INTRODUCTION
CHAPTER 1

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INTRODUCTION

“We must give our students the skills with which they find a way through the sea of knowledge that we have created and continue with life long learning. Today, we have the ability, through technology, to really and truly teach ourselves to become the life-long learners. This is required for sustained economic development”

-Dr. A.P.J. Abdul Kalam, 2006
(President of India)

Education should start with every infant. It is not the amassing of information and its purpose is not mere career hunting. It is a means of developing a fully integrated personality and enabling one to grow effectively into the likeness of the ideal that one has set before oneself. Education is drawing out from within the highest and best qualities inherent in the individual. Education should also prepare young people for a life in the society, including the capacity to think critically and to understand one’s rights and responsibilities. Education for citizenship is a set of practices and activities aimed at making young people and adults better equipped to participate actively in democracy by assuming and exercising their rights and responsibilities in society. As stated in UNESCO’s (1995) Integrated Framework of Action on Education for Peace, Human Rights and Democracy “education must prepare the citizens to cope with difficult and uncertain situations and fit them for personal autonomy and responsibility. Awareness of personal responsibility must be linked to the recognition of the value of civic commitment, of joining together with others to solve problems and to work for a just, peaceful and democratic community”.

True education of the intellect can come only through proper mental, physical and emotional training of the mind and body (Sarvodaya, 2005). But unless the development of the mind and body goes hand in hand, it would prove to be a poor lopsided affair. Man falls from the pursuit of the ideal plan of living and high thinking the moment he wants to multiply his daily wants. Purity of one’s life is one the most desirable reason for building up a sound education. Spiritual training educates the heart. Intellect takes us through life’s struggle to a certain point, but fails us at crucial moments. Faith transcends reason. It is when the horizon is darkest and human reason is at a loss that faith shines brightest and comes to the rescue.
A conventional classroom focuses on the collection of knowledge without any clear purpose other than to attain high grades. A typical student is academically challenged while being motivationally starved. Lack of motivation is the lack of knowledge processing skills. What is gained from learning is implemented in day-to-day life; examples of this being the development of circumstantial understanding and systematic intelligence. Furthermore, education promotes living standards and it helps in strengthening the society and culture. Quality education is custom designed. It recognizes the unique abilities of each student and gives a positive emotional experience. Education is the act or process of imparting or acquiring general knowledge, developing the powers of reasoning and judgment and generally of intellectually preparing oneself for a mature life; acquiring skills for a profession, or obtaining a degree or qualification (NAEC, 2004). Education can occur with or without a 'teacher', in both formal and non-formal environments, and can happen consciously or unconsciously. There are four different types of education (Selman et. al, 1998):

*Formal Education* (FE) refers to an age-graded, hierarchically organized, formally constituted system. It promotes specific curricula for different levels of development (i.e., age). Each level must be completed before the student can move ahead. This system requires compulsory attendance up to a certain age. It has clearly stated objectives.

*Non-Formal Education* (NFE) includes all organized educational activities outside the formal educational system.

*Continuing Education* (CE) refers to the act of furthering one’s education beyond a level that has already been achieved (e.g., continuing to study after finishing a university degree). CE is one form of Adult Education, but not the only form of Extension. This system focuses primarily on individuals who live in rural and small town communities. It is usually vocational in nature.

*Lifelong Education* (LLE) refers to education over one's entire life span. *Open Learning* refers to the “open accessibility to and utilization of resources for the assistance of learning. Rather than be limited to particular curricula, places or times for study, the learner has access to a wide range of resources which may be utilized when and as the learner sees fit”.


"In our schools, every classroom in America must be connected to the information superhighway, with computers and good software, and well-trained teachers. We are working with the telecommunications industry, educators and parents are to connect 20 percent of California's classrooms this spring, and every classroom and every library in the entire United States by the year 2000. I ask Congress to support this educational technology initiative so that we can make sure this national partnership succeeds."

— President Clinton, 1996.
(President of U.S.A.)

Computers, in education, will eventually be the dominant delivery devices for all areas of education (Alfred Bork, 1984). Education in the 21st century presents challenges to quality assurance. Quality assurance and accreditation in the 21st century will require a consensus on a set of "universal" attributes or standards of a quality educational experience, a focus on the learner rather than the institution, and a willingness to open the entire process to a much broader group of stakeholders (Wallace, 2002). Computer technology is rapidly changing the way educators can interact with their students. (Hammoud et. al., 2006). Computers and telecommunication systems are changing how educational organizations are managed, and how students learn. Technology-rich classrooms are most successful when advanced technologies are linked with advanced teaching strategies; such as cooperative learning, thinking skills, guided inquiry, and thematic teaching.
"Technology has revolutionised the way we work and is now set to transform education. Children cannot be effective in tomorrow's world if they are trained in yesterday's skills. Nor should teachers be denied the tools that other professionals take for granted."

-- Prime Minister Tony Blair, 1998.
(Prime Minister of U.K.)

Technology allows students to collect quality information from various sources and to discover conceptual relationships among content that was previously segmented and learned separately. CD-ROMs and other digital technologies bring a new richness of information into the classroom and provide students with access to multiple sources of information that could be used to answer complex questions. Sound, pictures, video, graphs, charts, maps, three-dimensional viewing, and animation all make for interesting, exciting content. Advances in the processing power of computers permit students to visualize phenomena formerly formed only in imagination. Pictures and graphics add a new dimension to presenting information that is responsive to alternative learning styles. Research suggests that computer-based technology can enhance learning. A meta-analysis that examined the impact of technology on student learning, (Statham and Torell, 1996) found increased teacher-student interaction, cooperative learning, and, most importantly, problem solving and inquiry. Technological tools could amplify, extend, and enhance human cognition. In the collection of information to answer one's own inquiries or to fulfill assignments from teachers, students can communicate more easily with others and interact with a variety of people and information. Afterwards, they can share their findings with this audience. Technology offers efficient ways to collect, store, and organize information and could alleviate some of the tediousness associated with traditional educational tasks. The machine does the routine work, freeing the student to concentrate on a higher level.

Using technology to support the integration of a collaborative knowledge system, which includes tools that enable group thinking, problem solving, and task orientation would be beneficial. One main benefit of data sharing is that it offers the opportunity to share information with a wide audience. The goal here is to help students develop common knowledge bases and expertise, instead of focusing only on the
individual. Sharing primary data with experts leads to students thinking and working the way experts do (Evard, 1996; Federman & Edwards, 1997; Jonassen & Reeves, 1996; Lonergan, 1997; Scardamalia & Bereiter, 1991; Wideman & Owston, 1993).

Technology tools can give teachers more time to interact with students. Teachers can leave the fact-finding to the computer and spend their time doing what they are meant to and use their contextual knowledge of the subject as well as arousing curiosity, asking the right questions at the right time, and stimulating debate and serious discussion on controversial topics (Hancock, 1997; Morrelli, 1990). While observing students working with computer applications, teachers can see the choices students are making on the monitor or printout, pose questions regarding the students' learning goals and make revision suggestions when needed.

Using technology as a tool aids learning by requiring learners to analyse the underlying structure of the ideas they are studying. Manipulating authentic sets of data, thinking about, and formulating explanations, can foster the new generation of knowledge and deep understanding (Dede, Salzman, & Loften, 1997). Computing power makes it possible to create and manipulate authentic data through the use of scientific probes and graphing software and to store this data in large databases. One example of this would be the storage of census data, storing data in this way allows one to seek answers to complex questions with ease.

Sometimes called online communication or computer-supported communication, computer-mediated communication (CMC) is a generic term that describes a variety of systems, which enable people to communicate with other people via computer networking (Romiszowski & Mason, 1996). CMC networks offer teachers direct access to a "professional community" where their experience can be shared and where they can be active participants in professional discourse about improving the practice (Corcoran, 1995). Meta-analyses of computer-based instruction and multimedia applications indicate that the effectiveness of educational technology on improving student achievement depends on a match between the goals of instruction, characteristics of the learners, the design of the software, the technology, and the implementation decisions made by teachers (Sivin-Kachala & Bialo, 1993).
PHYSICAL EDUCATION & ITS IMPORTANCE

"Early childhood, which is the period in a child's life from birth through age 5, is a critical time for children to develop the physical, emotional, social, and cognitive skills they will need for the rest of their lives."

-- President Bush, 2002
( President of U.S.A.)

Physical education is an integral part of the total education process. The primary objectives of Physical Education System are the development of physical, mental, social and emotional well-being and to enhance the quality of the learners' lives using physical activities that have been selected and planned to achieve specific outcomes.

Physically inactive children are more likely to become sedentary adults. With an inactive lifestyle now recognized as the fourth major risk of heart disease, after cigarette smoking, high blood pressure, and high cholesterol, encouraging students to live actively reduces the chances of health risks later in life (Education, 2005). Children do not automatically develop the requisite knowledge, skills, attitudes and behaviour that lead to consistent involvement in physical activity. Students need to be guided toward these objectives, and schools can be prime facilitators in providing opportunities for participation. As the benefits of physical activity increase proportionally with time and intensity, consideration should be given to maximize the amount of time available within the school context.

If physical education is to be intellectual, enlightened and effective, it must be based upon sufficient knowledge of the human body, of its structure and it's functioning. As the child grows, he/she must gradually be taught to observe the functioning of his internal organs so that he/she may control them with time, and it must be seen that this functioning remains normal and harmonious. As for positions, postures and movements, bad habits are formed very early and very rapidly, and these may have disastrous consequences for his/her whole life. Those who take physical education seriously and wish to give their children the best conditions for normal development will easily find the necessary indications and instructions (The Mother, 1951).
The only effective way is to provide quality physical education to children for their good. Most bodily defects can be rectified and many malformations avoided by enlightened physical education given at the proper time. But if for any reason this physical education has not been given during childhood or even in youth, it can be started at any age and be pursued throughout life. But the later one begins, the more one must be prepared to meet deeply rooted bad habits, rigidities and malformations. (The Mother, 1951).
Yoga is the science of living right and it works easily even when integrated in modern life. It works on all aspects of the person: the physical, mental, emotional, psychic and spiritual (Yoga, 2003). Its purpose is to help one achieve the highest potential and to experience enduring health and happiness.

Yoga focuses on a harmony between mind and body. Yoga derives its philosophy from Indian metaphysical beliefs (Ganesh, 2007). The ultimate aim is to strike a balance between the mind and body, thus attaining self-enlightenment. To achieve this, yoga uses movement, breathing, posture, relaxation and meditation in order to establish a healthy, lively and balanced approach to life.

In Yoga, the internal organs are toned and rejuvenated; the epidermal, digestive, lymphatic, cardiovascular, and pulmonary systems are purified of toxins and waste matter; the nervous and endocrine systems are balanced and toned; and the brain cells are nourished and stimulated. The end result is an increased mental clarity, emotional stability, and a greater sense of overall well-being (Specialyoga, 2005).

Yoga Postures and Asanas exercise every part of the body. The stretching involved helps in toning muscles and joints, including the spine and the entire skeletal system. Yoga not only facilitates in improving the body but also aids in keeping the glands, nerves and other internal organs in radiant health. By releasing physical and mental tension, vast sources of energy will be liberated. The Yogic breathing exercises known as Pranayama revitalize the body and help control the mind, leaving one calm and refreshed; combined with the practice of positive thinking and meditation, and the result will be increased clarity, mental power and concentration. Yoga helps one discover one’s true nature, a state of inner peace, through the practice of toning and relaxing the body and mind. Yoga helps in self-realization, in finding what one seeks - consciously or unconsciously. Controlling the mind will open up new abilities; it will set one free from illusions and preconceptions that prevent self-fulfilment (Treatyoga, 2003).
THERAPEUTIC ASPECTS OF YOGA IN MODERN EDUCATION

"The true and full object and utility of Yoga can only be accomplished when the conscious Yoga in man becomes, like the subconscious Yoga in Nature, outwardly conterminous with life itself and we can once more, looking out both on the path and the achievement say in a more perfect and luminous sense: 'All life is Yoga.'"

- Dr. A.P.J. Abdul Kalam, 2004
  (President of India)

In the modern educational system teachers should use Yoga in the classroom to help children who are stressed. Yoga energizes the student's imagination, creates an atmosphere of peace, balances energy, and focuses the children before a class activity. It is a scientific system of physical and mental practices that originated in India more than three thousand years ago.

Modern educationists are taking interest in improving the quality of education with the help of Yoga. Therefore it is high time to think seriously on the inclusion of Yoga and Yogic values in the education system. Here Yogic values refer to the holistic and spiritual approach towards life and the world. Yoga in education should lead to the development of a harmonious personality and behaviour at all levels. An atmosphere should be created wherein the students study yoga with their own enthusiasm.

Presently it is being seriously sensed that, as Indian tradition established the four Noble Aims (Purusarth) in human life i.e. Ethics (Dharma), Earning (Artha), Enjoyment (Kama) and Emancipation (Moksha), (which are equally essential and significant for sublime human existence in the present time as well) the education system should also impart the teaching and training of the moral (Dharma), socio-economic (Artha), psychological (Kama) and spiritual (Moksha) values to the students (Tripathi, 2005).

Therapeutic aspects of Yoga in the modern education system

The Web Based Yoga Teaching-Learning Process (WBYTLP) is a powerful way to rectify a learner's problems at their own pace. WBYTLP will enable people to start a new life with more vitality, mental stamina, self-confidence, self-interest and self-motivation by various media, methods and materials. Furthermore, one will develop a
broader outlook on life, understand their own and other people’s problems and solve them more easily by contacting others via chatting, video conferencing, audio conferencing, discussion forums, and e-mailing various experts enquiring about their relative fields easily.

Yoga Therapy

Although yoga is historically a spiritual discipline, it has also been used clinically as a therapeutic intervention. Many experts in Yoga have undertaken research on the clinical application of yoga for curing and controlling various diseases viz. psychopathological (e.g. depression, anxiety), cardiovascular (e.g. hypertension, heart disease), respiratory (e.g. asthma), diabetes and a variety of others. Many research studies on yoga therapy have been published in Indian and international journals (Bharshankar et. al., 2003; Khalsa, 2004; Clay et. al. 2005; Goyeche, 1982; Nagarathna & Nagendra, 1985; Jain et. al., 1991). Yoga therapy is a relatively novel clinical discipline within the broad category of mind-body medicine, whose growth is consistent with the burgeoning popularity of yoga in the West and the increasing worldwide use of alternative medicine (Khalsa, 2004).

Modern drugs are limited and not without dangerous side effects, whereas the systematic and gentle practice of yoga is both harmless and effective as well as eventually leading to a happy, fruitful and fulfilling life (Youngmag, 1993).

Below, three chronic diseases have been taken, namely Diabetes, Asthma and Heart disease and for each, the relevant Yoga cures have been listed.

Diabetes Mellitus

Diabetes Mellitus (DM) is a metabolic disease in which a lack of insulin (either relative or absolute) leads to an uncontrolled rise in blood sugar levels. This rise, if uncontrolled / poorly controlled, in the long term, leads to both metabolic and vascular complications. The former can lead to keto-acidosis, coma and death. The vascular complication results in strokes, disease of the coronary artery, disease of the kidney, nervous (neuritis) and eye (retinal and vitreous) problems.
Insulin controls one’s blood sugar level by:

1. Helping convert glucose to fat
2. Helping convert glucose to glycogen in the liver
3. Helping the entry of glucose into peripheral tissues. Lack of insulin leads to high blood sugar levels, with classic symptoms being excessive thirst, excessive hunger and excessive urination.

**TABLE: 1 DIABETES MELLITUS: DISORDER, SYMPTOMS AND RISK FACTORS**

<table>
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<tr>
<th>Diabetic Disorder</th>
<th>Symptoms of Diabetes</th>
<th>Risk Factors</th>
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<td>Pancreas</td>
<td>excessive hunger; excessive thirst; excessive urination; recurring bladder infections; fatigue; weakness; nausea; vomiting; blurred vision; urine leakage; numbness in hands; numbness in feet; muscle aches and cramps; vaginal dryness; soreness; itching; overflow and inconsistent headaches.</td>
<td>obesity; age; history of disease in family; history of diabetes in pregnancy; impaired glucose tolerance; ethnic ancestry; high blood pressure; high cholesterol or other fats in the blood.</td>
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</table>

**Asanas Useful in the Management of Diabetes Mellitus:**

Only a few asanas need be recommended to the sufferer for the management of diabetes mellitus, the most important thing here is for one to be steady and comfortable while in the asana position. The comfort experienced in the asana position is crucial to the way this method works. After attaining the position, one needs to relax all the muscles and try to maintain the position for as long as possible. Due to the various twists and stretches in the body, the internal organs are subjected to strain. This strain increases the blood supply, (and thus the oxygen supply) to the organs, increasing its efficiency and functioning. Stretching the various glands results in an increased efficiency of the endocrine system. Asanas like Vajrasana Yogamudra, Padahasthasana, and Janusirasana have been found useful in treating diabetes. These asanas have positive effects on the pancreas and, more importantly, on the release of insulin. But to get this result, one needs to maintain the asana for extended periods of time while relaxing the muscles. Beginners should try to practice the asanas listed above as often as possible. When one has gained
more experience, one can proceed to practice the positions given online (with the same discipline) and thus extract the maximum benefit from the asanas for the management of *diabetes mellitus*.

**Heart Disease**

Heart disease is a disease of the heart and the circulatory system. Such ills are also called “cardiovascular diseases”. This encompasses coronary heart disease, heart attacks, high blood pressure, strokes, chest pains (also known as “angina”), and rheumatic heart disease. Coronary heart disease is the primary concern as it is the leading killer of the people in the world. A heart attack happens when an artery becomes blocked, preventing oxygen and nutrients from getting to the heart muscle. A stroke results from a lack of blood flow to the brain, or, in some cases, bleeding in the brain. Heart failure means the heart cannot pump enough blood throughout the body. It does not mean that the heart has stopped or is about to stop working. It means that it is not able to pump blood the way that it should. The heart cannot fill with enough blood or pump with enough force or both.

**TABLE: 2 HEART DISEASES: SYMPTOMS AND RISK FACTORS**

<table>
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<tr>
<th>Part of Heart</th>
<th>Symptoms</th>
<th>Risk factor</th>
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<tbody>
<tr>
<td>Normal Heart</td>
<td>chest discomfort; pain; dizziness; light-headedness; sweating; shortness of breath; coughing; nausea/vomiting; extreme; fatigue; difficulty sleeping or lying down; swelling of the feet, legs and abdomen</td>
<td>Smoking; Stress; Alcohol; Hypertension; Drug Abuse; High Cholesterol; Obesity; Gender; Family History</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>The main symptom of coronary heart disease is angina, caused by insufficient oxygen reaching the cardiac muscle of the heart because of a reduction in blood flow. Angina is a feeling of heaviness, tightness or pain in the middle of the chest that may extend to, or just affect, one’s arms, neck, jaw, face, back or abdomen</td>
<td>Heart Risks</td>
</tr>
</tbody>
</table>

Source: guidant.com

12
Asanas Useful in the Management of Heart Disease

Through the regular practice of Yogasanas viz Matsyasana, Simhasana, Trikonasana, and Vrikshasana, heart disease patients can ensure an ample supply of blood to the lungs and the bronchial tubes therein, the breathing system as a whole will gain air capacity and become more active. The legs will be stretched both vertically and transversely, oxygen will thus circulate fully around the body, and the working capabilities of both the diaphragm and the lungs will increase. Lifting of the legs will step up blood to flow to the heart, providing a larger supply of fresh air to the lungs that will help the heart receive more oxygenated blood, it is in these ways, most importantly by nourishing the heart with a healthy blood supply, that heart disease can be managed.

Yogasanas like Matsyasana, Simhasana, Trikonasana, and Vrikshasana help to control heart problems by incorporating deep breathing with movements, postures and sign language. The movements help in lowering stress, improving balance and increasing circulation to speed up the healing process. Training the respiratory muscles will increase the efficiency of the respiratory system, as the muscles will be able to accomplish much more with much less effort. At the same time, higher levels of blood oxygen will be present, this is important for cardiac patients since they suffer the most from it. Low blood oxygen may impair skeletal muscle as well as metabolic functions, and lead to muscle atrophy and exercise intolerance.

Asthma

Asthma is a chronic disease that affects one’s airways. The airways are the tubes that carry air in and out of the lungs. The inside walls of airways become inflamed (swollen) in asthmatics. The inflammation makes the airways very sensitive, and they tend to react strongly to things that the body is allergic to or finds irritating. The airways react by getting narrower, interrupting the flow of air to the lung tissue. This causes wheezing (a whistling sound when breath is taken), coughing, chest tightness, and troubled breathing, especially at night and in the early morning. When asthma symptoms worsen suddenly, an asthma episode or attack is said to have occurred. During an asthma attack, inflammation increases, and the airways become more swollen and even narrower. Cells in the airways may also produce excess mucus. This extra mucus clogs the already narrow airways. This makes breathing very difficult for the sufferer.
### TABLE: 3 ASTHMA: SYMPTOMS, RISK FACTORS AND TRIGGERS

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Risk Factors</th>
<th>Triggers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coughing</td>
<td>1. Family history</td>
<td>Dust and dust mites; animal dander; moulds; history</td>
</tr>
<tr>
<td>2. Wheezing</td>
<td>2. Allergies</td>
<td>pollens; cockroaches; viral infections; certain air pollutants; cigarette smoke; exercise vigorous activity; cold air; chemical fumes; strong smelling substances e.g. perfumes; intense emotions; certain food additives e.g. sulphates.</td>
</tr>
<tr>
<td>3. Chest tightness</td>
<td>3. Gender</td>
<td></td>
</tr>
<tr>
<td>shortness of breath</td>
<td>4. Gender</td>
<td></td>
</tr>
<tr>
<td>4. Rapid breathing</td>
<td>5. Obesity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Smoking</td>
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</table>

Asanas Useful in the Management of Asthma

Yogic breathing exercises will strengthen and relax the muscles of the lungs. This reduces the nerve activity in the airways, causing less constriction during an asthma attack. Furthermore, by practicing rhythmic, controlled breathing techniques on a daily basis, the respiratory muscles and lungs develop the ability to breathe more slowly all the time, meaning less stress on the airways in general. There are many Yogasanas available for controlling asthmatic problems but only a few important asanas need be recommended viz. Ustrasana, Bhujangasana, Dhanurasana and Bastrikasana, for practising regularly no matter where one is, or what time it is to protect one from or to help one control asthma. The routine practice concentrates on exercises that stretch and relax the respiratory muscles while using several specific breathing patterns in synchronisation. It will take only a few minutes a day, and one will be feeling strengthened and confident.
OBJECTIVES OF TEACHING YOGA

The objectives of teaching Yoga can be interpreted in a physical, psychological, and spiritual sense, they deal with the mind, body and soul. The physical interpretation applies to the preliminary objective of Yoga; the psychological interpretation embraces the intermediate objective, while the spiritual interpretation addresses the sublime objective of liberation, which is the ultimate goal of Yoga.

The first objective of teaching Yoga is to improve bodily health and physical resilience. Thereafter, the intermediate objective of Yoga is to harmonize and integrate one's thoughts, emotions, desires, aims, motives, reasoning, etc. Through this process, it is possible to discover the hidden potentials of the mind and the intellect. Through the unfolding of one's inherent mental and psychic abilities one can then attain the state of self-realization, the final stage of purification in which one becomes aware of the indwelling self or soul.

The teachings of Yoga are very useful for diminishing sufferings. Many are seeking more balance, both physically and mentally. Hatha Yoga, the physical part of yoga that begins with stretching and paying closer attention to breathing, helps create just that. Attention is rarely paid to posture while sitting or standing; aches and pains are dismissed, and the individual has become accustomed to limited movement throughout the day. Over time this lack of movement will create stiffness, which may eventually lead to a number of problems including a muscle strain or ligament sprain. In a typical Hatha Yoga class, the instructor will guide students to move almost every joint in the body to its full range of motion, while simultaneously learning to focus on a deeper breath. Practicing Hatha Yoga consistently will teach the yogi to pay attention to his/her body in addition to increasing flexibility in the muscles and the connective tissues surrounding the muscles, which will help prevent common mishaps and conditions resulting in chronic soreness. Pranayama breathing exercises help clear the Nadis, or channels, that carry Prana the Universal life force, allowing Prana to flow freely. Kundalini rises through the spine, through the central channel called the Sushumna-nadi, and joins the crown Charkas. According to the tradition, the release of Kundalini leads to enlightenment and union.
Specifically, research shows that yoga helps manage or control anxiety, arthritis, asthma, back pain, blood pressure, carpal tunnel syndrome, chronic fatigue, depression, diabetes, epilepsy, headaches, heart disease, multiple sclerosis, stress and other conditions and diseases. It also improves muscle tone, flexibility, strength and stamina, reduces stress and tension, boosts self esteem, improves concentration and creativity, lowers fat levels, improves circulation, stimulates the immune system and creates a sense of well-being and calm.

According to the yogis, true happiness, liberation and enlightenment comes from union with the divine consciousness known as Brahman, or with Atman, the transcendent Self. The various yogic practices are paths to reaching that goal. The objective of Patanjali Yoga is to set man free from the cage of matter. The mind is the highest form of matter and man freed from this dragnet of Chitta or Ahankara (mind or ego) becomes a pure living being.

The objective of Yoga education is to teach that one has to strive to understand the philosophy of Atma and Paramatma leading a worldly life. If one tries so practically, his life becomes worth living.
NEED FOR THE STUDY

In the U.S.A all the (Government) schools are well equipped with computers, teachers encourage their pupils to undertake computer projects by using e-Learning material and also using information available on internet. This not only makes learning interesting and joyful but also incorporates innovativeness and novel approach of the children and enhances their imagination power. E-Learning has grown dramatically in popularity for students of all ages over the World for the past five years or so. Perhaps nowhere has the Internet's impact been greater than in the world of online education and distance learning. There has been a noticeable rise in the number of online schools across the United States and North America. According to researchers from Cornell University, "the web provides significant new functionality in transmitting information to the student and providing forums for exchange. The web is revolutionizing some areas of study through increased opportunities for learning and alternative formats for information." (Dwyer, Barbieri, and Doerr, 1995). Online schooling is not just a pathway to achieving a quick degree or an easy grade. Nowadays, the majority of online schools are highly reputable and dedicated to providing students with an in-depth and creative learning experience. In fact, some of the most respected colleges and universities in North America and Europe are now offering e-Learning courses and programs in order to cater to the needs of their students (Leamsource, 2002).

Online learning is the most effective way of delivering the best training to the maximum number of people at the lowest cost. It is flexible, fast and convenient. It delivers measurable results that bring a real return on investment (Gtslearning, 2003). Unlike a traditional class, online courses usually don't have regular meetings. As a result, the student can do his/her schoolwork and studying based on their schedule. Instead of being limited to asking questions during class or office hours, they have direct access to their instructors via email or message boards (Goast, 2004). The minimum requirement for students to participate in an online course is access to a computer, the Internet, and motivation to succeed in a non-traditional classroom. The ability to access a course from a home computer via the Internet everyday is a tremendous incentive for this group to reach their academic and career goals.
There are many benefits of online learning for both the student and the instructor. Academic and professional organizations agree that using e-learning environments can offer sound pedagogical practice. E-Learning does not require physical attendance. Most of the e-courses can be taken at anytime. They are well suited for people who like to learn at their own convenience. Some e-Learning courses bring together students from across the country, or even the world, allowing learners to create a network of resources outside the immediate area of the Learners. E-Learning can be customized to learners’ abilities and skills. Learners can skim over materials they have already mastered and concentrate on areas containing new information and skills. Learners are often able to study materials at their own personal speed and with your own degree of intensity. Cyber Works Training Center offers the following additional benefits: Cost-effectiveness, Flexibility, Customization, Assessment, Interaction with Peers, Distance Learning, Interaction with Experts, Up-to-Date Information, and Learning Management.
STATEMENT OF THE PROBLEM

Most of the countries in the world have felt the need to incorporate Computer Education and the use of Information Communication Technology (ICT) in education. E-learning or internet-based education provides a new and excellent way to present knowledge to the users since there is no schedule limitation and no space limitation. By taking advantage of the Internet, concepts and theories can be explained with the help of text, animation, graphics and simulations. Internet-based education or training can be accessed by every user in every corner of the world if an Internet connection is available, which is particularly beneficial to remote users.

Yoga through e-Learning renders self-education. Yoga teaches how to live with wisdom, not with the worldly orientations. Present education system causes orientation towards external world to such an extent that one gradually starts losing the awareness of his being i.e. self-awareness. The present education system conveys no training to develop an acquaintance with the abstract internal world of our Self. There is essentially a need to learn to understand the subtle realities concerned with the inert aspects of self-existence. Keeping these points in view, the present study is entitled "EFFECTS OF DIFFERENT STRATEGIES OF WEB-BASED INSTRUCTION IN THE CONTEXT OF PRACTISING YOGA ONLINE".
SCOPE OF THE STUDY

Education providers are taking advantage of technology to offer more effective and flexible ways of teaching learning process. E-Learning is an influencing tool for both Distance and on campus learners that can be useful to both full and part-time learners. Technology proves a rich environment for e-Learners and e-Instructors. The process of learning in the classroom can become significantly richer as students have access to new and different types of information, can manipulate it on the computer through graphic displays or controlled experiments in ways never before possible, and can communicate their results and conclusions in a variety of media to their teacher and fellow students.

The present study assesses the impact of different instructional technique on the achievement of the learners' in Yoga at International level. This study establishes the effectiveness of education with the help of the Yoga system. This study contributes to the learners who are interested to attain Physical, Mental and Social well being. The results of the study reveal that the performance of e-Learners on Yoga Education through Internet will be useful for the decision makers. This learning system uses different learning strategies and suitable learning methodologies.
OBJECTIVES OF THE STUDY

Keeping the statement of the problems in mind, the following objectives have been spelt out.

1. To develop web based e-Learning software packages for the selected Yogasanas for selected diseases at international level.

2. To evaluate the developed software packages from technical and pedagogical point of view.

3. To study the effectiveness of Internet Based Educational Programmes in Yogasanas which cure Diabetes, Heart Diseases and Asthma at international level.

4. To find out whether there is any difference among the three web-based instructional strategies viz. Training Mode (TM), Training and Feedback (TF), and Training, Feedback and Guidance (TFG) in terms of their effectiveness in learning Yogasanas.

5. To develop Criterion Referenced Tests to measure the different levels of cognition viz. Knowledge, Understanding and Application in learning Yogasanas curing Diabetics, Asthma and Heart Diseases at international level.

6. To find out whether there is any significant difference among the learners in terms of their nationality with respect to change in cognitive behaviour in Yoga Education.

7. To find out whether there is any significant difference among different strategies of e-Learning in Yoga Education in terms of the time taken by the learners.

8. To find out whether there is any significant difference among the learners in terms of the demographical variables such as Sex, Age, Educational Qualification, Occupation, and Experience on e-Learning with respect to change in cognitive behaviour in Yoga Education.
HYPOTHESES OF THE PRESENT STUDY

The hypotheses of the study are given as follows:

1. There is significant difference among different web-based instructional strategies viz. Training Mode (TM), Training and Feedback (TF) and Training, Feedback and Guidance (TFG), in terms of their effectiveness in realising the instructional objectives in Yoga Education at International Level.

2. There is significant difference among different web-based instructional strategies viz. TM, TF and TFG, in terms of their effectiveness in developing the cognitive skills at different levels viz. Knowledge, Understanding and Application.

3. There is significant difference among different web-based instructional strategies viz, TM, TF, and TFG in terms of their effectiveness in realising the instructional objectives in Yoga Education in the context of the contents with varying difficulty levels.

4. There is significant difference among different web-based instructional strategies viz. TM, TF and TFG in terms of the Nationality of the learners in realising the instructional objectives in Yoga Education.

5. There is significant difference among different web-based instructional strategies viz. TM, TF and TFG in terms of the demographical variables viz. age, sex, Educational qualification, occupation, experience on e-Learning, of the learners in realising the instructional objectives in Yoga Education.

6. There is significant difference among different web-based instructional strategies viz, TM, TF, and TFG differs in the context of learning different Yogasanas.

7. To find out whether there is any significant difference among different strategies of web based learning in Yoga Education in terms of the time taken by the learners.
The tools used in the study are given as follows:

1. A Web based e-Learning package was developed for the international learners practising twelve Yogasanas using ASP, HTML, 3D Max Studio, Flash, Java Script, VB Script and Sound Forge software which might help curing chronic problems viz. Diabetics, Asthma, and Heart problems.

2. Pre-tests were developed for three different content areas by the investigator based on the Bloom’s Taxonomy of Educational Objectives. The pre-test consists of 96 multiple-choice questions. It helped assess the learners’ pre-knowledge in the content areas based on which the three experimental groups were formed. Of the 96 multiple choice questions 28, 34 and 34 questions are at K-28, U-34 and A-34 levels of cognition. Care was taken to see that the questions included in the pre-test are in the ratio (approximately 1:1:1) of Knowledge, Understanding and Application respectively.

3. The Criterion Referenced Tests consist of multiple choice type questions testing at different levels of cognition viz. Knowledge, Understanding and Application in Yoga Education. There are totally 82 questions with the break up of 42 Knowledge type questions, 24 Understanding type questions, and 16 Application type questions.
METHODOLOGY IN BRIEF

Quasi-Experimental method was found to be the most appropriate method for testing the spelt out hypothesis in the study. Three non-equivalent groups availed 276 samples from different countries were formed based on the mean and SD on the scores of their personality variables and scholastic achievement in Yoga Education. Three groups formed as experimental groups. Training Mode (TM) method was adopted in the first group without feedback, while Training & Feedback and Training, Feedback and Guidance as a support to the learners with feedback and guidance were introduced as a experimental factors in the second the third groups.

Web based e-Learning package deals with 12 Yogasanas, which might cure three chronic problems viz. Diabetes, Asthma and Heart problems, has already been developed and evaluated by Educational Technologies, Yoga Experts, Media Experts and Web-based Software Developing Experts. The same content was taught to all the three groups through respective instructional strategy. Pre and posttests in the same content areas were administered to all the groups. Details regarding this web site were despatched to the target audience through e-mail, net forum, chatting, video conferencing, etc.

As the learner enters the website, he/she is made to furnish his/her profile with username and password. Once the initial formalities are completed the learner can choose any of the three diseases subsequently any of the three instruction strategies and learn relevant Yogasanas. Before practicing the Yogasanas, the investigator finds out the pre-knowledge of the chosen Yogasana by pre-test questions that contain eight questions. The learners are totally free to learn at their own pace. The learner can go to the next Yogasana only when he completes all the concepts of the chosen Yogasana. Once he has practised a particular Yogasana, he cannot access the same Yogasana again. After completing all the four Yogasanas for a disease, the learner is directed to take the posttest, which is based on the content areas learned. Once the learner completes all Yogasanas further disease concern, learners can test their time taken to practice of each Yogasana besides knowing the scores in the respective area. The marks are automatically stored for future reference.
The sample comprised of learners from different environment with different age groups. As already stated, three groups were formed viz Experimental Group-I, Experimental Group-II and Experimental Groups-III. The Training Mode (TM) was adopted in the Experimental Group –I. The Training and Feedback Mode (TF) was adopted in the Experimental Group – II. The Training, Feedback and Guidance Mode (TFG) were adopted in the Experimental Group – III. In TM, the online instructor does not give any feedback for wrong answer instead the learner is directed to read the same content again. In TF mode, the online instructor gives feedback to the learner when the answer is wrong. In TFG mode, the online instructor gives feedback and guidance to the learners through e-mail, chatting, video-conferencing, teleconferencing, etc. All the three experimental groups were observed thoroughly and then the spelt out the hypotheses were tested using appropriate statistical techniques.

DELIMITATION OF THE STUDY

The Delimitations of the study is the follows:

Due to the vastness of the Yogasanas, it is not possible for the investigator to develop web based e-Learning package for all of them. Moreover such an attempt would need more time and money. Hence, only twelve Yogasanas were considered for the software development.
The study is reported in six chapters. In the first chapter the problem has been introduced and the need for the study has been highlighted. In the second chapter, a conceptual framework with regard to e-Learning was developed and presented. In the third chapter, an account of some of the previous studies related to the present investigation in India and Abroad are abstracted and a conclusion was also arrived at the end of the chapter. The fourth chapter explains the development of the web based instructional software, procedure adopted for conducting the experiment, tools and evaluation of the software, and the establishment of the reliability and validity of different tools used for data collection. The fifth chapter presents a detailed report of the analysis and interpretation of data and the hypotheses testing. The sixth chapter summarizes the findings and conclusions of the study, provides recommendations for effective use of web based Instructional software and suggests for further research in the area of web based software in Yoga Education at International standard.