



ISSN: 2456-0057  
IJPNPE 2019; 4(1): 564-569  
© 2019 IJPNPE  
www.journalofsports.com  
Received: 08-11-2018  
Accepted: 11-12-2018

**Ray Gopal**  
Ph.D. Scholar, Ph.D. Scholar  
(Physical Education), University  
of Mumbai, Mumbai,  
Maharashtra, India

**Bera Tusharkanti**  
Principal & Professor,  
Bharati Vidyapeeth (Deemed to  
be University) College of  
Physical Education, Pune,  
Maharashtra, India

## Assertion of government policies on physical education in colleges in West Bengal

**Ray Gopal and Bera Tusharkanti**

### Abstract

Realizing the values of physical activities on human health and fitness, today, physical education programmes have been included in the curriculum of Indian schools and colleges considering its importance for inculcation of values and development of personality.

**Objectives:** To evaluate the implementation status of Physical Education in Colleges in West Bengal & to assess the attitude of policy makers and implementers towards implementation of Physical Education in the Colleges.

**Method:** The data were gathered by administering custom made questionnaires, checklists and rating scales. The policy documents were analyzed considering internal and external criticism, whereas percentage-wise analysis was done for other data. Two Attitude scales (one for Head of the colleges, and another for the director of Physical Education) were also constructed for evaluating their attitudes while implementing Physical Education in colleges in the state.

**Results:** The policy documents obtained from primary and secondary sources were found authentic. The critical review of the documents revealed that the Govt. of West Bengal framed a committee under the leadership of the then DPI (Director of Public Instruction) to review and recommend if physical education can be introduced formally in the Colleges. The committee, after review, recommended physical education (as optional subject) for inclusion in the curriculum of colleges in West Bengal.

**Conclusion:** The policies of Bengal Government on Physical Education for the colleges have been properly designed and there is no lacuna on the part of the state Government towards implementation of Physical Education in the colleges in West Bengal. There may be a possibility to make Physical Education as a compulsory subject in the colleges in West Bengal.

**Keywords:** Physical education, colleges, West Bengal, policies

### Introduction

History reveals that physical activities of physical education have a deep root in our human civilization and they cannot be neglected till the human dynasty is alive. Realizing the values of physical activities on human health and fitness, today, physical education programmes have been included in the curriculum of Indian schools and colleges considering its importance for inculcation of values and development of personality. In this context, the present investigator intends to affirm the role of West Bengal Govt. in enriching physical education in its colleges. To accomplish the assertion process, it is essential to review the scenario of physical education in India in general and in West Bengal in particular.

Although the first *National Plan on Physical Education* was prepared in 1956, the *Kothari Commission* (1965) recommended the pattern of 10 + 2 + 3 for implementation in different states, and also recommended the Health and Physical education should be one of the compulsory subjects for students. The necessity of *Physical Education in College Curriculum* has been emphasized very recently for *all round development among the college levels youth*.

In 1907, the post of "Advisor to the Bengal Govt. for Physical Education" was sanctioned and accordingly Dr. J.H. Gray (USA) was appointed to look after the formal implementation of physical education among the youths in the state. Further, Dr. Segard was appointed for this post in 1914 and he worked up to 1919 and proposed to facilitate physical education in the colleges in Bengal. However, Calcutta being the then Capital of India (under British rule), Sri Nagendranath Ghosh was the first fulltime "Physical education advisor to Bengal province" in 1922. In February 1926, the first female Physical Directress was Miss M.G. Carswell of

**Correspondence**  
**Bera Tusharkanti**  
Principal & Professor,  
Bharati Vidyapeeth (Deemed to  
be University) College of  
Physical Education, Pune,  
Maharashtra, India

YWCA, Calcutta. Amazingly, during 22 February 1926 the Bengal Legislative Council recommends compulsory physical culture for the students of college level. Importantly, in 1927, the Calcutta University made physical education activities (3 days in a week for a total period of 1 year) as mandatory for the collegiate students. The first physical training college in Bengal was started in a rented building from 1<sup>st</sup> July 1932 at Calcutta and Mr. Buchanan was appointed as Principal and Mr. K.N. Roy was the full time Lecturer. In 1940, the first training college of physical education for women was established at Calcutta and started Diploma in Physical Education course for women. Even though the communal riot (after World War) could divide our country into Pakistan and East Bengal, the continuous status of improvement towards implementation of physical educational activities in the state was progressive.

After independence (on 15<sup>th</sup> August, 1947), the status of physical education in West Bengal got a new momentum due to Dr. Radhakrishnan Committee (1949) for higher education / university education. This *Central Advisory Board* for the first time in India, in 1953-54, considered physical education as an essential and integral part of general education. In 1956 the National Plan of "physical education and recreation" was emphasized and in 1959, the Union Govt. recommended to implement National Physical Efficiency Drive (NPED) which is mandatory of every state. Accordingly the Govt. of West Bengal implemented this NPED programme throughout the state. During 1972, the NPED scheme was handed over to the then Laxmibai National College of Physical Education, Gwalior.

The real momentum of physical education in college education was on top priority during 1995. After 1995, the programme of Physical Education was made as an optional examination subject in colleges in the state of West Bengal. Moreover, the NCTE (National Council for Teacher Education), an apex body of Govt. of India has made an opportunity for the colleges to add Physical Education as an optional subject at undergraduate level. Thus, it is clear that the Govt. has made Physical Education as an optional subject in colleges. However, the theme of this investigation seems to be important towards suggesting the Govt. of West Bengal to reverse the status of Physical Education as a compulsory examination subject rather than an optional one.

The major aim of Physical Education is to develop wholesome personality through participation in physical activities. In United States of America, physical activity has become a must and the AAHPERD (American Alliance for Health, Physical Education, Recreation and Dance) has given responsibility to prepare different modules of exercises and design standard evaluation technique for measuring the outcomes. Studies revealed that many of the youths consistently exhibited lower levels of fitness (American Academy of Pediatrics Committees on Sports Medicine and School Health, 1987; American College of Sports Medicine, 1988; Becque, Katch, Rocchini, Marks, and Moorehead, 1988) <sup>[1, 2, 6]</sup>. Furthermore for youths, activities of daily living demand increased energy; and the need to be fit is even greater (Bera *et al.*, 1982). Such types of compulsion of physical activities of physical education must be made in India especially in the state of West Bengal. Thus, inclusion of physical education in the syllabus of college / university education would offer a gift of HEALTH among the Indian citizen. Hence it is needless to say that Physical Education must be a compulsory examination subject from primary to university education system in India. This, in fact, reveals that

the present investigation has a significant rationale in the society. Moreover, in recent days, although physical education has been included as an optional subject on try-out basis in the general colleges in West Bengal, the number of students choosing this subject is very less at the undergraduate level. Thus, Physical Education in the Educational System in West Bengal is in a dilemma. Therefore, the present study seems to be justified and formulated the following objectives:

- To locate the Bengal Govt. policies on Physical Education at the college level during post-independence period of India.
- To evaluate the implementation status of Physical Education in Colleges in West Bengal.
- To assess the attitude of policy makers and implementers towards implementation of Physical Education in the Colleges.
- To suggest the strategies for revival of Physical Education as a compulsory examination subjects at higher education institutions in Bengal.

### Research Design

This piece of investigation is a historical-cum-developmental research. In the phase of historical research the authentic documents on Govt. policies on physical education and sports after India's independence have been located and verified. After establishing the authenticity of the documents, the developmental phase of research was conducted.

For historical research, two sources viz., primary sources and secondary sources were identified. Further, the data of primary sources and secondary sources were validated by internal and external criticisms. The primary sources located for data collection during September 2013, where the Asiatic Library, National Library and British Library of Kolkata (previously Calcutta) were attended to chalk-out the hard copy of the references of Govt. policies on Physical Education. Although membership is required to use these Libraries, the researcher was able to use them through the Ministry sources of Govt. of West Bengal. From these sources, the researcher got little information about implementation of physical education at college education.

Further, for gathering primary sources, the investigator visited the Ministry of Youth Welfare and Sports (Bikas Bhavan, Govt. of West Bengal) at Kolkata for collecting the hard copy of some of the Govt. policies on Physical Education and also the Govt. decision (Govt. GR etc) towards its implementation. The researcher got entry in this Ministry with a special pass from the Office of the Education Minister, but could not able get the photo of hard copies of the documents on the Govt. decisions (Govt. GR etc). However, he was allowed to note down the summary of some of the decisions from the original hard copies under the CCTV surveillance. Here he got some information, in a disrupted way, about implementation of physical education at higher education institutions in the state. The researcher also visited almost 20% of the Universities and some of their affiliated colleges situated in different parts of West Bengal for the quest of documents in relation to implementation of physical education for the general students of higher education. Here he got some information about implementation of physical education at higher education in the state

The secondary sources located for data collection during September 2013. He browsed Internet to have proper references of various Government policies on Physical Education at university education; however, little information

available was identified and noted. In fact, books containing the Reports of recommendations of various committees assigned and published time to time by the Govt. of West Bengal were out of stock; however, some old photographs and scanned pages of old books (out of print) were found in the Library of Department of Physical Education (Kalyani University, West Bengal) and in the oldest Post Graduate Training College of Physical Education (Banipur, West Bengal). However, a book (Banerjee and Koner, 2006) [5] published by a private agency on the basis of a doctoral dissertation of Kalyani University (West Bengal) containing some of the important reports of recommendations of various committees on physical education was also consulted as a secondary source for data collection. The data received, here, indicate that the data were not enough on physical education for college level education. In fact, whatever data on higher education received were authenticated against the references and through internal criticism.

Through implementing the method of developmental research and critical review, a Check-list was prepared during January 2014 for evaluating the Govt. policies. The Check-list consisted of 9 points and the scoring was done on 'Yes' or 'No' basis. This helped to obtain the list of problems and challenges faced by West Bengal Government towards proper implementation of Physical Education in the State. After identifying the list of problems and challenges faced by West Bengal Government towards proper implementation of Physical Education in the State, following method was,

further, employed to examine if the similar problems are facing by the Head of the colleges, and the director of Physical Education in the State:

Consecutively, three Rating scales (one for the Govt. official, one for the Principal of the colleges, and another for the director of Physical Education) were constructed for evaluating the implementation status of Physical Education in West Bengal. Standard process was considered to construct these Rating scales (Bhattacharyya *et al.*, 1977) [9]. The reliability coefficients of these rating scales for the Heads of the institutions and director in physical education were 0.75 and 0.77 respectively and, of course, they ensured the content validity.

Two Attitude scales (one for Head of the colleges, and another for the director of Physical Education) were also constructed for evaluating their attitudes while implementing Physical Education in colleges in the state. The reliability coefficient of the attitude scale for the Heads was 0.68 and the scale for the directors of physical education was 0.71). Since there was no such parallel questionnaire of similar nature available, the researcher has to restrict for content validity which the questionnaires had.

Cluster sampling technique was employed to locate the sample colleges in the state of West Bengal, and then the Rating scales as well as Attitude scales were administered (from July 2014 till July 2015) on the sample for data collection throughout the state.

**Table 1:** Blue print of sample schools in West Bengal

Name of District (No. of College available)	No. of College attended (month, year)	Data obtained on Rating Scale (No.)		Data obtained on Attitude Scale (No.)	
		Heads responded	DPE* responded	Heads responded	DPE* responded
Darjeeling - 16	03	02	03	02	03
Jalpaiguri - 12	02	02	02	02	02
Cooch Behar - 09	02	02	02	02	02
Uttar Dinajpurgh - 06	01	01	01	01	01
Dakshin Dinajpur - 04	01	00	01	00	01
Malda - 10	02	02	02	02	02
Birbhum - 14	03	03	03	03	03
Murshidabad - 27	05	04	05	04	05
Nadia - 20	04	04	04	03	04
Bardhaman - 30	06	06	06	06	06
Hooghly - 26	05	05	05	03	05
Purulia - 21	04	04	04	04	04
Bankura - 18	04	04	04	04	04
Midnapur - 42	08	06	08	06	08
Howrah - 19	04	04	04	04	04
North - 24 Parganas - 19	04	04	04	04	04
South 24 Parganas - 28	06	06	06	06	06
Kolkata - 60	12	10	12	10	12
Total College in the state 327	20% College attended 75	69	76	66	76

\*DPE: Director of Physical Education

### Statistical design

The historical data as obtained through the primary and secondary sources were analyzed through external as well as internal criticism with logical reasoning. The data of developmental research on implementation status and implementation attitude of the heads colleges and the director of physical education were processed through percentage-wise analysis and their comparison was also assessed too.

### Findings

#### 1) Result on Authentication of documents on College level Education

The authentication of the data obtained from the department of higher education regarding Bengal Govt.'s decisions about inclusion of physical education in the curriculum of Higher Education revealed that –

- 1) the primary sources were the documents (*Circulars issued by the Higher Education department, Govt. of West Bengal and letter issued by some of the respective Universities to the Colleges that contains policy decision as well as order for introducing physical education at the institution of higher education*) were found authentic because they bear govt. seal, stamp,

date and signature of authorized officials.

2) the secondary sources were the documents (Curriculum structure of Colleges, newspaper cuttings, *Circular / Notices of the Colleges for introducing physical education for the students, etc issued by the universities to respective colleges etc*) were valid because they were written by the then authorized officials.

## 2) Result on implementation status of Govt. Policies on Physical Education in Colleges

To accomplish the work on framing the Check-list, some of the Govt. nominees (who are alive and were involved for framing the policies) and renowned personalities in Physical Education in West Bengal were consulted. The Check-list consisted of 9 points and the scoring was done on 'Yes' or 'No' basis. These policy documents (primary and secondary data) were assessed on the line of the questions as per the Check-list.

The result indicates that –

- The policy documents obtained from primary and secondary sources were found authentic.
- The critical review of the documents revealed that the Govt. of West Bengal framed a committee under the leadership of the then DPI (Director of Public Instruction) to review and recommend if physical education can be introduced formally in the Colleges. The committee, after review, recommended physical education (as optional subject) for inclusion in the curriculum of colleges in West Bengal.
- Recently, based on the recommendation, the higher education department, Govt. of West Bengal introduced physical education as an optional subject in the curriculum of degree Colleges and implemented in the curriculum.

## 3) Result on problems, challenges and threats faced by the Colleges while implementing Physical Education

Three Rating scales were administered on the Govt. officials (Department of higher education, Govt. of West Bengal) (n1=06), Principals of Colleges (n2=69) and physical education teachers (n3=76) from 20% of the universities situated in West Bengal. The percentage-wise analysis of their opinion revealed the following problems –

- Govt. officials did not receive any complaints about the implementation status of physical education in the Colleges in the state.
- 12-18% of the Principal of the Colleges were not in the favour of physical education. Rest of the Principal of the Colleges are happy that there is not much financial burden on physical education because the teachers of this subject work either on part-time or contract basis. They also feel that the behaviour of physical education teachers is good and possess good body physique with proper fitness. The Principals expressed that physical education teachers / lecturers have good control over the students and students remain happy with the concerned teacher of physical education. There is no dispute about allotment of marks in the final examination. Moreover, no parents / guardians lodged any complaint about physical education in the Colleges – the Principals opined. The Principals also remarked that physical activities are good for the students, and physical education teachers are better responsible for it.

- 96-99% of the physical education teachers (PET)/ lecturers of the Colleges feel happy about the remuneration they receive as compared to other lecturers. They feel very positive about the College and the Principal. They have good relationship with the lecturers teaching other subjects. They are found efficient and spend more time for implementing physical education programmes in the Colleges.

The above results infer that both the Principal and the Lecturers of physical education share responsibility with good coordination. Therefore, the physical education programme as per curriculum was properly implemented in the Colleges in West Bengal.

Now, the Lecturers face tough challenge for more improvement towards implementation of physical education for their existence in the Colleges. The Principals also accept the challenge for proper transaction of teaching-learning process of physical education in the Colleges. Therefore, there may be a chance to continue physical education as a teaching subject, in future, in the Colleges in West Bengal.

In fact, there is always a threat about the existence of physical education even as optional subject in Colleges. Therefore, the Principal and the Lecturer must work hand-in-hand for continuation of physical subject at Colleges in West Bengal.

## 4) Result on attitude of the Principal and Lecturer towards implementation of physical education in the Colleges

The developmental research was conducted to verify if there is any problem in implementing physical education as an optional subject in the Colleges. To accomplish this part of investigation, two custom-questionnaires (attitude scales towards implementation of physical education) were developed: One for the Principals and another for Lecturer of the Colleges. The result revealed that –

- Attitude of 92-96% of the Principals of the Colleges towards Lecturers is found favourable. The Principals of the Colleges are also favourable for the students who opt for physical education.
- About 95-98% of the Lecturers opine that the Principals and other Lecturers in the College create direct favourable environment for proper implementation of physical education even though it is an optional subject.

The result presented above indicates that there was no problem being faced by the Principals and the Lecturers towards implementation of physical education in the Colleges in West Bengal. This part of investigation indicates that the Bengal Govt may think of creating permanent post of Lecturer / Asst. Professor in physical education in the Colleges.

## Conclusion

This study could warrant the following conclusion:

- The policies of Bengal Government on Physical Education for the colleges have been properly designed and there is no lacuna on the part of the state Government towards implementation of Physical Education in the colleges in West Bengal.
- There may be a possibility to make Physical Education as a compulsory subject in the colleges in West Bengal.

## References

1. American Academy of Pediatrics Committees on Sports

- Medicine and School Health. Physical fitness and the schools. *Pediatrics*. 1987; 80:449-450.
2. American College of Sports Medicine. Physical fitness in children and youth. *Medicine and Science in Sports and Exercise*. 1988; 20:422-423.
  3. Anastasi A. Psychological testing (2nd ed.). New York: The Macmillan Co., 1963.
  4. Bagal, Jogesh Chandra. Jati baira ba amader desatmoboth. *Viswa Bharati Patrika*. 1946; 6:166.
  5. Banerjee AK, Koner J. Physical education in Bengal 1882-1982. Kolkata, India: Pustak Bipani, 27 Beniatola Lane, Kolkata-700 009, 2006.
  6. Becque MD, Katch VL, Rocchini AP, Marks CR, Moorehead C. Coronary risk incidence of obese adolescents: reduction by exercise plus diet intervention. *Pediatrics*. 1988; 81:605-612.
  7. Bera TK, Jolly S, Ganguly SK, Gharote ML. Effect of three-year yogic exercise programme on motor function in school boys. (Unpublished manuscript), Scientific Research Department, Kaivalyadhama SMYM Samiti, Lonavla (India), 1995.
  8. Bergsgard, Nils Asle, Rommetvedt, Hilmar. Sport and politics: The case of Norway. *International Review for the Sociology of Sport*, 2006. Doi: 10.1177/1012690206073146.
  9. Bhattacharyya DD, Bhattacharyya A. Evaluation and statistics in education. Calcutta: Blacki India Employees Cooperative Industrial Society Ltd., 1977.
  10. Bitcon LE. Validation of four item fitness test and norms for high school boys in state of Iowa. *Completed Research in Health, Physical Education and Recreation*. 1965; 8:37.
  11. Black David. The symbolic politics of sports mega-events. *South African Journal of Political Studies*. 2008; 34:3. DOI:10.1080/02589340801962536
  12. Broome AK. Health psychology. London: Chapman Hall., 1989.
  13. Bucher CA. Foundations of physical education. St. Louis: The C.V. & Mosby Co., 1960.
  14. Das, Basanta Kumar, Sadhinata sangrame Medinipur: Vol-1. Calcutta: Medinipur Sadhinata Sangram Itihas Samiti.
  15. Director of Public Instruction (DPI), Letter / Circular to the Secretary, Govt. of Bengal, General department in General Education, Proceeding No.13, File No.8-D\11, Letter No.36, dated 4.1.1900.
  16. Director of Public Instruction (DPI), Letter to the Secretary, General department in General (Edn), Govt. of Bengal, Proceeding No.53-54, File:1-G\10, Letter No.13259, dated 23.7.1097.
  17. Donaldson A, Hill T, Finch CF, Forero R. The development of a tool to audit the safety policies and practices of community sports clubs. *J Sci Med Sport*. 2003; 6(2):226-230.
  18. Donatelle RJ, Davis LG, Hoover CF. Access to health. New Jersey: Prentice Hall Engle Wood Cliffs, 1988.
  19. Education Department, Govt. of West Bengal. Prospectus of the Govt. College of physical education. Alipore, Calcutta: West Bengal Govt. Press. Education proceeding No.143-144, File:11C-95, 1954.
  20. Education survey unit, National Institute of Education, College and Institutes of Physical Education – A survey, New Delhi, 1967.
  21. Epstein LH. Adherence to exercise in obese children. *Journal of Cardiac Rehabilitation*. 1984; 4:185-195.
  22. Fitness through Physical Education, a frame work for physical education in the state of Mississippi, United States of America.
  23. Frances Alter, Terrence Hays, and Rebecca O'Hara. The challenges of implementing primary arts education, 2002. [www.earlychildhoodaustralia.org.au](http://www.earlychildhoodaustralia.org.au)
  24. Furst EJ. Constructing evaluation instruments. New York: Longmans Green & Co., 1970.
  25. Gangopadhyay, Prabhat Kumar. Debendranath Thakur – autobiography, 1962.
  26. General report on public instruction in Bengal 1889-1890 in General (Edn), Proceeding Nos. 19-22, File-5, Nov., 1890.
  27. General report on public instruction in Bengal 1890-1891 in General (Edn), Proceeding Nos. 1-4, File-5R-3, Nov., 1891.
  28. General report on public instruction in Bengal 1891-1892 in General (Edn), Proceeding Nos. 1-6, File-6R-2, Nov., 1892.
  29. General report on public instruction in Bengal for 1902-1903 in General (Edn), Dec., 1903, Proceeding Nos. 43-44, File-8R\ 61.
  30. Gharote ML, Gharote MM. Swami Kuvlayananda, A pioneer of scientific yoga & indian physical education. Lonavla: Lonavla Yoga Institute (India), A - 7, Gulmohor Apartment, Bhangarwadi, Lonavla - 410 403, 1999.
  31. Gilada IS. Home health care for people with HIV/ AIDS: The Indian perspective. *AIDS Asia*, 2, 8, 1995.
  32. Goldmann F. Public medical care: principles and problems. New York: Columbia University Press, 1947.
  33. Haywood MK. The role of physical education in the development of active lifestyles, *Research Quarterly for Exercise and Sport*, 62, 151, 1991.
  34. Hiscock IV. Community health organization (The Common Wealth Fund). London: Oxford University Press, 1939.
  35. Hollingshead, August de B. Elmtown's youth, the impact of social classes on adolescents. New York: John Wiley & Sons., 1949.
  36. Houlihan, Barrie. The government and politics of sport 11 New Fetter Lane. London: EC4P 4EE. Routledge. 295, 1991.
  37. Houlihan, Barrie and While, Anita. The politics of sports development: Development of sport or development through sport? London: Rutledge, 250, 2002.
  38. Hubbard AW. Research methods in health, physical education and recreation. Washington, D.C.: American Alliance of Health, Physical Education and Recreation or AAHPER, 260, 1973.
  39. Johnson WR. Health in action. London: Library of Congress Cataloging in Publication Data (Holt, Rinehart, & Winston), 1977.
  40. Kelley A. The validity and reliability of Borg's RPE scale in a field test. *Completed Research in Health, Physical Education and Recreation*, 24, 47, 1982.
  41. Lauer RM, Connor WE, Leaverton PE, Reiter MA, Clarke WR. Coronary heart disease risk factors in school children: The mescaline study. *Journal of Pediatrics*. 1975; 86:697-706.
  42. Laushey, David M. Bengal terrorism and marksist left. Calcutta, India: Temple Press, 1975.
  43. Letter from Deputy Secretary, Govt. of West Bengal to all District Officers for Physical Education and Youth Welfare, Midnapore (Letter No.4112-39-A, dated 21-8-

- 1972.
44. Letter from Director of Public Instruction, Bengal, to the Secretary, Govt. of Bengal, General Department in General (Edn.), May 1908, Proceeding Nos.53-54, File No.1-G\10, Letter No. 13259, dated 23.7.1907.
  45. Maharashtra State Council of Educational Research and Training. Primary education. Pune: Maharashtra S.C.E.R.T., 1988.
  46. Majumdar RC, Pusalkar AD. The vedic age. London: George Allen and Unwin Ltd., 1957.
  47. Ministry of Education and Social Welfare, Govt. of India (1975). Report of the education commission 1964. New Delhi: The Manager of Publications.
  48. Monroe WS. Educational measurement in 1920 and in 1945. Journal of Educational Research. 1945; 38:334-340.
  49. Moss V. Health manual: A self help guide. New Delhi: Jaypee Brothers, 1978.
  50. MSCERT (1995). Competency based primary education curriculum - 1995, [Language, Mathematics (Std. I to IV) & General Science (Std. III to V)], [As sanctioned under G.R. No. (RT1094 / 216 / 94)], Maharashtra State Council of Educational Research & Training, Pune 411 030.
  51. Mukhopadhyay H *et al.* Bharater sadhinata andolone jugantar patrikar dan by Sri Aurobindo O Banglar biplabad. Calcutta, India: Rarma K.L. Mukhopadhyay, 1972.
  52. NCERT. National curriculum framework 2000. New Delhi: Publication Division, National Council of Educational Research & Training, Sri Aurobindo Marg, New Delhi, 110 116, 2000.
  53. NCERT. National curriculum framework 2005. Publication Division, National Council of Educational Research & Training, Sri Aurobindo Marg, New Delhi, 110 116, 2005.
  54. NCERT. Syllabus for primary classes. New Delhi: Publication Division, National Council of Educational Research & Training, Sri Aurobindo Marg, New Delhi, 110 116, 2005, I.
  55. NCERT. Syllabus for upper primary, secondary and higher secondary classes. New Delhi: Publication Division, National Council of Educational Research & Training, Sri Aurobindo Marg, New Delhi-110 116, 2005, II.
  56. Paffenbarger RS, Hyde RT, Wing AL, Hsieh C. Physical activity, all-cause mortality, and longevity of college alumni. New England Journal of Medicine. 1986; 314:605-613.
  57. Pate RR, Shephard RJ. Characteristics of physical fitness in youth. In C.V. Gisolfi & D.R. Lamb (Eds.), Perspectives in exercise science and sports medicine, vol.2. Youth, exercise, and sport. Indianapolis, IN: Benchmark, 1989, 1-46.
  58. Powell KE, Thompson PD, Caspersen CJ, Kendrick JS. Physical activity and the incidence of coronary heart disease. Annual Review of Public Health. 1987; 8:253-287.
  59. Promis D, Erelles N, Matthews J. Reconceptualizing inclusion: the politics of university sports and recreation programs for students with mobility impairments. Sociology of Sport Journal. 2001; 17:37-50.
  60. Rao BS. Textbook of school medicine. India: Mrs. Sudha Sridhar, 1976.
  61. Report of Health Survey and Development Committee. Recommendations. New Delhi: Manager of Publication, Govt. of India Press, 1946, II.
  62. Rice EA, Hutchinson JL, Lee M. A brief history of physical education (4 ed). New York: The Ronald Press Company, 1958.
  63. Rice, Joseph M. The futility of a spelling grind. Forum, 23. 1897; 163-172, 409-419.
  64. Robson M et al. A simple physical fitness test battery for elementary school children. SNIPES Journal. 1978; 1:28.
  65. Sallis JF, McKenzie TL. Physical education's role in public health. Research Quarterly for Exercise and Sport. 1991; 62(2):124-137.
  66. Simmons JS. Public health in world today. Cambridge: Harvard University Press, 1949.
  67. Smith, Eugene R, Tyler, Ralph W, Others. Appraising and recording student progress. New York: Harper & Brothers, 1942.
  68. Somani SM. Metabolism and disposition of chemicals in relation to toxicity. In S.M. Somani and F.L. Cavender (Eds.), Environmental toxicology: principles and policies. Springfield, IL: Charles C Thomas, 1981.
  69. Wakharkar DG. Handbook of physical education. Delhi: Friends Publications (India), 6, Mukherji Tower, Dr. Mukherji Nagar, Delhi. 110 009, 1995.
  70. West Bengal Board of Secondary Education. Proceeding of the meetings of the Board held during 1972, Calcutta. 1972; pp. 293.
  71. Weston A. The making of American physical education. New York: Appleton Century-Crofts, 1962.
  72. Williams CL, Carter BJ, Wynder EL, Blumenfeld TA. Selected chronic disease 'risk factors' in two elementary school populations: A pilot study. American Journal of Diseases of Children. 1979; 133:704-708.
  73. Williams J, Torrens PR. Introduction to health services. New York: A Witey Medical Publication, 1988.
  74. Willis O. Sport and development: The significance of Mathare youth sports association, Canadian Journal of Development Studies. 2000; 21(3):825-849.