

Comparative Study of Selected Physical Fitness Parameters between Different Levels of School Children


Singh H.^{1*}

DOI:

^{1*} Harpreet Singh, Assistant Professor, Physical Education, University College Chunni Kalan Fatehgarh Sahib, Fatehgarh Sahib, Punjab, India.

The purpose of the study was to compare the physical fitness between eighth and tenth class school students of Govt. high school Cheema (Sangrur). Total 30 male students (15 students of 8th class and 15 students of 10th class) age ranging 13-16 years were selected as subjects. After the collection of the relevant data, it was processed and analysed with descriptive statistics. The study aimed at studying physical fitness between eighth and tenth class school students. To compare the physical fitness profile of the subjects, mean, standard deviation and t-test were applied with the help of statistical package of SPSS. To test the hypothesis the significance level was set at 0.05. After statistical treatment, result showed that there was significance difference between eighth and tenth class school students in physical fitness variables (speed, Flexibility and Agility).

Keywords: Physical fitness parameters Speed, Flexibility and Agility.

Corresponding Author	How to Cite this Article	To Browse
Harpreet Singh, Assistant Professor, Physical Education, University College Chunni Kalan Fatehgarh Sahib, Fatehgarh Sahib, Punjab, India. Email: harpreetphyedu@gmail.com	Harpreet Singh, Comparative Study of Selected Physical Fitness Parameters between Different Levels of School Children. IJEMS. 2022;11(03):12-15. Available From https://ijems.net/index.php/ijem/article/view/228	

Manuscript Received
2022-07-08

Review Round 1
2022-07-21

Review Round 2
2022-08-11

Review Round 3
2022-08-25

Accepted
2022-09-29

Conflict of Interest
NIL

Funding
NO

Ethical Approval
YES

Plagiarism X-checker
17%

Note



© 2022by Harpreet Singhand Published by The University Academics. This is an Open Access article licensed under a Creative Commons Attribution 4.0 International License <https://creativecommons.org/licenses/by/4.0/> unported [CC BY 4.0].



Introduction

Physical fitness is defined as 'the ability to carry out daily tasks with vigour and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and respond to emergencies.' Based on this definition, fitness involves everything from getting out of bed to hiking to performing CPR.

In order to complete all of these tasks, one must consistently address their fitness levels. This requires proper conditioning through both structured exercise and leisurely activities.

The speed of an object is the magnitude of its velocity (the rate of change of its position); it is thus a scalar quantity (Elert, Glenn 8 June 2017). The average speed of an object in an interval of time is the distance travelled by the object divided by the duration of the interval; the instantaneous speed is the limit of the average speed as the duration of the time interval approaches zero.

Speed has the dimensions of distance divided by time. The SI unit of speed is the metre per second, but the most common unit of speed in everyday usage is the kilometre per hour or in the US and the UK, miles per hour. For air and marine travel, the knot is commonly used.

Flexibility is defined for a joint or a group of joints as its range of motion, or degree of extension, that its tissues are capable of flexibility. Flexibility is specific to individual joints, so it is possible to have some joints and muscle groups which are movable and flexible, while others are tight and inflexible.

There are many factors that influence flexibility, including genetics, age, gender, injury history and activity levels. Improving flexibility is a gradual process that requires regular practice.

Agility or nimbleness is the ability to change the body's position efficiently and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength and endurance. Agility is the ability to change the direction of the body in an efficient and effective manner and to achieve this requires the combination of different motor skills (Barratt, Marcia, et al 1994).

- Balance – The ability to maintain equilibrium when stationary or moving (i.e.

- not to fall over) through the coordinated actions of our sensory functions (eyes, ears and the proprioceptive organs in our joints);
- Static Balance – The ability to retain the centre of mass above the base of support in a stationary position;
- Dynamic Balance – The ability to maintain balance with body movements;

Speed - The ability to move all or part of the body quickly

Objective

The objective of the study was to compare selected physical fitness parameters between eighth and tenth class school students.

Hypothesis

There will be significant difference of physical fitness parameters between eighth and tenth class school students.

Material & Methods

Selection of Subjects

In present study total sample were comprised 30 male students (15 student of 8th class and 15 students of 10th class) studied Govt. high school cheema were selected as subject. The subjects were selected through purposively sampling method.

Selection of Variables

The following three Physical fitness variables were selected for the purpose of research:

01. Speed
02. Flexibility
03. Agility

CRITERION MEASURES

Speed was measured with the help of 50-yard sprint, Flexibility was measured with the help of Sit and reach test and Agility was measured with the help of Shuttle run.

STATISTICAL PROCEDURE

After the collection of relevant data T-test (Unpaired t test) was employed with the help of Statistical package for the social sciences (SPSS). The level of significance was set at 0.05.

Result

Analysis of data and results

Table No. 1

Comparison of Speed parameter between 8th class students and 10th class students of Govt. high school cheema

COMPONENT	GROUP	MEAN	SD	t-value
Speed	8th class students	9.188	0.4467	1.0433
	10th class students	9.082	0.6382	

*Significant at 0.05

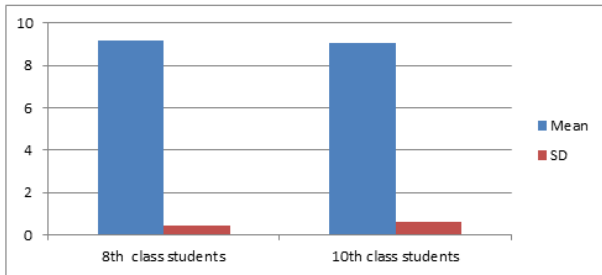


Figure No. 1

The descriptive statistics shows the Mean and SD values of 8th class students on the sub variable Speed as 9.188 and 0.4467 respectively. However, 10th class students had Mean and SD values as 9.082 and 0.6382 respectively. The 't'-value 1.0433 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that 10th class students have demonstrated better Speed than the 8th class students.

Table No. 2

Comparison of Flexibility parameter between 8th class students and 10th class students of Govt. high school cheema

COMPONENT	GROUP	MEAN	SD	t-value
flexibility	8th class students	28.8	4.27	5.8314
	10th class students	20.45	4.89	

*Significant at 0.05

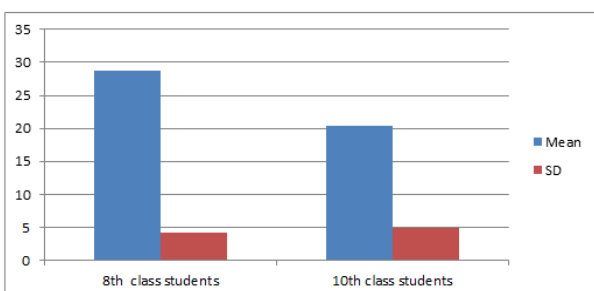


Figure No. 2

The descriptive statistics shows the Mean and SD values of 8th class students on the sub variable Flexibility as 28.8 and 4.27 respectively. However, 10th class students had Mean and SD values as 20.45 and 4.89 respectively. The 't'-value 5.8314 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that 10th class students have demonstrated less Flexibility than the 8th class students.

Table No. 3

Comparison of Agility parameter between 8th class students and 10th class students of Govt. high school cheema

COMPONENT	GROUP	MEAN	SD	t-value
Agility	8th class students	11.867	0.7805	-0.4676
	10th class students	12.0315	1.5929	

*Significant at 0.05

'T'0.05(28)=

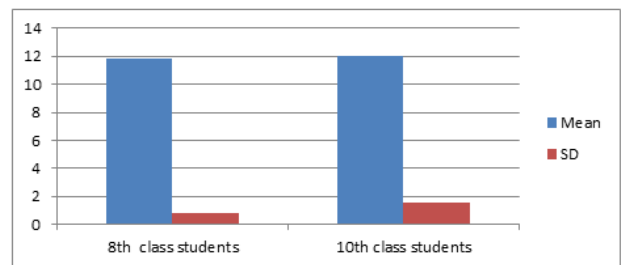


Figure No. 3

The descriptive statistics shows the Mean and SD values of 8th class students on the sub variable Agility as 11.867 and 0.7805 respectively. However, 10th class students had Mean and SD values as 12.0315 and 1.5929 respectively. The 't'-value -0.4676 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that 10th class students have demonstrated less Agility than the 8th class students.

Conclusion

The present study was designed to compare selected physical fitness parameters between eighth and tenth class school students of Govt. high school cheema (Sangrur). To achieve this purpose Total 30 male students (15 students of 8th

Class and 15 students of 10th class) age ranging 13-16 years were selected as subjects. After the collection of the relevant data, it was processed and analyzed with descriptive statistics. The study aimed at studying physical fitness between eighth and tenth class school students. The statistical analysis of data shows that there was significant difference between eighth and tenth class school students in speed component of physical fitness. There was significant difference between eighth and tenth class school students in Flexibility component of physical fitness and there was significant difference between eighth and tenth class school students in Agility component of physical fitness.

Reference

01. Malina R (2010). Physical activity and health of youth. Constanta: Ovidius University Annals, Series Physical Education and Sport/Science, Movement and Health. [\[Crossref\]](#)[\[Google Scholar\]](#)
02. Wilson, Edwin Bidwell (1901). Vector analysis: a text-book for the use of students of mathematics and physics, founded upon the lectures of J. Willard Gibbs. p. 125. *This is the likely origin of the speed/velocity terminology in vector physics* [\[Crossref\]](#)[\[Google Scholar\]](#)
03. Elert, Glenn. "Speed & Velocity". The Physics Hypertextbook. Retrieved 8 June 2017. [\[Crossref\]](#)[\[Google Scholar\]](#)
04. Ashley, Linda. Essential Guide to Dance. 2nd ed. London: Hodder & Stoughton, 2004. *Print* [\[Crossref\]](#)[\[Google Scholar\]](#)
05. Mandeep Singh Nathial, Analysis of set shot in basketball in relation with time to perform the course and displacement of center of gravity, American Journal of Sports Science, Vol. 2 Issue. 5 pp: 122-126 (2014). Retrieved from <https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13> [\[Crossref\]](#)[\[Google Scholar\]](#)
06. Mandeep Singh (2010). Evaluation And Improvement Of Sports Techniques Through Biomechanical Updated Analyzing Technology, University News, Journal of Higher Education Association of Indian Universities, Association of Indian Universities, Vol:48:Issue. 05;2010 Pp45-57, 2010. [Sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13](https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13) [\[Crossref\]](#)[\[Google Scholar\]](#)
07. Mandeep Singh Nathial, A Study of Adjustment and Emotional Intelligence of University Coaches in India, American Journal of Applied Psychology. Volume 3, Issue 6, November 2014 , pp. 122-126. doi: 10. 11648/j.ajap.20140306.11 [\[Crossref\]](#)[\[Google Scholar\]](#)
08. Nathial, Mandeep Singh. A COMPARATIVE AND ANALYTICAL STUDY OF SELF-ESTEEM AND JOB SATISFACTION IN ATHLETES AND NON ATHLETES. Journal of Advances in Social Science and Humanities, 2(10). <https://doi.org/10.15520/jassh210123> [\[Crossref\]](#)[\[Google Scholar\]](#)
09. Singh, M. , Kour, R. , & Kour, A. ,. *A collaborative diversified investigation of respective responses of sports person coaches and organizations on criminalization of doping.*International Journal of Health Sciences,6(S3), 11295–11310. [\[Article\]](#)[\[Crossref\]](#)[\[Google Scholar\]](#)
10. Mandeep Singh. , Assessment of Vocational Interests of Pahadi & Bakarwal School Students In Relation To Their Gender. Int J Recent Sci Res. 9(3), pp. 24817-24819. DOI: [\[Article\]](#)[\[Crossref\]](#)[\[Google Scholar\]](#)
11. Singh, M. , & Deol, N. S. ; KINEMATICAL ANALYSIS OF HIGH DRIVE IN SOCCER. INTERNATIONAL JOURNAL OF RESEARCH PEDAGOGY AND TECHNOLOGY IN EDUCATION AND MOVEMENT SCIENCES, 1(01). Retrieved from [\[Article\]](#)[\[Crossref\]](#)[\[Google Scholar\]](#)
12. Barratt, Marcia, et al. Foundations For Movement. Dubuque, IA: Wm. C. Brown Co., 1964. *Print* [\[Crossref\]](#)[\[Google Scholar\]](#)
13. Dell'Antonia, K. J. (2016-10-04). "Teaching Your Child Emotional Agility". *The New York Times*. ISSN 0362-4331. Retrieved 2019-06-26 [\[Crossref\]](#)[\[Google Scholar\]](#)
14. Mandeep Singh. , Assessment of Vocational Interests of Pahadi & Bakarwal School Students In Relation To Their Gender. Int J Recent Sci Res. 9(3), pp. 24817-24819. DOI: [\[Article\]](#)[\[Crossref\]](#)[\[Google Scholar\]](#)