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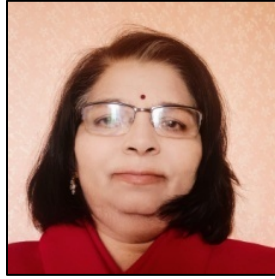
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**Editorial**

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2020 – A year full of uncertainty, misery, losing loved ones and incurring financial losses. This year has been a major correction in how we were living our lives and about the things we took for granted. While we were locked down, we saw how it impacted positively on the Nature. Businesses found a way to keep working via Work from home policy. While this idea has been muted for some time, this was forcefully applied when the whole world shut down and tried to work from home. New business avenues kicked in. Meetings were held online and most of the business which can be carried out via Information Technology saw themselves recover the losses and sustain in this uncertain environment. Companies which heavily invested in technology saw themselves better prepared for pandemic than others. Now this new phenomenon, Work from Home is tested all over the world. Will this be the new world order on how the businesses will be conducted in the future or is it just a stop gap arrangement? If this is being looked as a long term solution, how will it impact the real estate investments of corporates, the productivity of employees, the blurring line between work and personal life and how employees are reacting to it. This is a topic for research. A question arises if a work can be carried out from anywhere, will it begin reverse migration process. We have seen Population being concentrated in cities like Mumbai Bengaluru Delhi etc, but what will happen if corporates will be able to hire talent from 2nd or 3rd tier cities. The cost of living of the said talent will be lesser and so will be the expectation of remuneration as compared to someone living in city due to rent, EMI etc. Will it adversely impact on overall down gradation of salaries of employees in the coming future? It will be beneficial to migrate back to 2nd tier cities and conduct work from there if basic internet connectivity is possible.

As we enter this new decade, we can see there is a lot of uncertainty, but there also is Hope. With vaccines being announced, the world seems to go back to normal in this coming year. But 2020 has been crucial as for the first time in many years it made us pause for a moment and ponder on how we would like to lead our lives. We are entering in a decade where the knowledge of new talent from education system might turn obsolete as the world is changing rapidly. In these times, the need of the hour is to keep up the pace with the changing environment. And the foundation of everything is research, analyzing data and drawing conclusions and probabilities from the given data and acting on it.

## **A Study of the Effectiveness of Short In-Service Training Courses And its Relationship with the Participation Hours in these Periods from the Point of View of Physical Education Teachers of Larestan, Iran**

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### **Abstract:**

Studies show that in-service training courses increase organizational trust, human development and job satisfaction in the staff. The main objective of this study was to investigate the effectiveness of Larestan physical education teachers' participations in in-service training classes. All of the 113 physical education teachers served as the sample of this study. A researcher made questionnaire was used as an instrument for this study. The reliability and validity of this instrument were reported to be significant at  $P < 0.05$ . The findings of this study showed that physical education teachers expressed their positive attitudes toward their participations in the in-service training classes. Furthermore, no significant differences were found between male and female physical education teachers regarding their attitudes toward their participations in the in-service training classes. They found these classes very interesting and effective. Based on the results of this study, it is suggested that it is the responsibility of educational organizational authorities to pay more attention to the role of in-service training courses through which the physical education teachers would be able to advance their knowledge in their field of interest, and provide more opportunities for them to take part in these courses.

**Keywords:** effectiveness, physical education teachers, in-service training courses.

### **1. Introduction:**

Training the human resources is one of the most basic and assured ways toward organizational improvement. Training the human resources not only nurtures individuals' talents, but also improves the methods and techniques of performing tasks, causes acquiring knowledge and improving professional skills, and prevents wastage in human and financial resources. In general, education is one of the most effective tools in adapting the employees with the dynamic and fast-changing environment of the organizations (Abtahi, 1392). Therefore, the vitality of the organization is extremely related to the knowledge and different skills of the employees. The more improved and up-to-date the employees are in these fields, the more adaptable the organization becomes in the dynamic environment.

Therefore, in-service training and improvement of the human resources not only has a significant role in creating knowledge and special skills in employees, but also encourages the individuals to get involved in the enhancement of the functionality and the effectiveness of the organization and to adapt themselves with the changing environmental pressures (Bazaz Jazayeri, 1385). Bass and Vauaghan (2001) suggest that in-service training courses for the

employees is necessitated by three factors of technological development, organizational complexity, and organizational relations.

These courses are designed and implemented with various titles and usually include curriculum to improve the existing capabilities of teachers and employees, to facilitate knowledge acquisition, and to improve skills and capabilities which are related to improvement of their performance. Among such courses are the official programs for staff development which is implemented in In-service Higher Training Centers by the Educational Department. The evaluation of the courses is the most difficult task among the different parts and various subsystems of in-service training system.

In order to find the answer to the main question of this research, 12 smaller questions can be considered as follows:

1. Is there a relationship between the hours spent in short in-service training courses and knowledge-acquisition of Larestan physical education teachers?
2. Is there a relationship between the hours spent in short in-service training courses and the improvement of practical skills in teaching methods of physical education teachers?
3. Is there a relationship between the hours spent in short in-service training courses and the amount of change in attitude of physical education teachers?
4. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the appropriateness of the educational curriculum in these courses with occupational needs of the participants?
5. Is there a relationship between the hours spent in short in-service training courses and the motivation and interest of physical education teachers to pursue higher scientific degrees?
6. Is there a relationship between the hours spent in short in-service training courses and the desire of physical education teachers to participate in later courses?
7. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality of management performance and course planning?
8. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality and the quantity of support services, procurement management and course equipment?
9. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality of teaching by the trainers of these courses?
10. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the assessment method in these courses?
11. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward achieving educational goals of these courses?
12. Is there a difference between male and female physical education teachers' points of view toward the effectiveness of short in-service training courses?

## 2. Methodology:

This is a descriptive-survey research which is undertaken by field method and by the use of a questionnaire. The statistical population of this research include all the high school physical education teachers of Larestan who have participated in at least one in-service training course in the last year (education year of 2017-2018). According to the list that was provided for the researcher by the Human Resources Training Center (In-Service) of Larestan, there are 113 teachers and all of them were selected to take part in the research. The questionnaire includes three parts: 1. a cover letter; 2. Personal information of the participants; 3. The questions.

Due to the lack of a standard questionnaire, a researcher-made questionnaire with a five-point Likert scale was used which included 66 closed-ended questions and one question which showed the priority of participating in these courses. The questionnaire evaluated 11 principal components which are measured each by a number of questions according to Table 1.

**Table 1. Conformity of teachers' questionnaire items to each of the research hypotheses**

No.	Main Components of the Research	The number of items for the component	The number of questionnaire items
1	Knowledge-acquisition of physical education teachers	6	No. 1 to 6
2	Improving practical skills in teaching methods	7	No. 7 to 13
3	Change in attitude in physical education teachers	4	No. 14 to 17
4	Proportionality of the educational contents in the courses	4	No. 18 to 21
5	The scale of interest and motivation of the teachers for gaining higher scientific degrees	4	No. 22 to 25
6	The scale of interest and motivation of the teachers to participate in the next courses	4	No. 26 to 29
7	The quality of the management performance and course planning	9	No. 30 to 38
8	The quality and quantity of support services of the courses	8	No. 39 to 46
9	The quality of teaching of the course trainers	7	No. 47 to 53

10	The method of evaluation from the participants the courses	7	No. 54 to 60
11	Fulfillment of the educational goals of the courses	6	No. 61 to 66

To assess the reliability of the questionnaire, Cronbach's Alpha and halving methods were used, which resulted in 0.96 and 0.85 respectively, which show the desirable and satisfactory reliability of the questionnaire. To gather the data, the questionnaire was distributed between the participants during one of the monthly meetings of physical education teachers (the questionnaire was officially sent to a few of the teachers who were absent from this meeting). The questionnaires were collected after two weeks. From a total number of 117 questionnaires that were distributed, 94 usable questionnaires were collected which comprise a desirable 80.34 percent of the distributed questionnaires.

### 3. Results and Findings:

The results and findings of the research are summarized in the following tables.

1. Is there a relationship between the hours spent in short in-service training courses and knowledge-acquisition of Larestan physical education teachers?

**Table 2. Simple correlation coefficients between hours spent in short in-service training courses and knowledge-acquisition of Larestan physical education teachers**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	Knowledge-acquisition of teachers	All teachers	0.34	0.0001	94
		Female teachers	0.27	0.069	48
		Male teachers	0.41	0.004	46
		Single teachers	0.49	0.130	11
		Married teachers	0.33	0.002	83

As Table 2 shows, there is a positive and meaningful relationship between the hours spent in short in-service training courses and knowledge-acquisition of physical education teachers ( $p = 0.0001$  and  $r = 0.34$ ).

2. Is there a relationship between the hours spent in short in-service training courses and the improvement of practical skills in teaching methods of physical education teachers?



**Table 3. Simple correlation coefficients between hours spent in short in-service training courses and the improvement of practical skills in teaching methods of physical education teachers**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient <b>r</b>	Level of meaningfulness <b>p</b>	Number of samples <b>n</b>
Hours spent in short in-service training courses	The improvement of practical skills in teaching methods of physical education teachers	All teachers	0.36	0.0001	94
		Female teachers	0.33	0.023	48
		Male teachers	0.39	0.008	46
		Single teachers	0.23	0.490	11
		Married teachers	0.37	0.001	83

It is observable in Table 3 that there is a positive and meaningful relationship between the hours spent in short in-service training courses and the improvement of practical skills in teaching methods of physical education teachers ( $p = 0.0001$  and  $r = 0.36$ ).

3. Is there a relationship between the hours spent in short in-service training courses and the amount of change in attitude of physical education teachers?

**Table 4. Simple correlation coefficients between hours spent in short in-service training courses and the amount of change in attitude of physical education teachers**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient <b>r</b>	Level of meaningfulness <b>p</b>	Number of samples <b>n</b>
Hours spent in short in-service training courses	The amount of change in attitude of physical education teachers	All teachers	0.26	0.009	94
		Female teachers	0.21	0.162	48
		Male teachers	0.31	0.034	46
		Single teachers	-0.17	0.628	11
		Married teachers	0.30	0.006	83

Table 4 shows that there is a positive and meaningful relationship between the hours spent in short in-service training courses and the amount of change in attitude of physical education teachers ( $p = 0.009$  and  $r = 0.26$ ).

4. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the appropriateness of the educational curriculum in these courses with occupational needs of the participants?

**Table 5. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward the appropriateness of the educational curriculum in these courses with occupational needs of the participants?**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The teachers' points of view toward the appropriateness of the educational curriculum in these courses	All teachers	0.36	0.0001	94
		Female teachers	0.27	0.065	48
		Male teachers	0.44	0.002	46
		Single teachers	0.43	0.192	11
		Married teachers	0.35	0.001	83

Table 5 shows that there is positive and meaningful relationship between the hours spent in short in-service training courses and the teachers' points of view toward the appropriateness of the educational curriculum in these courses with occupational needs of the participants ( $p = 0.0001$  and  $r = 0.36$ ).

5. Is there a relationship between the hours spent in short in-service training courses and the motivation and interest of physical education teachers to pursue higher scientific degrees?

**Table 6. Simple correlation coefficients between hours spent in short in-service training courses and the motivation and interest of physical education teachers to pursue higher scientific degrees**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The motivation and interest of physical education teachers to pursue higher scientific degrees	All teachers	0.34	0.0001	94
		Female teachers	0.16	0.283	48
		Male teachers	0.53	0.0001	46
		Single teachers	0.73	0.011	11
		Married teachers	0.32	0.004	83

Table 6 shows that there is a positive and meaningful relationship between the hours spent in short in-service training courses and the motivation and interest of physical education teachers to pursue higher scientific degrees ( $p = 0.0001$  and  $r = 0.34$ ).

6. Is there a relationship between the hours spent in short in-service training courses and the desire of physical education teachers to participate in later courses?

**Table 7. Simple correlation coefficients between hours spent in short in-service training courses and the desire of physical education teachers to participate in later courses**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient <b>r</b>	Level of meaningfulness <b>p</b>	Number of samples <b>n</b>
Hours spent in short in-service training courses	The desire of physical education teachers to participate in later courses	All teachers	0.31	0.002	94
		Female teachers	0.26	0.078	48
		Male teachers	0.36	0.004	46
		Single teachers	0.12	0.734	11
		Married teachers	0.34	0.002	83

Table 7 shows that there is a positive and meaningful relationship between the hours spent in short in-service training courses and the desire of physical education teachers to participate in later courses ( $p = 0.002$  and  $r = 0.31$ ).

7. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality of management performance and course planning?

**Table 8. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward the quality of management performance and course planning**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient <b>r</b>	Level of meaningfulness <b>p</b>	Number of samples <b>n</b>
Hours spent in short in-service training courses	The desire of physical education teachers to participate in later courses	All teachers	0.41	0.0001	94
		Female teachers	0.32	0.026	48
		Male teachers	0.50	0.0001	46
		Single teachers	0.40	0.250	11
		Married teachers	0.41	0.0001	83

8. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality and the quantity of support services, procurement management and course equipment?

**Table 9. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward the quality and the quantity of support services, procurement management and course equipment**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The teachers' points of view toward the quality and the quantity of support services, procurement management and course equipment	All teachers	0.46	0.0001	94
		Female teachers	0.43	0.001	48
		Male teachers	0.49	0.0001	46
		Single teachers	0.53	0.093	11
		Married teachers	0.45	0.0001	83

9. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the quality of teaching by the trainers of these courses?

**Table 10. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward the quality of teaching by the trainers of these courses**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The teachers' points of view toward the quality of teaching by the trainers of these courses	All teachers	0.39	0.0001	94
		Female teachers	0.21	0.161	48
		Male teachers	0.60	0.0001	46
		Single teachers	0.69	0.018	11
		Married teachers	0.35	0.001	83

10. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward the assessment method in these courses?

**Table 11. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward the assessment method in these courses**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The teachers' points of view toward the assessment method in these courses	All teachers	0.28	0.006	94
		Female teachers	0.07	0.623	48
		Male teachers	0.51	0.0001	46
		Single teachers	0.65	0.031	11
		Married teachers	0.22	0.049	83

11. Is there a relationship between the hours spent in short in-service training courses and the teachers' points of view toward achieving educational goals of these courses?

**Table 12. Simple correlation coefficients between hours spent in short in-service training courses and the teachers' points of view toward achieving educational goals of these courses**

Predictor variable	Criterion variable	Sample subjects	Statistical indicators		
			Correlation coefficient r	Level of meaningfulness p	Number of samples n
Hours spent in short in-service training courses	The teachers' points of view toward achieving educational goals of these courses	All teachers	0.42	0.0001	94
		Female teachers	0.26	0.070	48
		Male teachers	0.56	0.0001	46
		Single teachers	0.54	0.087	11
		Married teachers	0.41	0.0001	83

12. Is there a difference between male and female physical education teachers' points of view toward the effectiveness of short in-service training courses?

**Table 13. The comparison of the mean of male and female physical education teachers' points of view toward the effectiveness of short in-service training courses**

Group	Number	Mean	Standard deviation	Statistic (t)	Degree of freedom (df)	Level of meaningfulness (p)	Mean difference (MD)
Women	48	250.56	30.50	1.05	92	0.296	7.04
Men	46	243.52	34.43				

Table 13 shows that there is no meaningful difference between male and female physical education teachers' points of view toward the effectiveness of short in-service training courses ( $p = 0.296$  and  $t = 1.05$ ).

#### 4. Discussion and Conclusion:

**Knowledge-acquisition:** The analysis of the items related to the knowledge-acquisition indicator showed that physical education teachers expressed a positive attitude towards the effectiveness of the courses in meeting their scientific and educational needs, improving their knowledge and enhancing their interest in studying more scientific sources. This result is consistent with the results of Ellis (2009) and Dunkin (2012).

**The improvement of practical skills in teaching method:** The analysis of items related to the improvement of practical skills in teaching method showed that from the points of view of physical education teachers after completing these courses, their skills in the field they were trained in and also their teaching method is improved; however, they had less satisfaction about the improvement of their creativity and innovation in their skilled performance. Therefore, more attention should be given to the improvement of the creativity and innovation in their skilled performance of the participants in these courses. These results are consistent with the results of Dunkin (2012) and Aithen (2015).

**The scale of change in attitude in physical education teachers:** the analysis of the items related to the scale of change in attitude in physical education teachers showed that they believe physical education can guarantee students' physical and mental health. They also believe in the need for a physical education textbook. However, they had less satisfaction about the increase of their information about the field of physical education. This result is consistent with the result of Aithen (2015).

**The scale of appropriateness between the educational content of the courses and the occupational needs of physical education teachers:** the analysis of the items related to the scale of appropriateness between the educational content of the courses and the occupational needs of physical education teachers showed that teachers had a positive attitude toward the improvement of self-confidence in teaching and educating, and also in improving job performance. However, they evaluate the appropriateness of the educational content of the courses for their occupational needs as relatively weak. Therefore, the occupational needs of the physical education teachers should be taken into account for the development of the educational content of these course. The results of this research are consistent with the results of Ellis (2009) and Mallilo (2011).

**The indicator for the scale of motivation and interest in pursuing higher scientific degrees:** The analysis of the items related to the indicator for the scale of motivation and interest in pursuing higher scientific degrees showed that from the point of view of physical

education teachers, these courses are most effective in creating motivation for pursuing education and higher scientific degrees; and least effective in creating interest in studying more physical education sources. These results show that teachers prefer to pursue their studies in the form of the educational courses and university programs. This result is consistent with the result if Pourboroujeni (1390).

The scale of increase in the motivation and interest of teachers to participate in the future courses: The analysis of the items related to the scale of increase in the motivation and interest of teachers to participate in the future courses showed that from the point of view of physical education teachers, these courses are most effective in making them interested to participate in the future courses; but least effective in encouraging their colleagues to participate in these courses. Effectiveness of the courses can be one of the reasons for the interest of teacher for future participation. This result is consistent with the result of Ellis (2009) and Boyd (2015).

The scale of the quality of management performance and course planning: The analysis of the items related to the scale of the quality of management performance and course planning showed that from the point of view of physical education teachers, such items as the time allocated to practical and theoretical classes, the manner of planning and managing the courses, and the printing and duplicating services have been relatively satisfactory; however, the condition of computer information facilities in the courses has been relatively weak. This result is consistent with the result of Fayyaz (1385).

The quality and the quantity of support services, procurement management and course equipment: The analysis of the items related to the teacher's points of view toward the quality and the quantity of support services, procurement management and course equipment showed that physical education teachers found the condition of the classes in terms of lighting, temperature, calmness of the environment, and the catering in break times as relatively satisfactory; however, they found the facilities for transportation to the courses as not satisfactory. This result is consistent with the result of Solyemanpour (1382).

The quality scale of teaching of the course trainers: The analysis of the items related to the teachers' points of view toward the quality scale of teaching of the course trainers showed that from their point of view, the trainers have been at a relatively satisfactory level in terms of practical competence, scientific mastery of the material and capability of making the material understandable. However, the trainers did not take enough advantage of the educational assistance facilities. This is consistent with the results of Fayyaz (1385).

The assessment method in these courses: The analysis of items related to the indicator of teachers' points of view toward the assessment method in these courses show that physical education teachers found the quality of printing of questions at the end of the course, the state of discipline in the exam salon, the examiners' manner of conduct and the proportionality of the number of questions to the time of exam as relatively satisfactory. This is consistent with the results of Ellis (2009).

The fulfillment of educational goals of the courses: The analysis of the items related to the indicator of the teachers' points of view toward the fulfillment of the educational goals of the courses showed that physical education teachers found these courses necessary for the fulfillment of educational goals. They have also found the quality of training in specialized course as relatively good, and their benefit rate from these courses as relatively high. These results are consistent with the results of Soleymanpour (1382).

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## Development of Software for Physical Fitness

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### **Abstract:**

In the present day, teachers are expected to understand and integrate technology into their classrooms. A state survey revealed that, evaluation in P.E. though compulsory is extensive and time consuming. The inverse ratio of P.E. teachers to the number of students in the schools, the total time allotment makes this task extremely difficult thereby restricting feedback. To overcome this, the researcher has developed a user friendly android mobile application, to be used on the field to record and evaluate student performance in physical fitness. Communication, planning, design, coding, testing, deployment for further services were the steps in the process for developing the software. The App had two interfaces (i) Admin interface – that allowed the admins to manage and validate the activities for registered schools and (ii) physical education teacher interface which gathered and maintained records of students for sports activities. The App R Fitness, is flexible, and provides for various kinds of reports. It would cut down on approximately 80% of back office time, significantly reduce errors and provide formative and summative feedback.

**Keywords:** R Fitness, Physical Fitness, Evaluation, Mobile app.

### **Introduction:**

Physical activity is directly related to physical fitness. Regular physical activity or cardio respiratory fitness decreases the risk of cardio vascular disease mortality in general and of coronary heart disease mortality in particular (Manley, 1996). Various, “Health surveys and development committee Government of India” also found poor status of public health. Several other surveys in the West have clearly pointed out that for optimal health; people of all ages have to be physically active on most days. In the present day physical and health related fitness is being considered as a prime factor for the healthy living of a child. The evaluation for the same is also considered as a priority in schools of Maharashtra. In Maharashtra state schools several health related physical fitness tests are conducted for the purpose of testing and evaluation of students. At present there are no evaluation norms for the said purpose as per the school norms of Maharashtra state and there is a need of the same hence the researcher has decided to undertake the study entitled “Development of Software for Physical Fitness”

The Maharashtra State Sports Policy 2001 has emphasized the importance of wellness, development of a Sports Culture, Nurturing Sports Talent effective implementation of all the progress.

It is known that evaluation plays a crucial role in the field of physical education and Physical fitness testing is seen as a very important part in the evaluation process. The aim of physical fitness testing is to study the learning outcomes. Continuous evaluation helps the student, teacher, head and the parents to know the fitness level of the student.

### **Need:**

In the current scenario most of the schools have one or two physical education teachers in relation to the number of students. The roles the teacher plays in school other than

conduct physical education classes are, organize competitions, accompany the students to various tournament and competitions and also act as a disciplinarian in the school etc. In addition to all the duties mentioned, the teacher has to single handedly conduct a minimum of ten physical fitness tests, write the performances, and give scores as per the norms for each of the tests. The scores then have to be segregated on the basis of gender. In this style of testing the teacher finds it very difficult to reveal the scores and the improvements in the scores to the students immediately, hence the physical education teacher finds it futile to conduct these tests in schools. In this study the researcher reviewed the current testing procedures and outcomes in schools and found a need to design an android application which would assist the P.E teacher to evaluate the physical fitness tests efficiently.

#### Objective:

1. To develop a software for Physical Fitness Index of School Children of Maharashtra State.
2. To provide results & assessment to individuals, classes, and required categories based on the norms given by software.

#### Assumption:

1. According to provided inputs it was assumed that the investigator will get the results through the software.
2. The software will be user-friendly and will be easy for teachers.

#### Limitation:

1. Norms were developed with the help of the provided data hence the authenticity of the data was not verified.
2. Investigation depended on the programmer.

#### Operational Definitions:

**Physical Fitness Tests:** The Investigator will collect the data of the different physical fitness tests conducted in the schools from the various districts of Maharashtra. Tests (age-group wise) are shown in the following table.

11 to 14 Age	15 &16 Age	
Height	HRPF	SRPF
Weight		
Push-ups	9/12min Run Walk Bent Knee Sit Up	50mt Dash Wall Volley
Sit-ups	Sit and Reach	1 min Rope Skipping
6 × 10 mt. Shuttle Run	Push Ups	Standing Broad Jump
	Sitting Ball Throw	4 × 10 mt. Shuttle Run

### Information about R 'rfitness.co.in' Software Fitness

This is an application for managing Sports activities in schools. This application can be used by Physical Education teachers in a school to maintain the records of students for sports activities and upload them in server.

This will reduce the Physical Education teacher's effort of maintaining the Students record as it is taken care of by our application, and all they have to do is insert the records in this application.

#### 1. **Software Development Process:**

The researcher gave detailed program to the physical education teachers and made appropriate changes as per the recommendations and finalized the application.

#### 2. **This application has two interfaces:**

Admin Interface which is nothing but Web application.

Physical Education Teachers Interface which is nothing but Mobile application.

#### 3. **Communication:**

The researcher has studied and reviewed different tests in various schools in the state of Maharashtra.

The researcher approached a software developer/ team experienced in developing the software and explained the idea and the requirements of the software to be developed.

#### 4. **Planning:**

- The researcher gave required inputs along with the grade wise norms for each test to the software developer.
- The researcher discussed the design of the application with the physical education subject experts.
- The hardware and other software requirements for the desired software were discussed to estimate the cost for the required process and the product itself, such as the cost of hosting the web application, deploying the Android app on Play Store, cloud storage costs, etc.
- Along with the costs, the deadlines for every stage were discussed and the legal agreements were made with the development person/team prior to any commitment.
- NOC needs was obtained from the development person/team and the necessary copyright/patent were taken into consideration through an advocate.

#### 5. **Design:**

After detailed planning with the developer, the development person/team provided a software design model for the system as per the requirements discussed earlier and got it verified from the researcher.

#### 6. **Coding:**

The development person/team developed the software modules for the system which was constantly verified with the researcher and any suggested changes were made.

**7. Testing:**

All functionalities were tested and verified with the original requirements. The overall software was checked to see if it was functioning properly. Any errors observed were rectified and the system was tested again.

**8. Deployment and Further Service:**

The software as required was ready to be deployed to the desired organizations. Agreements for further service updates were discussed.

**Requirements for the Application:**

- Computer or Laptop or Tablet, Internet connection
- Student details (Name, date of birth, roll no and gender)
- School details (School name, logo, address and phone number)
- Principal and physical education teacher names
- Test details (Test names and standard wise tests)
- Norms (Test and standard wise norms)

**Admin Interface:**

This is a web interface provided for Admin to manage and validate all the activities for all the registered schools.

This interface consists of following modules: School, Class, Division, Test, Student, Performance Norms, Report, User.

Each module consists of sub-modules.

**1. School:**

This module consists of two parts-

- **School List**
  - Lists all the registered schools for this application.
- **Add School**
  - Add School by providing requested details in a form.

**2. Class:**

This module consists of three parts-

- **Class List**
  - Displays the list of Classes for each registered school.
- **Add Class**
  - Add Class by providing requested details in a form.
- **Import Class Test**
  - Import class test from a file. This will be helpful if Teacher missed uploading data to server using mobile application.

**3. Division:**

This module consists of two parts-

- **Division List**
  - Displays the list of Divisions for selected School and class name.

- **Add Division**
    - Add division by providing the required details.
  - **Delete Division Wise**
    - Delete division of selected School and class.
4. **Test:**  
This module consists of two parts-
- **Test List**
    - Displays the list of Tests with School and Test Type details.
    - Also provides option to Print, Save and Export for Tests.
  - **Import Test List**
    - Import Test list for selected School.
5. **Student**  
This module consists of two parts-
- **Student List**
    - Displays the list of Students based on the selected School, Class and Division.
  - **Import Student**
    - Import students from a file to selected school, class and division.
6. **Performance**  
This module consists of two parts-
- **Import Performance**
    - Import performance for selected Scholl, class and division for particular semester.
  - **Add/Update Performance**
    - Add/Update performance/test Details for selected Division of a school for particular semester.
7. **Norms**  
This module consists of two parts-
- **Import Norms**
    - Import norms from a file for selected School and class for the selected Gender.
  - **Add Norms**
    - Add norms by providing the details as required.
8. **Reports**  
This module consists of five parts-
- **Student Report**
    - Print Student report for Particular semester for selected division of a class for specified school.
  - **Class Report**
    - Print Class report for particular school.

- **Head Report**
    - Print Head report for particular class and semester for selected school.
  - **Consolidated Performance**
    - Export performance for given semester for a particular class of a division in a school.
  - **Consolidated Marks Report**
    - Export Marks report for given semester for a particular class of a division in a school.
- 9) **Users**  
This module consists of two parts-
- **Users List**
    - Displays the list of Users with options to save, export and print.
  - **Add User**
    - Add User for a particular school with its Devices Mac Id for the secure usage of an account.

**Characteristics of the Application:**

- User friendly.
- Can be accessed anywhere through cloud.
- Can be used on field during the tests.
- Internet access is not necessary for use on field.
- Changes in the tests and norms can be need based.
- The results per semester and also final results can be easily generated as needed.
- Saves time and frequent evaluation is possible.
- Helps develop fitness culture and awareness among the students.
- A performance card can be generated for each student.

**Benefits of the R Fitness Application:**

- The scores need to be recorded only once.
- Fewer errors in feeding the scores.
- The marks, grade and remark as per the norms can be made known immediately to the student, teacher, head and parents.
- The application will reveal the percentage of above average students in the class.
- A semester wise consolidated performance and marks score sheet can be generated.
- Student and class strengths and weaknesses will be revealed.

**Description:**

**Software:** A software program was designed and developed with the help of a developer. The program is a visual basic program. This software will provide for various functions such as:

- Class wise results for class teachers,
- Individual results for students,
- Class wise results for class teachers,
- Class wise comparative results for class Head,
- Assessment chart,
- Result in the form of assessment of suggestions,
- Provision for direct print outs and forwarding of the results through emails to the concerned.

**Contribution to Knowledge:**

There are less number of physical education teachers in schools of Maharashtra and at a time a single teacher has to look over all activities. This software will help the teacher to prepare the result and the find out the strong and weak points of the students for their progress.

Through the software the students will get the separate physical fitness status card and the suggestions for his or her betterment. This will help the teacher to motivate the students and parents to participate in physical fitness regularly.

With the help of the software overall physical education subject and its status will improve in Maharashtra.

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## **Characteristics of the Psychological Function Assessment Indicators Recovery of High-Level Shooting Athletes in Maximum Capacity Exercising**

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**Master. Dao Tien Dan:** Hanoi University of Science and Technology, Vietnam

### **Abstract:**

04 indicators were selected to assess the ability to recover psychological function of high-level shooting athletes in maximum capacity exercise. On that basis, we assessed the process of psychological recovery of the study subjects in maximum capacity exercising at times: before exercising, after warming up, while exercising and 10 minutes after exercising.

**Keywords:** Recovery, psychological function, athletes, Shooting, in exercising, maximum capacity.

### **Question:**

Regularly exercise and play sports will bring about changes in the direction of adapting to benefit the body. Those changes are specifically expressed through indicators of bodily functions and psychological functions. Today, modern equipment system is used in sports, which allows us to accurately determine the practice level and the indicators to evaluate the psychological function of athletes after physical exercising, as well as the effectiveness of the training and teaching work. This is also an important basis for training athletes.

In their researches, foreign authors have identified the law of recovery after physical exercising, fatigue characteristics after an amount of exercises in different capacity zones, the time required to end the recovery of various biochemical processes during the resting period following muscles exercising, as well as the means and methods of recovery for an athlete following exercises and competitions. When practicing and competing, it is inevitable that the athlete's body will become tired and will recover. Fatigue is a condition in which the human body's ability to function decrease temporarily. The authors of researches on fatigue and recovery include: Menxip V. V, Volcop N. I(1997) [6], the authors of researches on recovery include: Nguyen Ngoc Cu, Duong Nghiep Chi (2000) [1], Bui Quang Hai et al (2009) [2], Le Huu Hung, Nguyen Thi Thanh Nhan [5], Luu Quang Hiep, Nguyen Dai Duong, Vu Chung Thuy, Dang Van Dung (2008) [3] with the topic: "Research on the characteristics of the recovery of high-level cyclical sports male athletes after exercising in different capacities". Additionally, there are other authors who have researches on methods for psychological recovery in sports activities such as: Le Van Xem, Pham Ngoc Vien (1991) [7].

With the existing modern machinery system, we conducted the research: **Characteristics of the psychological function recovery of high-level shooting athletes in maximum capacity exercising.**

Research purpose: choosing indicators to assess the ability to recover psychological function of high-level shooting athletes in maximum capacity exercise. Based on that, we will assess the psychological function recovery process of the research



subjects in maximum capacity exercising at times: before exercising, after warming up, while exercising and 10 minutes after exercising.

### **Research Methods:**

The research process uses the following methods:

- Method of analyzing and synthesizing documents
- Interview method
- Method of pedagogical examination
- Mathematical statistics method
  - Research time: 10/2010 – 10/2012
  - Location: Bac Ninh Sports University
  - The research was conducted on 14 level-1 shooting athletes and grandmasters, including 10 male athletes aged 17-19 and 4 female athletes aged 14-16.
  - Selected exercise to represent maximum capacity: 100m running

### **Research Results and Discussion:**

#### **1. Selecting indicators to assess the psychological function of high-level shooting athletes in maximum capacity exercising**

Using the method of analyzing and synthesizing documents, interviewing method, we selected 06 indicators to evaluate the psychological function of high-level shooting athletes in maximum capacity exercising, including:

1. Simple reflex (ms)
2. Complex reflex (ms)
3. Leg muscle force feeling 50% (%)
4. Hand shake 10s (times)

We conducted the research on 14 level-1 shooting athletes and grandmasters, in which there are 10 male athletes aged 17-19 and 04 female athletes aged 14-16.

The exercise selected to represent the maximum capacity zone: 100m running

We took data to evaluate the characteristics of the psychological function recovery process of high-level shooting athletes in maximum capacity exercising at times: Before exercising (before athletes begin practice activities); while exercising (10 seconds after completing the maximum capacity exercise) and 10 minutes after exercising (10 minutes after completing the maximum capacity exercise).

#### **2. Characteristics of the psychological function recovery of high-level shooting athletes in maximum capacity exercising**

##### **2.1. Characteristics of the indicators reflecting the psychological function of high-level shooting athletes before exercising in maximum capacity**

The functional evaluation indicators of athletes are diverse and plentiful. However, within the research scope, we only selected the indicators that not only allowed the assessment of mental capacity but also the indicators for evaluating the level of fatigue and recovery of athletes, at the same time, these are also indicators that are sensitive to the amount of exercise.

Before testing the athletes in the maximum capacity zone, we examined the indicators to evaluate the athletes' psychological function. The results are presented in Table 1.

**Table 1. Characteristics of indicators for evaluating mental and psychological functions of high-level shooting athletes before exercising**

No.	Indicator	Male (aged 17-19) (n = 10)		Female (aged 14-16) (n = 04)		
			$\sigma$		$\sigma$	
1	Simplereflex (ms)	211.11	47.11	231.71	36.95	
2	Complex reflex (ms)	258.95	18.84	298.20	59.00	
3	Leg muscle force feeling 50% (%)	Fmax (KG)	137.13	23.26	77.75	21.57
		Feeling of deviation	3.01	0.32	3.05	0.34
4	Hand shake 10s (times)	1	0.00	0.00	0.00	0.00
		2	0.00	0.00	0.00	0.00
		3	0.00	0.00	0.00	0.00
		4	0.00	0.00	0.00	0.00
		5	0.08	0.02	0.50	0.71
		6	0.25	0.86	1.00	1.41
		7	1.50	1.39	3.50	0.71
		8	2.75	1.86	6.00	2.83
	9	3.58	2.87	2.00	2.83	

Table 1 shows: Before exercising, the characteristics of the indicators for evaluating mental and psychological functions of sports athletes were better than normal Vietnamese people.

## 2.2. Characteristics of the indicators reflecting the psychological function of high-level shooting athletes while exercising in maximum capacity

Immediately after completing the exercise (10 seconds after completing the test), we set up a psychological test for the athletes of selected sports in exercising to evaluate the psychological function of high-level sports athletes in maximum capacity exercising. The results are presented in detail in Table 2 .

**Table 2. Characteristics of indicators for evaluating mental and psychological functions of high-level shooting athletes while exercising in maximum capacity**

No.	Indicator	Male (aged 17-19) (n = 10)			Female (aged 14-16) (n = 04)			
			$\sigma$	% change		$\sigma$	% change	
1	Simplereflex (ms)	215.36	21.35	5.50	232.27	23.28	1.77	
2	Complex reflex (ms)	254.12	25.61	3.57	291.45	28.13	0.68	
3	Leg muscle force feeling 50% (%)	Fmax (KG)	145.35	8.22	2.22	86.27	6.69	4.29
		Feeling of deviation	3.51	6.43	31.46	3.43	5.48	23.38

4	Hand shake 10s (times)	1	0.00	0.00	0.00	0.00	0.00	0.00
		2	0.00	0.00	0.00	0.00	0.00	0.00
		3	0.00	0.00	0.00	0.00	0.00	0.00
		4	0.00	0.93	0.00	0.00	0.45	0.00
		5	0.12	1.70	33.33	0.60	1.34	15.38
		6	0.54	3.20	125.00	1.45	2.17	40.78
		7	2.47	3.84	59.35	3.27	2.61	-7.63
		8	3.23	4.87	15.77	5.12	4.85	-15.37
		9	3.68	3.72	4.84	3.37	3.21	62.02

Table 2 shows that: In the reflex time indicator, right after running 100m, some athletes performed more flexible reflexes than before the test, but there are also athletes who reflected slowly and made more mistakes than before.

In the muscle force feeling indicator: shooting athletes had a decrease in maximum muscle force as well as in the accuracy when feeling the force.

In the hand shake 10s (time) indicator: there were significant changes in the hand shaking level in athletes following the exercising activities.

Thus, while exercising in maximum capacity, there were a lot of changes in the indicators evaluating the psychological function of athletes.

### 2.3. Characteristics of the indicators reflecting the psychological function of high-level shooting athletes 10 minutes after exercising in maximum capacity

10 minutes after the maximum capacity exercise, we continued to test the athletes' psychological function, and compared with the results obtained before the test. The results are presented in Table 3.

**Table 3. Characteristics of indicators for evaluating mental and psychological functions of high-level shooting athletes 10 minutes after exercising**

No.	Indicator	Male (aged 17-19) (n = 10)			Female (aged 14-16) (n = 04)			
			$\sigma$	% recuperate		$\sigma$	% recuperate	
1	Simple reflex (ms)	187.13	19.45	251.38	198.27	20.28	841.58	
2	Complex reflex (ms)	176.47	18.79	886.42	259.63	26.33	1607.07	
3	Leg muscle force feeling 50% (%)	Fmax (KG)	147.39	15.68	-64.56	85.42	9.13	23.94
		Feeling of deviation	2.61	0.26	107.14	2.73	0.25	107.69

4	Hand shake 10s (times)	1	0.00	0.00	0.00	0.00	0.00	0.00
		2	0.00	0.00	0.00	0.00	0.00	0.00
		3	0.00	0.00	0.00	0.00	0.00	0.00
		4	0.00	0.00	0.00	0.00	0.00	0.00
		5	0.13	0.03	-33.33	0.37	0.05	287.50
		6	0.41	0.05	43.33	1.15	0.12	71.43
		7	2.08	0.21	42.39	3.46	0.37	70.37
		8	3.35	0.38	-27.27	5.82	0.65	75.27
		9	3.97	0.63	-170.59	3.67	0.41	-23.26

Table 3 shows that: 10 minutes after completing the maximum capacity exercise, the characteristics of the psychological function of athletes have completely recovered compared to the time before exercising. Particularly, the indicators of reflex time, muscle force feeling and maximum muscle force tended to be higher than before exercising in maximum capacity. Thus, it can be said that 10 minutes after exercising in maximum capacity, the athletes' psychological function has completely recovered, even many indicators have recovered excessively.

#### Conclusion:

1. Before exercising in maximum capacity, the characteristics of the indicators evaluating the mental and psychological functions of selected sports athletes were better than normal Vietnamese people.
2. While exercising in maximum capacity, the least change occurs in indicators assessing cardiovascular and blood biochemical functions, followed by indicators evaluating psychological function and the most changes occurred in indicators evaluating the athletes' psychological function.
3. 10 minutes after exercising in maximum capacity, the psychological function evaluation indicators changed little compared to the level before exercising.

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## **A Comparison Study of the Physiological Variable of Kho-Kho and Kabaddi Players from Beed District - Maharashtra**

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### **Introduction:**

The rate and style of development in international sports, especially in team games is identified as a result of an increase in the games variability in technique and tactics. An increased in the performance level is only achievable by working and training all major components effecting an athlete's sports performance i.e. technique, coordination, tactics, physical fitness, physiological qualities. Physiological exercise testing is important in help identify potential talent but also to provide the players, trainers and coaching staff with some profiles for the players and a measure for evaluating training programs.

Testing physiological requirements of Kho-kho and Kabaddi has become more specific over the past decade with further advances in both sports science technology and general understanding of the physiological requirements for testing Kho-kho and Kabaddi. However, despite this progress in testing procedures and knowledge there still appears limited research regarding the analysis and critical appraisal of tests used specifically for Kho-kho and Kabaddi. Many laboratories and field tests for physiological assessment do exist, however to be thorough in reviewing physiological status is important to assess all components of the sport, specifically measuring each energy system.

The purpose of this study was to compare the Physiological Variables between the Kho-kho and Kabaddi Players from Beed District - Maharashtra.

### **Methodology:**

#### **Selection of Subjects:**

In the present study 25 male Kho-Kho and Kabaddi players from Beed District were selected as Subjects.

#### **Selection of variables:**

The age of the subjects was ranging from 16-21 years. The selected subjects were underwent Blood pressure and Pulse rate measured test using a digital sphygmomanometer and body temperature was measured with help of thermometer.

#### **Research Design:**

Present study was Experimental in nature, where Non-Equivalent Control Group Designed was used.

#### **Procedure of the Study:**

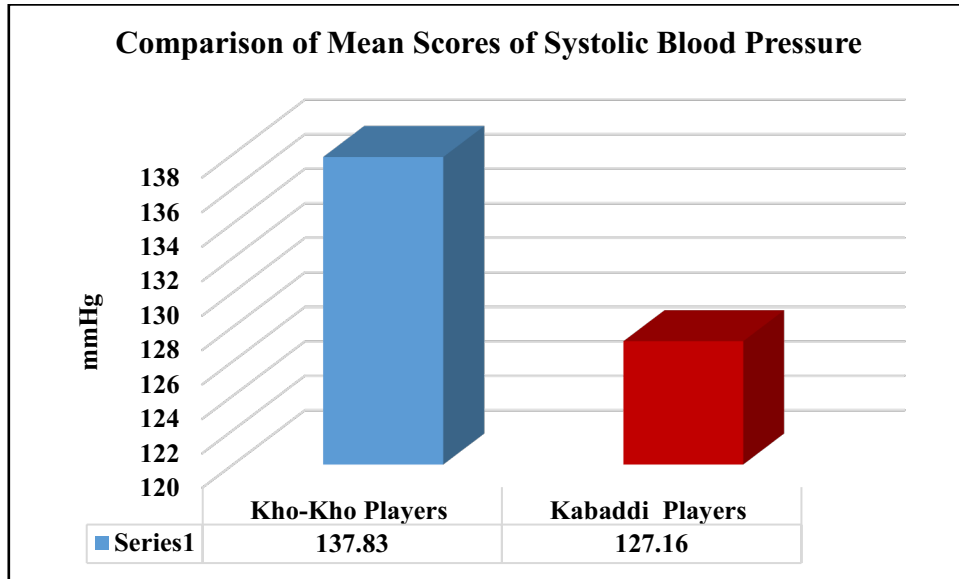
Test was conducted on physiological variables i.e., blood pressure, pulse rate and body temperature were recorded after the training session of both Kho-kho and Kabaddi players through electronic devise of Dynamic for BP and body temperature was recorded through thermometer.

#### **Statistical Technique:**

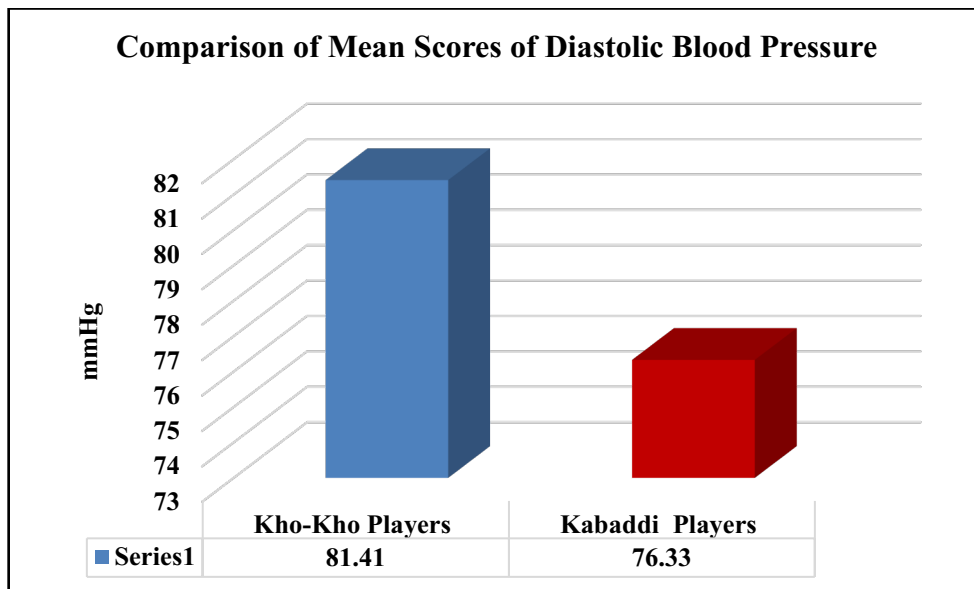
To test the significance of mean difference between the Kho-kho and Kabaddi players Independent Sample 't' test was applied.

**Results and Discussion:**

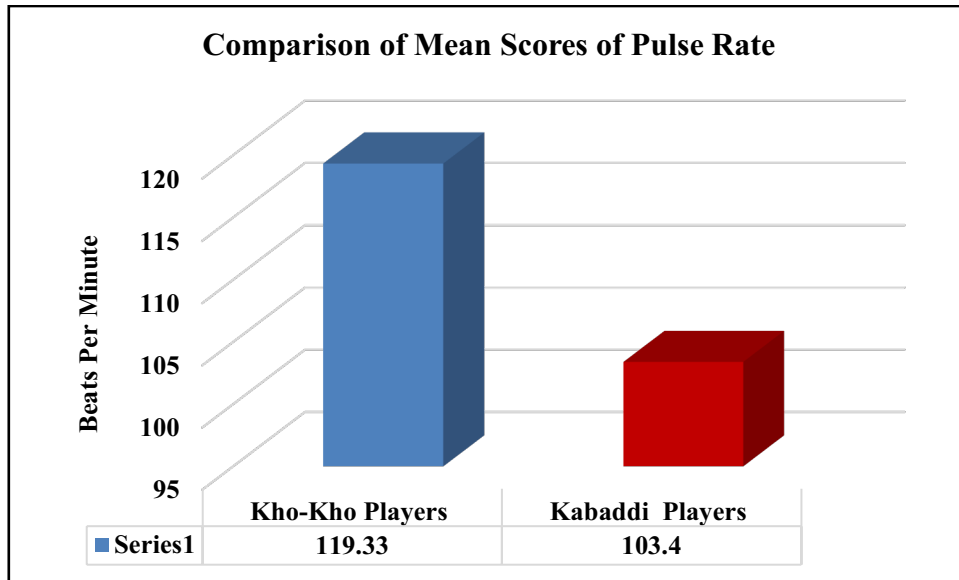
• It was seen that the mean of systolic pressure during rest was of Kho-Kho Players was  $137.83 \pm 9.812$  and of Kabaddi players was  $127.16 \pm 13.41$ . The calculated 't' value was 2.50 was higher than table value of (28)  $t=2.04$  at  $p=0.05$ . Graphical presentation of the same is as follows:



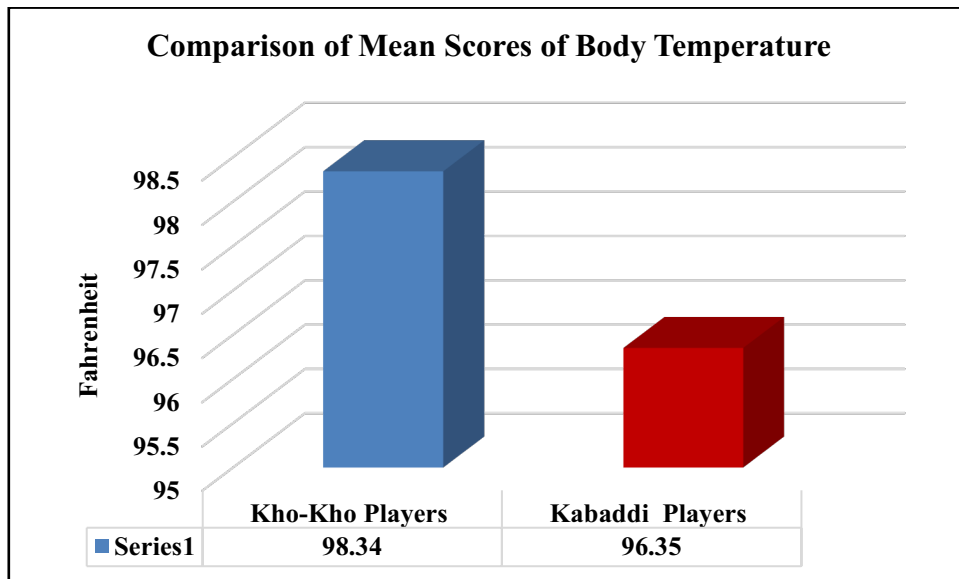
• It was also recorded that the mean of diastolic pressure during rest of kho-kho players was  $81.41 \pm 7.215$  and of the kabaddi players was  $76.33 \pm 6.00$ . The calculated 't' value was 2.09 was higher than table value of (28)  $t=2.04$  at  $p=0.05$ . Graphical presentation of the same is as follows:



• It was also noted that the mean of pulse rate during rest of Kho-kho players was  $119.33 \pm 20.465$  and that of kabaddi players was  $103.4 \pm 17.53$ . The calculated 't' value was 2.28 was higher than table value of (28)  $t=2.04$  at  $p=0.05$ . Graphical presentation of the same is as follows:



- However the mean value of body temperature during rest of Kho-kho players was  $98.34^{\circ}\text{F} \pm 0.72$  of and that of Kabaddi players was  $96.35^{\circ}\text{F} \pm 1.60$ . The calculated 't' value was 4.36 which was lower than table value of (28)  $t=2.04$  at  $p=0.05$ . Graphical presentation of the same is as follows:



**Discussion of the Results:**

The data revealed that physiological variables of pulse rate, and blood pressure (systolic and diastolic) was observed significant difference between male Kho-Kho and Kabaddi players however there was no significant difference in body temperature between Kho-kho and Kabaddi players.

**Conclusion:**

The results of the study stated that the Kho-Kho players had more faster recovery in post session heart Rate as well as Blood Pressure in compare to Kabaddiplayers. The result also indicates that Kho-Kho players are having higher endurance capacity than of their counterpart Kabaddi players.

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## **Effect of Resistance Training on Selected Skill Performance of Female Kick-boxers**

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**Prof. Vasanthi Kadhiravan:** Department of Physical Education, University of Mumbai, Mumbai

### **Abstract:**

Kickboxing is a modern martial art as well as combat full contact sport that combines the powerful kicks of Taekwondo and Muay Thai with the basic techniques and hand movements of boxing. It is a rigorous, total body workout comprised of controlled kicking, punching and jabbing movements. Kickboxing has been practiced by many for self-defense and as a sport. There are different variations for kick boxing rules. The main purpose of this study was to find of effect of resistance training programme on punching skill performance and kicking skill performance of female kick boxers. For this purpose, 40 female kick boxers with the age group of 16 from Seven Square Academy School of Mira Road have been randomly selected as the subjects of this study. The selected forty female kickboxing players underwent eight weeks of resistance training for three days in a week (Monday, Wednesday Friday) in morning or evening session for one hour. Pretest and posttest were conducted on selected skill performance – punching and kicking skill of female kickboxers. Significance differences were determined through “t” test and the result revealed that the resistance training has improved the skill performance of female kickboxers.

**Keywords:** resistance training, punching skill, kicking skill, female kickboxers.

### **Introduction:**

Physical activity is essential to the health and development of the youth. Multitudes of research show that being active is essential to the well-being of a person; it is now our responsibility as a society to utilize that information. Sports and physical education are vital factors when it comes to keeping kids healthy.

The term kickboxing is a somewhat generic one used to cover the combination of several different striking or stand up fighting styles that fall within the classification of sport martial arts. Though the term kickboxing was specifically initiated in Japan and evolved from full contact karate, its history and roots are in many ways tied to the Thailand martial art of Muay Thai Boxing as well. Kickboxing is a group of stand-up combat sports based on kicking and punching, historically developed from Karate and Muay Thai. Kickboxing is practiced for self-defense, general fitness, or as a contact sport.

Resistance training is any exercise that causes the muscles to contract against an external resistance with the expectation of increases in strength, tone, mass, and/or endurance. The external resistance can be dumbbells, rubber exercise tubing, our own body weight, bricks, bottles of water, or any other object that causes the muscles to contract. Resistance training is a form of exercise that improves muscular strength and endurance. Effectiveness of accommodation and constant resistance training on maximal strength and power in trained athletes. Accommodation resistance is a training technique that may improve strength and power gains beyond those achieved by traditional free weights. (Ataee et al., 2014)

**Methodology:**

Experimental research design was formulated for this study was to find of effect of resistance training programme on punching skill performance and kicking skill performance of female kick boxers. For this purpose, 40 female kick boxers with the age group of 16 from Seven Square Academy School of Mira Road were randomly selected as the subjects of this study. The selected forty female kickboxing players were equally divided into two groups i.e. experimental and control group. The experimental group underwent eight weeks of resistance training for three days in a week (Monday, Wednesday Friday) in morning or evening session for one hour. Pretest and posttest were conducted on selected skill performance – (punching, kicking skill and eye –hand co ordination) of female kickboxers administering standardized tests such as Hitting punch, Hitting kicks, and Ball transfer. Control group was kept sedentary.

**Statistical Analysis Used:** As per the guidelines and the key directions of collected data were analyzed by using the “t” test as suggested by Mc Guigan for the significance of differences with and between the experimental and control groups.

**Results:** After the collection of data the researcher analyzed the data and the results obtained have been summarized as under –

Variables	Pre Test		Post Test		Mean Diff.	Std Error Mean	‘t’	Sig.
	Mean	SD	Mean	SD				
Straight punch	58.4	11.64	61.75	11.22	3.35	0.15	22.33	(P<0.005)
Kick on upper body	28.8	6.85	32.3	6.65	3.5	0.427	7.400	(P<0.005)
Eye-hand coordination	27.80	3.95	26.20	4.16	-1.604	0.185	8.624	(P<0.005)

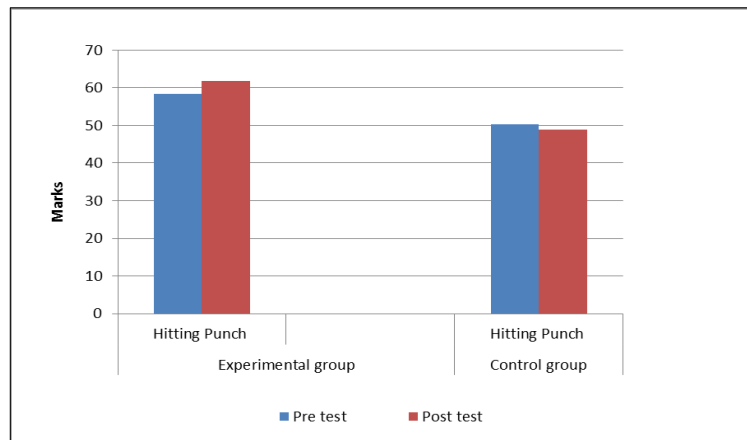
- The comparison of mean between pre test and post test of hitting punch Experimental and control group-**  
The data were analysed with the help of t-test and the results are given in the table. hitting punch tests were measured and the mean score of pre test and post test of the experimental group are 58.4 (SD 11.64) and 61.75 (SD 11.22) respectively, whereas the mean difference was 3.35 and ‘t’ value was 22.33, which is significant at 0.05 level ( $p < 0.05$ ). The hitting punch were measured and the mean score of pre test and post test of the control group are 5.25 (SD 11.97) and 48.95 (SD 11.80) respectively. After applying ‘t’ test it was found that the ‘t’ ratio 4.950 and level of significance is 0.05. That is statistically not significant.
- The comparison of mean between pre test and post test of hitting kicks of Experimental and control group-**  
The hitting kick were measured and the mean score of pre test and post test of the experimental group are 28.8 (SD 6.85) and 32.3 (SD 6.65) respectively, whereas the mean difference was 3.5 and ‘t’ value was 7.400, which is significant at 0.05 level

( $p < 0.05$ ). The hitting kick test were measured and the mean score of pre test and post test of the control group are 31.95 (SD 6.11) and 31.25 (SD 6.08) respectively. After applying 't' test it was found that the 't' ratio 3.390 and level of significance is 0.05. That is statistically not significant.

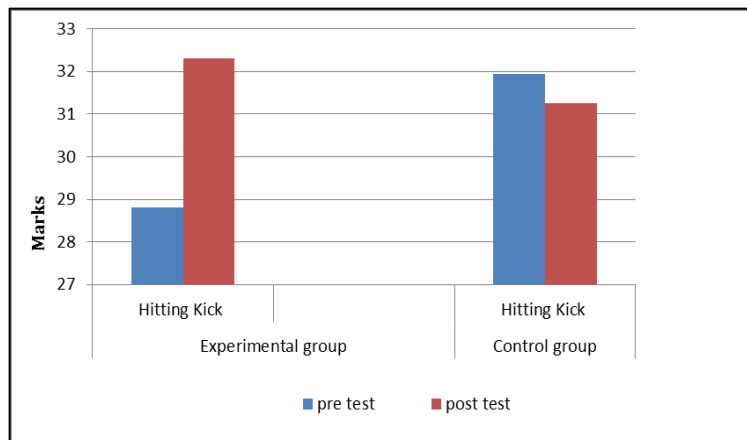
- **The comparison of mean between pre test and post test of ball transfer of experimental and control group-**

The ball transfer test were measured and the mean score of pre test and post test of the experimental group are 27.80 (SD 3.95) and 26.20 (SD 4.16) respectively, whereas the mean difference was -1.604 and 't' value was 8.624, which is significant at 0.05 level ( $p < 0.05$ ). The ball transfer test were measured and the mean score of pre test and post test of the control group are 28.69 (SD 4.75) and 29.56 (SD 4.71) respectively. After applying 't' test it was found that the 't' ratio 2.540 and level of significance is 0.05. That is statistically not significant.

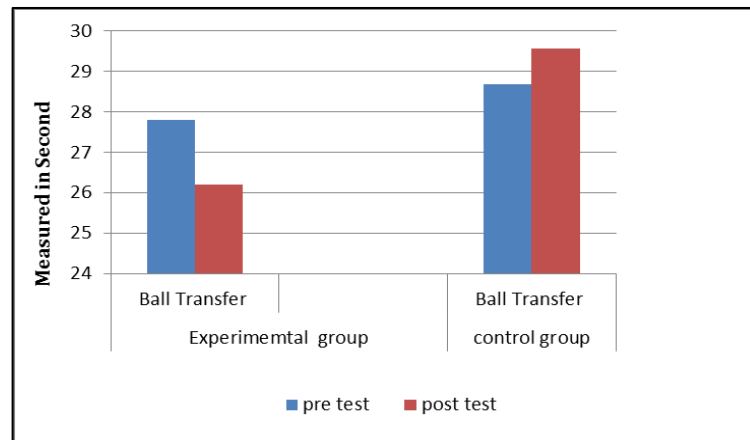
***The comparison of mean between pre test and post test of hitting punch test on Experimental and control group of female kick boxers***



***The comparison of mean between pre test and post test of hitting kicks test on Experimental and control group of female kick boxers***



***The comparison of mean between pre test and post test of ball transfer of experimental and control group of female kick boxers***



**Conclusion:**

The Resistance Training has showed a significant improvement in the skill performance of female kickboxers. This training program can be used to improve the selected variables of other age group and also the professional kick boxers.

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## **A Legend Footballer Squadron Leader S. S. Hakim an Olympian**

**Dr. Ravi Nayak:** Physical Education Director, Govt. First Grade Degree College, Humanbad (Karnatka)

### **Introduction:**

Physical education is to develop human personality in its totality. In other words physical education aims at all round development of the personality of an individual or wholesome development of human personality and it includes physical, mental, social, emotional and moral aspects to make an individual a good citizen, who will be able to contribute to the development process of nation. Physical education means making an individual physically fit mentally alert, emotionally balanced, socially well adjusted, morally true and spiritually uplifted.

### **Statement of Problems:**

The investigator has conducted a study on the renowned personality Squadron Leader S.S. Hakim and the contribution he made to the field of football.

Hence to achieve this purpose the problem selected by the present investigator was cited as below.

### **Objective of Study:**

The study is taken with the following objective.

- To study Squadron Leader S.S. Hakim childhood.
- To study Squadron Leader S.S. Hakim family background.
- To study Squadron Leader S.S. Hakim educational background.
- To study Squadron Leader S.S. Hakim nature behaviour and hobbies.
- To study Squadron Leader S.S. Hakim practice methodology, like styles and techniques.
- To study Squadron Leader S.S. Hakim's training method like physical training.
- To study coach and mentors role of Squadron Leader S.S. Hakim.
- To study the role of media.

### **Hypothesis:**

The researcher formulated the following hypothesis for the present study on Squadron Leader S.S. Hakim.

- 1) On the basis of the interview taken with Squadron Leader S.S. Hakim and his family member's friends, teammates and students, it was assumed that the information provided by them will be true towards the subject's life and his contribution in the field of football.
- 2) On the basis of the questionnaire sent to Squadron Leader S.S. Hakim and the persons related to the subject, it was assumed that the information provided will be true about the subject as a player, as a mentor, as a personality and as a team manager and administrator, in his sporting career.
- 3) On the basis of the collected information through interviews and questionnaire it was assumed that it will give a clear image about the personality of Squadron Leader S.S. Hakim and his contribution in the field of football.

**Significance of the Study:**

The present study is under taken to answer such questions which promote the football game in India from the lower level to the higher level competitions. The present study contributed to the knowledge in the following ways.

- This study will point out need of case study for football players.
- Result and conclusions of this study will influence the policies and practices in physical education and sports.
- This study may be helpful to motivate the beginner, professional, students and all physical educationists and this study may be helpful to sports persons, coaches, administrators and officials of football and other sports to learn from his experience.

**Methodology:**

- The design of the study
- The selection of the subject for primary and secondary sources
- The construction of questionnaire and rating scale
- Reliability of the interview
- The tools for collection of data
- The methods employed to collect data
- The methods for analyzing data

**Table 1. Characteristics of indicators for evaluating mental and psychological functions of high-level shooting athletes 10 minutes after exercising**

S. No.	Statements	Students			
		Agree	Strongly agree	Disagree	Strongly disagree
1	Behaves in sober manner	50	50	0	0
2	Follows the rules	0	100	0	0
3	Behave boldly in decision making	50	50	0	0
4	Acts in self reliant manner	100	0	0	0
5	Is a practical man	100	0	0	0
6	Respects established traditions	100	0	0	0
7	Behaves in relaxed manner	100	0	0	0
8	Is a warm hearted person	100	0	0	0
9	Acts in a controlled manner	50	50	0	0
10	Acts in a dominant manner	50	0	50	0
11	Takes his own decision	100	0	0	0
12	Possesses a very pleasant personality	50	50	0	0
13	Very friendly and cooperative	0	100	0	0
14	Health conscious	50	50	0	0
15	Has a good physique	50	50	0	0

16	Not stubborn	100	0	0	0
17	Never loses his cool	100	0	0	0
18	Has lot of patience and perseverance	100	0	0	0
19	Believes much in social service	100	0	0	0
20	His attitude towards others is always human	100	0	0	0

**Table 2. Sports Achievements as player and referee in the field of football**

	<b>As Player</b>	<b>As Referee</b>
<b>International Level</b>	<ul style="list-style-type: none"> <li>➤ Represented India at 1959 Pre-Olympics, Djakarta, Indonesia and at Singapore and Malaysia, in exhibition matches in the same year.</li> <li>➤ Represented India at the 1960 Rome Olympics.</li> <li>➤ Played for India, Hyderabad, Andhra and Services teams against visiting foreign teams.</li> <li>➤ Captained North India XI against visiting foreign teams from 1963 to 1959.</li> </ul>	<ul style="list-style-type: none"> <li>➤ FIFA referee from 1974 to 1989. Referred 33 international matches which is a national record.</li> <li>➤ Refereed in Asian Games twice, in Asian Cup Preliminary and Final round thrice, Olympic qualifying round thrice, World Cup qualifying round twice, in Asia Youth Final round twice, Merdeka Cup once and Nehru International Tournament seven times with three finals.</li> </ul>
<b>National Level</b>	<ul style="list-style-type: none"> <li>➤ Played for Hyderabad, Andhra and Services in the Santosh Trophy (National Championship) from 1957 to 1968-69; captain services team in 1964, 1956 and 1968-69.</li> <li>➤ Played for Hyderabad State which won the Santosh Trophy in the Year 1957.</li> <li>➤ Captain Services team in the year 1965-66 which won the Bronze Medal in the Santosh Trophy.</li> <li>➤ Played for Osmania University from 1954 to 1958 winner in 1954 &amp; 1955, captain in 1958, captain of the Indian Air Force Team for a number of years.</li> <li>➤ Played for the prominent clubs of Hyderabad from 1954 to 1961 in the Premier Tournaments of the country.</li> <li>➤ Played from 1952 to 1976 (25 years).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Referred in all Premier Tournaments of the country and officiated the finals of Durand Cup, twice, IFA Shield twice, Santosh Trophy twice, Rovers Cup once, DCM once and Services Championship once.</li> <li>➤ AFC Referee's instructor from 1989 to 1992. Produced more than 100 referees from services, NIS and Aurangabad.</li> <li>➤ No other Indian Referee can match these achievements. In Asia too, only a few referees may match these achievements. Referee from 1960 to 1989 (30 years).</li> <li>➤ Attended a number of FIFA and AFC Referees Seminars.</li> </ul>

**Table 3. Sports Achievements as Coach and Sports Administrator in the field of football**

	<b>As Coach</b>	<b>As Sports Administrator</b>
<b>International Level</b>	<ul style="list-style-type: none"> <li>➤ Coach of 1980 Indian Youth Team along with Mr. Nikhil Nandy of Bengal.</li> <li>➤ Coach of National Team from 1980 to 1982 along with P.K. Banerjee and Arun Ghosh, for the 1982 Merdeka Cup, Malaysia and for the 1982 Asian Games.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Commissioned Officer in the Indian Air Force from 1962 to 1983.</li> <li>➤ After taking premature retirement from Air Force, joined the National Institute of Sports as Director, was Dean NIS and retired as Regional Director, Sports Authority of India in 1997.</li> <li>➤ Secretary Air Force Sports Control Board from 1972 to 1978. Air Force teams and sportsmen gave the best results.</li> <li>➤ Commended by the Chief of the Air Staff in 1978.</li> <li>➤ Member of the special organizing committee of the IX Asian Games and member of the various committees of the AIFF &amp; SSCB from 1972 to 1982.</li> <li>➤ Consultant – Cum-Advisor Sports, JMI, New Delhi from Dec. 2009 to Dec. 2013.</li> <li>➤ Consultant-cum-Advisor Sports to the V.C. Aligarh Muslim University, Aligarh from Aug. 2014 to Sept. 2015.</li> <li>➤ Chief Project Director SAI JNTSP Talent Hunt from Sept. 2015 to Dec. 2017.</li> </ul>
<b>National Level</b>	<ul style="list-style-type: none"> <li>➤ Coached Indian Air Force Services, Salgaocar (Goa), Mohammeden Sporting (Kolkata), Mahindra (Mumbai), Peerless (Kolkata), J&amp;K Bank (Srinagar), Hindustan Club (Delhi), Marathwada University (Aurangabad) Bengal Mumbai Football Club (Mumbai) and Jamia Millia Islamia New Delhi with outstanding results and without stars.</li> </ul>	<ul style="list-style-type: none"> <li>➤ 2017 Dhyan Chand Awardee</li> <li>➤ Expert commentator for 2006, 2010 and 2014 World Cup Football Tournament, 2008 and 2012 Euro Cup, 1996 National Football League and National Football Championship and 2000 Sahara Millennium Cup on various T.V. Channels like Door Darshan (Sports), Door Darshan (News), Sahara Samay, Live India, NDTV and Star Sports from 2002 to 2014.</li> </ul>



	<ul style="list-style-type: none"> <li>➤ Mahindra was the first Mumbai team to win the Durand Cup, in the 111 years history of the tournament, in 1998. Gillette Coach of the year 1996.</li> <li>➤ Chief Coach of the Subroto Mukherjee Sports and Educational Society and of the Air Force Team from May 2007 to March 2009.</li> <li>➤ Conducted refreshers courses for coaches in Air Force, at Hyderabad and at Aurangabad.</li> <li>➤ Produced hundreds of players. Many of my trainees represented India and a few even captained the India Team. A few of them were the coaches of the National teams.</li> <li>➤ Qualified courses from NIS in 1986 in 1st Division.</li> <li>➤ FIFA Coaching course in 1990.</li> </ul>	
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### Conclusion:

The following conclusions may be drawn from the analysis of the data gathered from the subject and other associates in responses to the questionnaires served to them and interviews conducted.

- Though the subject belongs to a reputed class family now, it was the self interest, willpower, a strong and firm determination of the subject that took him to the present height in football career.
- The subject possesses very sound habits, discipline, sincerity, humbleness, regularity, punctuality, calmness, relaxed approach, optimistic attitude, die hard attitude, aggressive attitude and a very positive and favorable approach towards sports and people, and has shown that dedication, will power, determination and involvement as a football player, coach, referee and sports administrator at various levels in India and abroad.
- The exposure of the subject to a number of competitions made him realize his own potentials which gave him the confidence to compete at all levels and defeat opponents during competitions with almost self confidence. The consistent performance and success in various competitions have not only made him capable for hard training and perseverance in sports, but also made him realize his own potentials of becoming a football player of Olympian and international repute. All these things have compelled him to work harder during training and the subject has developed a never to give up attitude.
- By observing his achievement and dedication towards the game is zeal and inspiration. He is a motivational figure for today's young generation of India.

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## **Contribution of Shivaji Park towards the Development of Indian Cricket**

**Mr Sunil kumar Yadav:** Master Degree Student, Department of Physical Education, University of Mumbai, Mumbai-400098

**Dr. Manohar M. Mane:** Assistant Professor & Head, Department of Physical Education, University of Mumbai, Mumbai-400098

### **Abstract:**

To investigate the contribution of Shivaji Park an Indian Cricket team, its benefits and drawback toward the promotion of the cricket and cricket players in India. A case study has been designed in which analytical, based on the survey was utilized to collect the relevant data. The collected information has been analyzed based on the information furnished.

The study was purely descriptive, based on the survey method. Shivaji Park was selected as the subject for the primary source.

All the gathering data were analyzed in descriptive manners. Published and Unpublished Materials in News Paper, book, Journals, Articles and websites of Shivaji Park, websites of cricket and Pictorial records of Shivaji Park were investigated. Some of the photographs relevant to different headings were chosen as documents for this study.

**Keywords:** Contribution, Shivaji Park, Indian Cricket, Development, Ground etc.

### **Introduction:**

Cricket is the world's second most popular spectator game after association football. Cricket, football, hockey baseball games required large ground to play the game. A city like Mumbai where already shortage of land to play any sports there Shivaji park maidan plays a very vital role in the promotion of game as well as the advancement of the individual fitness. Shivaji Park Gymkhana with an area of 27 acres, Shivaji Park is the largest ground in Mumbai. Situated at the heart of Dadar, Shivajipark is home to eight cricket clubs that carry out cricket coaching sessions the entire year for cricket players. These clubs are-Bengal Club, Young Maharashtra SC, Kamath Memorial CC, Mahim Juvenile SC, Mumbai Municipal SC, Central Railway Institute, Bharat Cricket Club and Shivaji park Gymkhana with an area of 27 acres.

### **Methodology:**

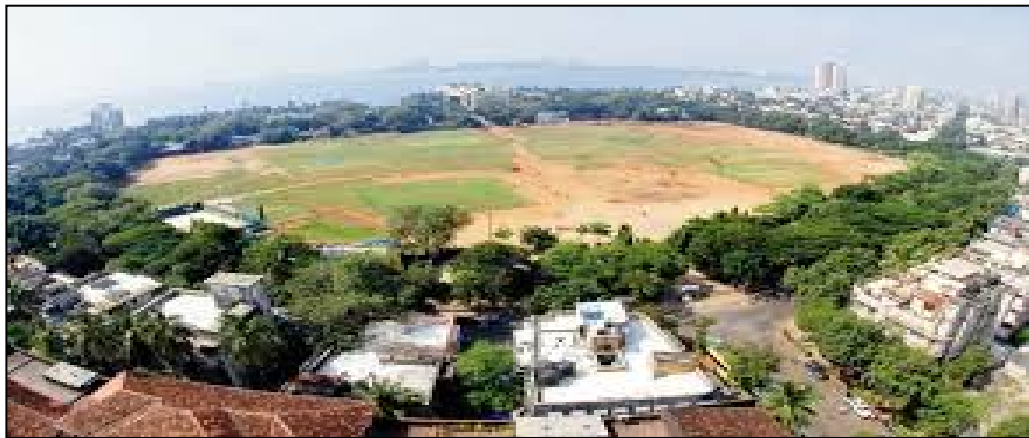
The case study is a complete analysis and report of the status of a particular, individual, subject, school, institution, playground or community to ensure the possible improvement. The case study aims to understand the life cycle of an important part of the life cycle of an individual an institution or a social group or community. The study was purely descriptive, based on the survey method. Shivaji Park was selected as the subject for the primary source.

To investigate the contribution of Shivaji Park an Indian team, its benefits and drawback toward the promotion of the cricket and cricket players in India. A case study has been designed in which analytical in nature, based on the survey were utilized to collect the relevant data. The collected data has been investigated based on the information furnished.

All the gathering data were analyzed in descriptive manners. Published and Unpublished Materials in News Paper, books, Journals, Articles and websites of Shivaji Park, websites of cricket and Pictorial records of Shivaji Park were investigated. Some of the photographs relevant to different headings were chosen as documents for this study.

**Result:**

Shivaji Park is an open ground which is bordered around its edge by a stone called Katta, a simple continuous low kerb edging that forms a makeshift seat, a popular hangout for young and old alike. The paved walkway around this border is crowded with people taking walks. 1.17 kilometres is an inner circumference of the Shivaji Park and the total area of Shivaji park is 112,937 square meters, maximum area is engaged by 31 cricket pavilion or temporary tenants and two major clubs and the largest being clubs like the Shivaji Park Gymkhana, and the Bengal Club. The remaining part of the ground and open spaces are available to the public for sports and other activities like physical fitness, walking and recreational activities. Other structures spotting the border of the grounds include mallakhamb training centre like the Samarth Vyayam Mandir (gymnasium), a children's Park, Nana-Nani Park (park for senior citizens), Scout's Pavilion, Shivaji Park Nagarik Sangh, a Ganpati temple and a library etc. The outside footpath is lined with huge rain trees. The most prominent entry to the park is the one on the east side, intended only for pedestrians.



**Figure 1. Aerial View of Shivaji Park**

Shivaji Park is a public park situated in Dadar, Mumbai, Maharashtra. Shivaji Park is the largest park in the island city of Mumbai like the two other grounds or open maidan is Azad Maidan and August Kranti Maidan (formerly Gowalia Tank Grounds), it is of historical and cultural value because of the political, cultural and social gatherings it has witnessed so many times, both in pre-and post-independence of India. The 112,937 square meters (27.907 acres) open space is renowned as the foundation of Indian cricket. The park was created in 1925 by the Bombay Municipal Corporation, during the British government Rule. The ground was famous as the Mahim Park till 1927 when it was named after the well-known 17th Century great king of the county, Chhatrapati Shivaji Maharajat the behest of a municipal councillor, Avantika Gokhale. There are few famous gymkhanas or clubs and Shivaji Park Gymkhana is one of them, then known as the Dadar Hindu Gymkhana, started with first Tennis court on the grounds in 1927 and pavilion is inaugurated in November 1931.



**Figure 2. A cricket match at Shivaji Park in the old days**

**Table 1. Various Cricket Records At Shivaji park**

<b>Records</b>	<b>Made By</b>
Highest Total	529 Dadar Union S. C. v/s P. J. Hindu Gymkhana
Lowest Total	10 Khar Gymkhana v/s Shivaji Park Gymkhana, 1956 10 Parsee Cyclists S. C. v/s Karnataka S. A., 1988 12 Indian Gymkhana v/s Shivaji Park Gymkhana, 1969 12 National C. C. v/s Shivaji Park Gymkhana 12 Bohra Cricketers v/s Fort Vijay C. C., 1948
Highest Individual Score	188 Gopal N. Koli (New Hind S. C.) v/s United Cricketers, 1972 183 R. B. Kenny (Dadar Union S. C.) v/s P. J. Hindu Gymkhana, 1954
Highest Individual Career Aggregate	5046 M. L. Apte (C. C. I. & Jolly Cricketers) 3499 A. L. Apte (P. J. Hindu Gymkhana & Jolly Cricketers) 3248 A. L. Apte (P. J. Hindu Gymkhana & Jolly Cricketers) 3204 V. L. Manjrekar (Friends Union, Shivaji Park Gymkhana, C. C. I. and P. J. Hindu Gymkhana)
Highest Individual Aggregate in a Season	560 M. K. Mantri (C. C. I.) 1948
Most Wickets in an Innings	10 FOR 20, V. Dutt (Dadar Union S. C.) v/s Rajasthan S. C., 1982 10 for 30, A. Abraham (Sunder C. C.) v/s Sind Hindus, 1952 10 for 40, B. L. Dalal (Fort Vijay C. C.) v/s Gaud Saraswat C. C., 1956
Most Wickets in a Match	17 for 44, P. S. Shetty (Jolly Cricketers) v/s M. B. Union C. C., 1978 17 for 49, B. R. Irani (Baronet C. C.), 1948
Most Wickets in a Season	94 for 256 in 12 matches, P. K. Shivalkar (Shivaji Park Gymkhana), 1972 93 for 717 in 12 matches, B. R. Irani (Baronet C. C.), 1948

Most Wickets in a Career	759 V. S. Patil (Dadar Union S. C.) 743 B. R. Irani (Baronet C. C. & Parsee Cyclists S.C.) 564 P. K. Shivalkar (C. C. I. & Shivaji Park Gymkhana) 459 R. B. Desai (Shivaji Park Gymkhana) 379 K. R. Panjri (MYC, Dadar Union S. C. & National C. C.)
Most Victims Behind The Wickets	202 Mobin Shaikh (Rajasthan S. C. & Victory C.C.)



**Figure 3. Sachin Tendulkar and Vinod Kambli during one of their many partnerships**

In an exclusive email interview with a reporter of Hindustan Times as part of its Mumbai Meri Hai series, with Sachin Tendulkar, talks about how the city's maidans were a vital part of the megapolis, the roles these maidans played in his outstanding career and his memories of Shivaji Park.

**How Shivaji Park plays a special role in your career. How did Shivaji Park help you grow as a cricketer?**

Sachin Tendulkar expressed that, It was where he first met his coach, his guru, Achrekar sir and the park was where he took his guiding steps in the world of competitive cricket. Here is where he made lifelong friends and relationships, but cricket was his best friend with whom he spent most of his time. In fact, to ensure that he spent more time practising at Shivaji Park, he moved to his aunt's place from his parent's house. It was a difficult decision at that time for him, but his family ensured that he managed to adapt to the change for his future. Shivaji Park will always have a special place in his heart.

**A lasting memory at any of Mumbai's maidans**

Sachin Tendulkar expressed that When he think about Mumbai's maidans, it takes him back to the sweet memory of the many one rupee coins that he was used to getting from his coach, Achrekar sir, for not losing his wicket during practice sessions. Those coins are precious and he still has them with him. The 664-run partnership in the Harris Shield semi-final of interschool cricket competition played at Sassanian ground at Azad Maidan between February 23 and 25, 1988 was also special for him.



**Figure 4. Cricket Net at Shivaji Park in Dadar**

Shivaji Park maidan is renowned as the foundation of Indian cricket. The late Anna Vaidya and Ramakant Acharekar, which they have produced several international cricketers for India and they coached them at Shivaji park maidan only. Some famous names who have trained here are Sachin Tendulkar, Sunil Gavaskar, Ajit Wadekar, Suhas Gupte, Dilip Vengsarkar, Vijay Manjrekar, Ramakant Desai, Balu Gupte, M.S. Patil, Dilip Sardesai, Ajit Agarkar, Vinod Kambli, Ashok Wadekar, Padmakar Shivalkar, Eknath Solkar, Pravin Amre, Chandrakant Pandit, Lalchand Rajput, Sandeep Patil, Sanjay Manjrekar and many more.

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## ***Pāṇigrahaṇa* : An Eye-bird View on an Essential Marriage Ritual in the Traditional Indian Culture**

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### **Abstract:**

Among Hindu marriage rituals, *Pāṇigrahaṇa* plays a major part. This study aims to trace the origin and development of this ritual. Hindu rites and rituals are mainly described in the *Gṛhya-Sūtras of Kalpa Vedāṅga*. However, the origin of this study can be traced back to the Vedic era. In this study, *Gṛhya-Sūtras* namely *Āśvalāyana*, *Gobhila*, *Śāṅkhāyana* *Hiraṇyakeśi*, *Khādira*, *Pāraskara* and the *Manusmṛiti* have been associated as primary sources. Some differences in describing this ritual in these *Gṛhya-Sūtras* also noticeable. The necessity of the *Pāṇigrahaṇa* ritual is supported by the laws of the *Manusmṛiti* as well.

**Keywords:** *Pāṇigrahaṇa*, Hindu marriage rituals, *Gṛhya-Sūtras*, *Saṃskāras*, *Vivāha*

### **Introduction:**

In the Sanskrit Language, '*Paṇi*' means 'hand' and '*Grahaṇa*' means 'grasping' or 'seizing'. Both of them together make a compound '*Pāṇigrāhaṇa*'. This term conveys a deep idea of a particular main marriage ritual performed in India, especially in the Hindu culture. The term means holding the hand of the bride by the groom when performing marriage rituals. This term can be found widely in the Sanskrit literature as well. For example, in the *Manusmṛiti* the word '*Pāṇigrāhaṇa*' is referred to the as '*Pāṇigrāhasya*' (one who takes the hand) when describing the how woman's behaviour should be in various ages of her life. On the other hand, Sinhala culture was also influenced by Hindu rituals like these. Hence, in Sinhala culture, the word '*Atinatagænīma*' also conveys presumably the same meaning as '*Pāṇigrāhaṇa*'. I have followed several studies on marriage rituals.

### **Research Objectives:**

The existing researches show that the concept of *Pāṇigrāhaṇa* could be traced back to the Vedic era. This study examines the origin and the spread of this ritual.

### **Research Methodology:**

This study has been conducted following the qualitative research methodology. Since this is a text-based study the data was collected from libraries and the internet, analyzed them accordingly. The primary sources of this study are *Āśvalāyana*, *Gobhila*, *Śāṅkhāyana* *Hiraṇyakeśi*, *Khādira* and *Pāraskara* *Gṛhya-Sūtras* and the *Manusmṛiti*.

### **Research Problem:**

What is the origin of the concept '*Pāṇigrāhaṇa*' and how did it evolve or spread throughout history?

**Discussion:**

The interconnection between Indian culture and the Sanskrit literature is Well-established. It is known that the time of emergence of rites and rituals could be traced back to the Vedic era. Most of the rites and rituals that are performed by Indians even today are given in the *KalpaVedānga*, which is one of the six *Vedāngas* mentioned in the *Muṇḍaka Upaniṣad*, and *Smṛtis*. Under this *Vedānga*, there are four sub-categories as *Śrauta-Sūtra* (Sacrificial), *Gṛhya-Sūtra* (Domestic), *Dharma-Sūtra* (Social) and *Śulva-Sūtra* (Science of measurement). The '*Pāṇigrāhaṇa*' ritual is in the scope of the *Gṛhya-Sūtra*, which is of the domestic rituals performed from the birth to death of a person. According to the *Manusmṛti*, there are eight Marriage systems in the Hindu tradition. Among them, *Brāhma* and *Daiva* systems are considered great because those marriages take place between a bride and a Sacrificial Priest (*Yāga-Pūjaka*). *Ārṣa* and *Prajāpati* marriages are considered ordinary. *Āsura* and Gandharva are considered corrupt. The other two marriages *Rākṣasa*, and *Paiśāca* are considered the nastiest. Though the ranking of these marriage systems is a matter of controversy, this is a general acceptance. At present, only the *Brāhma* and *Daiva* marriages are being performed in Hindu culture. The *pāṇigrāhaṇa* is one of the main rituals performed at those weddings.

There are many rituals performed in Hindu weddings. In various *Gṛhya-Sūtras*, rituals can be seen in different orders because of the variety of *Sūtra* traditions. For example, in the *Pāraskara Gṛhya-Sūtra*, there are 30 wedding rituals while 25 could be witnessed in the *Baudhāyana Gṛhya-Sūtra*. However, in all the traditions including these *Gṛhya-Sūtras*, *Pāṇigrāhaṇa* is considered essential. In the *Pāraskara Gṛhya-Sūtra*, it is the 09th ritual while it takes the 05th place in the *Baudhāyana Gṛhya-Sūtra*. (In *Baudhāyana* the term '*Hastagrahaṇa*' is used instead of *Pāṇigrāhaṇa* which carries the same meaning.)

Given the *Gṛhya-Sūtras* and other *Smṛti* traditions, it is seen that, at present, Hindu weddings are performed under two main traditions ('*paddhatis*' or '*prayogas*') namely '*Māṇḍalika*' and '*Gadādhara*'. Raj Bali Panday says that "The *Paddhatis* and the *Prayogas* also deal with only the *Brāhma Saṃskāras* and leave the *Daiva Saṃskāras* altogether, partly because they have now become obsolete...". The differences between the rituals in those two traditions could be recognized as follows.

<i>Māṇḍalika</i>	<i>Gadādhara</i>
01. Vāgdāna	Vāgdāna
02. Maṇḍapakaraṇa	Mṛdāharaṇa
03. Puṇyāha-Vācana	Haridrālāpana
04. Varagamana	Maṇḍapa-nirmāṇa
05. Madhuparka	Gaṇapatipūjana
06. Viṣṭaradāna	Samkalpa
07. Gaurihara-pūjā	Nāndi-Śraddhā
08. Kanyādaniya - Jalaśuddhi	Vara-Varaṇa
09. Kanyādāna	Ghaṭi-Sthāpana
10. Akṣataropaṇa	Varagamana
11. Kaṅkaṇa-Bandhana	Nīrājana

12. Ārdrākṣataropana	Madhuparka
13. Tilakakarana	Vara-pujā
14. Aṣṭaphalidāna	Agni-sthāpana
15. Maṅgala Sūtrabandhana	Vastra-paridhāpana
16. Gaṇapatipūjana	Samañjana
17. Vadhūsarvayoruttariyaprāntabandhana	Gotrochchāra
18. Akṣataropana	Kanyādāna
19. Laṣmi-Parvati Śachipūjana	Pratigrahaṇa
20. Vāpanadāna	Samīkṣaṇa
21. Vivaha-Homa	Agni-Pradakṣiṇā
22. Saptapadī	Vaivāhika Homa.
23. Gr̥hapraveśa-Homa	Lāja-Homa
24. Arṇidānam	Paṇigrahaṇa
25. Svasurāya Kanyārpana	Aśmārohaṇa
26. Devakotthāpanam Maṇḍapodvāsana	Gathāgāna
27. Gr̥hapraveśa	Seṣa Lāja-Homa with Parikramā
28. Saptapadī	Saptapadī
29. Abhisiñcana	Abhisiñcana
30. Sūryāvalokana	Sūryāvalokana
31. Hṛdaya-sparśa	Hṛdaya-sparśa
32. Abhimantraṇa	Abhimantraṇa
33. Sindūra-dāna	Sindūra-dāna
34. Sitting on a bull-skin	Sitting on a bull-skin
35. Dakṣiṇā to Ācārya	Dakṣiṇā to Ācārya
36. Dhruva-darśana	Dhruva-darśana
37. Trirātra-vrata	Trirātra-vrata
38. Devakotthāpana and Maṇḍapodvasana	Devakotthāpana and Maṇḍapodvasana
39. Vadhūpraveśa	Vadhūpraveśa
40. Chaturthīkarma	Chaturthīkarma

As seen in the table above, the pāṇigrahaṇa is mentioned only in one tradition. The reason for this might be some different readings in different Sūtra traditions. P.V. Kane also demonstrates these differences widely. Gr̥hya-Sūtras can be arranged in chronological order as follows.

- Ancient era - *Āṣvalāyana, Gobhila, Baudhāyana, Mānava, Kautuma*  
 Mid era - *Bhāradvāja, Āpastambha, Śāṃkhāyana, Kāṭaka, Pāraskara*  
 Post era - *Satyāśādhya, Hiranyakeśin, Jaiminīya, Khādira, Drāhyāyana*

These differences of the time might have caused for these *Grhya-Sūtras*. The rest of this study will be dedicated to analyzing as to how and where this concept is mentioned in the Vedic Literature and *Grhya-Sūtras*.

First glimpses of this concept could be traced in the Atharvaveda which is very popular for Rites and Rituals in the Vedic Culture. There are several Mantras in relation to the Marriage ritual in the hymn no 36 of the 2nd *Adhyāya* of the *Atharvaveda*. In the hymns 60 and 82, it is described how a bride could choose a husband. Interestingly, some rituals mentioned here are slightly similar to the *Paṇigrahaṇa*. Some verses in the hymns no. 36 and 37 are fine examples of how diligently the bondage and the affection of the husband and wife were taken into their account by ancient Indians. In the post Vedic era this concept can be found in *Grhya-Sūtras*.

<b>Sūtra and the śākhā</b>	<b>Text and Translation</b>	<b>Place</b>
<i>Aśvalāyana</i> ( <i>Rgveda</i> )	पश्चादग्रेर्दृष्टदमश्मानं प्रतिष्ठाप्योत्तरपुरस्तादुदकुम्भं समन्वारब्धायां हुत्वा तिष्ठन् प्रत्यङ्मुखः प्राङ्मुख्या आसीनाया गृह्णामि ते सौभगत्वाय हस्तं इत्यंगुष्ठमेव गृह्णीयाद्यदि कामयीत पुमांस एव मे पुत्रा जयेरन्निति।	<i>Adhyāya</i> - 01 <i>Khaṇḍikā</i> - 07 <i>Sūtra</i> - 03
	Having placed to the west of the fire a mill-stone, to the north-east (of the fire) a water-pot, he should sacrifice, while she takes hold of him. Standing, with his face turned to the west, while she is sitting and turns her face to the east, he should with (the formula), 'I seize thy hand for the sake of happiness seize her thumb if he desires that only male children may be born to him;	
<i>Gobhila</i> ( <i>Sāmaveda</i> )	अथेदानीम्पाणिग्रहणमभिदीयते।पाणिग्रहनेपुरस्ताच्चालाया अग्निरुपस्माहितो भवति। ॥२२॥	<i>Prapātaka</i> - 02 <i>Khaṇḍikā</i> - 02 <i>Sūtra</i> - 02
	The husband passes behind her back, stations himself to the south, with his face turned to the north and seizes the woman's joined hands.	
<i>Śāṅkhāyana</i> ( <i>Rgveda</i> )	॥ अथ पाणिग्रहणम् ॥ "सम्राज्ञी श्वसुरे भवेति" पिता भ्राता वाऽस्यग्रेण मूर्धनि जुहति सु वेण वा तिष्ठन्नासीनायाः प्राङ्मुख्याः प्रत्यङ्मुखः ॥१॥ "गृह्णामि ते सौभगत्वाय हस्तमिति" दक्षिणेन पाणिना दक्षिणं पाणिं गृह्णाति साङ्गुष्ठमुतानेनोत्तानं तिष्ठन्नासीनायाः प्राङ्मुखः ॥२॥	<i>Adhyāya</i> - 02 <i>Khaṇḍa</i> - 13 <i>Sūtra</i> - 02
	'I seize thy hand for the sake of happiness' (Rig-veda X, 85, 36), with these words (the bridegroom) seizes with his right hand her right hand with the thumb, both hands being turned with the palms upwards, he standing while she is sitting, with his face turned to the west, while her face is turned to the east.	

<i>Hiranyakeśī</i> ( <i>Kṛṣṇa</i> <i>Yajurveda</i> )	प्राङ्मुखः प्रत्यङ्मुख्या हस्तं गृह्णीयात्प्रत्यङ्मुखः प्राङ्मुख्या वा। यदि कामयेत पुंसो जनयेयमित्यङ्गुष्ठं गृह्णीयात्। यदि कामयेत स्त्रीरित्यङ्गुलिः। यदि कामयेतोभयं जनयेयमित्यभीव लोमान्यङ्गुष्ठं सहाङ्गुलिभिर्गृह्णीयात्।	<i>Praśna</i> - 01 <i>Paṭala</i> - 06 <i>Sūtra</i> - 20
	Facing the east, while she faces the west, or facing the west, while she faces the east, he should seize her hand. If he desires to generate male children, let him seize her thumb; if he desires (to generate) female children, her other fingers; if he desires (to generate) both (male and female children), let him seize the thumb together with the other fingers, (to seize the hand) up to the hairs (on the hair-side of the hand).	
<i>Khādira</i> ( <i>Sāmaveda</i> )	अनुपृष्ठं गत्वा दक्षिणतोऽवस्थाय वध्वञ्जलिं गृह्णीयात् ॥१७॥	<i>Paṭala</i> - 01
	(The bridegroom) should pass behind (the bride's) back, station himself to the south, and seize the bride's hand.	<i>Khaṇḍa</i> - 03 <i>Sūtra</i> - 17

Considering these *Grhya-Sūtras*, '*Pāṇigrahaṇa*' can be seen as an essential ritual mentioned in all the *Grhya-Sūtras* above. Several important facts pertaining to this ritual are given in these texts. One of them is that the bride and the Bridegroom should face towards a particular direction while performing this ritual. One of the main deferences of these recommendations in the *Sūtras* above is that some traditions have their own preferred directions over others. There are different opinions about the benevolence (*śubha*) and malevolence (*aśubha*) of a certain direction according to their traditions. Some alterations can be seen in *Hiranyakeśī* and *Āśvlāyana Grhya Sūtra*. Among these, *Gobhila Grhya Sūtra* follows a totally different opinion about directions.

Another important matter about *Pāṇigrahaṇa* is mentioned in the *Manusmṛti*. It is said that the *Pāṇigrahaṇa* should be performed only for a girl. That shows how valuable this ritual was in the Hindu culture. Further, this emphasizes that the *Pāṇigrahaṇa* is an essential step for completing the *Saptapadī*, which is the most important ritual in Hindu marriage. However, the *Manusmṛti* mentions that "Though (a man) may have accepted a damsel in due form, he may abandon (her if she be) blemished, diseased, or deflowered, and (if she has been) given with fraud." According to this, a husband may abandon a wife with above-mentioned characteristics even though they have fulfilled the *Saptapadī* rite. This shows the importance of this rite in Hindu Marriage rituals.

Hindu Marriage is not only a mere religious rite but also each and every ritual performed in the marriage rite including the *Pāṇigrahaṇa* symbolizes the norms and values of the culture and their purposes. In Asian cultures, marriage is not just another step in life. It is considered as the second birth of both the bride and groom. Hence, people in India consider marriage to be sacred and it has a supreme spiritual value. It is not only a physical bond but a spiritual bond as well. When a couple performs *Pāṇigrahaṇa* at the wedding, it is considered that they hold their lives on their hands. For further clarification of the symbolic value, there is another ritual called '*Hṛdayaspharśa*' which is performed after *Pāṇigrahaṇa*. Uttering some mantras the husband keeps his hand on the right shoulder of the bride in the performance of that ritual. This is a symbolic expression that the husband touches the heart of the bride and convinces her the depth of their bond.

In conclusion, it is clear that the *Pāṇigrahaṇa* is an essential rite in Hindu marriage. Its roots are found in the Vedic era and some references are in the *Atharvaveda*. Afterwards, it found a special place in every *Gṛhya-Sūtra* and practical domestic rituals as well. Further, the importance of this ritual is emphasized by the laws of *Manusmṛti*. Overall, rituals like this with the deep insight adds a great value to the Hindu Culture.

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तेसर्वार्थेष्वमीमांस्येताभ्यांधर्माहिनिर्बभौ ॥२.२० ॥  
"Sruti (revelation) is meant the Veda, and by Smṛiti (tradition) the Institutes of the sacred law: those two must not be called into question in any matter, since from those two the sacred law shone forth."Bhāratīya Vidyā Series – Vol. No. 29. Manu-Smṛiti Vol I(Adhyāys 1-2), ed. Jayantakrishna Harichandra, Dave. (Bombay: Bharatiya Vidya Bhavan, 1972), 180.
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ब्रह्मो दैवस्तथैवार्षः प्राजापत्यस्तथासुरः।  
गन्धर्वो राक्षसश्चैव पैशाचश्चाष्टमोधमः ॥३.२१॥Bhāratīya Vidyā Series - Vol. No. 33.Manu-Smṛiti Vol II(Adhyāys 3-4), ed. Jayantakrishna Harichandra, Dave. (Bombay: Bharatiya Vidya Bhavan, 1975), 33-34. ;"Now listen to (the) brief (description of) the following eight marriage-rites used by the fourcastes (varna)which partly secure benefits and partly produce evil both in this life and after death. 3.20."The rite of Brahman (Brahma), that of the gods (Daiva), that of the Rishis (Arsha), that of Prajapati (Pragapatya), that of the Asuras (Asura), that of the Gandharvas (Gandharva), that of the Rhashasas(Rakshasa), and that of the Pisacas (Paisaca).3.21" The laws of manu, trans. Georg Bühler (Oxford: Clarendon Press, 1886.) 79.
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11. Raj Bali Panday. Hindu Saṁskāras (Delhi: Motilal Banarsidass, 1969), 170.
12. Ibid, 203-204.
13. Ibid. 23.
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15. "There are certain rites that are preliminary, there are then a few rites that are of the essence of the saṁskāra viz.pāṇigrahaṇa, homa, going round the fire and the saptapadī, and there are certain rites like the seeing of the Pole star & c, that are subsequent to the central rites, the essential rites are mentioned by all sūtrakārās, but as to the preceding and subsequent rites there is a great divergence in the details. Even as regards the essential rites the sequence in which they take place differs. For example, the Āṣv. gr. (I.7.7) describes going round the fire before saptapadī, while the Āp. gr. describes saptapadī (IV. 16) before the act of going round the fire (V.I).The Gobhila gr̥hya (II.2.16), the Khādira gr. (1.3.31), and Baud,gr. ( I.4.10 ) describe paṇigrahaṇa after saptapadī while many other sutrakārās describe it before saptapadī." Government Oriental Series Class -B, No.6, P.V. Kane. History of Dharmasāstra Vol. II Part I (Poona: Bhandarkar Oriental Research Institute, 1941), 531.
16. Ven. Jambugahapitiye Dhammaloka.84.
17. "II.36.01. May, O Agni, a suitor after our own heart come to us, may he come to this maiden with our fortune! May she, agreeable to suitors, charming at festivals, promptly obtain happiness through a husband !." Hymns of the Atharva-Veda, trans. Maurice, Bloomfield. (Delhi: Motilal Banarsidass, 1973), 94.
18. "VI.60.1 This Aryaman (wooer) with loosened crest of hair comes hither in front (of the procession), seeking a husband for his spinster, and a wife for this wifeless man." Ibid, 95.
19. "VI.82.1 I call the name of him that comes here, that hath come here, and is arriving; I crave (the name) of Indra, Vritra's slayer, the Vasava of hundred fold strength." Ibid, 95.
20. "VII.36.The eyes of us two shine like honey, outt foreheads gleam like ointment. Place me within thy heart; may one mind be in common to us both!" Ibid, 96.

21. "VII.37 Ienvelope thee in my garment that was produced ny Manu (the first man), that thou shalt be mine alone, shalt not even discourse of other women." Ibid, 96.
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## **Study of Relationship between the Professional Development of Junior College Teachers and their Teaching Performances**

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### **Abstract:**

Teachers are continuously confronted with challenging situations that demand professional growth. Our subject of interest is to explore the teachers, action in their classroom management, quality, growth and performances. Effective Professional Development Educational success is when students learn and continue to develop skills, knowledge, and love of learning throughout their lifetime. Professional development needs minimum five fundamental principles which is integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

### **Introduction:**

Professional development play an important role in the life of teacher. Without professional development the teacher cannot sign in the teaching profession. Teachers' professional competence and working attitude have a direct bearing on teaching standard and learning effectiveness. Schools should establish transparent and accountable performance management policies and mechanisms. Transparent and accountable performance management can facilitate decision-making on personnel matters, the building of team spirit for boosting staff morale, enhancement of teachers professional standard and improvement of teaching quality. It helps to achieve the ultimate goal of quality education.

### **Review:**

A literature review is a comprehensive overview of all the knowledge available on a specific topic till date. When you decide on a research topic, usually the first step you take in the direction of conducting research is learn more about the previous research published on the topic, and this eventually translates into literature review when you write your research paper. Literature review is one of the pillars on which your research idea stands since it provides context, relevance, and background to the research problem you are exploring.

### **A) Study on Professional Development of Teachers**

**R Santagata, (2009),** This article describes the theoretical framework, research base, structure, and content of a video-based professional development program implemented during 2 consecutive years with sixth-grade mathematics teachers from five low-performing schools. First, difficulties teachers encountered in responding to video-based prompts during the 1st year are summarized. Problematic questions deal with teachers'(a) basic understanding of target.

**May Britt Postholm (2012),** The review of articles shows that both individual and organizational factors impact teachers' learning. Teacher co-operation has importance for how they develop, and some of the teachers can lead such learning activities themselves.

Moreover, a positive school culture with a good atmosphere and understanding of teachers' learning, in addition to co-operation with external resource persons, may impact the professional development of teachers. The article concludes with the reflection that learning in school is the best arena for further development of teachers.

**Pandey (1986)**, studied organizational commitment, professional commitment and job involvement in relation to organizational climate, micro-job climate and personality variables on 424 scientists working in R&D of a big research organization. Results indicated weak predictive nature of organizational and job climate variables on professional commitment but personality variables (growth and work involvement variable) were found to be strong predictors. Pandey's study also found professional commitment having a weak relation with organizational commitment and moderate relationship with job involvement.

**E Kazemi, A Hubbard (2008)**, Research on professional development (PD) typically focuses on what teachers learn as a result of their participation in PD. Questions are framed unidirectional: To what extent does participation in PD affect teachers' classroom practice? The authors challenge this unidirectional conceptualization of teacher learning and instead argue for understanding the multidirectional influences between teachers' participation across the PD and classroom.

**H Borko (2004)**, Teacher professional development is essential to efforts to improve our schools. This article maps the terrain of research on this important topic. It first provides an overview of what we have learned as a field, about effective professional development programs and their impact on teacher learning. It then suggests some important directions and strategies for extending our knowledge into new territory of questions not yet explored.

## **B) Study on Teachers Teaching Performances**

**Maicibi (2005)**, argue that informal appraisal is a system in which subordinates go into informal discussions with the super ordinate; with the good aim of assessing habits and qualities of subordinates. He says that through this method, the management can collect a lot of information that is useful for purposes of promotion, advancements, transfers, termination or layoffs or training and development of staff.

**Adair (2000)**, thinks that the decision process involves determining the problem, gathering the data, creating suitable alternatives, making decisions, practicing the decision, and evaluating the results. A good decision, while subject to the constraints of knowledge and resources, maximizes the well-being of those affected by it (Dietz,2003). It is also based on the information, values, and preferences of the decision-maker.

**Craig (1996)**, it has three main objectives, to measure performance fairly and objectively against job requirements, to increase performance by identifying specific development goals so that the workers may keep pace with the requirements of a fast placed organization.

**Ronald H. Heck (2016)**, Teacher effectiveness and student achievement: Investigating a multilevel cross - classified model-First, the effectiveness of successive teachers was related to student achievement in reading and math. Second, collective teacher effectiveness, as an organizational property of schools, was positively associated with achievement levels. Third, the stability of the school's teaching staff and the quality of its academic organization and teaching processes were positively related to achievement levels.

**Eliza (1996)**, argued that in many organizations, the appraisal system has been mishandled. She stresses that the worker should not walk blindly into performance appraisal.

Past counselling sessions, feedback and proper design are crucial. The appraisal should be a joint effort because no one knows the job better than the person performing it.

**Conclusion:**

The previous review of related literature has been considered for feedback. The reviews are indicated the teacher's professional development and teaching performances in the field of education has mostly founded on their activities and performances. Their roles, responsibilities, duties and quality of teaching of teachers are depended on their alertness on teaching and their professional quality. The present study will be examine and analysis the teachers professional development and their teaching performance with various view of points.

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