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EDUCATION DYNAMICS

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EDITOR'S NOTE

Step into the vibrant world of education with the latest issue of Education Dynamics, the Biannual Journal of Education, Special Education, Physical Education, Lifelong Learning, and Yoga proudly brought to you by Alagappa University.

Within the pages of our January 2023 edition, we present a tapestry of active and essential investigations, carefully curated from the profound contributions of esteemed researchers spanning the breadth of India. Their scholarly dedication has not only enriched our journal but has also elevated it to a pinnacle of international repute in the realm of education. Dive into this dynamic issue to discover a mosaic of insights and perspectives that mirror the ever-evolving landscape of educational discourse. Through meticulous research and profound analysis, our contributors have shed light on diverse facets of education, encompassing physical well-being, lifelong learning, vocational training, the serenity of yoga, and the inclusivity of special education.

We extend our heartfelt appreciation to all the authors, Associate Editors, Editorial Board Members, and Peer Review Team Members whose relentless commitment and expertise have sculpted this creative volume. Their unwavering dedication has not only enriched scholarly dialogue but has also provided a fertile ground for meaningful engagement with educators and society at large.

As we embark on our relentless pursuit of excellence in education and scholarship, we invite you, our cherished readers, to embark on a journey of exploration and enlightenment through the rich tapestry of topics and insights presented within these pages. May the knowledge shared herein ignite a spark of innovation, dialogue, and collaboration, propelling us towards the forefront of educational advancement.

We extend our heartfelt gratitude for your steadfast support and engagement with Education Dynamics. Together, let us forge ahead on a transformative voyage of discovery in the realm of education.

Editor

EFFECT OF SUPER CIRCUIT RESISTANCE TRAINING AND YOGIC PRACTICES ON SELECTED VARIABLE PHYSIOLOGICAL OF TRIBAL COLLEGE WOMEN KABADDI PLAYERS

Banoth Neela* & Dr. R. Senthil Kumaran**

Abstract

The purpose of this study was to find out the effect of super circuit resistance training and yogic practices on selected physiological variable such as Muscular Strength of tribal college women kabaddi players. For this study, sixty (N=60 tribal college women kabaddi players from Bhadradri Kothagudem, Telangana state, India were selected randomly as subjects. The age of the subjects were ranged between 19 to 25 years. They were divided at random into four group of fifteen each (n=15). Group- I underwent to Super Circuit Resistance Training, Group-II underwent Yogic practices, Group –III underwent Combined Super circuit Resistance Training and Yogic Practices and Group-IV was acted as the Control group. The training period was limited to three days per week for twelve weeks. The dependent variables only selected for this study were Muscular Strength. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variables. To analyse the data, ANCOVA and schefee's post hoc test was used. The level of the confidence was fixed at 0.05.The results of the study show that there was significant improvement in the selected physiological variable among tribal college women kabaddi players due to the influence of super circuit resistance training and yogic practices.

Key word: Super Circuit Resistance Training and Yogic Practices, Muscular Strength

Introduction

Kabaddi:

The sport has a long history dating back to pre-historic times. Its was probably invented to ward off croup attacks by individuals and vice-versa. The game was very popular in the southern part of Asia played in its different forms under different names. A dramatized version of the great Indian epic, the Mahabharatha,

The game, known as Hu-Tu-Tu in Western India, Ha-Do-Do in Eastern Indian &Bangladesh, Chedugudu in Southern India and Kaunbada in Northern India, has undergone a

sea chance through the ages. Morden Kabaddi is a synthesis of the game played in its various forms under different names.

Super Circuit Resistance Training:

Super circuit resistance training weight training refers to a program in which running or other aerobic exercises are performed between set's this training produces aerobic as well as strength benefits. Circuit training is a weight training system where you do exercises quickly one after another for aerobic benefits as well as strength gains. Super Circuit training combined the weight lifting exercises of circuit training with internal cardio training.

Yoga:

The term Yoga has been derived from the word unity. The Indus Valley civilization in South Asia is an old system of both physical and mental exercise. In Yoga sutra of pathanjali, 200 BC, the earliest written records of these methodologies emerged. The system was an 8 tracks or Asthanga Yoga. Yoga has been described in many ways in modern literature.

Muscular Strength:

Muscular Strength is a condition ability which depends largely on the energy liberation in the muscular strength is also perhaps the ability in sports; Muscular Strength is the ability to overcome the resistance or act against resistance. The ability to apply force and overcome resistance strength is an essential element in physical performance.

Methodology:

Selection of the Subjects:

To achieve the purpose of this study, sixty subjects were randomly selected from Bhadradri Kothagudem, Telangana State, India. The age of the subjects were ranged between 19 to 25 years. They were divided at random into four group of fifteen each (n=15). Group I underwent to super circuit resistance training, Group II underwent to Yogic Practices, Group III Underwent to Combined Super Circuit Resistance Training and Yogic Practices and Group –IV acted as the Control group. All the subjects were fully informed regarding nature of the experimental methodology and the subjects gave their consent to participate in this investigation.

Selection of the Variables:

Independent Variables:

1. Super circuit resistance training
2. Yogic Practices
3. Combined super circuit resistance training and Yogic Practices

Dependent Variable:

Muscular Strength:

Experimental Design: The study was formulated as a true random group design, consisting of a Pre Test and Post Test. The subjects (N=60) were randomly assigned to four equal groups. The groups were assigned as Experimental group I Super circuit resistance training, Group –II Yogic Practices, Group-III Combined Super circuit resistance training and Yogic practices and Group – IV Control group respectively. Pre – Test was conducted for all the subjects on selected physiological variables such as Muscular Strength. The experimental group participated in their respective Super circuit resistance training and Yogic practices for a period of twelve weeks. The Post –Test was conducted on the above said dependent variable after a period of twelve weeks in the respective treatments.

Statistical Technique:

The data collected from the subjects were treated. Statistical analysis of Co-variance was used to find out the adjusted mean difference among the treatment groups. The Scheffe's post hoc test used to find out the paired mean significances.

Result On Muscular Strength:

Table-1: The summary of Mean and Dependent 't' Test for the Pre and Post Tests on of Muscular Strength Experimental Group and Control Group

Mean	Super circuit resistance training	Yogic Practices group	Combined Super circuit resistance Training and Yogic practices group	Control group
Pre –Test	**14.47**	**14.27**	**13.8**	**14.80**
Post - Test	**18.47**	**17.33**	**19.20**	**14.87**
't' Test	**3.86**	**2.82**	**5.62**	**0.05**

**Significant at 0.05 level*

(Table value required for significance at. 0.05 level for 't'-test with df14 is 2.15)

Table- 1 Show that the Pre-Test and Post – Test mean of Muscular Strength for Super circuit Resistance Training, Yogic Practices group, Combined Super circuit Resistance Training and Yogic Practices group and control group are values of 14.47,14.27,13.8,14.80 Post Test:18.47,17.33,19.20 and 14.87,'t' Test:3.86,2.82.5.62 and0.05 respectively.

The table value required for significant difference with df 14 at 0.05 level is 2.15.It was conducted that experimental groups such as Super Circuit Resistance training group, Yogic Practices group, and Combined super circuit resistance training and Yogic Practices.

Figure:1 The Pre-Test and Post Mean Value Super Circuit Resistance Training Group Yogic Practices Group, Combined Super Circuit Resistance Training Yogic Practices Group and Control Group

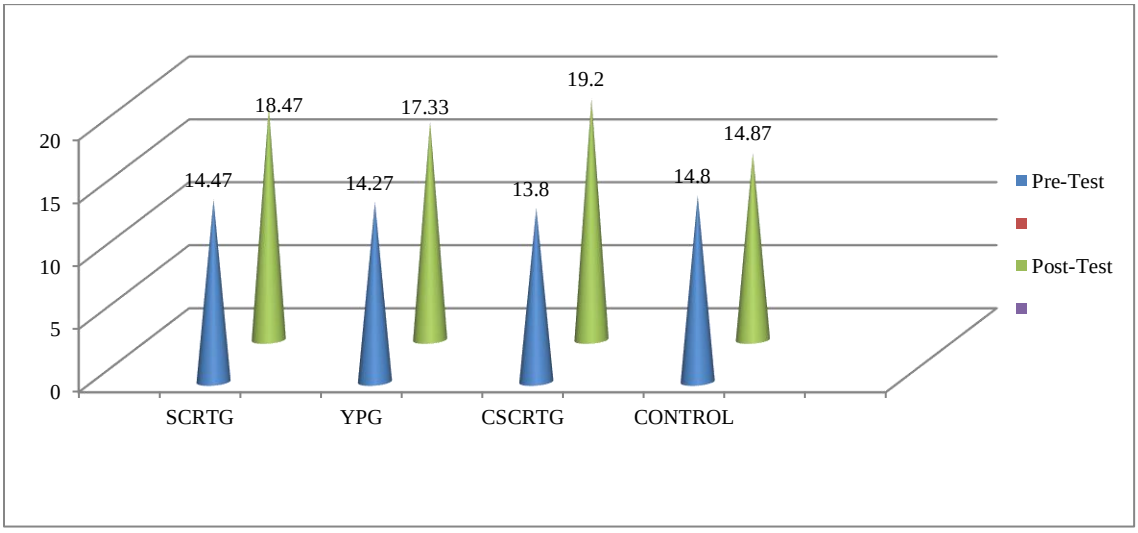


Table –II Analysis of Covariance on Muscular Strength of Experimental Groups and Control Group

Test	Super circuit resistance training	Yogic Practices	Combined Super Circuit resistance training and yogic practices	Control group	Source of variance	Sum of Squares	df	Mean Squares	F ratio
Pre-Test Mean	14.47	14.27	13.80	14.80	Between	7.87	3	2.62	0.59
					Within	247.47	56	4.42	

Post-Test Mean	18.47	17.33	19.20	14.87	Between	161.73	3	53.91	16.13
					Within	187.20	56	3.34	
Adjusted Post Test Mean	18.38	17.38	19.56	14.55	Between	201.02	3	67.01	50.01
					Within	73.69	55	1.34	

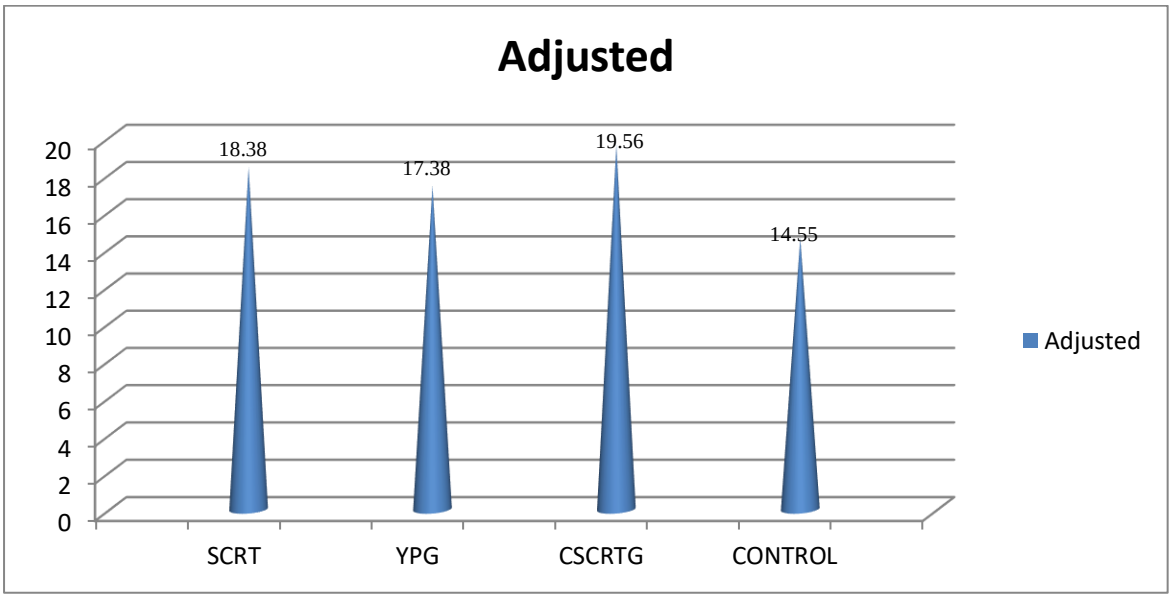
*Significance at 0.05 level of confidence (Muscular Strength Score in Numbers)

Table value for df (3, 56) at 0.05 level=2.76 Table value for df (3, 55) at 0.05 level = 2.78

Table –II the 'F' Ratio on the Muscular Strength variable is displayed in Table II. The calculated 'F' Ratio came out at 50.01.Since the obtained F ratio Adjusted post test scores was higher than the table value of 2.78 for degree of freedom 3 and 55 required for significance at 0.05 level of confidence Muscular Strength.

The result of the study indicate that there are significant differences among the adjusted post test means of super circuit resistance training group, Yogic Practices group, Combined super circuit resistance training group, Yogic Practices and control group in Muscular strength.

Figure: 2 The Adjusted Post Test Mean Value Super Circuit Resistance Training Group, Yogic Practices Group, Combined Super Circuit Resistance Training and Yogic Practices and Control Group on Muscular Strength.



Discussion on Finding

Generally the results indicated significant Increases in efficiency of the selected variable during twelve weeks of Super circuit resistance training and Yogic practices. Hence the hypothesis was accepted at 0.05 level of confidence. Muscular Strength increases through super circuit resistance training and Yogic practices for experimental group when paired with control group.

Conclusion

1. It was concluded that there was significant improvement I selected variable physiological variable of Muscular Strength due to Super circuit resistance training an Yogic practices among Tribal college Women kabaddi players.
2. The result of the study reveals that super circuit resistance training an Yogic practices Would improve tribal college women kabaddi players physiological variable significantly.

References

- *Vinolia and Annadurai(2021) Effect of yogic practices on functional variable of spouse.*
- *Ramos et at.,(2021): Effect of resistance circuit –based training on strength, Cardio respiratory fitness and body composition.*
- *Wase and Getachew(2020): Effect of circuit training on selected health related physical fitness of 2nd –year sport science students at Ambo University, Ethiopia*
- *Vinnedkumar (20222): Effect of Circuit training programme on Muscular Strength.*

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A COMPARISON OF THE ATHLETES POSITIVE MENTAL HEALTH

S. Praveen Kumar*, Dr. R. Senthil Kumaran** & Prof. S. Saroja***

Abstract

The goal of the current study was to look at the beneficial psychological well-being of both solo and cooperative gamers. 180 participants from each group—90 for team games and 90 for solo games—were used to perform the study chosen as samples in turn. Thirty athletes were chosen from each of the 180 team sports, which included basketball, handball, volleyball, badminton, tennis, and table tennis. The selection of athletes for the current study was based on their involvement in college competitions at any point in their athletic career. Every participant took the Positive Mental Health (PMH) standardized test. The findings showed that among athletes, positive mental health was statistically significant.

Keywords*: Sports, Physical Education, Good Mental Health*

Introduction

Physical education is an instructional approach that uses carefully chosen physical exercises to achieve certain goals in order to empower human growth. According to the previous definition, education is commonly understood to refer to the continuous process of learning and overall growth that takes place over our lifetime. Chaplin (1975) defined positive mental health as "a state of healthy adjustment with a subjective sense of well-being, zest for life, and a sense that one is constantly exercising his skills and abilities." This statement helped to crystallize the idea of positive mental health.

Method

The goal of the current study was to look at the beneficial psychological well-being of both solo and cooperative gamers. 180 participants from each group—90 for team games and 90 for solo games—were used to perform the study chosen as samples in turn. Thirty athletes were chosen from each of the 180 team sports, which included basketball, handball, volleyball, badminton, tennis, and table tennis. The selection of athletes for the current study was based on their involvement in college competitions at any point in their athletic career. The C. D. Agashe and R. D. Helode-developed "Positive Mental Health Inventory (PMHI–ACHR)" exam was used to evaluate the participants' mental health.

Hypothesis

It was hypothesized that players of solo and team video games would not significantly differ in terms of their good mental health.

Findings and Discussion

Table 1: Positive Mental Health Subscales' Descriptive Statistics for Players in Individual and Team Games

Mental Health Subscales	Individual game players		Team game players		No of players
	Mean	SD	Mean	SD	N
Ego strength	7.0222	1.70246	6.7778	1.75958	90
Self acceptance	6.7889	2.05265	6.9667	1.80791	90
Philosophies of life	6.8556	1.80238	6.5111	1.64381	90
Overall PMH	20.667	3.30475	20.2556	2.76642	90

Table 2: Participants of Individual and Team Games Compare on the Positive Mental Health Subscales

Positive Mental Health		Mean	SD	t-value	Df	Sig.(2-tailed)
Ego strength	**TG**	7.0222	1.70246	.947	178	.345
	IG	6.7778	1.75958			
Self acceptance	**TG**	6.9667	1.80791	.617	178	.538
	IG	6.7889	2.05265			
Philosophies of life	**TG**	6.8556	1.80238	1.340	1789	.182
	IG	6.5111	1.64381			

*Team Game (N=90), Individual Game (N=90)

Table 2's results show that there is no significant difference between the team's and each player's good mental health on the subscales of self-acceptance (t=.617, p>0.5), ego (t=.947, p>0.5), strength, and philosophical views of life (t=1.340, p>0.5). The findings also show that team game players (M=6.9667±1.80791) had higher mean scores on the Self Acceptance subscale than solo game players (M=6.7889±2.05265). Individual game players had substantially higher mean scores on the Ego Strength subscale (M=7.0222±1.70246) compared to team game

players (6.7778±1.75958). In the solo game, participants' mean scores on the Philosophies of Life subscale (M=6.8556±1.80238) were higher than those in the team game (M=6.5111±1.64381).

Findings

The assumption is accepted in these situations since the results also show that there is no discernible difference in subscales throughout the whole team and individuals game players. Individual players in games scored higher on the Ego Strength & Philosophies of Life subscales, whereas team game participants scored higher on the Self-Acceptance subscale.

Conclusion

A good mental state (subscales including self-acceptance, ego strength, and life philosophies) was shown to be consistent across both the team and solo game players.

References

- *Tobias Teismann, Julia Brailovskaia, Jürgen Margraf. Positive Mental Health, Positive affect, and Suicide Ideation, International Journal of Clinical and Health Psychology. 2019;19(2):165-169.*
- *Agashe CD, Helode RD. Positive Mental Health Inventory manual, Psychoscan, Wardha; c2007.*
- *Tiwari PK, Agashe CD. A Comparative Study of Positive Mental Health among Kho-Kho Players with Varying Levels of Sports Achievements; c2016.*
- *Deborah A Wuest, Charles A Bucher. Foundation of Physical Education and Sport. B.I. Publications, Edition: 1st; c1992. ISBN:81-7225-000-2.*

Institute Reorganization of Authors

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EFFECT OF SELECTED PRANAYAMA PACKAGE ON FORCED VITAL CAPACITY OF COLLEGIATE MEN

Prof. S. Saroja* & Dr. M. Senthil Kumar**

Abstract

The purpose of the study was to find out the effects of selected pranayama package forced vital capacity of collegiate men. For this study 60 healthy untrained subjects were selected on random basis. The students were selected from various colleges from pondicherry, India. The subject's age were ranged between 18 to 23 years. The selected subjects were divided into four groups, each group consist of fifteen (15) subjects. Group I underwent to practice vitalizing pranayama, group II underwent balancing pranayama and group III underwent cooling pranayama and group IV acted as a control group. The duration of the training period was stipulated to 12 weeks for 5 days per week (45 minutes). Control group was kept under control without any training. The forced vital capacity was measured by using dry spirocek tests. Prior to and after the end of practice period all the subjects were tested on forced vital capacity. The 'F' ratio value was statistically analyzed and tested for significant difference at 0.05 level of confidence.

Keywords: *Pranayama Package, Vital Capacity, Collegiate Men*

Introduction

Yoga is a path towards total harmony of body, mind, and spirit. The word yoga comes from the Sanskrit word Yuj, which means union. The Union of individual consciousness with differs from the universal consciousness. Yoga is not merely a form of exercise for the body. It is an ancient wisdom - for a healthier, happier, and more peaceful way of living – which ultimately leads to union with the self. It is an inherent desire in humans to be happy. The ancient sages, through inquiry about life, were able to reach a state of consciousness in which the secrets of healthier, happier and meaningful living were revealed to them.

Yoga is one of the most ancient arts which help us to bring a kind of harmony among our mind, body and spirit. It belongs to all human begins not an individual religion. The continued to practice of yoga will make our whole environment as a beautiful garden and leads our mind to peace and our body to fit. The kundalini moves by way of six psychics to skull, called sahasrara,

which is described as a lotus with a thousand petals. A true yogi should raise his kundalini power through the nadi sukshumana from one chakra to another until it reached the sahasrara, so that his life attaining. The complete salvation to reach the position one must learn to control his body, mind and bring them under his control. He can control everything even the rhythm of his heart beat and he can live without food, water and even the air for breathing. Yogi has achieved super human control over their bodies. Thus many Indians and some foreigners perform yogic exercises only for their spiritual and physical development not for any special religious purpose.

Pranayama

Pranayama is a breath –control techniques. In Sanskrit, pran means life and ayama means way. Pranayama can help you regulate your system, alter your mood and ensure longevity. The main aspects of pranayama are inhalation, exhalation and retention. Pranayama always begins with inhalations and exhalations. This strengthens the lungs and balances the nervous system, preparing the body to hold the breath (retention). Practicing pranayama on a regular basis regulates energy flow to the 72 thousand nadis (channels through which consciousness flows) in our body, helping us improves our wellbeing.

Prana is the universal principle of energy or force. It is the sum total of all energy that is manifest in the universe, all the forces in nature and powers which are hidden in men and which lie everywhere around us. This prana remains in a subtle, motionless, unmanifested, undifferentiated state during the cosmic pralaya, dissolution. When the vibration is set up, prana moves and acts upon akasha, space, and brings forth the various forms. The macrocosm, brahmanda, and microcosm, pindanda, are combinations of prana and akasha.

All forces, all powers and prana spring from the fountain or common source, known as atman. Heat, light, electricity, magnetism are manifestations of prana. It may be in either a static or a dynamic state. It is found in all forms from the highest to the lowest, from the ant to the elephant, the unicellular amoebae to man, from the elementary forms of plant life to the developed forms of animal life.

Major Types of Pranayama

- Nadi Sodhana
- Shitali Pranayama

- Ujjayi Pranayama
- Kapalabhati Pranayama
- Digra Pranayama
- Bhastrika Pranayama
- Bahaya Pranayama
- Bhramari Pranayama
- Udgit Pranayama
- Anuloma & Viloma Pranayama
- Agnisar Kriya

Hypothesis

It was hypothesized that there would be significant differences among the effect of pranayama packages on forced vital capacity of collegiate men.

Methodology

Selection of Subjects

The purpose of the study was to find out the effects of selected pranayama package on forced vital capacity of collegiate men. For this study 60 healthy untrained subjects were selected on random basis. The students were selected from various colleges from pondicherry, India. The subject's age were ranged between 18 to 23 years. The selected subjects were divided into four groups, each group consist of fifteen (15) subjects. Group I underwent to practice vitalizing pranayama, group II underwent balancing pranayama and group III underwent cooling pranayama and group IV acted as a control group. Thr duration of the training period was stipulated to 12 weeks for 5 days per week (45 minutes). Control group was kept under control without ant training. The forced vital capacity was measured by using dry spirochek tests. Prior to and after the end of practice period all the subjects were tested on forced vital capacity.

Statistical Analysis

The analysis of covariance applied to find the significant difference and the Scheffe's test were used when the 'F' ratio is significant to find the paired means difference.

Table I

Analysis of Variance on Pre and Post Tests and Analysis of Covarience on Adjusted Post Test Means of Vitalizing Pranayama Group, Balancing Pranayama Group, Cooling Pranayama Group, and Control Group on Forced Vital Capacity

(Scores in liters)

Test	VPG	BPG	CPG	CG	SOV	SOS	df	MS	'F'
Pre-test Mean	2.46	2.59	2.68	2.22	B:	1.78	3	0.59	2.63
S.D	0.41	0.36	0.41	0.66	W:	12.61	56	0.23	
Post-test Mean	3.21	3.17	3.12	2.09	B:	13.37	3	4.46	40.30*
S.D	0.19	0.19	0.23	0.56	W:	6.19	56	0.11	
Adj. Post Test Mean	3.24	3.12	3.02	2.22	B: W:	8.93 3.04	3 55	2.98 0.05	53.93*

*Significant at 0.05 level.

Required table value at 0.05 level of significant for 3 & 55 degree of freedom 2.77

The table shows the pre test mean value of vitalizing pranayama group is 2.46, balancing pranayama group is 2.59, cooling pranayama group is 2.68 and control group is 2.22. The 'F' value of pre test is 2.63 which are lesser than the required table value of 2.77, and there is no significant change in pre test. The post test mean value of vitalizing pranayama group is 3.21, balancing pranayama group is 3.17, cooling pranayama group is 3.12 and control group is 2.09. The 'F' value of post test is 40.30 which is higher than the table value of 2.77, hence it shows significant change in post-test. The adjusted post test mean value of vitalizing pranayama group is 3.24, balancing pranayama group is 3.12, cooling pranayama group is 3.02 and control group is 2.22. The 'F' value of adjusted post test is 53.93 which is higher than the table value of 2.77, thus is a significant change in adjusted post test.

Table II

Order Scheff's Test for the Differences Between the Adjusted Means of Vitalizing Pranayama Group, Balancing Pranayama Group, Cooling Pranayama Group and Control Group on Forced Vital Capacity

VPG	BPG	CPG	CG	M.D	'P'
3.24	3.12	-	-	0.12	0.98
3.24	-	3.02	-	0.22	0.85
3.24	-	-	2.22	1.02	0.00*
-	3.12	3.02	-	0.10	0.98
-	3.12	-	2.22	0.09	0.00*
-	-	3.02	2.22	0.80	0.00*

*The mean difference is significant at the 0.05level.

The above scheffe's table shows the mean difference value of vitalizing pranyama group and cooling pranayama group is 1.02, balancing pranayama group and control group is 0.09 and cooling pranyama group and control group is 0.80 which are significant at 0.05 level, and there is no significant changes between the experimental groups, but experimental groups shows significant with the control group.

Forced Vital Capacity

The outcome of the study is observed that there is no significant changes in forced vital capacity pre test means between the intervention groups and control group. However the forced vital capacity has significant changes in post and adjusted post tests between the intervention groups and control group after twelve weeks of pranayama package. The result concludes twelve weeks practice of pranayama package improve the forced vital capacity.

Conclusion

The study concludes the experimental groups have exposed significant progress on selected forced vital capacity due to the selected pranayama packages such as vitalizing pranayama, balancing pranayama and cooling pranayama. The outcome of the research is in pranayama package practice of college men, all the experimental groups on forced vital capacity significantly improved when compared with the control group but there is no significant changes in between the three package groups.

Reference

- *Asana Pranayama Mudra and Bandha by Swami Saithyanandha Saraswathi, Yoga Publication Trust, Bihar, India. Second Edition -1973.*
- *Johnson, Barry L. and Nelson, Jack K. (1986). Test and Measurement in Sports and Physical Education. (4th Sub Edition). Macmillan Pub Co., 128-129.*

- *Kansal, Devinder K. (1996). Test and Measurement in Sports and Physical Education. New Delhi: D.V.S. Publication, 116.*
- *Practice of Karma Yoga, Swami Sivanandha, a Divine Life Po (Sivanandha Nagar, Uttarpradesh, Himalayas, India, 1995.*
- *Practice of Yoga, the Devine Life Society, PO. Sivanandha Nagar, Uttar Pradesh Himalayas, India,1994.*
- *Prana Pranayama Prana Vidya, Swami Niranfannanda Saraswathi, Bihar School of Yoga, Munger, Bihar, India. Second Edition-1998.*
- *Sound Health Through Yoga, K. Chandrasekaran, Prem Kalian Publication, Madurai, Tamilnaadu, India-1999.*
- *The Yoga Tradition, George Feuerstein, Motilal Banar the Ltd., Delhi, 2002.*
- *The Complete Book of Yoga Harmony of Body. 86 Mind, a, Ghent Paperbacks (A Division of Vision Books Private Limited).*

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EFFECT OF YOGIC PRACTICES ON SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES AMONG COLLEGE MEN BASKETBALL PLAYERS

Ms. C. Vijayalakshmi* & Prof. S. Saroja**

Abstract

The purpose of the study was to find out the effect of Yogic Practices on selected physical and physiological variables such as Speed, Leg Explosive Power and resting pulse rate of college men Basketball Players studying Sree Sevugan Annamalai College, Devakottai, Sivagangai District, Tamil Nadu, India were randomly selected as subjects. Thirty men students were selected as subject. The subject's age were ranged from 18 to 23 years. The selected subjects were divided into two equal groups of thirty subjects each at randomly, which were one experimental groups and a control group. Experimental Group underwent the Yogic Practices programme. The training period of an experimental group was six weeks. Control group did not undergo any training programme rather than their routine work. The data were collected on physical fitness variables namely Speed ,Leg Explosive Power physiological variables namely resting pulse rate for all the two groups before the experimental period (Pre-test), after six weeks of training period (Post -test) respectively. In order to test the effect of training, the collected data from all the two groups before, during and after experimentation on Physical, Physiological variables were statistically analyzed by using one-way factorial analysis of variance with last factor repeated measures. When the obtained 'T' ratio value in the simple effect is found significant, to determine which of the paired mean had significant differences. In all the cases the level of confidence is fixed at 0.05 to test the significance. The result of the study also revealed that there significantly improved in the Speed, Leg Explosive Power and resting pulse rate were significantly reduced due to Yogic Practices among college men Basketball Players after effect of Yogic Practices on selected physical and physiological variables among College men Basketball Players.

Keywords*: Yogic Practices, Speed, Leg Explosive Power, Resting Pulse Rateand Basketball*

Introduction

Yoga means to "yoke" to "unite" to bind to "link" to connect or to "merge". As yoke joins two bulls together, the yoga unites body and mind together. The merger of soul with God,

and the experience of oneness with him is yoga. It is possible only through the control over sense organs and through continued practice and detachment. According to the great Sage Patanjali's the withdrawal of sense organs from their worldly objects and their control is yoga.

The aim of man's life is to get rid of the worries, anxieties and sufferings of the world and to achieve peace and bliss. To get rid of the tempting delusions, sorrows and pains of the world, there are different paths of yoga namely Bhakti yoga, Karma yoga, Dhyana yoga, Jnana yoga, Hatha yoga and other yogas. The paths may be different but the ultimate aim is the same. Our body has been called the temple of the God. According to Shankracharya we can see the image of God in our own body if maintained purity and free from disease. Just as spotless mirror gives clear reflection, the body and mind if maintained purity and health can lead up to success. Yoga is a science of physical and mental control. It is a system of self renewal of mind and body. It is a means of acquiring a slim supple and healthy body. It can be a way to achieve inner tranquility. It is also a path to great spiritual attainment. Our ancient Rishis and sages have given eight stages of yoga. They are Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi.

Methodology

The purpose of the study was to find out the effect of Yogic Practices on selected physical and physiological variables such as Speed, Leg Explosive Powerand resting pulse rate of college men Basketball Players studying Sree Sevugan Annamalai College, Devakottai, Sivagangai District, Tamil Nadu, India were randomly selected as subjects. Thirty men students were selected as subject. The subject's age were ranged from 18 to 23 years. The selected subjects were divided into two equal groups of thirty subjects each at randomly, which were one experimental groups and a control group. Experimental Group underwent the Yogic Practices programme. The training period of an experimental group was six weeks. Control group did not undergo any training programme rather than their routine work. The data were collected on physical fitness variables namely Speed ,Leg Explosive Power, physiological variables namely resting pulse rate for all the two groups before the experimental period (Pre-test), after six weeks of training period (Post -test) respectively. In order to test the effect of training, the collected data from all the two groups before, during and after experimentation on Physical, Physiological variables were statistically analyzed by using one-way factorial analysis of variance with last

factor repeated measures. When the obtained 'T' ratio value in the simple effect is found significant, to determine which of the paired mean had significant differences. In all the cases the level of confidence is fixed at 0.05 to test the significance.

Table -1

Analysis of 't' Ratio for the Pre and Post-tests of Control and Experimental Group on Speed

Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Speed	Control	7.42	7.58	0.28	0.39	0.04	14	1.12
	Experimental	7.36	7.20	0.26	0.12	0.01		5.69*

*****_Significance at .05 level of confidence_

The Table -1 shows that the mean values of pre-test and post-test of control group on speed were 7.42 and 7.58 respectively. The obtained 't' ratio was 1.12, since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on speed were 7.36 and 7.20 respectively. The obtained 't' ratio was 5.69 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in speed. It may be concluded from the result of the study that experimental group improved in speed due to six weeks of yogic practices.

Fig - 1: Mean Values of Pre and Post-Tests of Control and Experimental Group on Speed

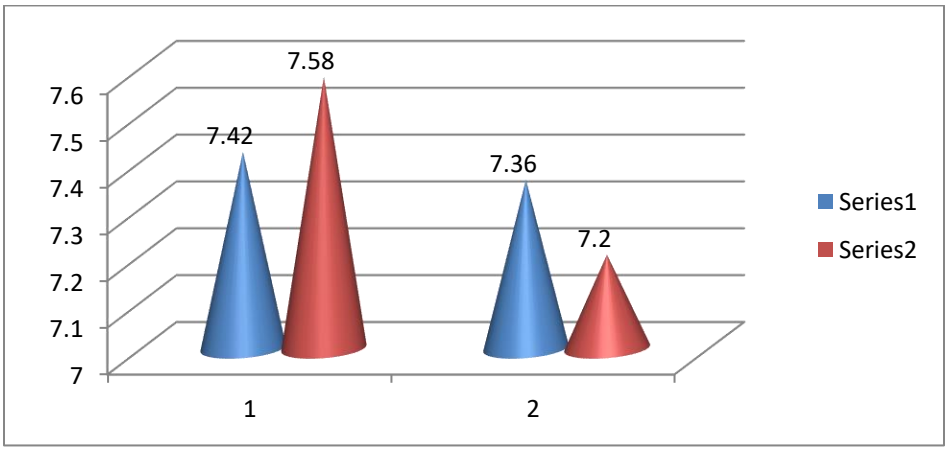


Table 2

Analysis of 't'-Ratio on Pre and Post-Test for Control and Experimental Group on Leg Explosive Power

Variables	Group Name	Mean		Sd		Sd Error	Df	't' ratio
		Pre	Post	Pre	Post			
Leg Explosive Power	Control	2.25	2.25	0.24	0.23	0.002	14	0.60
	Experimental	2.26	2.31	0.16	0.16	0.004		**9.86***

*****Significance at 0.05 level of confidence*

The Table 2 shows that the mean values of pre-test and post-test of control group on leg explosive power were 2.25 and 2.25 respectively. The obtained 't' ratio was 0.60 since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom, it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental group on leg explosive power were 2.26 and 2.31 respectively. The obtained 't' ratio was 9.86 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in leg explosive power It may be concluded from the result of the study that experimental group improved in speed due to six weeks of yogic practices.

Fig - 2: Mean Values of Pre and Post-Tests of Control and Experimental Group on Leg Explosive Power

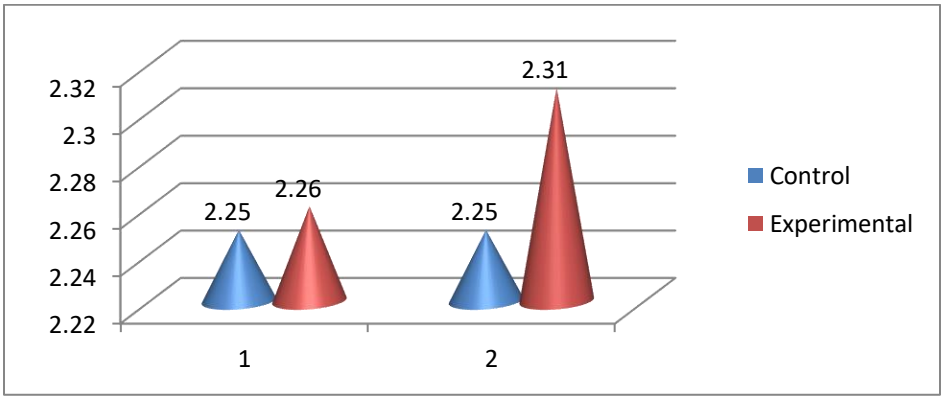


Table-3

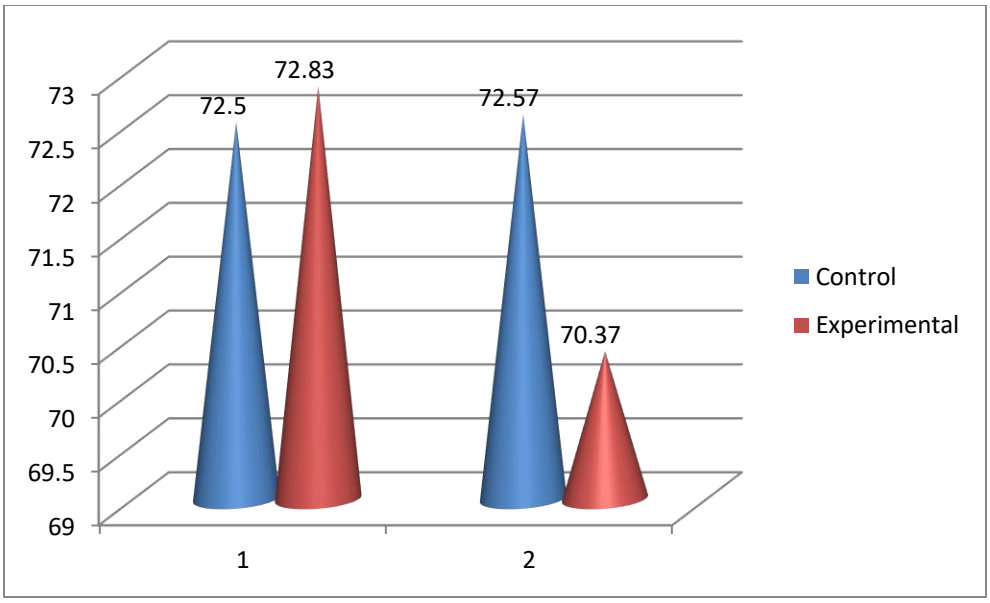
Analysis of 'T'-Ratio the Pre and Post-Test for Control and Experimental Group on Resting Pulse Rate

Variable	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Resting Pulse Rate	Control	72.50	72.57	1.62	2.02	0.45	14	0.52
	Experimental	72.83	70.37	0.64	0.42	0.48		**7.46***

***Significance at .05 level of confidence*

The table - 3 shows that the mean values of pre-test and post-test of control group on resting pulse rate were 72.50 and 72.57 respectively. The obtained 't' ratio was 0.52 since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on resting pulse rate were 72.83 and 70.37 respectively. The obtained 't' ratio was 7.46 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in resting pulse rate. It may be concluded from the result of the study that experimental group improved in resting pulse rate due to six weeks of yogic practices.

Fig - 3 Mean Values of Pre and Post-Tests of Control and Experimental Group on Resting Pulse Rate



Conclusions

Within the limitations and delimitations of this study, the following conclusions were drawn,

1. It was concluded that there was significant improvement in selected physical and physiological variables of Speed, leg explosive power and Resting Pulse Rate due to yogic practices among college men Basketball players.
2. The result of the study reveals that yogic practices would improve college men Basketball players' physical and physiological variables significantly.

References

- *James R. Atkinson (1977), "Predicting Performance Tennis, Basketball and Badminton from certain Physical Traits", Journals Completed Research in Health, Physical Education and Recreation 19: 241.*
- *Komathi.R and Kalimuthu.M,(2011) "Effect of Yogic Practices on Abdominal Strength among School Boys", Recent Treads in Yoga and Physical Education, Vol. I, (August, 2011)*
- *Oxyzoglou et.al. (2008), "Profile of Elite Basketball Athletes by Playing Position", http://ejmas.com/pt/2008pt/ptart_ hatzimanouil_ 0806.html article - Serbian Journal of Sports Sciences*
- *Prabakaran, T. and Chidambara Raja, S. (2012). Effect of yogic practices on vital capacity and total cholesterol.Internet. J. Phy. Edu.,*
- *Vishan Singh Rathore,(2012)the impact of yogic exercise on selected physiological and motor fitness component of National sub-junior volleyball players The 24 junior national volleyball players Indian Streams Research Journal, Volume 2, Issue. 6, July 2012.*

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IMPACT OF LADDER TRAINING ON SPEED AGILITY AND EXPLOSIVE POWER OF COLLEGE MEN ATHLETES

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Abstract

The study's goal was to determine how ladder training affected the men's collegiate athletes' speed, agility, and explosive power. To achieve the goals of the study, thirty college-age male athletes [100-, 200-, and 400-meter sprinters] were selected at random from Alagappa University Karaikudi, Tamilnadu, India. The ages of the people ranged from 18 to 25. The subjects were split into two groups of fifteen each, the experimental group and the control group. The experimental group received ladder training for eight weeks, once a day, three days a week, for sixty minutes each. The control group carried on with their usual daily activities without receiving any extra guidance. To determine if there was a statistically significant difference between the groups, the obtained data were statistically examined using analysis of covariance (ANCOVA). The degree of significant difference, if any, between groups was tested at the fixed.05 level of confidence. The results of the study showed that there were notable differences between the control group and the group that received rigorous ladder training. In addition, the Ladder training group showed a notable increase in speed, agility, and explosive power when compared to the control group.

Keywords: *Ladder Training, Speed, Agility, Explosive Power*

Introduction

"Ladder training will improve our speed, coordination, timing, and balance and also set our calves or fire," claims Dhanaraj (2014). It follows that using stairs for exercise will enhance your speed, balance, precision, and coordination. There are many different ways to perform ladder drills for agility and speed training; however this study only used two types of training: carioca ladder drills and slaloms ladder drills. This task ladder system is often used by trainers who are looking for ways to help athletes improve their speed, coordination, balance, and agility. A ladder typically consists of a box that is 12 to 15 inches in diameter made of plastic that is tied to nylon rope. Ladders are typically 10 yards long. Recent research has shown that ladder drills improve power, speed, and agility (Pratama et al., 2018). The drill's design for the carioca ladder

one movement pattern that is said to improve speed and agility is the slalom and ladder practice. It is anticipated that the trainer would be able to enhance athletes' physical fitness in terms of speed and agility through a range of basic movement patterns, leading to an increase in athlete fitness. The physical function of older persons depends heavily on neuromuscular performance and dynamic balance, both of which can be enhanced by agility training (AT). Daily living activities, which become less difficult as people age, include dual tasks that call for both muscular and cognitive skills at the same time (Castillo de Lima et al., 2023). It appears that using an agility ladder for short-term plyometric training would not increase the physical fitness of young football players in a time-efficient or effective manner. But it's important to consider the sample size constraints when interpreting these findings (Padron-Cabo et al., 2021).

According to (Pramod and Divya 2023) students may improve their anaerobic capacity and explosive performance by doing circuit training and ladder training. Both training and examination modalities were successful in increasing speed and explosive power after a 12-week training programme. The agility ladder is a reasonably priced and simple-to-use training aid that enables trainers and athletes to exercise creativity in modifying task limitations and to develop the coordinated movement patterns associated with team sports (Gatz et al., 2009). Although agility ladder training is widely used and has theoretical advantages, there is little research to support its effectiveness in enhancing players' physical and technical skills. As far as we are aware, just one study (Venturelli et al., 2008) examined the long-term effects of agility ladder training on football players. In pre-adolescent soccer players, (Venturelli et al., 2008) investigated the benefits of a 6-week coordinative training programme employing an agility ladder in 20-meter sprints with and without the ball, squat jumps, and counter-movement jumps. In contrast to repeated-sprint training groups, the results showed that six weeks of coordination training with the agility ladder only resulted in further performance increases in 20-meter ball sprints. Coaches and fitness instructors frequently utilise the agility ladder as a tool during football practice. (Padron-Cabo et al., 2020) discovered the effects of an agility ladder-based training programme on youth football players' speed, agility, straight dribbling, and dribbling with direction changes. According to the findings, training with an agility ladder for six weeks does not appear to be a time-efficient way to improve physical fitness and dribbling ability.

Methodology

In this investigation, the experimental approach was used. For the experimental group (n = 15 individuals) and control group (n = 15 subjects), a ladder training program was created. The eight-week ladder exercises training program consisted of three sessions held on Monday, Wednesday, and Friday, lasting forty-five minutes each day. Purposive sampling was used to choose research participants from Alagappa University in Karaikudi, Tamil Nadu. To serve as the subjects of this study, a total of thirty students (n = 30) were chosen. They were split into two groups at random: 15 people were placed in the experimental group and 15 people were placed in the control group. The individuals (n = 30) were measured for height (M = 169.13 ± 7.27) kg, weight (M = 61.70 ± 8.55) kg, and age (M = 22.20 ± 1.25) years

Table-I

Criterion Measures

Sl. No	Criterion measure	Test items	Unit of Measurement
1	Speed	30 mts dash	In seconds
2	Agility	Illinois agility test	In seconds
3	Explosive power	Vertical jump	In centimeters

Statistical Techniques

Analysis of covariance (ANCOVA) was used to statistically assess the collected data in order to ascertain whether there was a statistically significant difference between the groups. The fixed.05 level of confidence was used to examine for any significant differences between the groups.

Results

Table – II

Descriptive Analysis of Speed Agility and Explosive Power on Control and Experimental Groups among College Men Athletes

Sl. No	Variables	Group	Pre-Test Mean	SD (±)	Post –Test Mean	SD (±)	Adjusted Mean
1	Speed	CG	4.51	0.004	4.41	0.10	4.41
		LTG	4.48	0.07	4.32	0.01	4.33
2	Agility	CG	18.55	0.26	17.87	0.80	17.86

		LTG	18.36	0.77	17.03	0.16	17.05
3	Explosive power	CG	52.47	0.26	55.38	1.37	55.42
		LTG	53.07	1.00	57.77	0.58	57.73

LTG= Ladder Training CG= Control Group

Tables II provided numerical data on the pre- and post-test means, adjusted means, standard deviations on speed agility and explosive power of college men athletes. Table III presents the analysis of covariance on a subset of variables for the ladder training group and the control group.

Table – III

Computation of Analysis of Covariance on Speed Agility and Explosive Power of College Men Athletes

S.No	variables	Test	Sum of variance	Sum of squares	df	Mean square	F ratio
1	Speed	Pre-test	B.G	0.009	1	0.009	2.91
			W.G	0.089	28	0.003	
		Post-test	B.G	0.054	1	0.054	10.46*
			W.G	0.143	28	0.005	
		Adjusted means	B.S	0.045	1	0.045	8.55*
			W.S	0.143	27	0.005	
2	Agility	Pre-test	B.G	0.257	1	0.257	0.75
			W.G	9.512	28	0.340	
		Post-test	B.G	5.283	1	5.283	15.70*
			W.G	9.421	28	0.336	
		Adjusted means	B.S	4.802	1	4.802	14.09*
			W.S	9.197	27	0.341	
3	Explosive power	Pre-test	B.G	2.726	1	2.726	1.33
			W.G	57.111	28	2.040	
		Post-test	B.G	42.973	1	42.973	9.373*
			W.G	128.374	28	4.585	
		Adjusted means	B.S	38.279	1	38.279	8.11*
			W.S	127.337	27	4.716	

*Significant at 0.05level of confidences

(The table values required for significance at .05 level of confidence for 1 & 28 and 1 & 27 are 4.20 and 4.21 respectively)

The findings of the analysis of covariance on speed, agility and explosive power are displayed in the above table. For speed, agility and explosive power, the resulting F ratios of 2.91, 0.75 and 1.33 were smaller than the table value of 4.20 for df 1 and 28, which is necessary for significance at the.05 level of confidence. For speed, agility and explosive power, the resulting F ratios of 10.46, 15.70 and 9.37 were larger than the table value of 4.20 for df 1 and 28, which was necessary for significance at the.05 level of confidence. For speed, muscular strength, and explosive strength, the resulting F ratios of 8.55, 14.09 and 8.11 for adjusted post-test means were more than the table value of 4.21 for df 1 and 27, which was necessary for significant at the.05 level of confidence. The study's findings showed that there was no significant difference between the control and experimental groups' pre-test results for any of the selected variables, and that there was a significant difference between the groups' post-test results for speed, agility and explosive power. Additionally, the adjusted post-test means for the control group and the ladder training group showed a significant difference in these three domains.

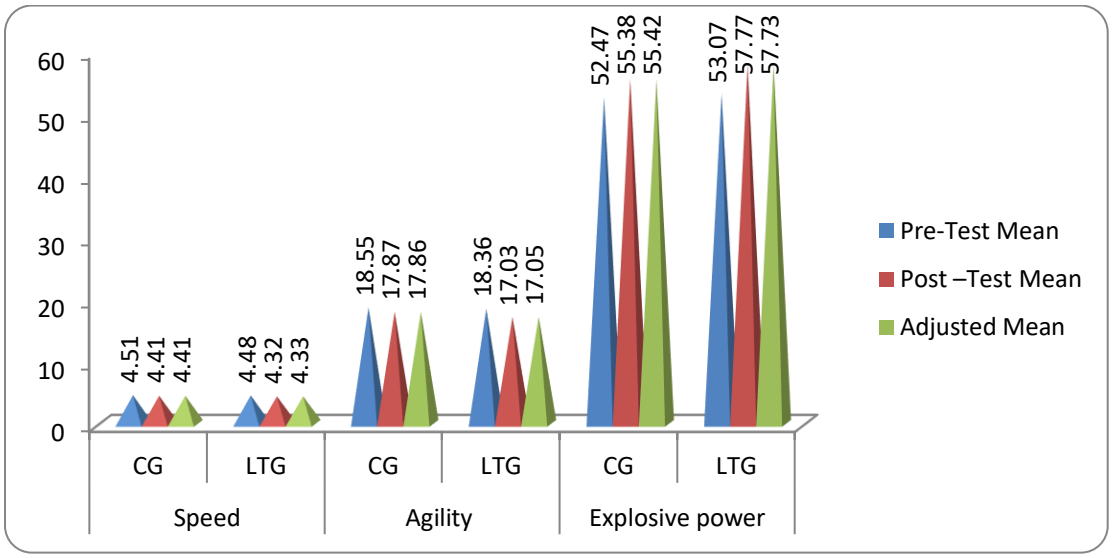

Figure-I, showed the pre, post, and adjusted mean values of the control and experimental groups' speed, agility and explosive power.

Discussion

The current study demonstrates the possible advantages of focused ladder training for college men athletes in terms of speed, agility and explosive power. Following eight weeks of ladder training, the experimental group exhibited superior speed, agility and explosive power in comparison to the control group. Nukhrawi Nawirand Jamaluddin (2019) suggest to the coaches

to use varied forms of Ladder training varies to increase the leg agility of the male athletes of Sepaktakraw Pengprov PSTI Sulawesi Selatan. Thomas and Shah (2022) concluded that ladder training shows significant effect on speed and explosive power among sub-elite cricket players. Trevor et al (2022) The outcome of result shows that the 4 weeks of LT to a pre-season strength and conditioning program seems to represent a time-efficient stimulus for a simultaneous improvement in sprint performance and kinematics (stride frequency and GCT)

Conclusions

Following data analysis, the following results were made.

1. The college men athletes in the experimental group showed a notable improvement in speed, agility and explosive power.
2. In none of the chosen variables did the college men athletes in the control group exhibit a statistically significant improvement.

References

- *Nukhrawi Nawirand Jamaluddin(2019). The Effect of Ladder Exercises Varies on the Increase in Athlete's Foot Agility. Advances in Social Science, Education and Humanities Research, 481, 206-209.*
- *Pratama, N.E., Mintarto, E., Kusnanik, N.W., Pratama, N.E. (2018). The influence of ladder drills and jump rope exercise towards speed, agility, and power of limb muscle. Journal of Sports and Physical Education,5(1), 22-9.*
- *Thomas, R., and Shah, D.N (2022). Effect of ladder training on speed and explosive power among subelite cricket players. International Journal of Creative Research Thoughts, 10 (11), 859-870*
- *Trevor, P.S., Justus, D.O., Manos, T.M., Petersen, A.J., and Kwon, Y.B. (2022). the Effects of Ladder Training on Sprint and Change of Direction Performance. Topics in Exercise Science and Kinesiology, 3(1), 1-15.*
- *Dhanaraj, S. (2014). Effects of Ladder Training on Selected Motor Fitness Variables Among Handsball Players. International Journal of Science Research, 3 (4), 406-407.*
- *Castillo de Lima, V., Castaño, L. A. A., Sampaio, R. A. C., Sampaio, P. Y. S., Teixeira, C. V. L., & Uchida, M. C. (2023). Effect of agility ladder training with a cognitive task (dual task) on physical and cognitive functions: a randomized study. Frontiers in public health, 11, 1159343. https://doi.org/10.3389/fpubh.2023.1159343.*
- *Padron-Cabo, A., Lorenzo-Martínez, M., Perez-Ferreirós, A., Costa, P. B., & Rey, E. (2021). Effects of Plyometric Training with Agility Ladder on Physical Fitness in Youth Soccer Players. International journal of sports medicine, 42(10), 896–904. https://doi.org/10.1055/a-1308-3316.*
- *Padron-Cabo, A., Rey, E., Kalén, A., & Costa, P. B. (2020). Effects of Training with an Agility Ladder on Sprint, Agility, and Dribbling Performance in Youth Soccer Players. Journal of human kinetics, 73, 219–228. https://doi.org/10.2478/hukin-2019-0146*
- *Gatz, G. (2009). Complete conditioning for soccer. Champaign, IL: Human Kinetics.*

- *Pramod, R., andDivya, K.(2023). Potential role of circuit training and ladder training in the development of anaerobic power and explosive performance of school students. Journal of Pharmaceutical Negative Result, 14 (2), 1783-1792.*
- *Venturelli, M., Bishop, D., Pettene, L. (2008). Sprint training in preadolescent soccer players. Int J Sports Physiology Performance, 3, 558–562.*

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EFFECT OF YOGIC PRACTICES AND AEROBIC DANCE ON ACHIEVEMENT MOTIVATION AMONG BASKETBALL PLAYERS

Mrs. S. Anbu Nisha Jeba Soundar* & Prof. S. Saroja**

Abstract

The goal of this study is to determine the Effect of Yogic Practices and Aerobic Dance on Achievement Motivation in Basketball Players. The aim of this research is to develop Yogic Practices and Aerobic Dance program and assess how well it works to improve Psychology Factor. 45 women Basketball Players from Alagappa University College of Physical Education and Umayal Ramanathan College for Women, Karaikudi, Tamilnadu were took part in the study. They were split in to three groups: Yogic Practices group, Aerobic Dance Group and Control group. The eight week training regimen included progressively difficult exercises that aimed to increase the Achievement Motivation level. With each passing week, the program gets harder and more complicated. Standardized testing protocols were utilized to evaluate Achievement Motivation both before and after the training program. When comparing the experimental group's Achievement Motivation levels to those of the control group, the results showed a considerable improvement. The "t" test foundation and analysis of covariance (ANCOVA) were used to analyze the data. The difference in the paired description was ascertained using Scheffe's post hoc test whenever the 'F' ratio of the adjusted post-test techniques was determined to be significant. In every instance, the confidence level was fixed at 0.05.

Keywords*: Yogic Practices, Aerobic Dance, Achievement Motivation*

Introduction

Yoga is the practice of being one with one's inner self. After the quality of matter and mind are dissolved into ultimate reality, this unity results. It's a science that helps each person approach the truth. Attaining the truth—where the individual soul aligns with the ultimate soul, or god—is the goal of all yoga practices. The most reliable treatments for both physical and psychological ailments in humans are found in yoga. It has a positive impact on how well the human body functions internally and encourages the organs to become more active. Yoga teaches both the physical and mental facets of re-education. Easy yoga poses are a terrific way to unwind after a game or to warm up before practice with a ball. Postures such as the forward bend

of the distributing leg are examples of special workouts. Here, the participants take a seat with their legs as wide as they can. They lead after that and touched the ground with their hands. After holding this position for fifteen seconds, they go back up. They repeat this process ten to fifteen times. This is made easier in this instance by the extended hamstrings and calf muscles. You can start practicing this wonderful Yogic technique right away (Iyengar, 2001).

A set of callisthenic rhythmic motions performed to music is known as aerobic dance. It is an inspiring technique that has increased in recent years. Aerobic literally means 'Spirit'. According to Sorensen and Jackie (1972), aerobic dancing is a sort of exercise where the amount of oxygen consumed and the amount needed are equal. Aerobic Dance have evolved from rigidly choreographed dance routines intended for female participants to free style routines that incorporate random combination of dance, sport and exercise movements designed to attract men and women.

Methods and Materials

Subjects

From Alagappa University College of Physical Education and Umayal Ramanathan College for Women in Karaikudi, Tamilnadu, 45 female basketball players were chosen in order to meet the research goal. 18 to 25 years old was the age range of the study. Thirteen people were split up into three groups: the Aerobic Dance group, the Yogic Practices group, and the Control group. If the subjects had any problems before, during, or after the test, they could easily withdraw their agreement. All participants in the trial remained, though. Studies have additionally received formal permission.

Testing Procedure

The eight week training included progressively difficult exercise that aimed to decrease the Variable of Psychology i.e Achievement Motivation. After every week, the training gets harder and more complicated. Before and after training program standardized testing procedures were used to assess Achievement Motivation.

Sl. No	Criterion Variable	Test Items	Unit of Measurement
1.	Achievement Motivation	SAMT Questionnaire	In Numbers

Statistical Technique

An analysis of covariance (ANCOVA) and a "t" test assessment were used to evaluate the data. Scheffe's post hoc test was employed to ascertain in the paired description whenever the 'F' ratio of modified post-test techniques was determined to be significant. In every instance, the confidence level was set at 0.05.

Table 1.1: Computation of Dependent‘t’ test on Achievement Motivation

(Scores in Numbers)

Mean	Yogic Practice Group	Aerobic Dance Group	Control group
Pre – test	28.40	28.20	27.33
Post – test	31.27	30.33	27.47
‘t’-test	3.29*	2.87*	0.11

***** Significant at 0.05 level (Table value required for‘t’ test with df 14 is 2.15)

According to Table 1.1, the Yogic practices group, the aerobic dancing group, and the control group had corresponding pre-test averages on Achievement Motivation of 28.40, 28.20, and 27.33. The respective post-test averages are 31.27, 30.33, and 27.47. Between the pre- and post-test averages, the dependent t-ratio values obtained are 3.29, 2.87, and 0.11, respectively. 2.15 is the table value needed to have a meaningful difference with df at the 0.05 level. It was determined that the experimental group's Achievement Motivation had significantly improved.

Table 1.2: Computation of Analysis of Covariance on Achievement Motivation

Test	Yogic Practice group	Aerobic Dance group	Control group	Source of Variance	Sum of squares	df	Mean squares	f ratio
Pre Test	28.40	28.20	27.33	Between	10.32	3	3.44	1.41
				Within	135.27	56	2.43	
Post Test	31.27	30.33	27.47	Between	388.98	3	129.66	59.71*
				Within	121.60	56	2.17	
Adjusted Post Test Mean	30.96	30.15	27.84	Between	366.35	3	122.12	100.65*
				Within	66.73	55	1.21	

*****Significant at 0.05 level of Confidence

Table Value for df (3, 56) at 0.05 level=2.76 Table value for df (3, 55) at 0.05 level=2.78

The above table 1.2 shows that the pre-test mean values of experimental and control groups are 28.40, 28.20 and 27.33 respectively. The obtained 'F' ratio of 1.41 for pre-test scores was lesser than the table value of 2.76 for degree of freedom 3 and 56 required for significance at 0.05 level of confidence.

The post-test mean values of experimental and control group are 31.27, 30.33 and 27.47 respectively. The obtained 'F' ratio of 59.71 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence.

The adjusted post-test mean values of experimental and control group are 30.96, 30.15 and 27.84 respectively. The obtained 'F' ratio of 100.65 for adjusted post-test score was higher than the table value of 2.78 for degree of freedom 3 and 55 required for significance at 0.05 level of confidence.

The result of the study indicates that there are significant differences among the adjusted post-test means of all experimental groups.

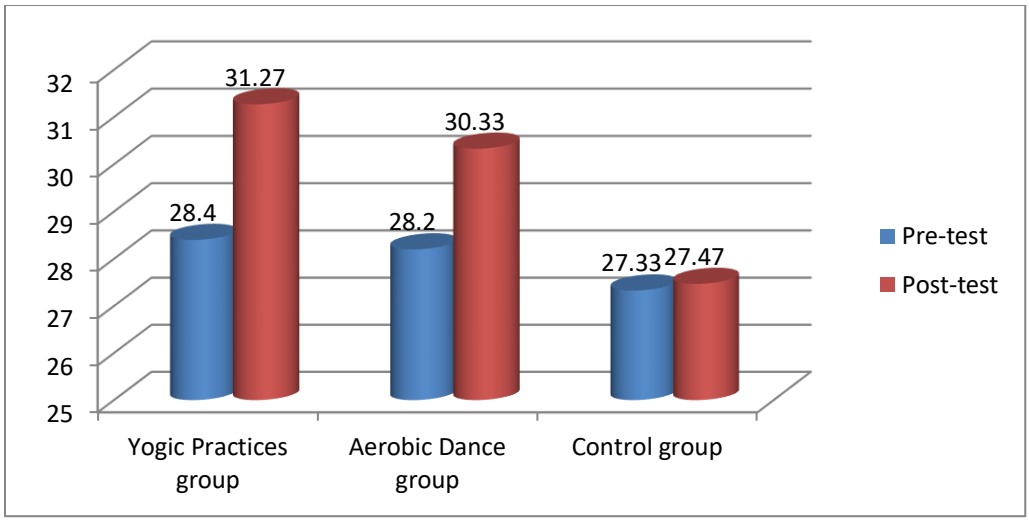
Table 1.3: Scheffe's Post Hoc Test on Anxiety

Adjusted Post Test Means			Mean Differences	Confidence Interval
Yogic Practices Group	Aerobic Dance Group	Control Group		
30.96	30.15		0.81	1.16
30.96		27.84	3.12*	1.16
	30.15	27.84	2.32*	1.16

*****Significant at 0.05 level of confidence

Table 1.3 shows that the adjusted post test means differences of above said comparison are 3.12 and 2.32 respectively, which are greater than the confidence interval value of 1.16 there is significant at 0.05 level of confidence. The comparisons of Yogic practices group and Aerobic dance group is 0.81, which is less than the confidence interval value of 1.16 there was insignificant at 0.05 level of confidence. The above data reveals that the experimental group had shown better performance in Achievement Motivation.

Fig 1.1: The Pre-Test and Post-Test Mean Values on Achievement Motivation



Conclusions

The study's findings led to the following conclusions being made.

1. The outcomes demonstrate a noteworthy improvement in Achievement Motivation as a result of the impact of aerobic dance and yoga.

2. The outcome demonstrates that the experimental group's performance significantly improved as a consequence of the impact of aerobic dance and yoga practices.

References

- *Iyengar B.K.S (2001), Yoga – The Path of Holistic Health, Dorling Kindersiley Limited, Great Britain*
- *Guszkowska M (2004), "effects of exercise on Anxiety, depression and mood", Psychiatr pol,38(4), pp 11-20*
- *Desai, D.B (1970), Research on Achievement Motivation, Macmillan Book Company, London.*

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ISOLATD AND COMBINED EFFECT OF ENDURANCE TRAINING AND YOGIC PRACTICES ON CARDIO RESPIRATORY ENDURANCE AMONG SCHOOL STUDENTS

Maidam Chaithanya Bhagath* & Dr. R. Senthil Kumaran**

Abstract

The study aimed to investigate the impact of endurance training and yogic practices on the cardio-respiratory endurance of students in Zilla Parishad High School, Shambunipet, warangal District, Telangana State, India. The research focused on 60 students aged 13 to 16 years. The study's scope was limited to a six-week training program, specifically targeting endurance training, yogic practices, and cardio-respiratory endurance. To assess cardio-respiratory endurance, subjects underwent a nine-minute run and walk test both before and after the six-week training program. The testing procedures followed standard protocols, overseen by an expert. The analysis involved applying both analysis of variance and analysis of covariance to examine inter-group variability. This allowed for comparisons between initial and final scores, as well as adjustments in terminal scores to account for differences in initial variables. The findings of the study can be summarized as follows: Endurance training was found to potentially increase the working capacity of the heart and lungs in students. Similarly, yogic practices were suggested to contribute to an increase in the working capacity of the heart and lungs. The researcher concluded that the combined training approach had a more significant impact on the cardio-respiratory fitness of football players. In summary, the study provides insights into the positive effects of endurance training and yogic practices on cardio-respiratory endurance among school students. The combined training approach emerged as particularly beneficial, underscoring the potential for holistic fitness improvements in the selected age group.

Keywords*: Endurance Training, Yogic Practices, Cardio Respiratory Endurance*

Introduction

The contemporary history of the world's favorite game spans more than 100 years. It all begins in 1863 in England, when rugby football and association football branched off on their different courses and the Football Association in England was formed - becoming the sport's first governing body.

Endurance exercise is traditionally viewed as the primary means of increasing aerobic capacity. Resistance exercise, in contrast, is not typically viewed as a means for improving cardio respiratory endurance. The absence of cardio respiratory adaptation may be explained by the fact that a session of resistance exercise has been shown to correspond to an oxygen uptake of only 36% to 45% of Vo2max. These values are lower than what is commonly recommended to elicit improvements in aerobic capacity. An alternative explanation is that augmentation of peripheral skeletal muscle strength does not influence cardio respiratory performance in young and middle- aged individuals because they possess normal leg strength values (Booth, F. W., & Baldwin, K. M, 1996).

Yoga has been practiced for thousands of years, and whilst many different interpretations and styles have been developed, most tend to agree that the ultimate goal of yoga is to achieve liberation from suffering. Although each school or tradition of yoga has its own emphasis and practices, most focus on bringing together body, mind and breath as a means of altering energy or shifting consciousness.

Cardiovascular endurance, or aerobic fitness, is how well your heart and lungs can supply the oxygen you need while you exercised at medium to high intensity. If you have good cardiovascular endurance, you can exercise at medium intensity for a long time (and high intensity for a while) before it makes you tired.

Study & Material

Purpose

The main purpose of this study is to find out the effect of endurance training and yogic practice on cardio respiratory endurance of School students.

Objectives: i) To find out the effect of endurance training on cardio-respiratory endurance of School students ii) To find out the effect of yogic practices on cardio-respiratory endurance of School students iii)To find out the effect of combined training of School students iv) To find out the cardio-respiratory fitness of School students.

Significance: i) The study might be helpful to know the cardio-respiratory function of School students ii) This study might be helpful to the coaches, physical education teacher to adapt this type of training for the development of cardio-respiratory level. iii) The Study might be helpful

in improving the healthy physiological functions of the Students. iv) The study might be helpful the students for selecting various games and Sports, which requires cardio-respiratory Endurance. v) The findings of this study might be helpful in preparing endurance training programme for the development of cardio-respiratory.

Hypothesis: (i) It is hypothesized that endurance training will be effect on cardio-respiratory fitness of School students (ii) It is hypothesized that yogic practices will be effect on cardio-respiratory fitness of School students (iii) It is hypothesized that combined training will be effect on cardio-respiratory fitness of school students.

Scope: i) The study was delimited to the 60 students from ZILLA Parishad High School, Shambunipet, Warangal District, Telangana State, India. ii) The age of students varied from 13-16 years. iii) The study was delimited to cardio respiratory fitness only. iv) The study was delimited to endurance training exercises, yogic practices only. v) The study was delimited to six (6) weeks training programme only. vi) The study was delimited to 60 boys' subjects only.

Methodology

Sources: The study was conducted to find out the Effect of endurance training and yogic practices on cardio-respiratory fitness of high school boys' students.For this present study selected subjects from Zilla Parishad High School, Shambunipet, Warangal District, Telangana State, India. Selection: For the present study Twenty (60) subject's boys were selected randomly from Zilla Parishad High School, Shambunipet, Warangal District, Telangana State, India**.** Their age ranges varied from 13 to 16 years.

Administration of Test: After the selection of the subjects from administered nine minute (9) run and walk test to measure the Cardio-respiratory Endurance before and after the endurance training and yogic practices programme of six weeks. Cardio-respiratory Endurance will be tested and measured through standard procedure with the help of expert.

Experimental Design: For the present study Sixtey(60) subjects were selected in simple random sampling method from Zilla Parishad High School, Shambunipet, Warangal District, Telangana State, India**.**

Their age varied from 13 to 16 years subjects belonging to three experimental groups and one control group, each comprising of 15 subjects, The experimental group underwent six weeks

endurance training, yogic practice group and combined training group for 5 (five) days in a week, for 60 (sixty) minutes each day, for the period of six weeks under direct supervision of the experimenter. The control group does not undergo any specific training during the period of six weeks apart from the physical education program**.**

Collection of Data: To find out the effect of endurance training on cardio-respiratory function the data were collected through administration of nine minute (9) run and walk test before and after the six weeks training programme. After the collection of data scores were calculated by employed " t " test statistical technique to see the significant differences.

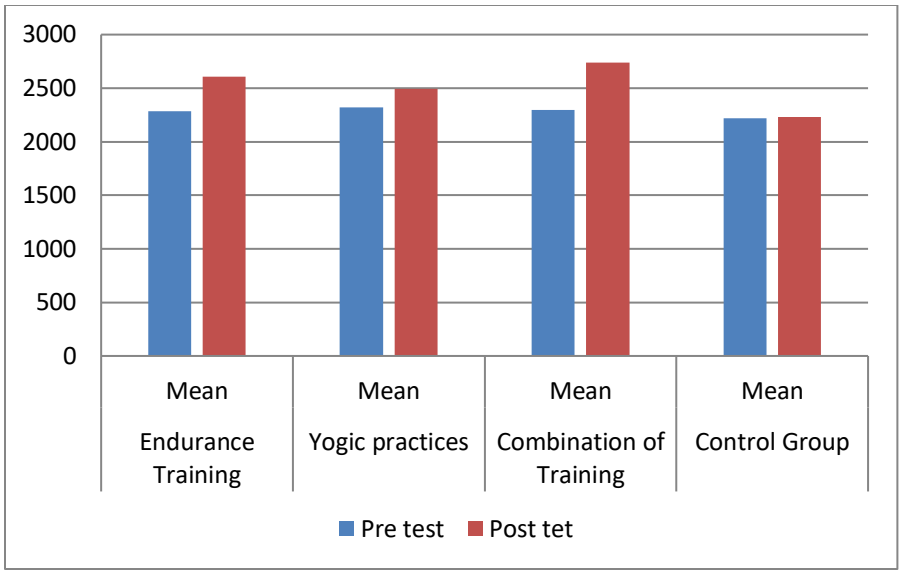
Statistical Analysis and Interpretation of Data Interpretation: All the data pertaining to the present study were examined by employing " t " test to find out whether any significance difference between the means of pre and post test score of the two groups before and after the period of six weeks training programme. The collected data of this study were tabulated in different tables for the statistical treatment. To see any significant difference 0.05 level of confidence was used.

Table – I: Means, Standard Deviations and Dependent 'T' Test Values on Cardio Respiratory Endurance of Experimental and Control Groups

Tests	Endurance Training		Yogic practices		Combination of Training		Control Group	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre Test	2283.33	68.94	2320.67	64.86	2294.00	108.48	2221.33	63.57
Post Test	2609.33	64.19	2494.67	70.49	2740.67	68.19	2230.67	64.64
T - Test	-15.80*		-9.80*		-11.97*		-0.68	

*Significant at .05 level. The Table Value required at .05 levels with sf 14 is 2.14.

From the table I the obtained t-test value of endurance training, yogic practices and combination of training programme groups are 15.80, 9.80 and 11.97 respectively which are greater than the tabulated t-value of 2.14 with df 14 at .05 level of confidence. This means that the endurance training, yogic practices and combination of training programme groups had effects on participants' Cardio Respiratory Endurance. Control group did not shown improvement on participants' Cardio Respiratory Endurance.



Summary: For the present study twenty (60) subjects were selected in simple random sampling method from the all students were divided into four equal groups of fifteen (15) School students. The experimental group was given six (6) weeks endurance training; no training was given to the control group. The data was collected before and after 6-week training programme on both groups by administered 9-minute run and walk tests. Mean Difference and, "t"test was applied between Pre-Test and Post-Test scores of Experimental and Control groups. The level of significance was set at 0.05 level of confidence. The findings of this study showed significant effect on cardio-respiratory fitness of school students after 6-week endurance training, yogic practice training and combined training programme.

Conclusion: The present study shows that there exist significant effects on cardio-respiratory fitness of school students in after the endurance training of six weeks on the experimental group. The researcher found that cardio-respiratory fitness was improved after giving the 6 weeks of endurance training yogic practice training and combined training programme.1. This might be due to the fact that endurance training might be helped to increases the working capacity of heart and lung. 2. This might be due to the fact that Yogic practices might be helped to increases the working capacity of heart and lung. 3. Finally researcher concluded that Combined training have more significant effect on cardio-respiratory endurance of school students.

References

- *A.K.Uppal,"Physical Fitness and wellness", Friends Publication, New Delhi, 2004*
- *2.A.Mahaboobjan& U.Viswejan, "Sports Training", Khel Sahitya Kendra, New Delhi, 2010, p.82*

- *Andrew M. Jones&Helen Carter. "The effect of endurance training on parameters of aerobic fitness", Aids International Sports England, 2000 Jun; 29 (6): 373-386*
- *Armstrong*, N., &et. al. "Cardio-respiratory training during childhood and adolescence",Journal of Exercise Science and Physiotherapy, U.K. Vol. 3, No. 1: 17-25, 2007*
- *Bharat &ShalanSavur,"Fitness for life", Jaico publisher, Mumbai, 2004,p.p17-18*
- *6.Dr A Rajam&Dr. A. Shenbagavalli, "Effect of selected physical exercises and yogic practices on cardiovascular efficiency of college women students", International Journal of Physical education sports Management and Yogic sciences, Chennai, vol.2, no.4, 2012.*
- *7.Dr A Rajam&Dr. A. Shenbagavalli, "Effect of selected physical exercises and yogic practices on cardiovascular efficiency of college women students", International Journal of Physical education sports Management and Yogic sciences, Chennai, vol.2, no.4, 2012.*
- *8.Arnheim&et.al,"PrinciplesofAthleticTraining", Mosbyyearbook,USA,1993,P.P63*
- *9.Dr.G.Kumaran&et. al.: "Effect of isolated and combined strength and endurance training induced adaptation on selected body composition variables." Journal of Physical Education Sports Management and Yogic Sciences.vol.2, no.1, M.2012*
- *10. Ramos-Jiménez A, Hernández-Torres RP, Wall-Medrano A, Muñoz-DawMDj, Torres-Durán PV, Juárez-Oropeza MA. Cardiovascular and metabolic effects of intensive Hatha Yoga training in middle-aged and older women from northern Mexico. Int J Yoga. 2009;2:49–54.*

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YOGIC EXERCISES AND FLEXIBILITY

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Abstract

The aim of this study was to ascertain why students at the Rajiv Gandhi Campus of Central Sanskrit University become more flexible through yoga exercises. For this study, 60 randomly selected students, ages 18 to 25, from the central Sanskrit University's Rajiv Gandhi Campus in Sringeri were used as subjects. While the experimental group performed yogic activates, the control group got no instruction. The experimental group practiced yoga for eight weeks Before and after the four and eight week training sessions data was processed using the't' test statistical technique. A significance level of 0.05 was established. The yoga exercises increased the flexibility of the Rajiv Gandhi Campus students of Central Sanskrit University.

Keywords: *Yogasanas, Flexibility, Sanskrit*

Introduction

Yoga poses are psycho-physical exercises that influence psycho-physio-sociological concepts as well as fitness. Yoga's Sanskrit terms are asana, which means "Posture" or "Pose" and yoga, which means "union". While certain yogasanas are performed for their physical benefits, the majority are linked to the physical workouts of Hatha Yoga.

Mountain pose (Tadasana), tree pose (Vrikshasana), downward – facing dog pose (Adhomukho Svanasana), triangle pose (Trikonasana), chair pose (Kursiasana), boat pose (Naukasana), cobra stance (Bhujangasana), child's pose (Paschimottanasana), and sukhasana are the ten basic yoga poses.

The secret to a longer, better, and more satisfying life was once disclosed to enlightened individuals who were wise, Furthermore, asanas in yoga are psycho-physical workouts that influence psycho-physiological-psychological concepts as well as fitness. This precious and hidden knowledge was called "yoga" by the sages.

Methodology

For the present study, sixty students were selected from the Central Sanskrit University (formerly Known as Rashtriya Sanskrit Sansthan), Rajiv Gandhi Campus students and the two

kilometers surrounding area of the campus were considered as subjects. Thirty subjects were allotted for each group. One is called control group and another one is called experimental group to know the effect of yogic exercise on flexibility of the students.

The following Yogasana training was given for eight weeks. The yoga training was comprised Surya Namaskara, Standing Postures Asanas, Sitting Postures Asanas, Prone Position Asanas, Supine Position Asanas, Pranayama and Shavasana. Training was given in the following manner.

The experimental group was undergone with a yoga training program as per the schedule. Yogasana Practices were done only three days per week, alternatively (Monday, Wednesday and Friday from 6.00 am to 7.00 am). The training program was designed as per the sources composed from periodicals, books, e-materials and deliberations with the expert. The duration of experimental designed was 60 minutes per day. All Participants considered in this study were cautiously observed all through the training period.

Using df 29. The resulting‘t’ value which was less than the theoretical table value of 2.045, was 1.362, which is significant at a 0.05 level of significance. As a result, the hypothesis that there is no discernible difference between the control and experimental groups in terms of flexibility was rejected. When group means are compared, experimental groups have higher group means.

After four weeks of training, the calculated‘t’ value is 0.533, which was less than the theoretical table value of 2.045 with of 29 and a significance level of 0.05. As a result, the hypothesis that there is no discernible difference between the control and experimental groups in terms of flexibility was rejected. When group means are compared, experimental groups have higher group means.

After eight weeks of training, the calculated‘t’ value is 2.053, which is higher than the theoretical table value of 2.045 with of 29 and a significance level of 0.05. As a result, the idea that there is a sizable difference in flexibility between the control and experimental groups was accepted.

After twelve weeks of training, the calculated‘t’ value was 3.362, which was greater than the theoretical table value of 2.045 with of 29 and a significance level of 0.05. As a result, the

idea that there is a sizable difference in flexibility between the control and experimental groups was accepted.

After sixteen weeks of training, the calculated‘t’ value was 4.527, exceeding the theoretical table value of 2.045 with of 29 and a significance level of 0.05. As a consequence, the hypothesis that there is a notable difference in flexibility between the control and experimental groups was accepted.

Table: 1- Pre-Test Flexibility Mean, Standard Deviation and T Value of Control and Experimental Groups

		N	Mean	SD	df	‘t’ value
Pre Test	**Control Group**	30	4.8380	1.94883	29	1.362
	Experimental Group	30	4.3087	1.31146		

The above table shows the t value of pre-test of control and experimental groups, the t value shows no significant difference in flexibility of control and experimental groups.

Table: 2- Four Weeks Descriptive Statistics of Flexibility and T Value of Control and Experimental Groups

		N	Mean	SD	df	‘t’ value
Pre Test	**Control Group**	30	4.9367	1.84641	29	0.533
	Experimental Group	30	5.0927	1.29523		

The above table shows the t value of after four weeks of control and experimental groups, the t value shows that there is a significance difference in flexibility between control and experimental groups.

Table: 3- Eight Weeks Flexibility Mean, Standard Deviation and T Value of Control And Experimental Groups

		N	Mean	SD	df	‘t’ value
Pre Test	**Control Group**	30	4.9127	1.84278	29	2.053
	Experimental Group	30	5.7483	1.10990		

Table: 4- Twelve Weeks Flexibility Mean, Standard Deviation and T Value of Control and Experimental Groups

		N	Mean	SD	df	't' value
Pre Test	**Control Group**	30	5.0083	1.83806	29	3.362
	Experimental Group	30	6.3217	1.04541		

The above table shows the t value of over twelve weeks of control and experimental groups, the t value shows that there is a significance difference in flexibility between control and experimental groups.

Table: 5- Sixteen Weeks Flexibility Mean, Standard Deviation and T Value of Control and Experimental Groups

		N	Mean	SD	df	't' value
Pre Test	**Control Group**	30	5.0157	1.83518	29	4.527
	Experimental Group	30	6.7870	1.13397		

The t value in the above table, which represents the flexibility between the control and experimental groups after sixteen weeks, indicates that there is a significant difference between the two groups.

Conclusion

The results of the current investigation showed that there is no discernible difference between the control and experimental groups' flexibility pre-test scores.

Following four weeks of yoga training, there is a discernible difference in the experimental and control groups' levels of flexibility.

Following eight weeks of yoga training, the experimental and control groups' levels of flexibility varied noticeably.

Following a twelve-week yoga training programme, a discernible shift in flexibility is observed between the experimental and control groups.

After sixteen weeks of yoga training programme, a discernible shift in flexibility is observed between the experimental and control groups.

After sixteen weeks of yoga training, there is a substantial difference in the flexibility of the experimental group compared to the control group.

References

- *Baljii Singh Sekhon and P.V.Shelvam, (2013), "Effect of Selected Yogic Practices on Bio-Motor Variables among University Men Students", International Journal of Humanities and Social Science Invention, Volume 2 (9), PP.25-26*
- *D.Sultana, (2011), "Effects of Yoga Practice on Dominate Hand Grip Strength of Female Students", Recent Treads in Yoga and Physical Education, Vol.1, p.360.*
- *John Walsakom, L.B., (2000) "Response of Selected Asanas on Balance, Flexibility, Muscular Endurance and Reaction Time, "Unpublished M.Phil Thesis, Pondicherry University, Pondicherry*
- *Selvakumar, Sreenimurugan M, and Jeyaveerapandian, (2011) "Effect of Selected Yogic Practices on Body Composition of College Students Recent Trends in Yoga*

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ROLE OF REFLECTIVE THINKING IN DIGITAL LEARNING

Ms. Savitha Kumari S* & Dr. M. Suganthi**

Abstract

Digital learning plays an important role to intensify reflective thinking by helping learners with different types of openings for self learning, skill attainment and for feed forward. Digital learning is also known as e-learning or online learning, which refers to the use of technologies in the current era for delivering content. Reflective thinking is a cognitive practice that involves pondering and scrutinizing one's own thoughts, feelings, and actions. It goes beyond simple observation and motivates individuals to dig deeper into their exposures, beliefs, and presupposition. It is the ability to think about one's own thinking process. Reflecting allows participants the chance to step back from the course and to analyze what they have learned up to a certain point and to assess how far they have come .The use of reflective thinking in digital learning increases critical thinking skills, assisting learners in evaluating information sources, making informed decisions, and effectively applying knowledge in various digital contexts.

Keywords*: Digital Learning, Reflective Thinking*

Introduction

From the beginning of the COVID 19 pandemic ICT emerged as a path of deliverance for all the stakeholders in education- teachers, students, parents and the government all over the world. Despite these pandemic situations, Academicians moved to online platforms like Google meet, zooms, and Google classrooms. Digital learning is facilitated by reflective thinking, which enhances the overall learning experience, fosters critical thinking, and promotes self-directed learning.

Digital learning provides the tools, environments, and resources that support reflective thinking, while reflective thinking enhances the depth and quality of the learning experience in the digital realm. Together, they contribute to the development of critical thinking skills, self-awareness, and a proactive approach to learning and problem-solving. It allows the learners to adapt with the new situation and helps to know the current position in the learning process. It also helps to adopt the new innovations in the digital era.

Importance

- It helps to foster a positive mindset and to find out the challenging opportunities for makeover.
- Individuals are encouraged to reflect on the virtual world which helps them to collaborate and with communicative skills.
- It serves as a tool for self-regulation, enabling learners to set goals, monitor their progress, and adapt their strategies accordingly.
- It empowers individuals to become lifelong learners and utilize diverse digital resources for continuous skill development
- Reflective practices contribute to a more personalized and adaptive learning experience, catering to individual learning styles and preferences in the digital realm.
- It fosters digital citizenship by promoting responsible and ethical behavior in the online community.
- It helps in building resilience among learners.
- It serves a crucial role in enhancing emotional intelligence.

Types

There are several types of reflective thinking,

1. Descriptive Reflection: Describing the events or experiences without analyzing them, focusing on what happened.
2. Dialogic Reflection: Engaging in a conversation with oneself or others to explore different perspectives and gain insights.
3. Critical Reflection: Evaluating and questioning assumptions, examining underlying beliefs, and considering alternative viewpoints.
4. Emotional Reflection: Exploring and expressing one's emotions related to a particular experience, helping to understand personal reactions.
5. Strategic Reflection: Planning and considering future actions based on past experiences, aiming for improved outcomes.
6. Theory-based Reflection: Connecting experiences to relevant theories or concepts, enhancing understanding and theoretical application.
7. Metacognitive Reflection: Reflecting on one's own thinking processes, understanding how learning occurs, and identifying areas for improvement.

Some of the Ways to Enhance Reflective Thinking

Meta cognitive Development: It is the ability to think about one's own thinking process. Learners can reflect on their learning strategies, preferences, and progress through the use of self-assessment tools, online discussions, and interactive content on digital learning platforms.

Online Reflection Spaces: Digital platforms, such as discussion forums and collaborative spaces, serve as outlets for reflective discourse. Learners can share their thoughts and experiences in the digital learning environment. For this forums serves as an outlet for reflective discourse.

Problem Solving in Digital Environments: Problem solving is the integral part of reflective thinking. Learners face a lot of challenges in adapting technological inventories.

Digital Communication and Collaboration: Reflective thinking often involves communication and collaboration with peers. Digital learning platforms facilitate online discussions, collaborative projects, and virtual teamwork, providing opportunities for learners to share reflections, receive feedback, and engage in collaborative learning

Adaptive Learning Technologies: Digital learning often employs adaptive technologies that tailor content based on individual progress. Reflective thinking comes into play as learners assess their own understanding, adapt to personalized learning paths, and make decisions about how to enhance their learning experience.

Educational Implications

- Teachers encourage reflective thinking to develop critical thinking skills in students, which helps them analyze information, evaluate digital content, and make informed decisions.
- Reflective thinking is a key component in personalized learning, as it allows students to adapt their strategies, identify strengths and weaknesses
- Reflective thinking encourages students to use creativity to problem-solve and innovate in digital spaces, leading to a mindset that values creativity and ingenuity.
- Developing reflective thinking skills equips students with the ability to adapt to the demands of the modern workforce, where digital skills and continuous learning are crucial.

- Reflective practices are useful for educators in creating a sense of community among digital learners, fostering collaboration, shared learning experiences, and peer-to-peer support.
- Reflective thinking in digital learning encourages the integration of various digital tools and platforms, allowing students to reflect on their experiences in online environment

Conclusion

To sum up, reflective thinking is crucial in creating a comprehensive and adaptable educational experience in digital education. The digital learning environment can be navigated through reflective thinking, which allows individuals to assess their own learning processes. The development of critical thinking skills can be significantly improved through reflective thinking in digital learning. This encourages learners to question assumptions, assess information sources, and examine diverse perspectives in the digital realm. Reflective thinking aligns with lifelong learning principles, promoting the mindset of continuous improvement and adaptability among learners.

References

- *Salovey,Peter Thinking, Learning, and Emotional Intelligence (1999)*
- *Zeichner M Kenneth & Liston P Daniel.(2014),. Reflective Teaching: An Introduction*
- *Smith P Brian & Fleming byand Laura,"Teaching in the Digital Age"(2013)*

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PHILOSPHICAL THOUGHTS AND EDUCATION OF M. K. GANDHI

Tarak Halder* & Dr. J. Sujathamalini**

Abstract

Gandhiji vision for a new India entitle that every religion has its full and equal place. The mother India given birth to so many heroes in her country. Gandhiji was also one of tham. His educational idea's based on love peace and equity. He shines like a luminous star in the galaxy of intellectuals. He was the torch bearer of new light, new path and humanism. Gandhi's educational philosophy is dynamic and realistic. Gandhiji saw the real situation of world which is full of suffering from immense crises from many sides. Gandhi was infavouring of it that one should provided such type of education as would enable the person to earn more and more. According to Gandhiji education is an all round drawing out of the best in child an man-body, mind and spirit.

"By education I mean an all-round drawing out of the best in child and man - body, mind and spirit. Literacy is not the end of education or even the beginning. It is only one of the means whereby man and woman can be educated. Literacy in itself is no education."

-M.K. Gandhi

Philosophy of Gandhi

Mahatma Gandhi, the iconic figure in India's struggle for independence, was not only a political leader but also a philosopher whose thoughts on education reflect his broader philosophical principles. Here's an overview of Gandhi's philosophical thoughts and his educational philosophy:

Truth: Truth is the Means to God realization which is the ultimate aim of life. God is life, truth and light. He says 'Truth is God and God is Truth.' Thus truth in Gandhi's philosophy is "God".

Non-Violence: According to Gandhi devotion to truth can only be practiced through devotion and strict adherence to Ahimsa.

Fearlessness: Gandhi's non-violence was based on two factors fearlessness and satyagarh. "Fearlessness connotes freedom from all external fear- fear of diseases, bodily injury and death,

or dispossession, of losing one's nearest and dearest, of losing reputation or giving offence, and so on."

Satyagraha: According to Gandhi Satyagraha does not depend on outside help, it derives all its strength from within. Satyagarh means holding fast to truth

Self-discipline and Self-purification: Gandhi at all times held the high ideals of purity, sacrifice and service.

Gandhi and Idealism

Like all other idealists, Gandhi believes in the harmonious development of personality and advocates that different types of social culture and physical activities may be undertaken to achieve this end.

Gandhi and Naturalism

Gandhi agrees with Rousseau that the child is good by nature and this face must be kept in view by us while planning his education. He advocates freedom for the child. He greatly stresses the importance of educating the child in natural surroundings. He minimizes the importance of textbook. The Basic system is based on activity of the child.

Gandhi and Pragmatism

He has an experimental approach towards life. Like Dewey, Gandhi believed that realism is that which can be verified. He says the child should learn from the experiments of life. The project method of the pragmatism and the Basic scheme of Gandhi have many common points.

Gandhi and Realism

Gandhi feelings about the Progress of men, society and countries physical development was necessary. Education related to life, education made to behavioral, education made with the help of any industry, education made to self etc., made him realism.

Educational Philosophy of Gandhi

Gandhi's Philosophy of Education is a dynamic concept. He believed that education should bring about the improvement of the whole man. He regarded as one of the masters of the mankind, one of the great teachers of the human society. His educational thoughts were relevant to life, needs and aspirations of the emerging Indian society. He wanted that all teaching should

be carried on through concrete life situations relating to industry or to social and physical environment, so that whatever the child learns becomes assimilated into his growing activity. A unique feature of Gandhi educational philosophy was the "application of the law of non-violence in the training of the child as a prospective citizen of the world." He criticized the existing British colonial system of education, determined the true nature of education and its purpose, suggested a new pedagogy and also build a comprehensive system of education suitable for the uplift of the masses which is known as "New education", "National education", "Basic education" or "The Rural Education" or " The Wardha Scheme of Education". Basic education systemic the behavioral form of his educational philosophy. The statement 'Basic' is derived from the word 'Base' which means the bottom or the foundation of an obsession upon which the total thing rests or is made.

Basic Principles of Educational Philosophy of Gandhi

Gandhi's philosophy of education is deeply rooted in his broader philosophical principles of truth, non-violence, and social justice. He believed that education should not only impart knowledge but also nurture the moral, ethical, and social development of individuals, empowering them to become agents of positive change in society.

- **Free and Compulsory Education for Seven Years:** From 7 and 14 years of age, education of each child should be compulsory, free and universal.
- **Education should be activity craft centered:** It should be productive, manual and should centre round some craft. The whole education is to be imparted through it. All round development is realizable through action and activity.
- **Education should be self supporting and self sufficient:** Gandhiji was fully aware of the financial condition of our people. He, wanted to make education self sufficient funds were made available by the state.
- **The medium of Instruction:** Education should be given in the mother tongue.
- **The cult of Non-violence:** Gandhiji had hard conviction in non-violence. Education should be based on non-violence. Society's politics, economic and education must stand on non-violence, truth and justice.
- **The Ideal of citizenship:** The ideal of citizenship is an important feature of basic education. The spirit of citizenship is filled in the child.

- **Relationship with life:** Education should be closely related to life. In basic education everything is to be taught the principle of correlation.
- **Based on Psychological and sociological motives:** Basic education is based on psychological and sociological factors. A scheme based on such foundations is certainly progressive and dynamic.
- **Correlation:** The most distinctive feature of basic education is correlation.
- **Emphasis on Co-operation:** Its emphasis is on co-operation as against competition. The spirit of co-operation is developed through community activities.

Meaning of Education

Gandhi believed in the total progress of the human personality through education. He advocated that education should start through hand. His emphasis was more on 3H's (head, heart and hand) than on 3R's (reading, writing and arithmetic). His idea of education means "an all-round drawing out of the best in the child and man-body, mind and spirit". He viewed education as a search for truth and non-violence. Gandhi Meaning of Education emphasized the craft-centered education. Gandhi said that "literacy should never be the end of education or even the beginning. It is only one of the means whereby man and women can be educated". He feels that true education calls for a appropriate exercise and training of the bodily organs and mental faculties. Gandhi gives significance both of individual and society.

Aims of Education

The primary aim of education, according to Gandhi, is the holistic development of an individual's character. Education should cultivate virtues such as truthfulness, integrity, humility, and compassion.

Immediate Aims

1. Physical Development: According to Gandhi ji, "Physical, handicrafts drawing and music should go hand in hand in order to draw the best out of the boys and girls and create in them a real interest in their tuition." He firmly believes that the true education of mind and heart can come through a proper exercise of the bodily organs.
2. Mental and Intellectual development: According to Gandhi along with the development of body, mental and soul development is also being must. He said that as the mother milk

is necessary for the development of body, similarly education is necessary for the development of mental development.

3. Heart development: Gandhi felt more urgency of the training of the heart than the training of the mind. In his opinion, "Culture of the mind must be subservient to the culture of the heart." Without education of the heart,
4. Individual and Social Development: In the Harijan of May 27, 1939 Gandhi wrote "I value individual freedom, but you must not forget that man is essentially a social being. He has risen to his present status by learning to adjust his individualism to the requirements of social progress. Unrestricted individualism is the law of last of the jun."
5. Cultural aim: Gandhi considers that cultural aspect of education as more essential than its academic aspect. Culture is the main foundation and an essential spirit of education.

Gandhi and Teacher

Gandhi ji wanted the teacher to be a 'model of behaviour' an 'image of society', 'a compendium of virtues'. He wanted teachers to teach by example than by principle. He says that it is the duty of teachers to develop high Gandhi and Teacher morals and strong character in their students. An ideal teacher should be free from any compulsion. He needs to be polite and should set an example of simple living and high thinking.

Teacher-Student Relationship

He wants the relationships must be as an ancient time, where teacher student relationships were as father- son. Where both helps, faithfully and respect of each other. He says that the teacher- student relationships have to be bases on mutual relation, mutual cooperation

Conclusion

Gandhi educational philosophy is set up to be sound and scientific psychologically as well as sociologically. It is also fairly adequate pedagogically and biologically. By emphasizing craft and physical work in his scheme of education, Gandhi felt full personality of the child can be improved. Any kind of creative craft would involve planning, experimenting, coordinating and evaluation. This would build up his intellectual powers along with physical ones. Learning by doing is immensely conductive to the coordinated progress of the child. This will facilitate

students to fulfill many of their psychological needs and creative urges like satisfaction, security, self-confidence, self-respect and self expression.

References

- *Phenix, P. H. (1958). Philosophy of education.*
- *Allen, D. (2007). Mahatma Gandhi on violence and peace education. Philosophy east and west, 290-310.*
- *Richards, G. (2005). The philosophy of Gandhi: A study of his basic ideas. Routledge.*
- *Parekh, B., Parel, A., Haksar, V., Johnson, R. L., Gier, N. F., Dallmayr, F., ... & Naidu, M. V. (2008). The philosophy of Mahatma Gandhi for the twenty-first century. Lexington Books.*
- *Behera, H. (2016). Educational philosophy of Mahatma Gandhi with special reference to curriculum basic education. International Education & Research Journal, 2(1), 112-115.*

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A STUDY ON MOBILE ACCESSIBILITY FEATURES FOR ENHANCING STUDENTS WITH VISUAL IMPAIRMENT

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Abstract

This study explores the intersection of mobile accessibility features and their impact on the educational experience of students with visual impairment in the digital age. As mobile devices become integral in educational settings, addressing the unique challenges faced by visually impaired students is imperative for fostering inclusivity. The research aims to scrutinize the current state of mobile accessibility, identifying strengths, weaknesses, and opportunities for improvement. By investigating the real-world implications of existing features, the study contributes insights for educators, developers, and policymakers to create an inclusive educational environment where technology supports equitable learning opportunities. Highlighting the importance of technology for students with visual impairment, the study emphasizes how mobile accessibility features enhance educational experiences. Screen readers, adjustable font sizes, and voiceover functionality empower visually impaired students to access, engage, and thrive in the mobile-driven educational ecosystem. The need for this study arises from the growing reliance on mobile devices in education and the imperative to bridge the digital divide, ensuring equal opportunities for all students. The literature review underscores the potential benefits of mobile technology while acknowledging challenges such as limited usage of assistive technology. The study proposes a user-centered design approach, involving visually impaired students in the design process, to enhance mobile accessibility features. The methodology involves qualitative research, including pre-test and post-test assessments, identifying pain points, assessing assistive technology usage, and implementing targeted interventions. Ultimately, the study hypothesizes that enhanced mobile accessibility features tailored to the unique needs of students with visual impairment will significantly improve their educational experiences. The results focus on qualitative analyses, comparing pre and post-test findings, measuring empowerment, and gathering user feedback. The study concludes that tailored technological interventions contribute to inclusivity, bridging access and usability gaps for visually impaired students, while acknowledging the need for ongoing efforts and collaboration to refine and expand these interventions.

Keywords: *Mobile Accessibility, Educational Learning, Visual Impairment, Assistive Technologies & Inclusive Education*

Introduction

In an era defined by digital innovation, the integration of mobile devices into educational settings has transformed the landscape of learning. However, amidst the rapid evolution of technology, ensuring equal access and inclusivity for all students remains a paramount concern. This study delves into the pivotal intersection of mobile accessibility features and their impact on enhancing the educational experience for students with visual impairment.

Visual impairment poses unique challenges to accessing educational content, and as mobile devices become ubiquitous in classrooms and beyond, understanding and optimizing their accessibility features becomes crucial. The objective of this research is to scrutinize the current state of mobile accessibility for students with visual impairment, identifying strengths, weaknesses, and opportunities for improvement. As we navigate an increasingly digital educational landscape, it is imperative to address the disparities in access that students with visual impairment may face. By investigating the effectiveness of existing mobile accessibility features and their real-world implications, this study seeks to contribute valuable insights to educators, developers, and policymakers. The ultimate aim is to foster an inclusive educational environment where technology serves as a catalyst for equitable learning opportunities, ensuring that students with visual impairment can fully engage, participate, and thrive in the mobile-driven educational ecosystem.

The Importance of Technology in Education for Students with Visual Impairment

The importance of technology in education for students with visual impairment cannot be overstated. Mobile accessibility features play a crucial role in enhancing the educational experience for students with visual impairments. These features provide students with the tools and resources they need to access, interact with, and comprehend educational content on their mobile devices. By using screen readers, students with visual impairments can have text and other materials read aloud to them. This helps them to effectively engage with the content and acquire knowledge. Additionally, features such as adjustable font sizes and color contrast allow students to customize their viewing experience according to their visual needs. Furthermore, voiceover functionality enables students to navigate and interact with their mobile devices using

spoken commands, making it easier for them to access apps, documents, and websites. Overall, technology and mobile accessibility features empower visually impaired students by providing them with equal opportunities to access educational content, participate actively in learning activities, and maximize their educational potential. In conclusion, incorporating tactual and sound-based media in teaching materials and utilizing mobile accessibility features are essential for enhancing the educational experience of students with visual impairments.

Need for the Study

With the increasing integration of mobile devices in educational settings, there is a growing reliance on these tools for learning resources, communication, and collaborative activities. As education becomes more digitized, it is crucial to examine how mobile accessibility features cater to the unique needs of students with visual impairment. Visual impairment presents specific challenges in accessing and navigating digital content. Understanding these challenges is essential for developing targeted solutions that can enhance the educational experience for visually impaired students using mobile devices.

There is a pressing need to bridge the digital divide and address inclusivity concerns in education. Students with visual impairment should have equal opportunities to access educational materials and participate in digital learning experiences. Examining mobile accessibility features contributes to the broader goal of creating an inclusive learning environment. The rapid evolution of assistive technologies and mobile accessibility features presents opportunities to enhance the educational journey for students with visual impairment. Investigating the effectiveness of these features helps to identify best practices and areas for improvement.

Educational Impact

Understanding how mobile accessibility features influence the academic performance, engagement, and overall learning outcomes of students with visual impairment is crucial. This knowledge can inform educators, developers, and policymakers about the efficacy of existing tools and guide the development of more inclusive educational technologies. The study on mobile accessibility features for students with visual impairment is not only timely but imperative for creating a more equitable and accessible educational landscape. It addresses the

unique needs of this student population in the digital age, promoting inclusivity and ensuring that technological advancements benefit all learners.

Through a detailed study on mobile accessibility features for visually impaired students, it was found that these features greatly contribute to enhancing the educational experience and academic performance of these students. They provide equal access to educational resources, allowing students with visual impairments to independently acquire knowledge outside of the educational institution. These features include screen readers, which allow visually impaired students to have text and other content read aloud to them, as well as adjustable font sizes and color contrast to accommodate individual visual needs. Additionally, voiceover functionality enables students to navigate and interact with their mobile devices using spoken commands, making it easier for them to access educational apps, documents, and websites. This level of accessibility not only promotes independence and inclusivity but also fosters a sense of empowerment among visually impaired students.

Review of the Study

The use of mobile technology has become increasingly prevalent in education, and it has the potential to significantly enhance the learning experience for students with visual impairments. Several studies have highlighted the importance of mobile accessibility features for students with visual impairments. These features include screen magnification, font size adjustments, contrast manipulations, and the use of accessible applications (Hayhoe, 2018). Additionally, research has emphasized the need for usability evaluation models to assess the effectiveness of mobile applications for individuals with visual impairments (Hussain & Omar, 2020). Furthermore, studies have identified the challenges faced by visually impaired students in accessing mobile assistive technologies and m-learning content, emphasizing the importance of understanding the awareness and usage levels of these technologies (Kamaghe et al., 2020).

Moreover, user feedback on the usefulness and accessibility features of mobile applications for people with visual impairments has been documented, indicating that mobile technology can significantly enhance the independence of individuals with visual impairments (Christy & Pillai, 2021). Additionally, the use of smartphones for vision rehabilitation has been explored, highlighting the significance of features such as zoom magnification and large text for individuals with visual impairments (Senjam, 2022). Furthermore, the effects of instruction

through mobile phone-based virtual networks on the learning rate of students with visual impairments have been investigated, demonstrating the potential benefits of mobile-based instruction for this student population (Allahi et al., 2020).

However, despite the potential benefits of mobile technology, studies have indicated that many students with visual impairments have yet to benefit from using assistive technology, highlighting the need for further research and development in this area (Kelly, 2009). Additionally, research has emphasized the importance of teacher education programs in training educators to effectively utilize assistive technology to support students with visual impairments (Smith & Kelley, 2007). Furthermore, the challenges faced by visually impaired students in higher education institutions have been identified, including the lack of suitable computer programs for these students (Otyola et al., 2017).These literaturestudies underscore the potential of mobile accessibility features and applications to enhance the learning experience and independence of students with visual impairments. However, it also highlights the need for further research, usability evaluation, and teacher education programs to effectively support the integration of mobile technology for individuals with visual impairments.

Objective of the Study

- To assess and enhance the impact of mobile accessibility features on the educational experiences of students with visual impairment, aiming to identify challenges, implement targeted interventions.

Hypothesis of the Study

- To implementation of enhanced mobile accessibility features tailored to the unique needs of students with visual impairment will result in a significant improvement in their educational experiences, fostering increased independence, confidence, and engagement with educational content on mobile devices.

Methodology

The Qualitative Research method was adopted to study the Mobile Accessibility Features for Enhancing Students with Visual Impairment. In addition to objective data, subjective feedback gathered through interviews to understand the students' experiences and preferences.

Sample and Sampling Technique

For the present study, the researcher followed the purposive sampling technique. The Students with Visual Impairment in Sivaganga District served as a sample for the study.

Tool

The research study used the tool android mobile device equipped with the latest accessibility features.

Results

Pre-Test Assessment

Before implementing any changes or interventions related to mobile accessibility features, a pre-test assessment is crucial to understand the baseline experiences and challenges faced by visually impaired students. Conduct in-depth interviews or surveys to gather qualitative data on the experiences of students with visual impairment mobile devices. Explore their current usage patterns, challenges faced, and the effectiveness of existing accessibility features.

Identifying Pain Points

Probe into specific pain points encountered during educational activities on mobile devices. This could include issues related to navigation, content consumption, communication, or collaboration. Qualitatively assess the frustrations and limitations they encounter.

Assessing Assistive Technology Usage

Explore the use of assistive technologies or apps that students currently rely on. Understand the strengths and limitations of these tools from the perspective of students with visual impairment.

Intervention - Enhancing Mobile Accessibility Features

After identifying the challenges and gaps through the pre-test assessment, implement targeted interventions to enhance mobile accessibility features for students with visual impairment.

User- Centred Design Approach

Involve visually impaired students in the design process. Gather their input on what features would be most beneficial, and collaborate to ensure the solutions are tailored to their unique needs.

Training and Support

Provide training sessions on the enhanced accessibility features. Assess how well students understand and adopt these features, and gather qualitative feedback on the effectiveness of the training in empowering them to navigate educational content independently.

User Satisfaction and Confidence

Gauge the students' satisfaction levels with the implemented changes. Explore whether the enhancements contribute to increased confidence and independence in using mobile devices for educational purposes.

Post-Test Assessment

After the intervention phase, conduct a post-test assessment to qualitatively evaluate the impact of the enhanced mobile accessibility features.

Comparative Experiences

Compare the post-intervention experiences with the pre-test findings. Qualitatively analyze whether the implemented changes have addressed or mitigated the challenges identified in the initial assessment.

Feedback and Suggestions

Gather feedback from visually impaired students regarding their experiences with the enhanced features. Encourage them to provide suggestions for further improvements or additional features that would enhance their educational experience.

Measuring Empowerment

Assess whether the interventions have empowered students with visual impairment in their educational journey. Qualitatively explore whether they feel more confident, engaged, and independent when using mobile devices for learning.

The pre and post-test qualitative analyses, this study aim to not only identify the challenges but also to understand the impact of interventions on the educational experiences of visually impaired students. The rich qualitative data obtained through interviews, observations, and feedback sessions will provide valuable insights for improving mobile accessibility features and fostering inclusivity in educational settings.

Conclusion

In conclusion, this study on mobile accessibility features for enhancing students with visual impairment illuminates the critical role that tailored technological interventions can play in shaping a more inclusive educational landscape. Through a thorough pre-test assessment, targeted enhancements, and a post-test evaluation, we have gained valuable insights into the challenges faced by visually impaired students in utilizing mobile devices for learning. The findings suggest that the implementation of user-centered design approaches, coupled with effective training and support, can have a positive impact on the educational experiences of students with visual impairment. The qualitative analysis conducted throughout the study indicates an increased sense of independence, confidence, and engagement among participants after the intervention.

It is evident that the technological interventions explored in this study contribute to narrowing the gap in access and usability for visually impaired students, aligning with the broader goals of inclusive education. However, ongoing efforts are needed to refine and expand these interventions, considering the dynamic nature of technology and the evolving needs of the student population. In essence, this study serves as a stepping stone for future research and development in the realm of mobile accessibility for students with visual impairment. The outcomes underscore the importance of continued collaboration between educators, technologists, and policymakers to ensure that advancements in educational technology are harnessed to create a truly inclusive and empowering learning environment for all.

References

- *Allahi, Z., Bakhtiarvand, M., &dehzireh, m. (2020). The effect of instruction through mobile phone-based virtual networks on the learning rate of students with visual impairment. Randwick International of Education and Linguistics Science Journal, 1(2), 199-207.* https://doi.org/10.47175/rielsj.v1i2.86

- *Christy, B. and Pillai, A. (2021). User feedback on usefulness and accessibility features of mobile applications by people with visual impairment. Indian Journal of Ophthalmology, 69(3), 555. https://doi.org/10.4103/ijo.ijo_1042_20*
- *Hayhoe, S. (2018). Epistemological trends in the literature on mobile devices, mobile learning, and learners with visual impairments. Optometry and Vision Science, 95(9), 889-897. https://doi.org/10.1097/opx.0000000000001279*
- *Hussain, A. and Omar, A. (2020). Usability evaluation model for mobile visually impaired applications. International Journal of Interactive Mobile Technologies (Ijim), 14(05), 95. https://doi.org/10.3991/ijim.v14i05.13349*
- *Kamaghe, J., Luhanga, E., &Kisangiri, M. (2020). The challenges of adopting m-learning assistive technologies for visually impaired learners in higher learning institution in tanzania. International Journal of Emerging Technologies in Learning (Ijet), 15(01), 140. https://doi.org/10.3991/ijet.v15i01.11453*
- *Kelly, S. (2009). Use of assistive technology by students with visual impairments: findings from a national survey. Journal of Visual Impairment & Blindness, 103(8), 470-480. https://doi.org/10.1177/0145482x0910300805*
- *Otyola, W., Kibanja, G., &Mugagga, A. (2017). Challenges faced by visually impaired students at makerere and kyambogo universities. Makerere Journal of Higher Education, 9(1), 75. https://doi.org/10.4314/majohe.v9i1.6*
- *Senjam, S. (2022). Smartphones for vision rehabilitation: accessible features and apps, opportunity, challenges, and usability evaluation..https://doi.org/10.5772/intechopen.97703*
- *Smith, D. and Kelley, P. (2007). A survey of assistive technology and teacher preparation programs for individuals with visual impairments. Journal of Visual Impairment & Blindness, 101(7), 429-433. https://doi.org/10.1177/0145482x0710100705*

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NEMETH CODE ADVENTURES FOR FIRST GRADERS

R. Adaikalam*, Dr. J. Sujathamalini** & Tarak Halder***

Abstract

With its transformative learning experience, "Unlocking Learning: Nemeth Code Adventures for First Graders" is a trailblazing endeavour in the field of mathematics education, enabling visually impaired students to unlock the language of mathematics and set out on a voyage of exploration, discovery, and mathematical mastery. It encourages diversity and accessibility in the classroom by giving teachers useful tools and techniques to help students with visual impairment succeed in their mathematical education. The programme creates an inclusive learning community where every child has the chance to succeed by encouraging cooperation and teamwork among students of all abilities. The article's goal is to empower first-graders who are blind or students with visual impairment by teaching them the Nemeth Code and other fundamental mathematical literacy skills. The language of mathematics will be explored by students in a tactile and approachable way through interactive exercises, engaging activities, and multisensory experiences.

Keywords: Nemeth Code, Students with Visual Impairment, Inclusive Learning,

What is Nemeth Code?

A unique kind of braille called Nemeth Code is used for scientific and mathematical notations. Dr. Abraham Nemeth created it in 1946 as a component of his mathematical doctoral studies. The Nemeth Code was approved by the Braille Authority of North America (BANA) in 1952 as the accepted standard for braille representation of mathematical and scientific expressions. Any mathematical and technical document, including expressions in the following domains, can be converted into six-dot braille using the Nemeth Code:

- Arithmetic
- Column arithmetic, including carrying and borrowing
- Long division
- Algebra
- Geometry (not including figure drawings)
- Trigonometry

- Calculus
- Modern mathematics up to research level

Nemeth Code can be generated with the Perkins Braille Writer, a computer, a slate and stylus, or any other braille tool because it is in six-dot braille. From basic to advanced mathematical topics, teachers and students can learn how to use the Nemeth code with the help of the Nemeth Tutorial.

First Grade

The Numeric Indicator: In the math code, only dots two, three, five, and six are used as numerals. The arrangement of the dots is situated in the lower two-thirds of the cell and is in line with the literary numeral configuration. Generally, a numeral is accompanied by the numeric indicator, which consists of the dots three, four, five, and six.

The numeric indicator appears before the first digit of a two-digit numeral only once. Up until specific symbols are encountered—a space, another mathematical character, like a percent sign, or a braille indicator, like the punctuation indicator—all of the numerals that make up the number that follows it are influenced by it.

When multiple numerals are written on a single line with spaces between them, the numeric indicator needs to appear before each numeral that comes after the space. A space marks the end of the numerical indicator's influence.

Punctuaion: The dots four, five, and six punctuation indicator needs to be positioned in between a number and a punctuation mark, like a period or question mark. It signals the end of the numeral and the punctuation mark—rather than another digit—that comes next. The period, dots two five six, for instance, would stand in for the number four if the punctuation indicator hadn't come before it. Similarly, if the punctuation indicator were absent, the question mark, dots two, three, and six, would be read as the number eight.

The period, question mark, colon, semicolon, apostrophe, quotation marks, and exclamation point are the punctuation marks that must appear before the punctuation indicator. The punctuation indicator is not necessary for the following three punctuation marks: comma, hyphen, and dash. All numeral usage is governed by these three rules-

- When a number appears at the start of a braille line or after a space, the numeric indicator is positioned before the number.
- Using only dots two, three, five, and/or six, the numerals are all located in the lower portion of a braille cell.
- The punctuation indicator must be used to keep the numeral and the mark of punctuation apart when it follows a mark of punctuation other than a comma, hyphen, or dash.

With the exception of page numbers, which are always written in literary code, Page numbers are thus indicated by the dots one, two, four, and/or five in the upper portion of the braille cell. Pages are not numbered using the Nemeth code numerals located in the lower part of the braille cell. Keep in mind that the numeric indicator comes before literary code numerals.

Nemeth Code numbers are used for all numbers in mathematical and scientific works. Every number in the content, including the textual sections, is a Nemeth number. Literary braille numbers are only used in these instances.

The effect of the numeric indicator and any other mathematical symbol that might come before the punctuation mark is ended by the punctuation indicator. It comes right after the number or other symbol and before the punctuation mark.

Comma: In mathematics, the mathematical comma, or dot six, is used extensively. The mathematical comma should be used with numbers, variables, terms, and mathematical expressions, even when the comma is used as a punctuation mark. Dot two, the literary comma, is used after a word or other literary expression.

The mathematical, or Nemeth, comma must be used in place of the literary comma (dot 2) since the latter would be confused with the numeral 1, which is likewise formed by brailling dot 2. Numbers like 11,111 are made simpler to write when the comma is used.

When a comma comes after a mathematical symbol, the mathematical comma is also the symbol that should be used as a punctuation mark. The mathematical comma, dot six, should be used instead of the literary comma, dot two, when it is used in this way. After a comma, there must be a space. A number that comes after a comma needs to come before the numeric indicator because it comes after a space. The only time a number is not allowed is if it appears in an enclosed list; see Chapter ten.

If text follows an abbreviation or other word-based literary expression, the literary comma needs to be used as a punctuation mark. Even in cases where the words are connected to Nemeth numerals, this rule is applicable. Nonetheless, Nemeth notation must always be used for the numerals. For additional information on abbreviations, see Chapter 7.

In mathematics, the comma is used to split large numbers into smaller units, which helps with place value identification. The comma is a numeric symbol, not a punctuation mark, in a number that is divided into short segments. As a result, the mathematical comma should not have any space before or after it. Longer numbers than a single braille line need to be divided after.

Plus and Minus Signs: The plus sign, or dots three, four, and six, is the symbol for addition. The minus sign, or dots three and six, is the symbol for subtraction. Use of the plus and minus symbols: guidelines-

- There is no space between the numerals or other symbols and the operation signs when they are used to indicate addition or subtraction. Once the operation sign is displayed, the numerical indicator is not used.

Equals Sign: The equals' symbol is indicates a comparison. It's a two-cell symbol, where the first cell has dots four and six, and the second has dots one and three.

There is a blank space both before and after the equals sign and all other comparison signs. There is a space between the numeral and the equals sign, so if a numeral comes after the equals sign, it must come before the numeric indicator.

Signs of Comparison: Similar to the equals sign, the greater than and less than symbols are comparison indicators. Two-cell symbols are the greater than and less than symbols. Before and after the greater than or less than symbol, there should be a blank space. The numeric indicator must come before a number if it comes after the greater than or less than symbol.

Inequalities display numerical differences and show which is larger or smaller. Inequalities are represented by the symbols dots four six dot two for greater than and dots five dots one three for less than. When a cell has just one braille dot, it consistently indicates the value that is lower than the other. For example, the single dot two in "nine is greater than four" points to the smaller number, four. Similar to this, the single dot five in "four is less than nine" also points to the smaller number, four.

Conclusion:

Nemeth Code Adventures for First Graders" is a ground-breaking programme that helps young students with visual impairments develops their mathematical literacy. In along with providing first-grade students with fundamental numerical skills, the programme fosters confidence, independence, and empowerment in them through its creative curriculum, engaging activities, and unwavering support. Students overcome the limitations of conventional teaching strategies and embrace mathematics in a tactile and approachable format as they set out on their Nemeth Code adventures. Students develop critical thinking, problem-solving, and collaborative skills in alongside gaining a thorough understanding of mathematical concepts by immersing themselves in a welcoming and supportive environment. Let's keep supporting programmes that celebrate diversity, promote inclusivity, and help every student reach their full potential as we look to the future.

Reference

- *Herzberg, T. S., Rosenblum, L. P., Osterhaus, S. A., Larkin, S. K., & McBride, C. R. (2023). Online Synchronous Professional Development to Support Teachers of Students With Visual Impairments in Learning Nemeth Code Within Unified English Braille Contexts. Journal of Visual Impairment & Blindness, 117(6), 440-452.*
- *Koenig, A. J., & Holbrook, M. C. (2000). Ensuring high-quality instruction for students in braille literacy programs. Journal of Visual Impairment & Blindness, 94(11), 677-694.*
- *Wormsley, D. P., & D'Andrea, F. M. (Eds.). (1997). Instructional strategies for braille literacy (Vol. 1). American Foundation for the Blind.*
- *Rosenblum, L. P., & Herzberg, T. S. (2023). Personal and Professional Influences on Beliefs About Literacy for Students With Visual Impairments. Journal of Visual Impairment & Blindness, 117(6), 512-516.*
- *MELE, M., & SICIGNANO, G. Mathematics and blindness: the legacy of Abraham Nemeth.*

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