CHAPTER 6
CONCLUSION

Education is a multifarious phenomenon and has diverse perspectives. In this research, various interpretations of education from great personalities worldwide were reviewed. It was inferred that education is not limited to academic performance but relates to broader perspective of personality and life. Undoubtedly education is important for overall development of individual but ultimate aim of education is to gain knowledge which can be achieved through concentration and Śraddhā. Hence, in this research, education is discussed from varied viewpoints such as direction, growth, adjustment, social change and progress, etc. Multiples purposes of education are identified that include integral development, intellectual development, tranquilizing the surroundings and making money, to list a few. Next the focus of this research shifts to current education system which is the medium at present to get education. Current education system emphasizes on formal education where students are prepared to learn particular techniques with an intention to achieve materialistic goals. More importance is given to systems, procedures and realities than developing the curiosity of why and how. Therefore, academic performance, specifically marks, scores or grades have become the measures to evaluate the potential of an adolescent. Since this research is aimed at improving academic performance of adolescents, problems faced by adolescents while obtaining education are detailed. During adolescence phase of life, an individual may get diverted towards criminal activities. An adolescent may fantasize resulting in wastage of time and energy. Ragging and exam fear are the adolescence problems closely related to education and school. One may even develop inferiority complex or suffer from identity crisis. In extreme case, all or some of these factors unfortunately result in great sense of dejection and suicide. Once all these problems of adolescents have been identified, this research work justifies the need for Yoga based education. Genii hardly use 5% of their brain which implies that common man utilizes negligible brain. To tap the hidden potential of adolescents, preparation of mind is the first step. In ancient education, four initial educations are required to gain knowledge. These include dispassion, discrimination and yearning for freedom from ignorance along with six valuable qualities viz. sama, dama, uparati, titikṣā, Śraddhā and samādhāna. All these qualities are helpful in education and can be obtained by following different paths.
of Yoga. But, a prerequisite to attain all these qualities is silencing the mind. Mind being a complex entity is difficult to understand. Hence, preparing mind is much needed before practicing Yoga to improve academic performance. Yet the very fact is no one, not even scientists know the location of the mind. But breathing and mind being related to each other, one can control breathing to discipline mind. Breathing is referred as Prāṇa Śakti in ancient science. The five Prāṇa Śaktis are Prāṇa, Apāna, Samāna, Udāna and Vyāna. Each one related to different functions of the body. For example: Prāṇa Vāyu relates to upper part of body, specifically from nose till diaphragm. It is related to respiratory system which helps in maintaining body heat and oxygenation and circulation of blood. Therefore, Anuloma - Viloma Prāṇayama, Jivha Bandha / Simha Mudrā / Brāhma Mudrā can be practiced to strengthen the Prāṇa Vāyu. Similarly each Prāṇa Śakti is related to various body functions and can be strengthened using respective yogic practices. To improve academic performance of adolescents, brain is another important aspect to be worked upon. Current teaching methodologies focus more on left hemisphere related to science, logic and analytics. More emphasis should be given on activities enhancing the capabilities of right hemisphere. Next factor significant in better the academic performance is a healthy body. Āsanas and mudrās can be used to improve balance, strength and flexibility of body. Also, adolescents, rather every human being, gets influenced by Bhāvanā i.e. emotions. One needs to feel, understand and accept a concept for real benefit. In yogic system, this is achieved using symbolic methods. Off the mat Yoga and Play Way method can be used to develop overall personality of adolescents. Apart from brain, body and emotions, adolescents are greatly affected by hormonal changes observed during this phase of life. Balance in the function of endocrine glands leads to well-formed personality. All these endocrine glands are related to seven cakras of human body as described in ancient science. These seven cakras include root cakra, sacral cakra, solar plexus cakra, heart cakra, throat cakra, third eye cakra and crown cakra. Each cakra is related to different feelings. For example: Root cakra is associated with balance, stability, sensibility and security. Awareness about these cakras and their association with functioning of endocrine glands shall lead to better understanding of human mind and body. Finally, relaxation of mind and body both are important for better academic performance. Thus, objective of this research was identified and literature survey was done. Most of the literature worked on reducing stress level and improving concentration. Different methodologies were used to evaluate the research work such as stress meter, memory, grade point
average, etc. The literature survey gave direction for this research work to design integrated approach of Yoga for holistic development of adolescents to improve their academic performance. Next step was to have better insights about adolescents before designing any yogic approach for them.

Adolescence is the word originating from Latin word ‘adolescere’ which means ‘grow to maturity’. This is the second and most rapid phase of human development where children grow into youngsters. WHO has defined adolescents’ age ranging from 10 to 19 years. However, age is not the only factor defining the term adolescence. It does reflect mark of physical, social, emotional, mental and psychological development, all of which somewhere impact academic performance. Numerous authors have described adolescence from varied perspectives such as educational, medical, legal, sociological and psychological. A general observation reveals that adolescents have a negative perception about Yoga. Even though Yoga is introduced from very childhood, adolescents are reluctant to whole heartedly adopt Yoga.

Adolescence period is marked with the arrival of puberty. Several physical changes are observed in both males and females. The physical changes during this phase might change an individual to be conscious, shy, extrovert, bold or even coward. Emotional changes / developments during adolescence include change in attitude, interest and interpersonal relationships. Adolescents undergo frequent mood swings and varieties of emotions in search of identity where they don’t want any interference or guidance from elders and society. Intellectual capability of adolescents also develops during this phase of life where they can address and discuss any global issue at length along with the solution for same. As a part of moral development, youngsters create a set of their own rules and regulations to be followed and design self-determined code of conduct. With the onset of pre-adulthood, social changes are also observed in adolescents. Teenagers now reach out with members of opposite sex, collaborate more with same age group and get highly influenced by the social and religious viewpoints. All of the above mentioned changes during adolescence have a very high impact on academic performance.

Parents play a major role in healthy development of adolescents. Out of the four styles identified for parenting, authoritative parenting is the best style for growth of a self-
reliant, confident and socially competent individual. Authoritarian, permissive and neglectful parenting styles have a very harmful effect on development of an individual. This also results in poor academic performance by youngsters. It is observed that through encouragement, appreciation and participation parents can effectively bring up a child healthy from physical, mental and emotional perspective. A sound growth produces an academically brilliant individual.

Academic achievement is also affected by different conflicting situations faced by adolescents. If parents compel adolescents then adolescents may rebel as this stage of life demands freedom. Fantasizing more about future or personal relationships and drifting away from reality may also hamper academic performance of individual. When adolescents observe that elders don’t follow what they preach, adolescents might be negligent towards studies especially when parents ask to concentrate on studies. Also, role models like many sportspersons and movie stars are not much educated yet they excel professionally. This creates an offbeat viewpoint that even without academic excellence, one can be successful in life. Sometimes, adolescents ignore studies as they are very much concerned about friend’s personal problems. Thus, there may be numerous reasons in adolescence to deviate the mind from academia.

In this research, focus is on the utilization of Yoga to improve academic performance of adolescents. Yoga can be practiced by youngsters to increase concentration and improve attentiveness during the study. But problems identified during adolescence phase cannot be neglected. Ultimate aim of academics is not only to study but also to gain knowledge and develop wisdom. Hence, an objective ‘to devise Yoga practice session for academic performance improvement of adolescents’ is identified. The devised mechanism will help improve attitude, behaviour, physical, mental and emotional health of adolescent which will eventually result in improved academic performance.

A framework based on input-process-output model is defined in this research. Yoga practice form the input whereas process focuses on what and how to achieve. Outcome is evaluated qualitatively and quantitatively. This framework aims to give better academic performance for adolescents.
After identifying problems associated with adolescence, an attempt is made to seek the solution in Yoga i.e. Indian Philosophy in broad sense. A brief overview has been detailed regarding The Vedas, The Upaniṣads and other Vedic texts. The origin of Vedas is approximately around 1500 BC. There are four Vedas viz. The Ṛgveda, The Yajurveda, The Samaveda and The Atharvaveda which are further classified into Saṁhitā, Aranyakas, Brahmanas and Upaniṣads. Yoga the term is particularly mentioned in The Ṛgveda. Upaniṣad literally means sitting down near which is in context of gaining knowledge. Upaniṣads are a source of various theoretical and practical aspects of Yoga but lacks summary of paths of Yoga. The Mahābhārata and The Rāmāyaṇa both promote Yoga symbolically as well as in the form of stories. Bhagavad Gītā, has a mention of the word ‘Yoga’ ninety nine times, which provide ordered approach for Yoga. In The Rāmāyaṇa, yogic paths of meditation and Jñāna are specifically discussed. Yoga is also part of Śaḍdarśana meaning six systems of philosophy. Therefore, a brief discussion regarding education and philosophy is done and interrelation between them is highlighted.

Yoga refers to unity and has originated from Sanskrit word ‘Yuj’, meaning ‘to join, unite, put together or integrate’. Various definitions of Yoga have been mentioned including those from Pātañjala Yoga Sūtra and by Swami Vivekananda and Swami Satyananda Saraswati. In this research work, different paths of Yoga have been discussed in detail from adolescence perspective viz. Karma Yoga, Bhakti Yoga, Jñāna Yoga, Haṭha Yoga and Pātañjala Yoga Sūtra from Raj Yoga. Karma Yoga refers to efficiency in action. It aims to purify the mind of adolescents which is full of queries and chaos. Karma Yoga also aims to discover hidden potential of adolescents. Bhakti Yoga refers to devotion to the divine. By practicing Bhakti Yoga, adolescents will be able to harmonize emotions and improve concentration. Jñāna Yoga is the path of knowledge and enquiry which aims to remove all the chaos, misconceptions and beliefs from mind while making them responsive. Haṭha Yoga refers to the practical way to control the mind i.e. through control of Prāṇa. It aims at purifying mind and body through practicing āsanas, Prāṇāyāma, mudrā and bandhas. These have been detailed in Haṭha Yoga Pradīpikā which has four parts. The first part explains yamas, niyamas, āsanas and food. Second one describes Prāṇāyāma and the shatkarmas. Third section deals with mudrā, bandhas, the nāḍī and the kundalini power. Fourth and the last one details about pratyahara, dharana, dhyana, and samadhi. Pātañjala Yoga covers the art,
science and philosophy of life in its four chapters or pādas viz. samādhi pāda, sādhana pāda, vibhūti pāda and kaivalya pāda. As these four pādas correspond to four purusharths and since, this research work is focused on adolescents, the four purusharths viz. Dhārma, Artha, Kāma and Mokṣa are briefed from adolescents’ perspective. Also, Yoga Vāsiṣṭha has been interpreted keeping adolescents in mind. Dispassion, qualification, behaviour, origin and creation of problems, control of Rāga and Dveṣa, calm composure of mind and liberation form the correct approach of Yoga for adolescents.

Based on all this study, aim of Yoga for adolescents is identified to develop an integrated approach covering all aspects of life such as physical, emotional, mental, intellectual and spiritual. Hence, a detailed discussion is done regarding integrated approach of Yoga i.e. holistic union with self. Also, integration of different paths of Yoga is proposed to develop perfect body with good health, peace of mind and mental stability which lead to concentration and subsequently improvement in academic performance. So, to design the path of Yoga for adolescents, initially Prakṛti and its evolutes are compared with the human journey from childhood to adolescents. Similarity between both can be observed where each one moves from Sattva to Tamas, specifically in adolescents it may be due to imbalanced endocrine glands. Actual cause is the Rāga and Dveṣa which fills mind with kliṣṭā vṛtti, Kleśas and nine obstacles viz. vyādhi, styāna, saṁśaya, pramāda, Ālasya, Avirat, bhrānti-darśana, alabdha bhūnikatva, anavasthitatvāni and cittā vikṣepāḥ that effects adolescents. To work on above the listed aspects, research focuses on true essence of Yoga. In this research, Sūtra relevant to adolescents are integrated to form hierarchy of Sūtra. These Sūtra are selected from Pātañjala Yoga Sūtra, Haṭha Yoga, Yoga Vāsiṣṭha and Bhāgavata Gītā. In this work, Karma Yoga, Bhakti Yoga, Jñāna Yoga, Haṭha Yoga and Pātañjala Yoga Sūtra along with Pañca Kośas are considered in defining yogic practice for experiments in form of games, stories, āsanas, mudrā, pranyams as well as relaxation techniques.

Hierarchy of Sūtra develops an understanding that one must have faith in Yoga, awareness should be developed and a path of discipline for longer duration needs to be created. In broad sense, the hierarchy of Sūtras cover what to do, why to do, how to do, output and the outcome. Each Sūtra has been explained in detail. To develop faith in
Yoga, all the queries should be resolved. Developed faith should be followed by creating awareness by means of Abhyāsa and Vairāgya. All yogic practices from yama to dhyana should be practiced intensely. These practices done with true, uninterrupted devotional attitude lays firm foundation of Yoga. Further it is justified that why yogic path should be followed. It is the primary purpose of Yoga to silence the mind. To achieve this, five cittāḥbhumis viz. Ksipta, Mudha, Vikṣipta, ekagra and Nirodha need to be worked upon as mind oscillates between sattva, rajo and tamas guṇas. Moreover, each adolescent might have different state of mind. Subsequently, emphasis is given on understanding importance of mind. Mind can serve as friend as well as enemy. Mind absorbed in senses objects is the cause of bondage, and mind detached from the senses objects is the cause of liberation. Therefore, one needs to become master of mind rather than being mind’s servant. For this purpose, one need to know how a mind cognizes external object and its functioning. Nineteen mouths through which mind experiences objects of the world include five Jñāna indriyas, five karma indriyas, five Prāṇa, Mānasa, Ahaṅkāra, buddhi and cittā. The interaction of guṇas with these nineteen principles shapes individual’s destiny according to one’s action. Five classes of fluctuation i.e. Vṛttis may disturb the adolescents or help them to develop maturity and intelligence. Correct knowledge is based on three kind of proof: direct perception, correct inference, or delusion and testimony from authoritative sacred scriptures. It helps adolescent to improve their discriminative power and intelligence is full and bright and cittā became sharp and clear as there is no doubt remain. Adolescent develop understanding that blaming other for their failure is wrong and they become alert about their own responsibilities. Vṛttis are based on five Kleśas viz. Avidyā, Asmitā, Rāga, Dveṣa and abhiniveśāḥ. These Kleśas are due to six psychological propensities of human being viz. Kāma, krodha, lobha, moha, Madā and mātsarya. All these are enemies of peace of mind. Saṃskāra is created by all these Vṛttis and Kleśas. Important subset of Saṃskāra are Vāsanas that create carving and passion for materialistic world. Finally it’s concluded that Rāga and Dveṣa lead to nine obstacles mentioned in Pātañjala Yoga Sūtra. These obstacles can be divided as physical, mental, intellectual and spiritual. Alternatively, these obstacles have 3 categories viz. Adhyatmika, Adhibhautika and Adhidevica. According to Yoga Vāśiṣṭha, there are two types of diseases i.e. Vyādhi viz. Adhija Vyādhi and Anadhij Vyādhi. Adhija Vyādhi is related to mind and covers 90% of adolescents’ diseases particularly referred to as psychosomatic diseases. Therefore, to increase concentration i.e. dharana, first five
angs of Aṣṭāṅga Yoga cannot be skipped. Thus, in this research work, Yoga is framed as an integration of Pañca Kośas viz. Anamaya Kośa, Prāṇamaya Kośa, Monomaya Kośa, Vijnanamaya Kośa and Ānandamaya Kośa along with integration of different paths of Yoga like Karma Yoga, Bhakti Yoga, Jñāna Yoga, Raj Yoga, Mantra Yoga and Prāṇava Sadhna.

Since aim of this research work is to improve academic performance of adolescents, research work has an insight in granularity of the term academic performance. Academic performance relates to both quantitative as well as qualitative characteristics of an adolescent. Therefore, this research work focused on practical aspects of Yoga. Overview of experimental research techniques revealed that huge cost involved is in setting up experimental setup for scientific study of Yoga. This proves to be one of the major reason as to why very few research scholars opt for experimental based research in Yoga. Emotions being an inevitable and significant constituent of any treatment, feedback from students constituted prime factor for proposed Yoga framework. Based on the issues highlighted by Dr. McCall in adopting scientific study of Yoga, it was inferred that clinical trials in the field of Yoga will lead to unreliable results. Also, it was observed that psychosomatic diseases were the core in the research on adolescents. None of the research focused to defeat the root cause.

Yoga being a tool for transformation, this research work aimed at improving academic performance by practicing Yoga in true essence. Since, academic performance is not limited to scores and grades i.e. output, current education system have moved to Outcome based Education where goals are set to develop skills in students. Similarly, Yoga is practiced with an outcome to be achieved. Hence, outcome based approach has been adopted in this research work. Since, results of observational studies have proved to be more accurate than clinical trials, observational designs have been preferred for evaluation in this research work. Particularly, Learning Management System LMS Rubric has been used for quick assessment of Yoga practice. An overview has been detailed regarding Outcome based education, its purpose, philosophy, principles and process. Similarly, rationale for Rubrics as the best tool for Yoga assessment has been justified. Further, formula and procedure for Rubric grade calculation has been explained. Since emotions i.e. Bhāvanās cannot be measured using any quantitative measures, qualitative assessment of Yoga is done using Rubrics in this research work.
It helps to instantly capture the emotions of adolescents. These emotions reveal attitude of the adolescents towards practicing Yoga. Also, efforts taken to practice Yoga can be inferred from qualitative assessment of Rubrics. Quantitative assessment of Yoga using Rubrics is done to evaluate the performance of adolescents. Hence, by evaluating both quantitative and qualitative aspects of Yoga using Rubrics, Yoga benefits can be inferred.

Pre experimental study was done to identify the gap between the benefits from short term Yoga sessions and proposed long duration integrated Yoga approach for academic improvement. Eleven step research process in the pre experimental study included (i) identification of school and students, (ii) designing pre and post experimental questionnaire, lecture plan, Yoga practices and yogic games (iii) collection of feedback and results and finally (iv) analysis and conclusion of the pre experimental study. 30 students of age group 14-15 years from a Gujrati Medium School were identified as participants for this pre experimental study. Pre experimental questionnaire aimed to get student’s perception about Yoga, their academic performance and Yoga for improvement in academic performance. It revealed that students have misconception about Yoga being an exercise and negative attitude towards subjects and exams. Lecture plans were designed with an intention to remove misconceptions and negative feelings and improve self-confidence. Yogic practices included ĀUM meditation, breathing awareness, Anuloma Viloma, bhramari Prāṇayama, Yoga Nidrā, sambhavi Mudrā, Trāṭaka, padmāsana and sukhāsana to list a few. Yogic games were designed to calm the mind and improve concentration. It also included stories of Swami Vivekananda, Lord Krishna, etc. to inculcate high moral values. Post experiment questionnaire aimed at collecting the feedback from students as to whether they benefited from Yoga practice, would they like to practice Yoga along with studies and so on. Feedback revealed the positive change in attitude of students towards Yoga. Also, exam results reflected improvement in academic performance. Hence, the pre experimental study concluded that current education system makes students tensed and is least focused on uncovering the true potential of students. Moreover, observation of participants after six months revealed that improvement in academic performance was not sustained. Hence, need for other approach was identified that would result in long term benefit. Characteristics of the new methodology such as long duration Yoga practice and overall development of personality were also derived from learnings of pre experimental study.
Since, new approach aims on overall development, it has been designed based on integration of five kośas. Step by step process includes resolving queries in mind, lead adolescents towards true essence of Yoga, awareness, introduce āsanas with breathing awareness, improving concentration, other ways to improve academic performance, adapt real life situations. Considering above listed process, outcome based Yoga methodology is designed. It is divided into three regions viz. Region 1 Yoga practice to remove barrier, Region 2 Yoga practice for short term benefits and Region 3 Yoga practice for long term benefits. Region 1 aims to solve the queries and doubts, remove chaos from mind and introduce breathing techniques and Pañca Prāṇas. Only when all the queries are resolved, chaos is removed and adolescents have developed a positive approach towards Yoga, Yoga for region 2 is practiced. Region 2 deals with short term benefits. It includes making adolescents aware about Karmendriyas, Jñānendriyas, Kleśas and karma theory. Śuddhi Kriyā, basic Āsanas, Mudrā and Prāṇava sādhanā are practiced in this region. Past academic performance is analysed to identify the root cause. Ability is developed to understand and handle any situation wisely. Adolescents are introduced to cakras and their relation with different endocrine glands. They are also acquainted with different paths of Yoga and relaxation techniques such as Yoga Nidrā. Several Prāṇāyāma methods such as Bhramarī, śītāli, sītkārī, Prāṇāyāma are also familiarized. All these lead to short term benefits. Region 3 concentrates on sustaining the learnings from Region 2 while developing lifelong learnings. Adolescents are taught to work in time bound manner. An ability to relate and apply Sūtra in real life is developed. Emphasis is given on self-study to acquire knowledge in long run. Patience and intelligence are developed to handle any situation in life. Thus, by the end of Region 3 Yoga practices i.e. after 52 weeks, adolescents have developed ability to differentiate between right and wrong, identify future goals, think innovatively and handle real life situation wisely. Four case studies, each on a different game, have been detailed along with name, method, problem identified, figure, description, Rubric questionnaire and corresponding graphs and analysis. Each case study proves to be successful through quick Rubric assessment.

After conducting the experiments on adolescents as per integrated approach proposed in this thesis, benefits of yoga were analyzed. Since (i) bhāvanās i.e. emotions have been an important aspect, considered in the research throughout and (ii) qualitative assessment has also been done in this thesis, first perspective of analysis has been
through Research Story. Research story highlighted prominent feelings of some of the students which would be difficult to capture using quantitative analysis. One of the sample of research story is *One students opened up in mid of the session of the region 1 and revealed to his parents that he is afraid of exams and hence he tried to attempt suicide during his 9th standard exam.* He also started his own way of learning the subjects and score above 85 % marks in the exams. Thus, positive response was received from subjects which reflected that they enjoyed the Yoga session and realized its importance through Play way method and stories of various Sūtras. Further analysis was done based on Rubrics. A graph was prepared to analyse the effect of the experiments conducted and Rubrics used for qualitative and quantitative assessment instantly. Analysis validated that Rubrics are the best assessment techniques to evaluate effectiveness of Yoga practices and they also provide scope for immediate corrective measure if the need be for a particular subject. Graph illustrated a fall of resistance in acceptance whereas a rise in progress. Negativity approach towards Yoga was diminished and chaos in mind was removed through games in Region 1. Region 2 experiments have been successful in improving memory and concentration while reducing stress. Experiments conducted in Region 3 developed lifelong learning capabilities such as to set goals, work in time bound manner, etc. in the subjects. All the facts stated above regarding outcomes of experiments are also supported by the feedbacks collected from subjects, parents and teachers. Apart from Research Story and graphical analysis based on Rubrics, statistical hypothesis testing has been used for evaluation of experimental thesis. Two Null hypothesis were defined. Null hypothesis 1 stated *There is no effect of integrated approach of Yoga on adolescent in improving the performance.* Null Hypothesis 2 claimed *There is no correlation between knowing true essence of Yoga and lifelong learning capability in adolescents.* To validate both the null hypothesis, p-value threshold i.e. significance level was set to be 0.05. During evaluation, both the null hypothesis were rejected since p-value turned out to be 0 which is less than the set threshold. Hence, alternative hypothesis were proved to be correct. Thus, scientifically this research was able to prove that *Implementing integrated approach in Yoga for adolescence for a longer duration will help adolescents to improve and sustain the academic performance.* Also, *There is a correlation between inculcating true essence of Yoga through integrated approach in adolescent and lifelong learning capability acquired by adolescents which helps to improve academic*
performance. Hence, this research work has been successful in improving the academic performance of adolescents through integrated holistic Yoga approach.

Finally, it can be concluded that since human body itself contains a universe, fusion of different paths of Yoga serves the best to gain better benefits of Yoga for overall development of adolescents along with improving their academic performance.