards from inverted hang on vaulting in 15 second	No of raising legs forward upward to touch wall high bar by feet insteps in 15 second	No of raising legs backward upward from laying on horse in 15 seconds	No of raising legs backward upward to touch hands in15th	Number of twisting body from stand on hand within two circles in 15 seconds	Number of pulling with hands from hanging in 15 second	Number of arms bending from horizontal lying in 15 seconds	Time of climbing 5 meters rope	No of lifting with strength to stand on hands from angle pivot on parallel bars (number)	Time of Standing on hands	stability time in V angle	Number of double leg circles from parallel support	Number of double leg circles from cross support	Time of horizontal pivot	Shoulders bend's motor range	Shoulder extension's motor range	Judges evaluation for skill performance l
Experimental	30.001%	35.412%	14.735%	23.286%	80.446%	24.557%	20.563%	22.222%	221.100%	22.857%	150.000%	142.503%	117.393%	8695.500%	29.558%	1.001%	52.941%
Control	24.491%	25.533%	6.383%	16.901%	67.401%	16.072%	11.428%	6.247%	100.000%	6.875%	49.994%	82.142%	60.418%	27.242%	5.769%	7.660%	92.314%

Table 10 which displays improvement percentage of research groups during experiment reveal that experimental group improvement percentage is higher than that or control group in all physical measurements and tests and arbitrators scores for skill performance level for skill under discussion.

This demonstrates that improvement percentage for experimental group that followed the proposes program using specific exercises were higher than that for control group, researcher return this difference in improvement rate is the following reasons:

- Deficiencies in traditional program followed by the control group.
- Proposed specific exercises focused on all forms of strength related to skill performance for skill under study., this confirms the high level of skill performance which demonstrates the positivity of specific exercises for Russian skill on pommel horse.

Through the research findings, it is clear that proposed specific exercises is credited for developing technical aspects and this is due to alerting sensory receptors in muscles and thus develop kinetic sense, and special exercises similarity with technical performance work to make balance between (arousal - stop) processes for nervous activity and this leads to player quickly enter to mastery and fixing stages, this is confirmed by Ahmed El-Hadu (1997,p292), quoting from Heinz that improving and developing performance could be done through development of physical and motor characteristics, which should be available in gymnastics junior, by setting the appropriate means and methods for their development in a scientific way, in addition, to that they save time and effort and contribute to performance level development in good manner.

This also is consistent with what Talha Hussain (1993, p21) and Kristy Browland (1988, p138) mentioned that specific exercises is highest specialization degree in skill performance development of performance as for quantity, quality and timing according to the instantaneous uses of muscles or muscle groups within the skill performance.

It can be seen that specific exercises led to development of physical fitness elements, especially muscular strength, which led to raise efficiency of muscle groups working on the joints for Russian skill, which in turn increased ability to control body parts and saving effort with a consistency between body movements, develop motor paths, reduce which led to education time in order to reach good performance level in the shortest possible time, it also evidenced that coach is full

understanding of muscular work during skill performance and then set proposed skill and physical exercises similar to skill performance with diversity muscle using methods led to positive results, both in physical fitness elements level and skill performance level, and it is also clear that strength training is an essential basis for raising achievement because it improves neuromuscular functions increasing its ability to transform energy and deepen settings and control paths giving more effective muscle to, Through this player can distribute strength in better way, and most important training methods are which its partial structure match power and time path of competition exercises and also linked to develop special physical quality abilities relate to performance type from one side, and from the other side characterized with the ability to provide training on the skill itself (Gensen, C.R. Nad Hirts, C.C, 1680:pp 134-135) (Mohammed Shehata, 1992 :p172)

From the above progress in skill performance level and physical abilities could be attributed to specific exercises which were progressive in difficulty levels, which led to the improvement of some port movements among it (rhythmic) related to harmony in moving hands and body waiving keeping maintaining body canter of gravity without falling down. Player mastering circle waiving on mushroom apparatus is the basis of Russian skill, also transition of training effect to the skill contributed to research sample mastery of the skill.

Conclusions

In light of research results it was possible to conclude the following:

- Specific exercise program contributes to improve some physical abilities for Russian skill on a pommel horse for players under 13 years old.
- Specific exercise program lead to increase performance level for the skill under study on pommel horse for players under 13 years old.
- There are differences in players progress level which is due to individual differences represented in the following:

- Differences in physical characteristics levels between players.
- Differences in physical characteristics acquiring level between players
- Differences in skill performance acquiring level between players
- Research sample achieved skill performance in Russian skill arrived to 8.333 marks.

Recommendations

In light of thesis results, researcher recommends the following:

1. Using proposed training program in this research when teaching Russian skill.

2. More concern to be given to fixed strength endurance especially for shoulders and trunk due to its effect on Russian skill performance on pommel horse and floor apparatus.

3. More concern to be given to develop performance endurance through performance of Russian skill in all its forms on different parts of pommel horse and floor apparatus.

4. conducting similar studies in the skills which coaches find difficulty in teaching or developing.

5. Researcher recommends that Egyptian Federation of Gymnastics in conjunction with faculties of physical education organize courses for gymnastic coaches about basis and rules for setting specific exercises

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