

## Scientific Attitude and Academic Achievement of Secondary School Students in Coimbatore District

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### Abstract

*The attitudes are changed in various situations. The person having scientific attitude feels easy to adjust in scattered society in comparison to other people. He can become helpful to maintain peace to other people, and as well as the nation can progress smoothly. We face many problems like pollution, population explosion, lack of energy, unemployment; poverty etc. Education is the weapon which can never fail in solving such problems. Scientific attitude can be cultivated by science education. Scientific attitude is necessary for progress of the nation. Scientific attitude helps an individual to develop vision for better life, to make life meaningful and teaches him to do all work systematically. Scientific attitude is like a foundation for all the fields of life so this must be attended. Evaluation is a process which can change the teaching techniques. Evaluation presents the true position of students and also propriety of teaching process. If we want to think for developing scientific attitudes in students, we also should know the level of scientific attitudes in them. So the researcher has selected this subject for research.*

**Keywords:** Attitude, Science, Scientific Attitude, Secondary level

### Introduction

Attitudes are mental predispositions toward people, objects, subjects, events, and so on. In science, attitudes are important because of three primary factors (Martin, 1984, pp. 13-14). First, a child's attitude carries a mental state of readiness with it. With a positive attitude, a child will perceive science objects, topics, activities, and people positively. A child, who is unready or hesitant, for whatever reason, will be less willing to interact with people and things associated with science. This readiness factor occurs unconsciously in a child, without prior thought or overt consent. Second, attitudes are not innate or inborn. Contemporary psychologists maintain that attitudes are learned and are organized through experiences as children develop. Furthermore, a child's attitude can be changed through experience. Teachers and parents have the greatest influence on science attitudes (George & Kaplan, 1998). Third, attitudes are dynamic results of experiences that act as directive factors when a child enters into new experiences. As a result, attitudes carry an emotional and an intellectual tone, both of which lead to making decisions and forming evaluations. These decisions and evaluations can cause a child to set priorities and hold different preferences.

### Scientific Attitude among the Students

Now a day, science has become an internal part of human life. The world without science can't be imagined. Science has changed the world from modern civilization to scientific civilization by its wonderful achievements. One of the objectives of education is to develop scientific attitudes in students. The curriculum and educational system should be arranged in a way that the views of Indian citizen be scientific. On the other hand central or state government has not tried their best to develop the scientific attitudes in students at secondary level. It resulted in decrease of number of students in science colleges. This is sorry state of affair to make us anxious. Students learn science subject till standard - 10. Secondary Education Board also tries to develop interest, attitudes and aptitudes in science subject. Science fairs, science exhibitions, science clubs, science projects, seminars etc are arranged at Taluka, District and state level. In spite of such efforts the students enrolment in science stream is decreased. So developing scientific attitude has become inevitable now.

The aim of value Education is to introduce students to democratic values, social, political & economic equality & respect for all religions. A System of education, which helps students to live a life of ideal citizen with peace & understanding, is value education. Today we live in the age of science and technology and scientific attitude is one of major values selected by National Policy on Education 1986. So the investigator tried through this study to identify the scientific attitude among the students of secondary school. According to National Policy on Education 1986; 10 values introduced in the school curriculum.

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|-------------------------|-------------------------|
| 1. Patriotism.          | 2. Scientific Attitude. |
| 3. National Integration | 4. Modesty              |
| 5. Religious Tolerance. | 6. Sensitivity          |
| 7. Equality of Gender.  | 8. Punctuality          |
| 9. Dignity of Labour.   | 10. Neatness            |

### Importance of Scientific Attitude of Students

Today's student is a citizen of tomorrow. Future society depends on all round development of students. Umashankar Joshi had rightly said, "Man should become human." The importance of this study is stated below.

- The study was aimed at constructing a standardized Scientific Attitude Scale. So such Scientific Attitude scale will be available to measure scientific attitudes of students studying in standard 8, 9 and 10.

- The Scientific Attitude scale will be useful not only to know the scientific attitudes of students but also to draw attention to deficiencies in developing scientific attitudes in students. It will guide to arrange educational programmes to develop such attitudes.
- Attitudes are shaped with physical and mental development of students. Positive or negative attitudes are formed by good and bad experiences in family, school, society etc.
- This study will provide guidance to develop positive scientific attitudes in students so they will take interest in science stream after passing standard10. The number of students will be increased in science colleges.
- After knowing the level of scientific attitudes of secondary school students by this study, more programmes will be planned to develop scientific attitudes.
- So many programmes are planned for development of scientific attitudes. The Scientific Attitude scale will be useful to test effectiveness of all these programmes and approaches and methods of science education.
- It will be known to which extent the variables like standard, area and sex of students contribute to develop scientific attitudes.

## **8 Tips to Help Create a Positive Scientific Attitude among Students**

### **Remember that you are powerful**

Most of the time we have no idea what we are supposed to be doing, or who we are supposed to be imitating. I say “imitating” because this is what we do: We conform to the external environment. We play roles and cover up our true selves by identifying with “things” that end up defining who we think we are. I’m a doctor, a salesperson, a secretary, a lawyer; I’m sad, happy, lonely, or miserable. I’m angry, jealous, afraid, and I can’t help it—it’s who I am. The truth is, though, we are none of those things. They are symptoms of the sleepwalking disease. You are more important than any label. We are not our professions. We are not our feelings. We are not our circumstances. We are not even our mind. What we are is far greater, far superior, far more important, and far more mysterious than our conceptual mind tries to define. This is why we are far more powerful than we think we are.

### **Choose to embrace life**

Let go and embrace the moment, whether it contains an obstacle or an opportunity. Stop fussing over trivial matters and start focusing on what’s really important to you. Don’t go through life expecting things to change. Life becomes hard and unfair when we decide to complain about things rather than trying to change them ourselves. Wake up to the truth that life is not a practice-run. Be bold and courageous, and make decisions that benefit your growth. Put yourself on your imaginary death-bed and realize

that time stands still for no one. Start as soon as possible to make any necessary changes you may need to. Take the first step before more time gradually passes by while you stand still stagnating. Your choice. Your life. Your responsibility. Your power.

**Realize that you get to control your reactions**

We create our outside reality by the thoughts and beliefs we maintain about life in general. What we believe in our inner world, we see in our outer world—not the other way around. We all have problems, and we're often tested by circumstances outside of our control. Even though you may not be in control of what's going on outside of you, you most definitely can control your reaction to those situations. We have the power because our inner world (cause) affects the influence we allow the outer world (effect) to have on us. So next time you hear somebody mention that you have great personal power, know they are 100% correct. You have more control than you think.

**Know that no one is better qualified**

We place far too much emphasis on other people's opinions about us, often to the exclusion of our own. This takes away from our own personal power. No matter what anybody says about you, it doesn't hold any significance to who you truly are unless you identify or agree with them. Stop identifying with other people's opinions and become aware of how you see yourself. Nobody knows you better than you do. Never accept another person's reality as your own. Always believe that you can achieve anything you put your mind to. And, most importantly, never let another person's opinion of you affect what you believe about yourself.

**Believe that you are more than enough**

If you have to compare yourself to someone else, let it be a person who is less fortunate, and let it be a lesson to learn just how abundant your life truly is. It's just a matter of perspective. You may find that you are not entirely grateful for what you possess. You may believe that you need more than you have right now to be happy. If this is the case, then you are absolutely right—you will need more, and you will continue to need more. This cycle will perpetuate as long as your mind believes it to be true. If you focus on what you have, and not on what you lack, you will always have enough, because you will always be enough.

**Love yourself**

You have arrived. Everything you need is right here. Cut out the distractions, open your eyes, and see that you already have everything in your possession to be happy, loved, and fulfilled. It's not out there. It never was out there. It's in the same place it was since the day you were born. It's just been covered up by all the external things you have identified with over the years. Be yourself. Love yourself completely and accept everything that you are. You are beautiful. Believe it, and most importantly, remind yourself often.

**Stay cool**

If someone cuts us off in traffic or skips the queue at our local cinema, we may feel our blood pressure begin to rise and feel the need to react in a negative manner. We get uptight with other people's actions, and in the end we punish ourselves for their bad behavior. We are losing control over our own actions because of the way other people act. But we are responsible for our own action, regardless of how rude other people may act. If it's hard to stay cool, remember: you are the one who loses in the end, if you lose the lesson.

**Journey well**

We know life is about the journey and not the arrival. We don't need to arrive if we accept that we are already here. Be content with where you are today and don't make the mistake of putting off being happy because you are waiting for the right moment to shine. Sometimes it takes a conscious effort to enjoy the journey. Not everyone woke up this morning and not everyone will go to bed tonight. Life has no guarantees. Every minute you are living is a blessing that has to be experienced in the moment. It's not always easy, but it's always an option—a choice. Your choice.

**Attitude of Students towards Teachers**

Nowadays teachers' behavior towards students has changed a lot. When asked from one of English medium school teacher she told that we are not allowed to let the students stand for more than ten minutes and we cannot physically beat the child we are just allowed to give written punishment. Older people always talk that their school days they were beaten by rulers and slap was very common for teachers. Teachers used to be more strict than fathers. One of the student of grade 6 told me that she loves those teachers who are competent in their work and make us let understand things to our level when asked about the language of communication used she told me it is English and not a problem to speak or understand. One of my friends told me that when she used to be a kid in 1983 in grade 6 she could not understand the science lecture cause it was in English although studying in an English medium school from beginning English was a problem. She discussed further that nowadays media has given students lot of confidence and they can easily understand English cartoons whole day on cartoon network and baby channel she added that when children come back from school I find out even their pronunciation of English is British or American. A teacher changed her school from girls branch to a co-education branch and she told me it is very difficult to tackle boys they are least interested in listening and even if you shout or give written punishment they imagine of themselves as heroes cause the Indian movies promote all the heroes to be warriors and always using street language and fighting. The punishment gives them the strength that they are better than others so being identified and punished. The students are seen more associated with

young unmarried teachers with sparkle in eyes, friendly as compared to married and strict teachers they feel scared and helpless.

#### **The Importance of Cultivating a Scientific Attitude**

It must be remarked that fear, within certain limits, is an appropriate emotional response which should lead to practical action in order to avoid impending harm or threatening situation. But when it is used as a basis for intimidating people and as an instrument of social control (for example, fear of eternal hell fire), it could have devastating consequences for the individual. Deep-seated fear of hell fire, enthusiastically promoted by the clergy for psychological manipulation of believers, for instance, has led to nightmares and neurosis as gullible minds cringe with horror at the prospect of eternal damnation. Belief in hell has no scientific foundation whatsoever. Thus, an individual who approaches life from the scientific perspective knows that hell is a myth created and promoted by mentally-twisted religious bigots preoccupied with consolidation of their power over the people's minds and pockets.

The scientific attitude encourages one to look at the universe without the distorting blinkers of superstition. Such a person can intelligently appreciate the wonders of nature with a sense of awe blended with humility, and yet understand that in the midst of incredible harmony and beauty in the universe, there is heart-rending ugliness and evil as natural by-products of cosmic evolution. To have a scientific attitude entails appreciating the good, the bad and the horrible in the world without ascribing them to supernatural forces. I am firmly convinced that on the question of death, which fills people with a sense of foreboding and utter helplessness, science offers a more realistic and practical solution than religion. Most religions teach the doctrine of immortality, together with the notions of divine reward and punishment after death. People usually do not realize that for thousands of years, belief in immortality has fostered unspeakable wicked practices, most especially internment of important personalities like kings and queens with living human beings.

Furthermore, they are unaware that research findings in the relevant biological sciences tend towards disbelief in immortality, for there is credible evidence that there is nothing in a human person that survives death in a meaningful subjective and personalized sense. In other words, in spite of decades of research, there is no well-documented evidence demonstrating that a dead person can continue to live as the same sentient being anywhere in the universe. Therefore, knowing that human beings have only one life to live here on earth because "life has no duplicate," a person with a scientific mind-set has a powerful incentive to maximize the singular opportunity s/he has to live meaningfully and productively.

### Conclusion

While it is desirable that students should be encouraged to develop these attitudes we need also make them aware of the role that personal characteristics play in the acquisition of scientific knowledge. By revealing the role of personal characteristics that scientists are normal human beings, fallible, stubborn, emotional and irrational, we can humanize education and thereby develop in the student proper appreciation of Education. To do this the student should be given the opportunity to perceive the benefit of education as normal, actively and occasionally fallible human beings, who are different only in the area of their special training. Students should have access to literature that reveals the extent to which the subjective side of the scientist influences his or her work. Needless to say, classroom teachers must play the major role in this enterprise, and thus help students acquire a better understanding of education. To be effective, teachers may need to familiarize themselves with current writings dealing with the nature of scientific knowledge and the practice at work.

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